

MASTER REFERENCE CATALOG



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*We are proud to present our
Master Reference Catalog and
Technical Support Program*

One source supply. ICS Cutting Tools offers off-the-shelf delivery for over 41,000 industrial, contractor, and specialty cutting tools for a wide range of applications. All items are arranged in related product categories which are easily found by looking for the prefix in front of the page number. A complete list of these categories and their prefixes can be found on page V of this preface.

Local stock. ICS Cutting Tools are available through over 1500 distributors domestically and abroad.

Quality. ICS Cutting Tools continuously strives to provide the highest quality cutting tools available and are second to none.

Competitive prices. You get more for your money with ICS Cutting Tools. Our prices are competitive with all major brands, including foreign.

Technical support. Our Technical Service Department will help you with technical questions and product information, directly on the telephone, via fax/Email, or at our web site.

Order fulfillment. Over 98% of all orders are shipped the same day with a 97.5% off-the-shelf fill rate. We use several different delivery services with online tracking to ensure you get your order.

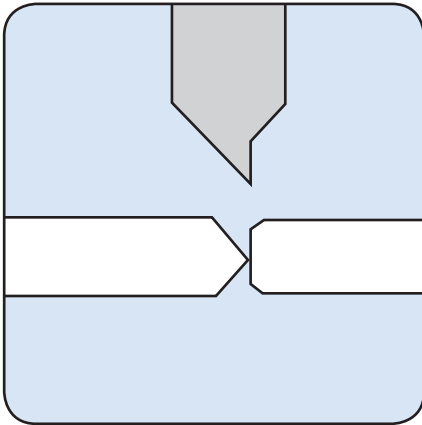
RIGHT TO KNOW

Material Safety Data Sheets are supplied to all customers in connection with the Worker "Right to Know" laws and OSHA Hazard Communication Standard, 29 CFR 1910.1200. Additional copies are available upon request.

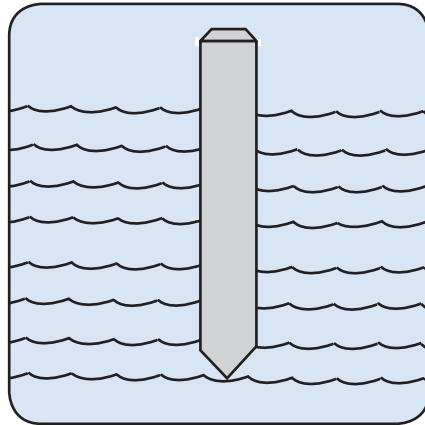
WARNING

Any cutting tool may break and shatter during use. Wear safety glasses in areas of cutting and threading tool use. Cutting tools are very sharp and caution should be used when handling them to avoid cuts. Cutting tools should be inspected regularly for needed repair or replacement to avoid bodily injury. Grinding of carbide or high speed steel cutting tools may produce potentially hazardous dust.

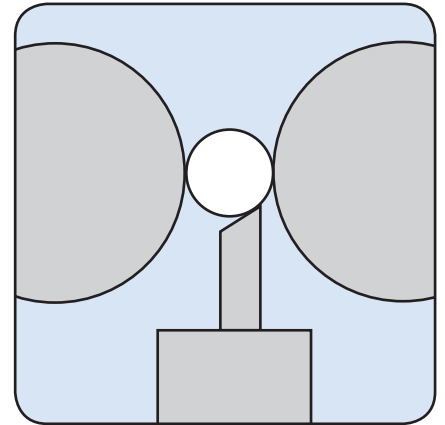
THE DRILL MANUFACTURING PROCESS



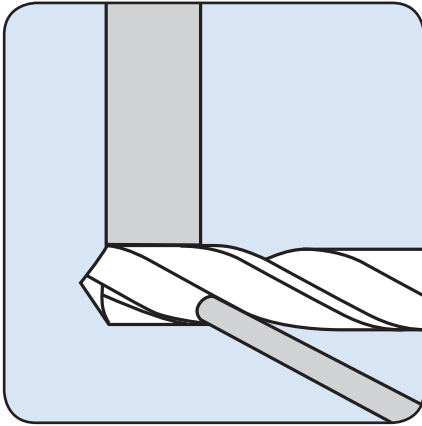
1. Automatic cutting and forming of blank.



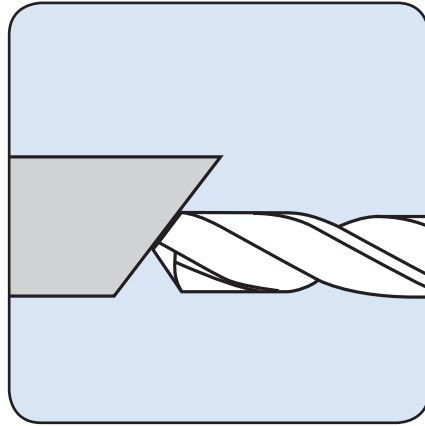
2. Harden and temper by salt bath.



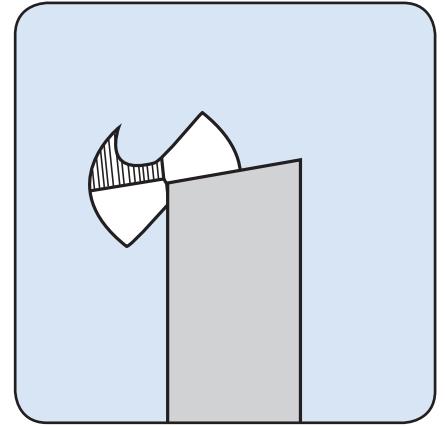
3. Centerless grind to diameter.



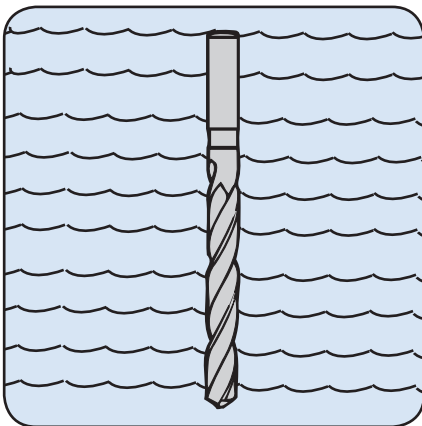
4. Flute and clearance grinding.



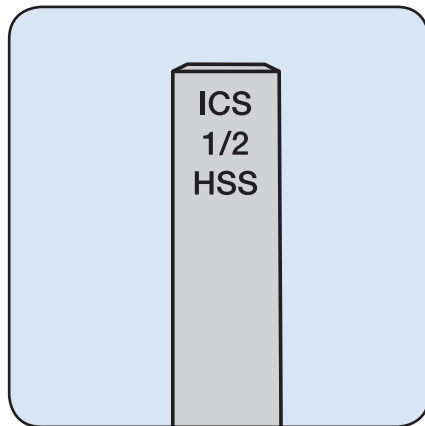
5. Sharpen drill point.



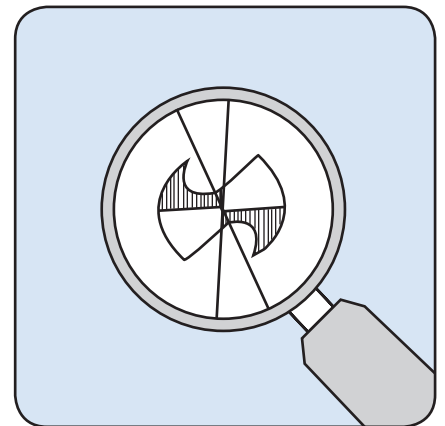
6. Grind split point.



7. Black Oxide Surface Treatment.



8. Mark logo, size, and steel.



9. Final inspection.

HIGH SPEED STEEL TOOL DATA

II

The chemical analysis of the High Speed Steels commonly used to manufacture ICS Cutting Tools is listed below.

GENERAL PURPOSE HIGH SPEED STEELS

TYPE	CHEMICAL COMPOSITION						HARDNESS ROCKWELL C	TERM
	CARBON C	TUNGSTEN W	MOLYBDENUM M	CHROMIUM CR	VANADIUM V	ALUMINUM AI		
M1	.80	1.50	8.00	4.00	1.00	-	63-65	"HSS"
M2	.85	6.00	5.00	4.00	1.90	-	63-65	"HSS"
M2AI	.85	6.00	5.00	4.00	1.90	*	63-65	"SUPER STEEL"
M7	1.00	1.75	8.75	4.00	2.00	-	63-65	"HSS"
M10	.85	-	8.00	4.00	2.00	-	63-65	"HSS"
M50	.83	.10	4.25	4.00	1.00	-	63-65	"HSS"

* Trade Secret

COBALT HIGH SPEED STEELS

TYPE	CHEMICAL COMPOSITION						HARDNESS ROCKWELL C	TERM
	CARBON C	TUNGSTEN W	MOLYBDENUM M	CHROMIUM CR	VANADIUM V	ALUMINUM AI		
M35	.80	6.00	5.00	4.00	2.00	5.00	65-67	"5% COBALT"
M42	1.10	1.50	9.50	3.75	1.15	8.00	65-67	"SUPER COBALT"

MANUFACTURING APPLICATIONS

TYPE	USE
M1 and M7	"HSS" is used for making drills that will be used in a wide variety of applications. They have some of the increased red-hardness properties of M2, and are less susceptible to shock. Generally favored for general purpose work and in aircraft plants where flexibility, extended drill life, and cost are all equally important. Not often used outside of the USA to make cutting tools.
M2	"HSS" is the standard material used for all ICS HSS cutting tools. M2 has good red-hardness and retains its cutting edge longer than other general purpose high speed steels, not as shock resistant nor as flexible as other HSS grades with less tungsten. Generally favored for high production machine work and heavy duty work. M2 is recognized as the global benchmark for HSS.
M2AI	"SUPER STEEL" comes from China and is used primarily for making Roughing End Mills. The chemical addition of Aluminum to M2 enhances the ability of M2 to dissipate heat. In most applications, it lasts 50-100% longer than regular M2 and in some cases, performs as well as Cobalt with a substantial savings in cost.
M10 and M50	"HSS" is used for making drills that will be used for portable drilling and where breakage is a problem due to flexing the drill. They do not have the red-hardness of other grades of HSS with tungsten. Generally favored for hardware and contractor use, although they are also sold for industrial uses.
M35	"5% COBALT" is used for making tool bits and taps. It has some of the increased red-hardness properties of M42, and is not quite so susceptible to shock.
M42	"SUPER COBALT" is the standard cobalt material used for all ICS cobalt cutting tools. It has excellent resistance to abrasion and very good red-hardness for working difficult materials.

Generally speaking, a cutting tool made of high speed steel containing the element tungsten will possess the very desirable property of "red-hardness". This enables tools to cut at a dull red heat (up to 1000°F) without loss of hardness or rapid dulling of cutting edge. Cobalt high speed steel will exhibit even greater red-hardness and wear resistance. Also, the more Tungsten or Cobalt a high speed steel contains, the more expensive the steel.

>>> CAUTION - The terms "SUPER HSS", "PREMIUM HSS", "Hi-Molybdenum", and "Hi-Tungsten" are not definitive and they can mean almost anything that one wants them to mean from ordinary M50 to High Cobalt material.

SPECIAL SURFACE TREATMENTS

Certain surface treatments for cutting tools can substantially improve the performance of the tools on difficult materials. No single treatment will solve every problem and their use should be restricted to those operations where the extra expense of the treatment can be justified by a substantial performance gain. All treatments are designed to improve performance by increasing tool hardness and wear resistance, reducing cutting friction and torque, inhibiting galling and chip welding, or improving lubrication. The descriptions listed below will assist you in selecting the most beneficial surface treatment.

TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Black Oxide ALSO KNOWN AS Blue Finish Steam Oxide	A black finish is produced by immersing tool in a hot oxidizing salt solution. During this treatment, all grinding stresses are relieved to improve toughness of tool. PERFORMANCE The black finish is rust resistant and helps prevent metal to metal contact in machining operations. This finish reduces galling and chip welding and enables tool surface to absorb more lubricant.	Used for free machining steels, low carbon steels, stainless steels, and ferrous metals (Iron based). PRECAUTIONS Black Oxide has tendency to cause galling and chip loading in some non-ferrous applications.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Gold Finish ALSO KNOWN AS Amber Finish Bronze Finish Gold Oxide	A gold finish is produced by a low temperature heat treatment. During this treatment, all grinding stresses are relieved to improve the toughness of tool and a gold oxide forms on surface. PERFORMANCE The gold finish is rust resistant. Gold finish tools combine the best features of black oxide and polished finish tools.	Used for non-ferrous and ferrous metals where there is a tendency for chips to cling to surface of cutting tool. It is also used to identify cutting tools made of cobalt. PRECAUTIONS Some cutting tools made of high speed steel have a gold or a gold and black finish and are sold as a premium super HSS or even as cobalt.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Polished Finish ALSO KNOWN AS Bright Finish Sliver Finish	The polished finish is the result of fine finish grinding and is standard on all ICS cutting tools. PERFORMANCE While not an actual surface treatment, the smooth surface decreases chip friction and loading.	Used for non-ferrous and ferrous metals, wood, and plastic where there is a tendency for chips to cling to surface of cutting tool.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Gray Finish ALSO KNOWN AS White Finish	A gray finish is produced by shot blasting the tool surface with fine powdered glass. During this treatment, surface stresses are reduced to improve endurance of tool and improve work finish. PERFORMANCE The gray finish is rust resistant and its surface layer decreases chip friction and loading.	Used for non-ferrous and ferrous metals, wood, and plastic where there is a tendency for chips to cling to surface of cutting tool.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Titanium Nitride (TiN) ALSO KNOWN AS Usually any trade name ending with -Tanium suffix	A bright gold coating of titanium nitride is produced by the physical (PVD) vapor deposition process. The coating is about .0001" thickness and is approximately Rc80 hardness. It refracts heat and acts as a thermal barrier between the chip and the tool. TiN has a very low coefficient of friction to reduce chip welding and tools can be operated at high speeds and feeds. PERFORMANCE TiN coated tools last from 200 to 700% longer than uncoated tools. Performance will vary by material and cutting tool. The harder the base material of the tool, the more effective TiN coating will be.	Used for ferrous metals below Rc40 hardness and for non-ferrous metals where increased metal removal rates signify productivity. PRECAUTIONS TiN coated tools have a tendency to gall in Titanium and Titanium alloys. TiN coated tools oxidize at about 1000°F.

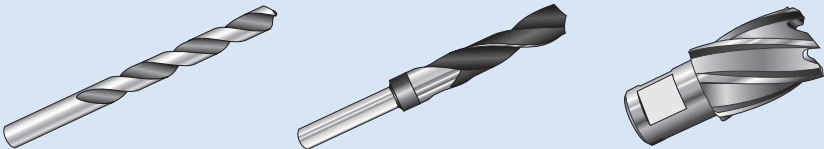
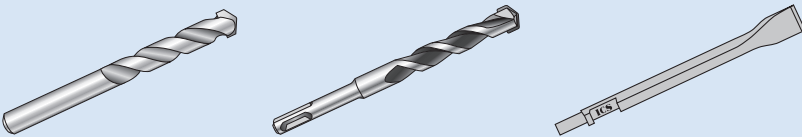
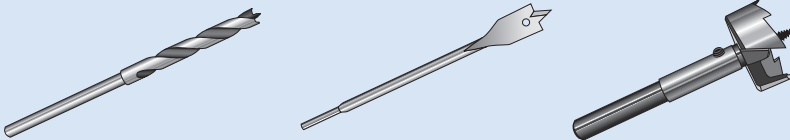
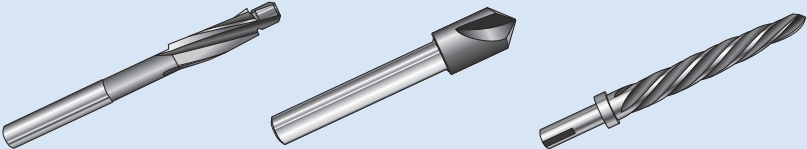
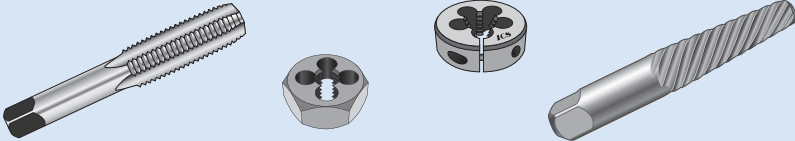
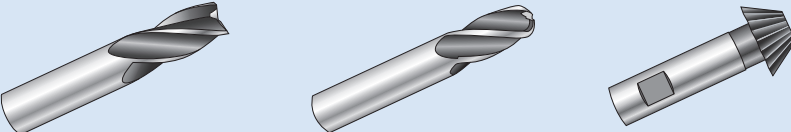
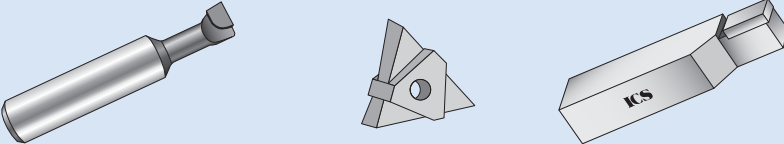
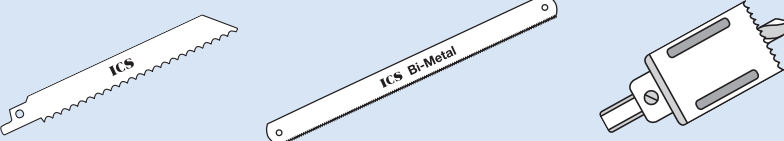
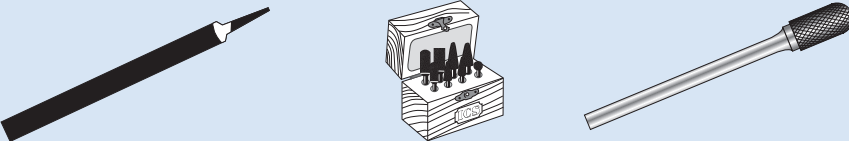
SPECIAL SURFACE TREATMENTS

IV

Certain surface treatments for cutting tools can substantially improve the performance of the tools on difficult materials. No single treatment will solve every problem and their use should be restricted to those operations where the extra expense of the treatment can be justified by a substantial performance gain. All treatments are designed to improve performance by increasing tool hardness and wear resistance, reducing cutting friction and torque, inhibiting galling and chip welding, or improve lubrication. The descriptions listed below will assist you in selecting the most beneficial surface treatment.

TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Titanium Carbonitride (TiCN)	A gray multi-layered coating of Titanium Carbonitride is produced by the physical (PVD) vapor deposition process. The coating is about .0001" thickness and is exceptionally hard (approximately 4000 Vickers hardness). TiCN has a very low coefficient of friction to reduce chip welding and tools can be operated at 15-25% faster feeds and speeds than TiN. PERFORMANCE TiCN coated tools last up to 300% longer than TiN when machining tool steels and abrasive materials. The performance of TiCN coated HSS tools is comparable to solid carbide tools.	Used for alloy steels, tool steels, and abrasive materials like cast iron and high silicon aluminum alloys. PRECAUTIONS TiCN coated tools may have a tendency to gall in Ni or Ti alloys. TiCN coated tools oxidize at about 750°F.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Titanium Aluminum Nitride (TiAlN)	A purple multi-layered coating of Titanium Aluminum Nitride is produced by the physical (PVD) vapor deposition process. The coating is about .0001" thickness and is very hard (approximately 2800 Vickers hardness). TiAlN has a very high oxidation resistance (up to 1500°F) and can be operated at 20-35% faster speeds and feeds than TiN. PERFORMANCE TiAlN coated tools last up to 1000% longer than TiN when machining abrasive materials such as cast iron. It was designed for very high speed performance.	Used for non-ferrous and ferrous metals where there is a tendency for chips to cling to surface of cutting tool. It is also used to identify cutting tools made of cobalt. PRECAUTIONS Some cutting tools made of high speed steel have a gold or a gold and black finish and are sold as a premium super HSS or even as cobalt.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Aluminum Titanium Nitride (AlTiN)	A black multi-layered coating of Aluminum Titanium Nitride is produced by the physical (PVD) vapor deposition process. The coating is about .0001" thickness and is exceptionally hard (approximately 4400 Vickers hardness). AlTiN has a very low coefficient of friction to reduce chip welding and tools can be operated at 25-40% faster feeds and speeds than TiN. PERFORMANCE AlTiN coated tools last up to 1000% longer than TiN coated solid carbide tools when machining hard abrasive materials and high temperature alloys. Can be used for ferrous and non-ferrous metals.	AlTiN was designed specifically for use on solid carbide cutting tools to machine hard abrasive materials and hardened steels. It is used for high speed (semi-dry & dry) machining and where higher temperatures are generated. PRECAUTIONS AlTiN coated tools oxidize at about 1650°F.
TREATMENT	DESCRIPTION / CHARACTERISTICS	APPLICATIONS
Zirconium Nitride Coated (ZrN)	The bright silver/gold coating of Zirconium Nitride is produced by the physical (PVD) vapor deposition process. The coating is about .0001" in thickness and is over 30% harder than TiN (approximately 3100 Vickers hardness). ZrN has more lubricity, improved chemical resistance, and better thermal stability at higher temperatures than TiN. PERFORMANCE ZrN coated tools last from 200 to 1000% longer than uncoated tools and up to 500% longer than TiN when drilling grey iron, aluminum and brass. Performance will vary by material and tool.	Used for aluminum alloys, cast iron, high temperature alloys, stainless steels, and non-ferrous metals. Also very effective in glass filled plastics and wood. PRECAUTIONS ZrN coated tools have tendency to gall in carbon steel, tool steel and 400 Stainless Steel. ZrN coated tools oxidize at about 1100°F.

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METAL DRILLING TOOLS

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[HEAVY DUTY]

Cobalt

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Metric

2mm to 100mm 93-94

[HEAVY DUTY]

High Speed Steel

Fractional

1/2" to 1" 92

Carbide Tipped • 1/4" to 1-1/4" 95

Metric

12.5mm to 25mm 92

Cobalt

Fractional

1/2" to 1" 95

[SPECIAL PURPOSE]

Fractional

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Aircraft Extension Drill

Display Merchandiser

12 pc 110

Combined Drill and Countersink

Vinyl Pouch

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5 pc • #11 to #15 114

Long Boy Drill

Fractional

6 pc • 3/8" Shank • 3/8" to 3/4" 102

8 pc • 3/8" Shank • 3/8" to 3/4" 102

8 pc • 1/2" Shank • 9/16" to 1" 102

11 pc • 3/16" to 1/2" 102

13 pc • 1/8" to 1/2" 102

Multi-Angle Drill 138

Jobber Length Drill

Fractional

7 pc • 1/8" to 1/2" by 16ths 56

11 pc • 1/16" to 3/8" by 32nds 57

13 pc • 1/16" to 1/4" by 64ths 53

15 pc • 1/16" to 1/2" by 32nds 53

21 pc • 1/16" to 3/8" by 64ths 54

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Fractional

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Plastic and Laminate Drill

7 pc • 1/8" to 1/2"

Straight Shank 118

Reduced Shank 118

1/4" 118

3/8" 118

Screw Machine Length Drill

Fractional

High Speed Steel 9

Cobalt 9

Metric 5

Wire Gauge 5

Left Hand 6

Silver & Deming Drill

Fractional

Display Merchandiser

8 pc • 9/16" to 1" 65

3/8" (Reduced) Shank

8 pc • 9/16" to 1" by 16ths 70

Wood Stand

5 pc • 1" to 1-1/2" by 8ths 67

8 pc • 9/16" to 1" 67

13 pc • 17/32"-3/4" by 32nds, 13/16"-1" by 16ths, 31/32" 67

32 pc • 33/64" to 1" by 64ths 67

3/8" (Reduced) Shank

8 pc • 9/16" to 1" by 16ths 70

3/4" Shank

5 pc • 1" to 1-1/2" by 8ths 68

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SCREW MACHINE LENGTH DRILLS

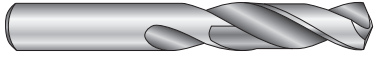
ICS USA

HEAVY DUTY

135° SPLIT POINT*

NAS 907 TYPE C SPECIFICATIONS

Screw Machine Length Drills were developed for screw machine operations where regular length drills were too long. The short length design reduces breakage and runout. They are now used in portable drilling where short, rigid drills are a requirement, and are especially suitable for N/C drilling applications. Also known as Short Length Drills or Stub Length Drills.

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	NAS SPECS
SMR	 OXIDE FINISH	For drilling in hard steel, stainless steel, titanium and other hard materials.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web	C
SMP	 BRIGHT POLISHED FINISH	For drilling stainless steel and aluminum. Often used where oxide could potentially contaminate the weld around edge of the hole. Saves on clean-up time and machining costs.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web	C
SMGF	 GOLD OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. Designed as an alternative to black oxide. Gold oxide film reduces friction between the tool and the work. Does not smear metal.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web	C
SMG	 OXIDE FINISH	For use primarily in screw machine operations, and for general purpose drilling in mild steel and low alloys.	M2	118° Std. Pt. Std. Spiral Hvy. Duty Web	-
SMT	 GOLD TITANIUM FINISH	The combination of titanium nitride coating with the heavy duty design enhances chip flow, finished hole quality and up to 700% more drill life. Super hard RC-80 cutting edge.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web	C

*SMG are general purpose 118° standard point.

(NAS) National Aerospace Standard

Fractional Sizes (Straight Shank) 3/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TiN COAT
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT	GOLD FINISH 135° SPLIT PT	GOLD FINISH 135° SPLIT PT
				SMR	SMP	SMGF	SMT
3/64	.0469	5/8	1-3/8	1.44	1.44	1.44	2.84
1/16	.0625	5/8	1-5/8	0.94	0.94	0.94	2.52
5/64	.0781	11/16	1-11/16	0.94	0.94	0.94	2.52
3/32	.0938	3/4	1-3/4	0.98	0.98	0.98	2.60
7/64	.1094	13/16	1-13/16	0.98	0.98	0.98	2.60
1/8	.1250	7/8	1-7/8	1.04	1.04	1.04	2.84
9/64	.1406	15/16	1-15/16	1.26	1.26	1.26	2.88
5/32	.1562	1	2-1/16	1.34	1.34	1.34	3.12
11/64	.1719	1-1/16	2-1/8	1.42	1.42	1.42	3.04
3/16	.1875	1-1/8	2-3/16	1.54	1.54	1.54	3.14
13/64	.2031	1-3/16	2-1/4	1.70	1.70	1.70	5.22
7/32	.2188	1-1/4	2-3/8	1.92	1.92	1.92	5.34
15/64	.2344	1-5/16	2-7/16	1.96	1.96	1.96	5.60
1/4	.2500	1-3/8	2-1/2	2.02	2.02	2.02	5.68
17/64	.2656	1-7/16	2-5/8	2.82	2.82	2.82	8.78
9/32	.2812	1-1/2	2-11/16	2.98	2.98	2.98	8.90
19/64	.2969	1-9/16	2-3/4	3.22	3.22	3.22	9.26
5/16	.3125	1-5/8	2-13/16	3.38	3.38	3.38	9.56
21/64	.3281	1-11/16	2-15/16	3.80	3.80	3.80	9.94
11/32	.3438	1-11/16	3	4.06	4.06	4.06	10.36
23/64	.3594	1-3/4	3-1/16	4.30	4.30	4.30	14.58
3/8	.3750	1-13/16	3-1/8	4.68	4.68	4.68	14.74
25/64	.3906	1-7/8	3-1/4	5.02	5.02	5.02	15.40
13/32	.4062	1-15/16	3-5/16	5.46	5.46	5.46	18.00
27/64	.4219	2	3-3/8	5.82	5.82	5.82	18.62
7/16	.4375	2-1/16	3-7/16	6.36	6.36	6.36	18.90
29/64	.4531	2-1/8	3-9/16	7.00	7.00	7.00	19.64
15/32	.4688	2-1/8	3-5/8	7.44	7.44	7.44	20.10
31/64	.4844	2-3/16	3-11/16	8.14	8.14	8.14	20.52
1/2	.5000	2-1/4	3-3/4	8.14	8.14	8.14	21.06

(Sizes continued on next page)

PACKAGING

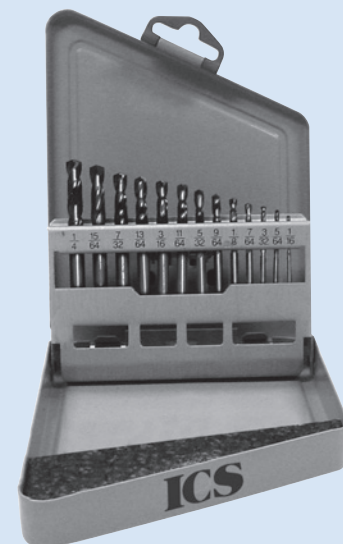
1/64 to 17/64 - 12 Drills/Envelope
9/32 to 1/2 - 6 Drills/Envelope
33/64 to 3/4 - 1 Drill/Tube

ORDERING NOTE

To complete your order we may substitute or interchange black or bright drills unless you have specified "no substitutions".

DRILL SETS

A variety of Screw Machine Length Drill Sets can found on page 5.



HIGH SPEED STEEL SCREW MACHINE LENGTH DRILLS

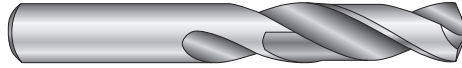
ICS

USA

HEAVY DUTY

135° SPLIT POINT*

NAS 907 TYPE C SPECIFICATIONS



Fractional Sizes 33/64" to 2" Dia.

				HIGH SPEED STEEL		
SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT SHANK BLACK OXIDE 135° SPLIT PT	3/8" REDUCED SHANK BLACK OXIDE 135° SPLIT PT	STRAIGHT SHANK BLACK OXIDE 118° STANDARD PT
				SMR	SMTS	SMG
33/64	.5156	2-3/8	3-7/8	27.10	34.16	21.52
17/32	.5312	2-3/8	3-7/8	28.08	35.14	22.52
35/64	.5469	2-1/2	4	28.96	36.02	23.42
9/16	.5625	2-1/2	4	28.96	36.02	23.42
37/64	.5781	2-5/8	4-1/8	32.42	39.48	26.88
19/32	.5938	2-5/8	4-1/8	32.42	39.48	26.88
39/64	.6094	2-3/4	4-1/4	33.66	40.72	28.12
5/8	.6250	2-3/4	4-1/4	32.54	39.60	26.98
41/64	.6406	2-7/8	4-1/2	36.64	43.70	31.10
21/32	.6562	2-7/8	4-1/2	36.64	46.62	31.10
43/64	.6719	2-7/8	4-5/8	40.04	47.08	34.46
11/16	.6875	2-7/8	4-5/8	40.04	47.08	34.46
45/64	.7031	3	4-3/4	42.98	50.02	37.40
23/32	.7188	3	4-3/4	42.98	50.02	37.40
47/64	.7344	3-1/8	5	45.76	52.82	40.22
3/4	.7500	3-1/8	5	49.78	58.58	39.40
49/64	.7656	3-1/4	5-1/8	53.48	62.30	43.10
25/32	.7812	3-1/4	5-1/8	53.48	62.30	43.10
51/64	.7969	3-3/8	5-1/4	56.42	65.24	46.04
13/16	.8125	3-3/8	5-1/4	55.72	64.54	45.34
53/64	.8281	3-1/2	5-3/8	58.38	67.20	48.02
27/32	.8438	3-1/2	5-3/8	58.38	67.20	48.02
55/64	.8594	3-1/2	5-1/2	60.10	68.92	49.74
7/8	.8750	3-1/2	5-1/2	59.72	68.54	49.36
57/64	.8906	3-5/8	5-5/8	62.02	70.84	51.64
29/32	.9062	3-5/8	5-5/8	62.02	70.84	51.64
59/64	.9219	3-3/4	5-3/4	67.30	76.12	56.94
15/16	.9375	3-3/4	5-3/4	67.30	76.12	56.94
61/64	.9531	3-7/8	5-7/8	67.34	76.12	62.16
31/32	.9688	3-7/8	5-7/8	67.34	76.12	62.16
63/64	.9844	4	6	74.58	83.40	65.56
1	1.0000	4	6	74.58	83.40	64.62
1-1/16	1.0625	4	6-1/4	-	94.04	79.34
1-1/8	1.1250	4	6-3/8	-	106.04	91.32
1-3/16	1.1875	4-1/4	6-5/8	-	-	93.26
1-1/4	1.2500	4-3/8	6-3/4	-	118.90	104.20
1-5/16	1.3125	4-3/8	7	-	-	140.00
1-3/8	1.3750	4-1/2	7-1/8	-	-	149.24
1-7/16	1.4375	4-3/4	7-3/8	-	-	160.18
1-1/2	1.5000	4-7/8	7-1/2	-	-	168.76
1-9/16	1.5625	4-7/8	7-3/4	-	-	190.64
1-5/8	1.6250	4-7/8	7-3/4	-	-	210.86
1-11/16	1.6875	5-1/8	8	-	-	244.50
1-3/4	1.7500	5-1/8	8	-	-	253.32
1-13/16	1.8125	5-3/8	8-1/4	-	-	277.90
1-7/8	1.8750	5-3/8	8-1/4	-	-	285.78
1-15/16	1.9375	5-5/8	8-1/2	-	-	303.04
2	2.0000	5-5/8	8-1/2	-	-	317.42

*SMG are 118° standard point.

DRILL SIZE	SHANK DIAMETER
UP TO 1 "	SAME AS DRILL SIZE
1-1/16 - 1-1/4	1"
1-5/16 - 1-1/2	1-1/4"
1-9/16 - 2	1-1/2"

HIGH SPEED STEEL

1/4" SHANK SCREW MACHINE LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

NAS 907 TYPE C SPECIFICATIONS

**Fractional Sizes (Reduced Shank) 17/64" to 1/2" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT
				SMQS	SMPQS
17/64	.2656	1-7/16	2-5/8	5.68	5.68
*9/32	.2812	1-1/2	2-11/16	5.68	5.68
19/64	.2969	1-9/16	2-3/4	6.14	6.14
*5/16	.3125	1-5/8	2-13/16	6.14	6.14
21/64	.3281	1-11/16	2-15/16	6.82	6.82
11/32	.3438	1-11/16	3	6.82	6.82
23/64	.3594	1-3/4	3-1/16	7.48	7.48
*3/8	.3750	1-13/16	3-1/8	7.48	7.48

*Available with 4" Overall Length. Item No. MLDHQS (Page 34)

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT
				SMQS	SMPQS
25/64	.3906	1-7/8	3-1/4	8.30	8.30
*13/32	.4062	1-15/16	3-5/16	8.30	8.30
27/64	.4219	2	3-3/8	9.26	9.26
*7/16	.4375	2-1/16	3-7/16	9.26	9.26
29/64	.4531	2-1/8	3-9/16	10.52	10.52
*15/32	.4688	2-1/8	3-5/8	10.52	10.52
31/64	.4844	2-3/16	3-11/16	11.08	11.08
*1/2	.5000	2-1/4	3-3/4	11.08	11.08

PACKAGING - All Sizes - 6 Drills/Envelope

HIGH SPEED STEEL

3/8" SHANK SCREW MACHINE LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

NAS 907 TYPE C SPECIFICATIONS

**Fractional Sizes (Reduced Shank) 25/64" to 1/2" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT
				SMTS	SMPTS
25/64	.3906	1-7/8	3-1/4	8.30	8.30
13/32	.4062	1-15/16	3-5/16	8.30	8.30
27/64	.4219	2	3-3/8	9.26	9.26
7/16	.4375	2-1/16	3-7/16	9.26	9.26

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT
				SMTS	SMPTS
29/64	.4531	2-1/8	3-9/16	10.52	10.52
15/32	.4688	2-1/8	3-5/8	10.52	10.52
31/64	.4844	2-3/16	3-11/16	11.08	11.08
1/2	.5000	2-1/4	3-3/4	11.08	11.08

NOTE: Reduced shank drills are used for drilling holes larger than the capacity of a 1/4", 3/8", or 1/2" drill chuck. Reduced shank drills should only be used for light to medium duty drilling applications as they do not have the torque strength of a straight shank drill. Reduced shank is not as hard as the body of the drill to allow more flex and less breakage.

Quick Reference for Heavy Duty Reduced Shank Drills

DRILL TYPE	DRILL SETS	STUB LENGTH	JOBBER LENGTH	SILVER & DEMING	EXTRA LENGTH
High Speed Steel	60-67	11, 12	30, 34-35, 37, 40-42, 46	69-70, 71-72, 76	105-106, 110
Cobalt	60, 62-63, 65	-	42, 45	73-74, 77	-
TiN Coated	-	-	34, 37	-	-

FACT

ICS Cutting Tools offers, as a standard, the broadest range of Heavy Duty Reduced Shank Drills in the world.

HIGH SPEED STEEL SCREW MACHINE LENGTH DRILLS

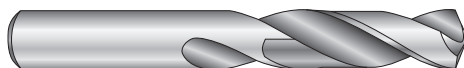
ICS

USA

HEAVY DUTY

135° SPLIT POINT

NAS 907 TYPE C SPECIFICATIONS



Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			PRICE	TiN COATED	PRICE
				BLACK OXIDE	BRIGHT FINISH	GOLD FINISH		GOLD FINISH	
1	.2280	1-5/16	2-7/16	SMR#01	SMP#01	SMGF#01	2.12	SMT#01	5.44
2	.2210	1-5/16	2-7/16	SMR#02	SMP#02	SMGF#02	2.12	SMT#02	5.44
3	.2130	1-1/4	2-3/8	SMR#03	SMP#03	SMGF#03	2.02	SMT#03	5.34
4	.2090	1-1/4	2-3/8	SMR#04	SMP#04	SMGF#04	2.02	SMT#04	5.34
5	.2055	1-1/4	2-3/8	SMR#05	SMP#05	SMGF#05	2.02	SMT#05	5.34
6	.2040	1-1/4	2-3/8	SMR#06	SMP#06	SMGF#06	2.02	SMT#06	5.34
7	.2010	1-3/16	2-1/4	SMR#07	SMP#07	SMGF#07	1.88	SMT#07	5.18
8	.1990	1-3/16	2-1/4	SMR#08	SMP#08	SMGF#08	1.88	SMT#08	5.18
9	.1960	1-3/16	2-1/4	SMR#09	SMP#09	SMGF#09	1.88	SMT#09	5.18
10	.1935	1-3/16	2-1/4	SMR#10	SMP#10	SMGF#10	1.72	SMT#10	5.04
11	.1910	1-3/16	2-1/4	SMR#11	SMP#11	SMGF#11	1.72	SMT#11	5.04
12	.1890	1-3/16	2-1/4	SMR#12	SMP#12	SMGF#12	1.72	SMT#12	5.04
13	.1850	1-1/8	2-3/16	SMR#13	SMP#13	SMGF#13	1.72	SMT#13	5.04
14	.1820	1-1/8	2-3/16	SMR#14	SMP#14	SMGF#14	1.72	SMT#14	3.40
15	.1800	1-1/8	2-3/16	SMR#15	SMP#15	SMGF#15	1.72	SMT#15	3.40
16	.1770	1-1/8	2-3/16	SMR#16	SMP#16	SMGF#16	1.72	SMT#16	3.40
17	.1730	1-1/8	2-3/16	SMR#17	SMP#17	SMGF#17	1.56	SMT#17	3.22
18	.1695	1-1/16	2-1/8	SMR#18	SMP#18	SMGF#18	1.56	SMT#18	3.22
19	.1660	1-1/16	2-1/8	SMR#19	SMP#19	SMGF#19	1.56	SMT#19	3.22
20	.1610	1-1/16	2-1/8	SMR#20	SMP#20	SMGF#20	1.56	SMT#20	3.22
21	.1590	1-1/16	2-1/8	SMR#21	SMP#21	SMGF#21	1.56	SMT#21	3.22
22	.1570	1-1/16	2-1/8	SMR#22	SMP#22	SMGF#22	1.56	SMT#22	3.22
23	.1549	1	2-1/16	SMR#23	SMP#23	SMGF#23	1.44	SMT#23	3.08
24	.1520	1	2-1/16	SMR#24	SMP#24	SMGF#24	1.44	SMT#24	3.08
25	.1490	1	2-1/16	SMR#25	SMP#25	SMGF#25	1.26	SMT#25	2.90
26	.1470	1	2-1/16	SMR#26	SMP#26	SMGF#26	1.26	SMT#26	2.90
27	.1440	1	2-1/16	SMR#27	SMP#27	SMGF#27	1.26	SMT#27	2.90
28	.1405	15/16	1-15/16	SMR#28	SMP#28	SMGF#28	1.26	SMT#28	2.90
29	.1360	15/16	1-15/16	SMR#29	SMP#29	SMGF#29	1.26	SMT#29	2.90
30	.1285	15/16	1-15/16	SMR#30	SMP#30	SMGF#30	1.12	SMT#30	2.78
31	.1200	7/8	1-7/8	SMR#31	SMP#31	SMGF#31	1.06	SMT#31	2.72
32	.1160	7/8	1-7/8	SMR#32	SMP#32	SMGF#32	1.06	SMT#32	2.72
33	.1130	7/8	1-7/8	SMR#33	SMP#33	SMGF#33	1.06	SMT#33	2.72
34	.1110	7/8	1-7/8	SMR#34	SMP#34	SMGF#34	1.06	SMT#34	2.72
35	.1100	7/8	1-7/8	SMR#35	SMP#35	SMGF#35	1.06	SMT#35	2.72
36	.1055	13/16	1-13/16	SMR#36	SMP#36	SMGF#36	1.06	SMT#36	2.72
37	.1040	13/16	1-13/16	SMR#37	SMP#37	SMGF#37	1.06	SMT#37	2.72
38	.1010	13/16	1-13/16	SMR#38	SMP#38	SMGF#38	1.06	SMT#38	2.72
39	.0995	13/16	1-13/16	SMR#39	SMP#39	SMGF#39	1.06	SMT#39	2.72
40	.0980	13/16	1-13/16	SMR#40	SMP#40	SMGF#40	1.06	SMT#40	2.72
41	.0960	13/16	1-13/16	SMR#41	SMP#41	SMGF#41	1.06	SMT#41	2.72
42	.0935	3/4	1-3/4	SMR#42	SMP#42	SMGF#42	1.06	SMT#42	2.72
43	.0890	3/4	1-3/4	SMR#43	SMP#43	SMGF#43	1.06	SMT#43	2.72
44	.0860	3/4	1-3/4	SMR#44	SMP#44	SMGF#44	1.06	SMT#44	2.72
45	.0820	3/4	1-3/4	SMR#45	SMP#45	SMGF#45	1.06	SMT#45	2.72
46	.0810	3/4	1-3/4	SMR#46	SMP#46	SMGF#46	1.06	SMT#46	2.72
47	.0785	3/4	1-3/4	SMR#47	SMP#47	SMGF#47	1.06	SMT#47	2.72
48	.0760	11/16	1-11/16	SMR#48	SMP#48	SMGF#48	1.06	SMT#48	2.72
49	.0730	11/16	1-11/16	SMR#49	SMP#49	SMGF#49	1.06	SMT#49	2.72
50	.0700	11/16	1-11/16	SMR#50	SMP#50	SMGF#50	1.06	SMT#50	2.72
51	.0670	11/16	1-11/16	SMR#51	SMP#51	SMGF#51	1.06	SMT#51	2.72
52	.0635	11/16	1-11/16	SMR#52	SMP#52	SMGF#52	1.06	SMT#52	2.72
53	.0595	5/8	1-5/8	SMR#53	SMP#53	SMGF#53	1.06	SMT#53	2.72
54	.0550	5/8	1-5/8	SMR#54	SMP#54	SMGF#54	1.06	SMT#54	2.72
55	.0520	5/8	1-5/8	SMR#55	SMP#55	SMGF#55	1.06	SMT#55	2.72
56	.0465	1/2	1-3/8	SMR#56	SMP#56	SMGF#56	1.14	SMT#56	2.80
57	.0430	1/2	1-3/8	SMR#57	SMP#57	SMGF#57	1.14	SMT#57	2.80
58	.0420	1/2	1-3/8	SMR#58	SMP#58	SMGF#58	1.14	SMT#58	2.80
59	.0410	1/2	1-3/8	SMR#59	SMP#59	SMGF#59	1.14	SMT#59	2.80
60	.0400	1/2	1-3/8	SMR#60	SMP#60	SMGF#60	1.14	SMT#60	2.80

Screw Machine Length Drill Sets are available on page 5.

PACKAGING #1-#60 • 12 Drills/Envelope

NOTE: Add 15% for orders accepted in less than standard packaging.

HIGH SPEED STEEL

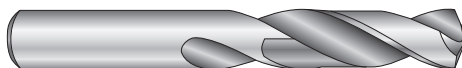
MET-5

SCREW MACHINE LENGTH DRILLS

ICS USA

HEAVY DUTY**135° SPLIT POINT**

NAS 907 TYPE C SPECIFICATIONS

**Letter Sizes (Straight Shank) "A" to "Z" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL		PRICE
				BLACK OXIDE	BRIGHT FINISH	
A	.234	1-5/16	2-7/16	SMR"A"	SMP"A"	3.38
B	.238	1-3/8	2-1/2	SMR"B"	SMP"B"	3.38
C	.242	1-3/8	2-1/2	SMR"C"	SMP"C"	3.38
D	.246	1-3/8	2-1/2	SMR"D"	SMP"D"	3.38
E	.250	1-3/8	2-1/2	SMR"E"	SMP"E"	2.74
F	.257	1-7/16	2-5/8	SMR"F"	SMP"F"	3.70
G	.261	1-7/16	2-5/8	SMR"G"	SMP"G"	3.92
H	.266	1-1/2	2-11/16	SMR"H"	SMP"H"	3.92
I	.272	1-1/2	2-11/16	SMR"I"	SMP"I"	3.92
J	.277	1-1/2	2-11/16	SMR"J"	SMP"J"	4.24
K	.281	1-1/2	2-11/16	SMR"K"	SMP"K"	4.56
L	.290	1-9/16	2-3/4	SMR"L"	SMP"L"	4.54
M	.295	1-9/16	2-3/4	SMR"M"	SMP"M"	4.96
N	.302	1-5/8	2-13/16	SMR"N"	SMP"N"	4.96
O	.316	1-11/16	2-15/16	SMR"O"	SMP"O"	5.06
P	.323	1-11/16	2-15/16	SMR"P"	SMP"P"	5.62
Q	.332	1-11/16	3	SMR"Q"	SMP"Q"	5.62
R	.339	1-11/16	3	SMR"R"	SMP"R"	5.74
S	.348	1-3/4	3-1/16	SMR"S"	SMP"S"	6.52
T	.358	1-3/4	3-1/16	SMR"T"	SMP"T"	7.52
U	.368	1-13/16	3-1/8	SMR"U"	SMP"U"	7.52
V	.377	1-7/8	3-1/4	SMR"V"	SMP"V"	7.94
W	.386	1-7/8	3-1/4	SMR"W"	SMP"W"	8.34
X	.397	1-15/16	3-5/16	SMR"X"	SMP"X"	9.70
Y	.404	1-15/16	3-5/16	SMR"Y"	SMP"Y"	11.52
Z	.413	2	3-3/8	SMR"Z"	SMP"Z"	11.52

A to M - 12 Drills/Envelope

N to Z - 6 Drills/Envelope

HIGH SPEED STEEL

SCREW MACHINE LENGTH [STUB] DRILL SETS**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
 (13 PC PICTURED)	13 PC DRILL SETS Sizes 1/16 to 1/4 by 64ths	Bright Finish Stub Drills 135° S/Pt Black Finish Stub Drills 135° S/Pt Titanium Nitride Coated Stub Drills 135° S/Pt	DS-SMP-13 22.34 DS-SMR-13 22.34 DS-SMT-13 47.04
	15 PC DRILL SETS Sizes 1/16 to 1/2 by 32nds	Black Finish Stub Drills 135° S/Pt	DS-SMR-15 74.56
	29 PC DRILL SETS Sizes 1/16 to 1/2 by 64ths	Bright Finish Stub Drills 135° S/Pt	DS-SMP-29 108.20
		Black Finish Stub Drills 135° S/Pt	DS-SMR-29 110.54
		Titanium Nitride Coated Stub Drills 135° S/Pt	DS-SMT-29 268.14
		Gold Finish Stub Drills 135° S/Pt	DS-SMGF-29 128.72
		Cobalt Stub Drills 135° S/Pt	DS-SMC-29 239.90
	60 PC DRILL SETS Wire Gauge Sizes 1 to 60	Bright Finish Stub Drills 135° S/Pt Black Finish Stub Drills 135° S/Pt	DS-SMP-60 88.20 DS-SMR-60 88.20
	25 PC DRILL SETS Metric Sizes 1.00mm to 13.00mm by 0.50mm	Black Finish Stub Drills 135° S/Pt	DS-SMM-25 180.40

LEFT HAND SCREW MACHINE LENGTH DRILLS

ICS

USA

GENERAL PURPOSE**118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SML	 BRIGHT POLISHED FINISH	For portable or machine drilling where left hand rotation is required. Also used to drill out broken screws and bolts.	M2	118° Point Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 3/64" to 1/2" Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/64	.0469	5/8	1-5/8	SML003	2.92
1/16	.0625	5/8	1-5/8	SML004	2.92
5/64	.0781	11/16	1-11/16	SML005	2.92
3/32	.0938	3/4	1-3/4	SML006	2.92
7/64	.1094	13/16	1-13/16	SML007	2.92
1/8	.1250	7/8	1-7/8	SML008	2.92
9/64	.1406	15/16	1-15/16	SML009	2.92
5/32	.1562	1	2-1/16	SML010	3.40
11/64	.1719	1-1/16	2-1/8	SML011	3.76
3/16	.1875	1-1/8	2-3/16	SML012	4.18
13/64	.2031	1-3/16	2-1/4	SML013	4.70
7/32	.2188	1-1/4	2-3/8	SML014	5.52
15/64	.2344	1-5/16	2-7/16	SML015	5.80
1/4	.2500	1-3/8	2-1/2	SML016	6.04
17/64	.2656	1-7/16	2-5/8	SML017	7.42
9/32	.2812	1-1/2	2-11/16	SML018	8.16
19/64	.2969	1-9/16	2-3/4	SML019	8.80
5/16	.3125	1-5/8	2-13/16	SML020	8.80
21/64	.3281	1-11/16	2-15/16	SML021	9.96
11/32	.3438	1-11/16	3	SML022	11.50
23/64	.3594	1-3/4	3-1/16	SML023	13.22
3/8	.3750	1-13/16	3-1/8	SML024	14.10
25/64	.3906	1-7/8	3-1/4	SML025	15.54
13/32	.4062	1-15/16	3-5/16	SML026	16.14
27/64	.4219	2	3-3/8	SML027	17.70
7/16	.4375	2-1/16	3-7/16	SML028	18.50
29/64	.4531	2-1/8	3-9/16	SML029	21.40
15/32	.4688	2-1/8	3-5/8	SML030	23.02
31/64	.4844	2-3/16	3-11/16	SML031	23.66
1/2	.5000	2-1/4	3-3/4	SML032	23.66

PACKAGING

3/64 to 17/64 - 12 Drills/Envelope

9/32 to 1/2 - 6 Drills/Envelope

METRIC SCREW MACHINE LENGTH DRILLS

ICS

WIS

GENERAL PURPOSE

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	NAS* SPECS
SMM	 OXIDE FINISH	For drilling in hard steel, stainless steel, titanium and other hard materials.	M2	135° Split Pt. Std. Spiral Hvy. Duty Web	C

Metric Sizes (Straight Shank) 1.00mm to 13.00mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
*1.00	.0394	1/4	1-1/32	SMM01.00	2.08
1.50	.0591	11/32	1-1/4	SMM01.50	2.08
2.00	.0781	15/32	1-1/2	SMM02.00	2.08
2.50	.0984	9/16	1-11/16	SMM02.50	2.08
3.00	.1181	5/8	1-13/16	SMM03.00	2.08
3.50	.1378	25/32	2-1/16	SMM03.50	2.06
4.00	.1575	7/8	2-5/32	SMM04.00	2.28
4.50	.1772	15/16	2-9/32	SMM04.50	2.78
5.00	.1969	1-1/32	2-7/16	SMM05.00	2.78
5.50	.2165	1-1/8	2-19/32	SMM05.50	3.58
6.00	.2362	1-1/8	2-19/32	SMM06.00	3.98
6.50	.2560	1-7/32	2-3/4	SMM06.50	4.44
7.00	.2756	1-5/16	2-29/32	SMM07.00	5.00

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7.50	.2953	1-5/16	2-29/32	SMM07.50	5.94
8.00	.3150	1-7/16	3-1/8	SMM08.00	5.94
8.50	.3346	1-7/16	3-1/8	SMM08.50	6.60
9.00	.3543	1-9/16	3-5/16	SMM09.00	7.48
9.50	.3740	1-9/16	3-5/16	SMM09.50	9.32
10.00	.3937	1-11/16	3-1/2	SMM10.00	9.32
10.50	.4137	1-11/16	3-1/2	SMM10.50	10.12
11.00	.4331	1-27/32	3-3/4	SMM11.00	10.36
11.50	.4528	1-27/32	3-3/4	SMM11.50	12.24
12.00	.4724	2	4	SMM12.00	13.44
12.50	.4921	2	4	SMM12.50	13.44
13.00	.5118	2	4	SMM13.00	13.44

*Not Split Point

DOUBLE END (STUB) DRILLS

ICS

USA

HEAVY DUTY

135° SPLIT POINT



Double End Stub Drills are fluted and split pointed on both ends and have a solid center shank for chucking. They will drill twice as many holes as a single end drill for only a fraction more in cost. When one end gets dull or breaks, it can be quickly reversed in drill chuck to reduce changeover time, overall costs, and inventory.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TiN COAT
				OXIDE FINISH 135° SPLIT PT	BRIGHT FINISH 135° SPLIT PT	GOLD FINISH 135° SPLIT PT	GOLD FINISH 135° SPLIT PT
				DED	DEDP	DEDF	DEDT
1/16	.0625	9/16	2	2.00	2.00	-	-
3/32	.0938	9/16	2	2.00	2.00	-	-
7/64	.1094	9/16	2	1.68	1.68	-	-
1/8	.1250	9/16	2	1.44	1.44	1.48	2.36
9/64	.1406	9/16	2	1.68	1.68	2.26	-
5/32	.1562	9/16	2-1/16	1.94	1.94	2.36	-
11/64	.1719	9/16	2-1/16	2.20	2.20	-	-
3/16	.1879	9/16	2-3/16	2.20	2.20	2.60	-
13/64	.2031	9/16	2-3/16	2.94	2.94	3.20	-
7/32	.2188	9/16	2-3/8	2.84	2.84	3.20	-
1/4	.2500	9/16	2-1/2	3.22	3.22	3.54	-
9/32	.2812	9/16	2-1/2	7.96	-	-	-
5/16	.3125	9/16	2-13/16	8.62	8.62	-	-
#11	.1910	9/16	2-1/4	3.68	3.68	-	7.84
#20	.1610	9/16	2-1/8	3.04	3.04	-	-
#30	.1285	9/16	2	-	1.44	1.48	2.48

NOW AVAILABLE

4 OPTIONS TO IMPROVE PERFORMANCE

Black Oxide Finish for hard steels and other tough materials.

Bright Polished Finish for stainless steels and aluminum.

Gold (Premium) Finish for hard steels, stainless steels and other tough metals.

TiN Coated for long tool life and harder materials. Run at higher speeds for maximum productivity, often used in air drills.

MET-8

HIGH SPEED STEEL

SHEET METAL SCREW MACHINE LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

Sheet Metal (Body) Drills were designed for sheet metal, tubing, and thin section work. They are considerably more durable than regular screw machine length drills and last longer with less breakage. They are also used to successfully drill holes in stainless steel and other work hardening alloys. The 135° split point prevents walking and begins cutting immediately upon contact. They are sometimes referred to as Skin Drills.

SINGLE END (BODY) DRILLS

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	9/16	2	SED008	1.44
1/8A	.1250	9/16	3	SED008A	1.54
9/64	.1406	9/16	2	SED009	1.46
5/32	.1562	9/16	2	SED010	1.54
3/16	.1875	9/16	2	SED012	1.76
13/64	.2031	9/16	2-1/2	SED013	2.12
7/32	.2188	9/16	2-1/2	SED014	2.12
15/64	.2344	9/16	2-1/2	SED015	2.50
1/4	.2500	9/16	2-1/2	SED016	2.50
9/32	.2812	9/16	3	SED018	3.12
5/16	.3125	3/4	3	SED020	3.68
3/8	.3750	1	3	SED024	5.74
7/16	.4375	1	3	SED028	7.56
1/2	.5000	1	3	SED032	9.66
#13	.1850	9/16	2	SED#13	1.76
#20	.1610	9/16	2	SED#20	1.76
#21	.1590	9/16	2	SED#21	1.76
#25	.1495	9/16	2	SED#25	1.76
#27	.1440	9/16	2	SED#27	1.54
#29	.1360	9/16	2	SED#29	1.54
#29A	.1360	9/16	3	SED#29A	1.62
#30	.1285	9/16	2	SED#30	1.44
#30A	.1285	9/16	3	SED#30A	1.54
#40	.0980	9/16	2	SED#40	1.44

RIVET (PUNCH) DRILLS

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#30	.1285	1/2	1-1/4	RPD#30	1.22

PACKAGING

All Sizes - 12 Drills/Envelope
Less than standard package - add 15%.

NOTE

SPECIAL SIZE SHEET METAL DRILLS
CAN BE MADE TO YOUR REQUIREMENTS

HIGH SPEED STEEL

EXTRA LENGTH SHEETERS DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT



Extra Length Sheeters Drills are used in the erection and assembly of corrugated metal buildings and other sheet metal applications. The 135° long sweep split point ensures easy centering and less breakage in hand held drilling operations. They are sometimes referred to as Corrugated Construction Drills.

Wire Gauge Sizes (Straight Shank) #1 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1	.228	1-1/4	2-1/4	SEDL#1X216	2.68
#1	.228	1-1/4	3	SEDL#1X300	3.18
#1	.228	1-1/4	4-1/2	SEDL#1X432	4.70

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1	.228	1-1/4	6	SEDL#1X600	7.34
#1	.228	1-1/4	7-1/4	SEDL#1X716	7.34
#1	.228	1-1/4	12	SEDL#1X12	8.76

COBALT SCREW MACHINE LENGTH DRILLS

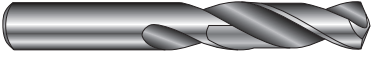
MET-9

ICS USA

HEAVY DUTY

135° SPLIT POINT

NAS 907 TYPE F SPECIFICATIONS

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	NAS* SPECS
SMC	 GOLD COBALT FINISH	For drilling in tough alloys, stainless steel, titanium inconel and other work hardening metals.	M42 Cobalt	135° Split Pt. Std. Spiral Hvy. Duty Web	F

* (NAS) NATIONAL AEROSPACE STANDARD

Fractional Sizes (Straight Shank) 3/64" to 1" Dia.

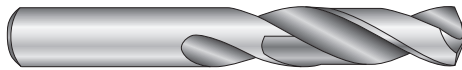
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/64	.0469	5/8	1-5/8	SMC003	2.82	17/32	.5312	2-3/8	3-7/8	SMC034	53.66
1/16	.0625	5/8	1-5/8	SMC004	2.06	35/64	.5469	2-1/2	4	SMC035	57.76
5/64	.0781	11/16	1-11/16	SMC005	2.06	9/16	.5625	2-1/2	4	SMC036	55.74
3/32	.0938	3/4	1-3/4	SMC006	2.06	37/64	.5781	2-5/8	4-1/8	SMC037	66.18
7/64	.1094	13/16	1-13/16	SMC007	2.50	19/32	.5938	2-5/8	4-1/8	SMC038	63.82
1/8	.1250	7/8	1-7/8	SMC008	2.50	39/64	.6094	2-3/4	4-1/4	SMC039	66.86
9/64	.1406	15/16	1-15/16	SMC009	2.66	5/8	.6250	2-3/4	4-1/4	SMC040	64.50
5/32	.1562	1	2-1/16	SMC010	2.80	41/64	.6406	2-7/8	4-1/2	SMC041	76.80
11/64	.1719	1-1/16	2-1/8	SMC011	3.24	21/32	.6562	2-7/8	4-1/2	SMC042	74.06
3/16	.1875	1-1/8	2-3/16	SMC012	3.42	43/64	.6719	2-7/8	4-5/8	SMC043	85.06
13/64	.2031	1-3/16	2-1/4	SMC013	4.12	11/16	.6875	2-7/8	4-5/8	SMC044	82.04
7/32	.2188	1-1/4	2-3/8	SMC014	4.68	45/64	.7031	3	4-3/4	SMC045	92.36
15/64	.2344	1-5/16	2-7/16	SMC015	4.84	23/32	.7188	3	4-3/4	SMC046	89.04
1/4	.2500	1-3/8	2-1/2	SMC016	4.90	47/64	.7344	3-1/8	5	SMC047	97.46
17/64	.2656	1-7/16	2-5/8	SMC017	5.78	3/4	.7500	3-1/8	5	SMC048	94.00
9/32	.2812	1-1/2	2-11/16	SMC018	6.48	49/64	.7656	3-1/4	5-1/8	SMC049	103.82
19/64	.2969	1-9/16	2-3/4	SMC019	7.50	25/32	.7812	3-1/4	5-1/8	SMC050	103.82
5/16	.3125	1-5/8	2-13/16	SMC020	7.90	51/64	.7969	3-3/8	5-1/4	SMC051	110.10
21/64	.3281	1-11/16	2-15/16	SMC021	8.90	13/16	.8125	3-3/8	5-1/4	SMC052	110.10
11/32	.3438	1-11/16	3	SMC022	9.66	53/64	.8281	3-1/2	5-3/8	SMC053	117.98
23/64	.3594	1-3/4	3-1/16	SMC023	11.12	27/32	.8438	3-1/2	5-3/8	SMC054	117.98
3/8	.3750	1-13/16	3-1/8	SMC024	11.12	55/64	.8594	3-1/2	5-1/2	SMC055	120.64
25/64	.3906	1-7/8	3-1/4	SMC025	12.70	7/8	.8750	3-1/2	5-1/2	SMC056	120.64
13/32	.4062	1-15/16	3-5/16	SMC026	13.12	57/64	.8960	3-5/8	5-5/8	SMC057	125.46
27/64	.4219	2	3-3/8	SMC027	14.54	29/32	.9062	3-5/8	5-5/8	SMC058	125.46
7/16	.4375	2-1/16	3-7/16	SMC028	14.96	59/64	.9219	3-3/4	5-3/4	SMC059	138.26
29/64	.4531	2-1/8	3-9/16	SMC029	17.90	15/16	.9375	3-3/4	5-3/4	SMC060	138.26
15/32	.4688	2-1/8	3-5/8	SMC030	17.90	61/64	.9531	3-7/8	5-7/8	SMC061	150.22
31/64	.4844	2-3/16	3-11/16	SMC031	17.90	31/32	.9688	3-7/8	5-7/8	SMC062	150.22
1/2	.5000	2-1/4	3-3/4	SMC032	17.90	63/64	.9844	4	6	SMC063	157.14
33/64	.5156	2-3/8	3-7/8	SMC033	53.20	1	1.0000	4	6	SMC100	157.14

HIGH SPEED STEEL

COBALT SCREW MACHINE LENGTH DRILL SETS

METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
29 PC DRILL SETS Sizes 1/16 to 1/2 by 64ths	Cobalt Stub Drills - 135° Split Point	DS-SMC-29	239.90

ICS**USA****HEAVY DUTY****135° SPLIT POINT****NAS 907 TYPE F SPECIFICATIONS****Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	1-5/16	2-7/16	SMC#01	5.78
2	.2210	1-5/16	2-7/16	SMC#02	5.78
3	.2130	1-1/4	2-3/8	SMC#03	5.78
4	.2090	1-1/4	2-3/8	SMC#04	5.12
5	.2055	1-1/4	2-3/8	SMC#05	5.12
6	.2040	1-1/4	2-3/8	SMC#06	5.12
7	.2010	1-3/16	2-1/4	SMC#07	4.02
8	.1990	1-3/16	2-1/4	SMC#08	4.02
9	.1960	1-3/16	2-1/4	SMC#09	4.02
10	.1935	1-3/16	2-1/4	SMC#10	4.02
11	.1910	1-3/16	2-1/4	SMC#11	3.96
12	.1890	1-3/16	2-1/4	SMC#12	3.96
13	.1850	1-1/8	2-3/16	SMC#13	3.82
14	.1820	1-1/8	2-3/16	SMC#14	3.82
15	.1800	1-1/8	2-3/16	SMC#15	3.82
16	.1770	1-1/8	2-3/16	SMC#16	3.82
17	.1730	1-1/8	2-3/16	SMC#17	3.72
18	.1695	1-1/16	2-1/8	SMC#18	3.18
19	.1660	1-1/16	2-1/8	SMC#19	2.94
20	.1610	1-1/16	2-1/8	SMC#20	2.94
21	.1590	1-1/16	2-1/8	SMC#21	2.94
22	.1570	1-1/16	2-1/8	SMC#22	2.94
23	.1549	1	2-1/16	SMC#23	2.94
24	.1520	1	2-1/16	SMC#24	2.94
25	.1490	1	2-1/16	SMC#25	2.80
26	.1470	1	2-1/16	SMC#26	2.80
27	.1440	1	2-1/16	SMC#27	2.80
28	.1405	15/16	1-15/16	SMC#28	2.54
29	.1360	15/16	1-15/16	SMC#29	2.54
30	.1285	15/16	1-15/16	SMC#30	2.28

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
31	.1200	7/8	1-7/8	SMC#31	2.28
32	.1160	7/8	1-7/8	SMC#32	2.28
33	.1130	7/8	1-7/8	SMC#33	2.32
34	.1110	7/8	1-7/8	SMC#34	2.32
35	.1100	7/8	1-7/8	SMC#35	2.32
36	.1055	13/16	1-13/16	SMC#36	2.32
37	.1040	13/16	1-13/16	SMC#37	2.32
38	.1010	13/16	1-13/16	SMC#38	2.12
39	.0995	13/16	1-13/16	SMC#39	2.12
40	.0980	13/16	1-13/16	SMC#40	2.12
41	.0960	13/16	1-13/16	SMC#41	2.12
42	.0935	3/4	1-3/4	SMC#42	2.12
43	.0890	3/4	1-3/4	SMC#43	2.12
44	.0860	3/4	1-3/4	SMC#44	2.12
45	.0820	3/4	1-3/4	SMC#45	2.12
46	.0810	3/4	1-3/4	SMC#46	2.12
47	.0785	3/4	1-3/4	SMC#47	2.12
48	.0760	11/16	1-11/16	SMC#48	2.12
49	.0730	11/16	1-11/16	SMC#49	2.12
50	.0700	11/16	1-11/16	SMC#50	2.12
51	.0670	11/16	1-11/16	SMC#51	2.12
52	.0635	11/16	1-11/16	SMC#52	2.12
53	.0595	5/8	1-5/8	SMC#53	2.12
54	.0550	5/8	1-5/8	SMC#54	2.12
55	.0520	5/8	1-5/8	SMC#55	2.12
56	.0465	1/2	1-3/8	SMC#56	2.12
57	.0430	1/2	1-3/8	SMC#57	2.12
58	.0420	1/2	1-3/8	SMC#58	2.26
59	.0410	1/2	1-3/8	SMC#59	2.26
60	.0400	1/2	1-3/8	SMC#60	2.26

PACKAGING

#1 to #60 - 12 Drills/Envelope

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	1-5/16	2-7/16	SMC"A"	5.86
B	.238	1-3/8	2-1/2	SMC"B"	6.24
C	.242	1-3/8	2-1/2	SMC"C"	6.24
D	.246	1-3/8	2-1/2	SMC"D"	6.24
E	.250	1-3/8	2-1/2	SMC"E"	4.90
F	.257	1-7/16	2-5/8	SMC"F"	6.62
G	.261	1-7/16	2-5/8	SMC"G"	6.62
H	.266	1-1/2	2-11/16	SMC"H"	7.00
I	.272	1-1/2	2-11/16	SMC"I"	7.00
J	.277	1-1/2	2-11/16	SMC"J"	7.00
K	.281	1-1/2	2-11/16	SMC"K"	7.00
L	.290	1-9/16	2-3/4	SMC"L"	8.32
M	.295	1-9/16	2-3/4	SMC"M"	8.32

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	1-5/8	2-13/16	SMC"N"	8.92
O	.316	1-11/16	2-15/16	SMC"O"	9.90
P	.323	1-11/16	2-15/16	SMC"P"	9.90
Q	.332	1-11/16	3	SMC"Q"	10.70
R	.339	1-11/16	3	SMC"R"	10.70
S	.348	1-3/4	3-1/16	SMC"S"	12.02
T	.358	1-3/4	3-1/16	SMC"T"	13.32
U	.368	1-13/16	3-1/8	SMC"U"	13.32
V	.377	1-7/8	3-1/4	SMC"V"	14.76
W	.386	1-7/8	3-1/4	SMC"W"	14.76
X	.397	1-15/16	3-5/16	SMC"X"	14.76
Y	.404	1-15/16	3-5/16	SMC"Y"	16.94
Z	.413	2	3-3/8	SMC"Z"	16.94

PACKAGING

A to M - 12 Drills/Envelope

N to Z - 6 Drills/Envelope

HIGH SPEED STEEL JOBBER LENGTH DRILLS

MET-11

ICS USA

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDR	 OXIDE FINISH	For general purpose and production machine drilling in ferrous or non-ferrous metals. Thicker web construction for extended drill life. Relief ground and twist fluted for maximum strength and rigidity.	M2	118° POINT. Std. Spiral Thicker Web	Str. 1/4 3/8
JDG	 OXIDE FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc.	M1, M2 M7, M50	118° Point Std. Spiral Std. Web	Str. 1/4 3/8 1/2
JDP	 BRIGHT POLISHED FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Polished ground flutes reduce loading when drilling soft materials like aluminum, brass, etc.	M1, M2 M7, M50	118° Point Std. Spiral Std. Web	Str. 1/4 3/8 1/2
JDT	 GOLD TITANIUM COATED	For high production drilling of ferrous and non-ferrous metals. TiN coating extends life of drill up to 700%.	M1, M2 M7, M50	118° Point Std. Spiral Std. Web	Str. 1/4 3/8 1/2
JDZ	 SILVER-GOLD ZIRCONIUM FINISH	For machining cast iron, brass, and aluminum die castings. Out performs TiN in many applications. Zirconium is harder than TiN and remains stable at higher cutting temperatures.	M1, M2 M7, M50	118° Point Std. Spiral Std. Web	Str.

Fractional Sizes (Straight Shank) 1/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TiN COAT		ZrN COAT
				OXIDE FINISH	OXIDE FINISH	BRIGHT FINISH	GOLD FINISH	SILVER/GOLD	
				118° PT JDR	118° PT JDG	118° PT JDP	118° PT JDT	118° PT JDZ	
1/64	.0156	3/16	3/4	1.56	1.64	1.64	-	-	
1/32	.0313	1/2	1-3/8	1.12	1.18	1.18	-	-	
3/64	.0469	3/4	1-3/4	1.08	1.14	1.14	2.82	3.50	
1/16	.0625	7/8	1-7/8	0.78	0.82	0.82	2.48	3.18	
5/64	.0781	1	2	0.78	0.82	0.82	2.48	3.18	
3/32	.0938	1-1/4	2-1/4	0.82	0.84	0.84	2.50	3.20	
7/64	.1094	1-1/2	2-5/8	0.88	0.90	0.90	2.58	3.26	
1/8	.1250	1-5/8	2-3/4	0.90	1.04	1.04	2.62	3.30	
9/64	.1406	1-3/4	2-7/8	0.98	1.04	1.04	2.70	3.38	
5/32	.1562	2	3-1/8	1.04	1.08	1.08	2.74	3.42	
11/64	.1719	2-1/8	3-1/4	1.14	1.22	1.22	2.88	3.58	
3/16	.1875	2-5/16	3-1/2	1.30	1.36	1.36	3.04	3.72	
13/64	.2031	2-7/16	3-5/8	1.46	1.52	1.52	4.82	6.14	
7/32	.2188	2-1/2	3-3/4	1.62	1.70	1.70	5.00	6.32	
15/64	.2344	2-5/8	3-7/8	1.70	1.82	1.82	5.08	6.40	
1/4	.2500	2-3/4	4	1.84	1.92	1.92	5.22	6.54	
17/64	.2656	2-7/8	4-1/8	2.44	2.58	2.58	9.46	12.18	
9/32	.2812	2-15/16	4-1/4	2.60	2.74	2.74	9.60	12.34	
19/64	.2969	3-1/16	4-3/8	2.90	3.08	3.08	9.94	12.66	
5/16	.3125	3-3/16	4-1/2	3.18	3.32	3.32	10.18	12.92	
21/64	.3281	3-5/16	4-5/8	3.20	3.36	3.36	10.24	12.94	
11/32	.3438	3-7/16	4-3/4	3.92	4.12	4.12	11.00	13.72	
23/64	.3594	3-1/2	4-7/8	4.38	4.60	4.60	12.92	16.26	
3/8	.3750	3-5/8	5	4.54	4.78	4.78	13.08	16.42	
25/64	.3906	3-3/4	5-1/8	4.80	5.04	5.04	16.14	20.52	
13/32	.4062	3-7/8	5-1/4	4.98	5.24	5.24	16.32	20.72	
27/64	.4219	3-15/16	5-3/8	5.72	6.02	6.02	17.10	21.48	
7/16	.4375	4-1/16	5-1/2	5.78	6.08	6.08	17.16	21.56	
29/64	.4531	4-3/16	5-5/8	6.52	6.86	6.86	17.94	22.32	
15/32	.4688	4-5/16	5-3/4	6.86	7.20	7.20	18.30	22.68	
31/64	.4844	4-3/8	5-7/8	7.30	7.64	7.64	18.74	23.12	
1/2	.5000	4-1/2	6	7.36	7.74	7.74	18.80	23.20	

PACKAGING

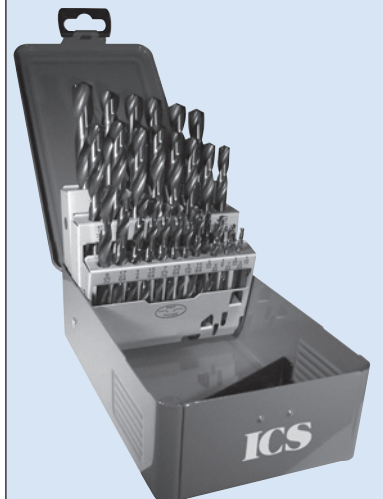
1/64 to 17/64 - 12 Drills/Envelope
9/32 to 1/2 - 6 Drills/Envelope
33/64 to 3/4 - 1 Drill/Tube

ORDERING NOTE

To complete your order we may substitute or interchange black or bright drills unless you have specified "no substitutions". Orders accepted in less than package quantity are subject to a 15% surcharge.

DRILL SETS

A variety of Jobber Length Drill Sets can be found on pages 53 to 59.



HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT



Fractional Sizes (Straight Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	
				OXIDE FINISH 118° POINT	TIN COAT GOLD FINISH 118° POINT
				JDG	JDT
33/64	.5156	4-13/16	6-5/8	16.38	32.24
17/32	.5312	4-13/16	6-5/8	16.38	32.24
35/64	.5469	4-13/16	6-5/8	18.40	34.16
9/16	.5625	4-13/16	6-5/8	18.40	34.16
37/64	.5781	4-13/16	6-5/8	19.30	35.02
19/32	.5938	5-3/16	7-1/8	20.38	36.04
39/64	.6094	5-3/16	7-1/8	22.10	37.68
5/8	.6250	5-3/16	7-1/8	22.10	37.68
41/64	.6406	5-3/16	7-1/8	23.66	40.18
21/32	.6562	5-3/16	7-1/8	23.66	40.18
43/64	.6719	5-5/8	7-5/8	26.88	43.26

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	
				OXIDE FINISH 118° POINT	TIN COAT GOLD FINISH 118° POINT
				JDG	JDT
11/16	.6875	5-5/8	7-5/8	26.88	43.26
45/64	.7031	5-5/8	7-5/8	30.88	45.62
23/32	.7188	5-5/8	7-5/8	30.88	45.62
47/64	.7344	5-5/8	7-5/8	33.08	47.08
3/4	.7500	5-5/8	7-5/8	33.08	47.08
49/64	.7656	6	8-1/8	34.44	62.16
25/32	.7812	6	8-1/8	34.44	62.16
13/16	.8125	6-1/8	8-3/8	47.46	74.56
7/8	.8750	6-1/8	8-3/8	51.88	78.76
15/16	.9375	6-1/8	8-3/8	59.52	86.02
1	1.0000	6-3/8	9	68.42	94.52

HIGH SPEED STEEL 1/4" SHANK JOBBER LENGTH DRILLS

ICS USA

GENERAL PURPOSE

118° POINT



Fractional Sizes (Reduced Shank) 17/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
		JDRQS	JDGQS	JDPQS
17/64	.2656	3.84	4.22	4.22
9/32	.2812	3.84	4.22	4.22
19/64	.2969	4.38	4.56	4.56
5/16	.3125	4.60	4.82	4.82
21/64	.3281	5.38	5.66	5.66
11/32	.3438	5.38	5.66	5.66
23/64	.3594	5.74	6.08	6.08
3/8	.3750	5.74	6.24	6.24

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
		JDRQS	JDGQS	JDPQS
25/64	.3906	6.12	6.66	6.66
13/32	.4062	6.48	6.72	6.72
27/64	.4219	6.96	7.62	7.62
7/16	.4375	6.96	7.72	7.72
29/64	.4531	7.92	8.34	8.34
15/32	.4688	7.92	8.82	8.82
31/64	.4844	8.60	9.28	9.28
1/2	.5000	8.90	9.34	9.34

HIGH SPEED STEEL 1/4" SHANK (4" LENGTH) JOBBER DRILLS

ICS USA

GENERAL PURPOSE

118° POINT



Fractional Sizes (Reduced Shank) 9/32" to 1/2" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
		MLDQS	MLDPQS
9/32	.2812	4.60	4.60
5/16	.3125	5.08	5.08
11/32	.3438	6.04	6.04
3/8	.3750	6.62	6.62

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
		MLDQS	MLDPQS
13/32	.4062	7.12	7.12
7/16	.4375	8.00	8.00
15/32	.4688	9.16	9.16
1/2	.5000	9.78	9.78

NOTE: 1/4" x 4" Long Jobber Drills are also known as Universal Length Drills, Metal Working Drills, or Mechanics Length Drills.

HIGH SPEED STEEL 3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

GENERAL PURPOSE

118° POINT



Fractional Sizes (Reduced Shank) 25/64" to 3/4" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL					
		OXIDE FINISH	PRICE	OXIDE FINISH	PRICE	BRIGHT FINISH	PRICE
25/64	.3906	JDGTS025	6.66	JDRTS025	6.12	JDPTS025	6.66
13/32	.4062	JDGTS026	6.72	JDRTS026	6.48	JDPTS026	6.72
27/64	.4219	JDGTS027	7.62	JDRTS027	6.96	JDPTS027	7.62
7/16	.4375	JDGTS028	7.72	JDRTS028	6.96	JDPTS028	7.72
29/64	.4531	JDGTS029	8.34	JDRTS029	7.92	JDPTS029	8.34
15/32	.4688	JDGTS030	8.82	JDRTS030	7.92	JDPTS030	8.82
31/64	.4844	JDGTS031	9.28	JDRTS031	8.60	JDPTS031	9.28
1/2	.5000	JDGTS032	9.34	JDRTS032	8.90	JDPTS032	9.34
33/64	.5156	JDGTS033	17.96	JDRTS033	17.96		
17/32	.5312	JDGTS034	17.96	JDRTS034	17.96		
35/64	.5469	JDGTS035	19.88	JDRTS035	19.88		
9/16	.5625	JDGTS036	19.88	JDRTS036	19.88		
37/64	.5781	JDGTS037	20.74				
19/32	.5931	JDGTS038	21.76				
39/64	.6094	JDGTS039	23.40				
5/8	.6250	JDGTS040	23.40				
41/64	.6406	JDGTS041	24.86				
21/32	.6562	JDGTS042	24.86				
43/64	.6719	JDGTS043	27.96				
11/16	.6875	JDGTS044	27.96				
45/64	.7031	JDGTS045	30.30				
23/32	.7188	JDGTS046	30.30				
47/64	.7344	JDGTS047	31.76				
3/4	.7500	JDGTS048	31.76				

HIGH SPEED STEEL 1/2" SHANK JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT



Fractional Sizes (Reduced Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
33/64	.5156	4-13/16	6-5/8	JDGRS033	17.96	11/16	.6875	5-5/8	7-5/8	JDGRS044	27.96
17/32	.5312	4-13/16	6-5/8	JDGRS034	17.96	45/64	.7031	5-5/8	7-5/8	JDGRS045	30.30
35/64	.5469	4-13/16	6-5/8	JDGRS035	19.88	23/32	.7188	5-5/8	7-5/8	JDGRS046	30.30
9/16	.5625	4-13/16	6-5/8	JDGRS036	19.88	47/64	.7344	5-5/8	7-5/8	JDGRS047	31.76
37/64	.5781	4-13/16	6-5/8	JDGRS037	20.74	3/4	.7500	5-5/8	7-5/8	JDGRS048	31.76
19/32	.5938	5-3/16	7-1/8	JDGRS038	21.76	49/64	.7656	6	8-1/8	JDGRS049	35.16
39/64	.6094	5-3/16	7-1/8	JDGRS039	23.40	25/32	.7812	6	8-1/8	JDGRS050	35.16
5/8	.6250	5-3/16	7-1/8	JDGRS040	23.40	13/16	.8125	6-1/8	8-3/8	JDGRS052	48.14
41/64	.6406	5-3/16	7-1/8	JDGRS041	24.86	7/8	.8750	6-1/8	8-3/8	JDGRS056	52.34
21/32	.6562	5-3/16	7-1/8	JDGRS042	24.86	15/16	.9375	6-1/8	8-3/8	JDGRS060	59.62
43/64	.6719	5-5/8	7-5/8	JDGRS043	27.96	1	1.0000	6-3/8	9	JDGRS100	68.10

NOTE

Reduced shank drills are used for drilling holes larger than the capacity of a 1/4, 3/8, or 1/2" drill chuck. A reduced shank drill should only be used for light to medium duty drilling applications as they do not have the torque strength of a straight shank drill. The shank is not as hard as the body of the drill to allow more flex and less breakage.

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS USA

GENERAL PURPOSE

SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #52 Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TIN COATED
				OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT	GOLD FINISH 118° POINT
				JDR	JDG	JDP	JDT
1	.2280	2-5/8	3-7/8	2.42	2.52	2.52	5.84
2	.2210	2-5/8	3-7/8	2.42	2.52	2.52	5.84
3	.2130	2-1/2	3-3/4	2.42	2.52	2.52	5.84
4	.2090	2-1/2	3-3/4	2.42	2.52	2.52	5.84
5	.2055	2-1/2	3-3/4	2.42	2.52	2.52	5.84
6	.2040	2-1/2	3-3/4	2.42	2.52	2.52	5.84
7	.2010	2-7/16	3-5/8	1.88	1.96	1.96	5.28
8	.1990	2-7/16	3-5/8	1.88	1.96	1.96	5.28
9	.1960	2-7/16	3-5/8	1.88	1.96	1.96	5.28
10	.1935	2-7/16	3-5/8	1.88	1.96	1.96	5.28
11	.1910	2-5/16	3-1/2	1.88	1.96	1.96	5.28
12	.1890	2-5/16	3-1/2	1.88	1.96	1.96	5.28
13	.1850	2-5/16	3-1/2	1.74	1.88	1.88	5.18
14	.1820	2-3/16	3-3/8	1.74	1.88	1.88	3.52
15	.1800	2-3/16	3-3/8	1.74	1.88	1.88	3.52
16	.1770	2-3/16	3-3/8	1.74	1.88	1.88	3.52
17	.1730	2-3/16	3-3/8	1.74	1.88	1.88	3.52
18	.1695	2-1/8	3-1/4	1.52	1.60	1.60	3.24
19	.1660	2-1/8	3-1/4	1.52	1.60	1.60	3.24
20	.1610	2-1/8	3-1/4	1.52	1.60	1.60	3.24
21	.1590	2-1/8	3-1/4	1.34	1.44	1.44	4.76
22	.1570	2	3-1/8	1.34	1.44	1.44	4.76
23	.1540	2	3-1/8	1.34	1.44	1.44	4.76
24	.1520	2	3-1/8	1.34	1.44	1.44	4.76
25	.1495	1-7/8	3	1.24	1.44	1.44	2.94
26	.1470	1-7/8	3	1.24	1.44	1.44	2.94
27	.1440	1-7/8	3	1.24	1.44	1.44	2.94
28	.1405	1-3/4	2-7/8	1.14	1.22	1.22	2.86
29	.1360	1-3/4	2-7/8	1.14	1.22	1.22	2.86
30	.1285	1-5/8	2-3/4	1.14	1.22	1.22	2.86
31	.1200	1-5/8	2-3/4	1.04	1.06	1.06	2.72
32	.1160	1-5/8	2-3/4	1.04	1.06	1.06	2.72
33	.1130	1-1/2	2-5/8	1.04	1.06	1.06	2.72
34	.1110	1-1/2	2-5/8	1.04	1.06	1.06	2.72
35	.1100	1-1/2	2-5/8	1.04	1.06	1.06	2.72
36	.1065	1-7/16	2-1/2	1.04	1.06	1.06	2.72
37	.1040	1-7/16	2-1/2	1.04	1.06	1.06	2.72
38	.1015	1-7/16	2-1/2	1.04	1.06	1.06	2.72
39	.0995	1-3/8	2-3/8	1.04	1.06	1.06	2.72
40	.0980	1-3/8	2-3/8	1.04	1.06	1.06	2.72
41	.0960	1-3/8	2-3/8	1.04	1.06	1.06	2.72
42	.0935	1-1/4	2-1/4	1.04	1.06	1.06	2.72
43	.0890	1-1/4	2-1/4	1.04	1.06	1.06	2.72
44	.0860	1-1/8	2-1/8	1.04	1.06	1.06	2.72
45	.0820	1-1/8	2-1/8	1.04	1.06	1.06	2.72
46	.0810	1-1/8	2-1/8	1.04	1.06	1.06	2.72
47	.0785	1	2	1.04	1.06	1.06	2.72
48	.0760	1	2	1.04	1.06	1.06	2.72
49	.0730	1	2	1.04	1.06	1.06	2.72
50	.0700	1	2	1.04	1.06	1.06	2.72
51	.0670	1	2	1.04	1.06	1.06	2.72
52	.0635	7/8	1-7/8	1.04	1.06	1.06	2.72

PACKAGING

#1 - 80 — 12 Drills/Envelope

HIGH SPEED STEEL JOBBER LENGTH DRILLS

MET-15

ICS USA

GENERAL PURPOSE

118° POINT



Wire Gauge Sizes (Straight Shank) #53 to #80 Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TiN COATED
				OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT	GOLD FINISH 118° POINT
				JDR	JDG	JDP	JDT
53	.0595	7/8	1-7/8	1.04	1.08	1.08	2.72
54	.0550	7/8	1-7/8	1.04	1.08	1.08	2.72
55	.0520	7/8	1-7/8	1.04	1.08	1.08	2.72
56	.0465	3/4	1-3/4	1.04	1.08	1.08	2.72
57	.0430	3/4	1-3/4	1.22	1.28	1.28	2.92
58	.0420	11/16	1-5/8	1.22	1.28	1.28	2.92
59	.0410	11/16	1-5/8	1.22	1.28	1.28	2.92
60	.0400	11/16	1-5/8	1.22	1.28	1.28	2.92
61	.0390	11/16	1-5/8	1.22	1.28	1.28	2.92
62	.0380	5/8	1-1/2	1.22	1.28	1.28	2.92
63	.0370	5/8	1-1/2	1.22	1.28	1.28	2.92
64	.0360	5/8	1-1/2	1.22	1.28	1.28	2.92
65	.0350	5/8	1-1/2	1.22	1.28	1.28	2.92
66	.0330	1/2	1-3/8	1.22	1.28	1.28	2.92
67	.0320	1/2	1-3/8	1.22	1.28	1.28	2.92
68	.0310	1/2	1-3/8	1.22	1.28	1.28	2.92
69	.0292	1/2	1-3/8	1.56	1.64	1.64	3.28
70	.0280	3/8	1-1/4	1.56	1.64	1.64	3.28
71	.0260	3/8	1-1/4	1.56	1.64	1.64	3.28
72	.0250	5/16	1-1/8	1.56	1.64	1.64	3.28
73	.0240	5/16	1-1/8	1.56	1.64	1.64	3.28
74	.0225	1/4	1-1/8	1.56	1.64	1.64	3.28
75	.0210	1/4	1-1/8	1.72	1.86	1.86	3.50
76	.0200	3/16	7/8	1.72	1.86	1.86	3.50
77	.0180	3/16	7/8	1.72	1.86	1.86	3.50
78	.0160	3/16	7/8	1.72	1.86	1.86	3.50
79	.0145	3/16	3/4	1.72	1.86	1.86	3.50
80	.0135	3/16	3/4	1.72	1.86	1.86	3.50

MINIATURE DRILLS

GENERAL PURPOSE



Wire Gauge Sizes (Straight Shank) #81 to #97 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS
				BRIGHT FINISH 118° POINT
				JDP
81	.0130	.104	3/4	2.88
82	.0125	.100	3/4	2.88
83	.0120	.096	3/4	3.30
84	.0115	.092	3/4	3.30
85	.0110	.088	3/4	3.30
86	.0105	.084	3/4	3.70
87	.0100	.080	3/4	3.70
88	.0095	.076	3/4	4.64
89	.0091	.073	3/4	4.64
90	.0087	.070	3/4	4.64
91	.0083	.066	3/4	4.64
92	.0079	.063	3/4	4.64
93	.0075	.060	3/4	4.64
94	.0071	.057	3/4	5.86
95	.0067	.054	3/4	5.86
96	.0063	.051	3/4	6.48
97	.0059	.047	3/4	6.48

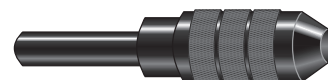
MICRO PIN VISES



Precision pin vises for holding small tools.
4 pc set - capacity: .0 to .040, .030 to .062,
.050 to .125, .115 to .187.

ITEM NO.	DESCRIPTION	PRICE
MPV	MICRO PIN VISE 4 PC SET	23.28

MICRO PIN CHUCKS



A handy adapter chuck for holding small drills.
3 collets - capacity: 0 to 1/32,
1/32 to 1/16, 1/16 to 3/32.

ITEM NO.	DESCRIPTION	PRICE
MPC	MICRO PIN CHUCK	18.80

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT



Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TIN COATED	PACKAGE QUANTITY
				OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT	GOLD FINISH 118° POINT	
				JDR	JDG	JDP	JDT	
A	.234	2-5/8	3-7/8	2.52	2.70	2.70	5.98	12
B	.238	2-3/4	4	2.52	2.70	2.70	5.98	12
C	.242	2-3/4	4	2.52	2.70	2.70	5.98	12
D	.246	2-3/4	4	2.52	2.70	2.70	5.98	12
E	.250	2-3/4	4	2.52	2.70	2.70	5.98	12
F	.257	2-7/8	4-1/8	3.14	3.32	3.32	9.26	12
G	.261	2-7/8	4-1/8	3.14	3.32	3.32	9.26	12
H	.266	2-7/8	4-1/8	3.14	3.32	3.32	9.26	12
I	.272	2-7/8	4-1/8	3.14	3.32	3.32	9.26	12
J	.277	2-7/8	4-1/8	3.62	3.84	3.84	9.74	12
K	.281	2-15/16	4-1/4	3.62	3.84	3.84	9.74	12
L	.290	2-15/16	4-1/4	4.04	4.28	4.28	10.18	12
M	.295	3-1/16	4-3/8	4.24	4.50	4.50	10.44	12
N	.302	3-1/16	4-3/8	4.24	4.50	4.50	10.44	6
O	.316	3-3/16	4-1/2	4.38	4.64	4.64	10.54	6
P	.323	3-5/16	4-5/8	4.90	5.22	5.22	11.12	6
Q	.332	3-7/16	4-3/4	4.90	5.22	5.22	11.12	6
R	.339	3-7/16	4-3/4	4.90	5.22	5.22	11.12	6
S	.348	3-1/2	4-7/8	5.30	5.64	5.64	17.40	6
T	.358	3-1/2	4-7/8	5.66	6.02	6.02	17.78	6
U	.368	3-5/8	5	6.14	7.20	7.20	18.30	6
V	.377	3-5/8	5	6.34	6.74	6.74	18.50	6
W	.386	3-3/4	5-1/8	6.78	7.20	7.20	18.96	6
X	.397	3-3/4	5-1/8	7.38	7.84	7.84	19.60	6
Y	.404	3-7/8	5-1/4	7.80	8.30	8.30	20.06	6
Z	.413	3-7/8	5-1/4	8.42	8.98	8.98	20.74	6

HIGH SPEED STEEL 3/8" SHANK JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT



Letter Sizes (Straight Shank) "W" to "Z" Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			PACKAGE QUANTITY
				OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT	
				JDRTS	JDGTS	JDPTS	
W	.386	3-3/4	5-1/8	8.40	8.82	8.82	6
X	.397	3-3/4	5-1/8	9.00	9.48	9.48	6
Y	.404	3-7/8	5-1/4	9.42	9.92	9.92	6
Z	.413	3-7/8	5-1/4	10.06	10.58	10.58	6

Quick Reference for General/Special Purpose Letter Size Drills

DRILL TYPE	DRILL SETS	STUB LENGTH	JOBBER LENGTH	REDUCED SHANK	TAPER LENGTH	TAPER SHANK	EXTRA LENGTH
PAGE NO. OF ITEMS AVAILABLE							
High Speed Steel	65	14	25, 49-58	25	79, 87	98	113
Cobalt	65	19	-	-	83	-	113
TiN Coated	65	-	25	-	-	-	-
Carbide Tipped	-	-	53	-	-	-	-
Solid Carbide	-	-	54	-	-	-	-

HIGH SPEED STEEL METRIC JOBBER LENGTH DRILLS

MET-17

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDM	 OXIDE FINISH	For general purpose and production machine drilling in ferrous or non-ferrous metals. Thicker web construction for extended drill life. Relief ground and twist fluted for maximum strength and rigidity.	M2	118° Point Std. Spiral Thicker Web	Str. 3/8 1/2
JDMP	 BRIGHT POLISHED FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Polished ground flutes reduce loading when drilling soft materials like aluminum, brass, etc.	M2	118° Point Std. Spiral Thicker Web	Str. 3/8 1/2

Metric Sizes (Straight Shank) .30mm to 5.40mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
.30	.0118	3	19	2.26	
.32	.0126	4	19	1.90	
.35	.0138	4	19	1.90	
.38	.0150	4	19	1.90	
.40	.0157	5	20	1.76	
.42	.0165	5	20	1.76	
.45	.0177	5	20	1.76	
.48	.0189	5	20	1.76	
.50	.0197	6	22	1.62	
.52	.0204	6	22	1.62	
.55	.0217	7	24	1.62	
.58	.0228	7	24	1.62	
.60	.0236	7	24	1.62	
.62	.0244	8	26	1.62	
.65	.0256	8	26	1.62	
.68	.0267	9	28	1.54	
.70	.0276	9	28	1.54	
.72	.0283	9	28	1.54	
.75	.0295	9	28	1.54	
.78	.0307	10	30	1.44	
.80	.0315	10	30	1.44	
.82	.0322	10	30	1.44	
.85	.0335	10	30	1.44	
.88	.0346	11	32	1.44	
.90	.0354	11	32	1.44	
.92	.0362	11	32	1.44	
.95	.0374	11	32	1.44	
.98	.0385	12	34	1.18	
1.00	.0394	12	34	1.18	1.28
1.05	.0413	12	34	1.18	
1.10	.0433	14	36	1.18	
1.15	.0452	14	36	1.18	
1.20	.0472	16	38	1.18	1.28
1.25	.0492	16	38	1.18	
1.30	.0512	16	38	1.18	
1.35	.0531	18	40	1.18	
1.40	.0551	18	40	1.18	
1.45	.0570	18	40	1.18	
1.50	.0591	18	40	1.18	1.28
1.55	.0610	20	43	1.18	
1.60	.0630	20	43	1.18	
1.65	.0650	20	43	1.18	
1.70	.0669	20	43	1.18	
1.75	.0689	22	46	1.18	
1.80	.0709	22	46	1.18	
1.85	.0728	22	46	1.18	
1.90	.0748	22	46	1.18	
1.95	.0767	24	49	1.18	
2.00	.0787	24	49	1.18	1.28
2.05	.0807	24	49	1.18	

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
2.10	.0827	24	49	1.18	
2.15	.0846	27	53	1.18	
2.20	.0866	27	53	1.18	1.28
2.25	.0886	27	53	1.18	
2.30	.0906	27	53	1.18	
2.35	.0925	27	53	1.18	
2.40	.0945	30	57	1.18	1.28
2.45	.0964	30	57	1.18	
2.50	.0984	30	57	1.18	1.28
2.55	.1003	30	57	1.18	
2.60	.1024	30	57	1.18	
2.65	.1043	30	57	1.18	
2.70	.1063	33	61	1.30	
2.75	.1083	33	61	1.30	
2.80	.1102	33	61	1.30	1.54
2.85	.1122	33	61	1.30	
2.90	.1142	33	61	1.30	
2.95	.1161	33	61	1.30	
3.00	.1181	33	61	1.30	1.54
3.10	.1220	36	65	1.30	
3.15	.1240	36	65	1.30	
3.20	.1260	36	65	1.30	1.54
3.25	.1280	36	65	1.30	1.54
3.30	.1299	36	65	1.44	1.54
3.40	.1339	39	70	1.44	
3.50	.1378	39	70	1.44	1.66
3.55	.1397	39	70	1.44	
3.60	.1417	39	70	1.44	
3.70	.1457	39	70	1.44	1.66
3.75	.1476	39	70	1.54	1.90
3.80	.1496	43	75	1.54	
3.90	.1536	43	75	1.54	
4.00	.1575	43	75	1.54	1.90
4.10	.1614	43	75	1.54	
4.20	.1654	43	75	1.54	1.90
4.25	.1673	43	75	1.72	1.90
4.30	.1693	47	80	1.72	
4.40	.1732	47	80	1.72	
4.50	.1772	47	80	1.72	1.90
4.60	.1811	47	80	1.72	
4.70	.1850	47	80	1.72	
4.75	.1870	47	80	2.02	1.90
4.80	.1890	52	86	2.02	2.20
4.90	.1929	52	86	2.02	
5.00	.1969	52	86	2.02	2.20
5.10	.2008	52	86	2.02	
5.20	.2047	52	86	2.02	2.20
5.25	.2067	52	86	2.02	
5.30	.2087	52	86	2.02	
5.40	.2126	57	93	2.68	

* Metric Bright Polished drills (JDMP) below 3.00mm are not split point.

NOTE: Metric Jobber Length Drills are manufactured to metric ISO/DIN 338RN, BSS 328 specifications.

HIGH SPEED STEEL METRIC JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT



Metric Sizes (Straight Shank) 5.50mm to 16.50mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
5.50	.2165	57	93	2.68	2.82
5.60	.2205	57	93	2.68	
5.70	.2244	57	93	2.68	
5.75	.2264	57	93	2.84	
5.80	.2283	57	93	2.84	
5.90	.2323	57	93	2.84	
6.00	.2362	57	93	2.84	2.82
6.10	.2402	63	101	2.90	
6.20	.2441	63	101	2.90	
6.25	.2461	63	101	2.90	
6.30	.2480	63	101	2.90	
6.40	.2520	63	101	2.90	
6.50	.2559	63	101	2.90	2.94
6.60	.2598	63	101	2.90	2.94
6.70	.2638	63	101	2.90	2.94
6.75	.2657	69	109	3.50	
6.80	.2677	69	109	3.50	4.10
6.90	.2717	69	109	3.50	
7.00	.2756	69	109	3.50	3.66
7.10	.2795	69	109	3.50	
7.20	.2835	69	109	3.50	
7.25	.2854	69	109	3.50	
7.30	.2874	69	109	3.50	
7.40	.2913	69	109	3.50	
7.50	.2953	69	109	3.50	3.66
7.60	.2992	75	117	3.50	
7.70	.3031	75	117	4.28	
7.75	.3051	75	117	4.48	
7.80	.3071	75	117	4.28	
7.90	.3110	75	117	4.28	
8.00	.3150	75	117	4.28	5.02
8.10	.3189	75	117	4.28	
8.20	.3228	75	117	4.28	
8.25	.3248	75	117	4.28	
8.30	.3268	75	117	4.28	
8.40	.3307	75	117	4.28	
8.50	.3346	75	117	4.28	4.52
8.60	.3386	81	125	5.30	
8.70	.3425	81	125	5.30	
8.75	.3445	81	125	5.88	
8.80	.3465	81	125	5.30	
8.90	.3504	81	125	5.30	
9.00	.3543	81	125	5.30	5.44
9.10	.3583	81	125	6.36	
9.20	.3622	81	125	6.36	
9.25	.3642	81	125	6.36	
9.30	.3661	81	125	6.36	
9.40	.3701	81	125	6.36	
9.50	.3740	81	125	5.78	6.48
9.60	.3780	87	133	7.18	
9.70	.3819	87	133	6.60	7.34
9.75	.3839	87	133	7.54	
9.80	.3858	87	133	7.54	
9.90	.3898	87	133	7.54	
10.00	.3937	87	133	6.60	7.34
10.10	.3976	87	133	6.60	

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
10.20	.4016	87	133	6.60	7.34
10.25	.4035	87	133	8.24	
10.30	.4055	87	133	8.24	
10.40	.4094	87	133	8.24	
10.50	.4134	87	133	7.64	8.36
10.60	.4173	87	133	7.64	
10.70	.4213	94	142	9.08	
10.75	.4232	94	142	9.94	
10.80	.4252	94	142	9.08	
10.90	.4291	94	142	9.08	
11.00	.4331	94	142	8.66	10.02
11.10	.4370	94	142	9.08	
11.20	.4409	94	142	9.08	
11.25	.4429	94	142	10.00	
11.30	.4449	94	142	10.00	
11.40	.4488	94	142	10.00	
11.50	.4528	94	142	9.54	11.08
11.60	.4567	94	142	9.54	
11.70	.4606	94	142	10.58	
11.75	.4626	94	142	12.28	
11.80	.4646	94	142	10.58	
11.90	.4685	101	151	12.28	
12.00	.4724	101	151	11.18	12.36
12.10	.4764	101	151	12.28	
12.20	.4803	101	151	11.18	
12.25	.4823	101	151	12.28	
12.30	.4848	101	151	11.18	
12.40	.4882	101	151	12.28	
12.50	.4921	101	151	11.18	12.36
12.60	.4961	101	151	12.28	
12.70	.5000	101	151	11.18	
12.75	.5020	101	151	13.52	
12.80	.5039	101	151	13.52	
12.90	.5079	101	151	13.52	
13.00	.5118	101	151	13.52	12.36
13.10	.5157	101	151	16.46	
13.20	.5197	101	151	16.46	
13.30	.5236	108	160	16.46	
13.40	.5276	108	160	16.46	
13.50	.5315	108	160	16.46	15.42
13.60	.5354	108	160	16.46	
13.70	.5390	108	160	16.46	
13.75	.5413	108	160	18.72	
13.80	.5433	108	160	18.72	
13.90	.5472	108	160	18.72	
14.00	.5512	108	160	18.72	19.88
14.25	.5610	114	169	18.72	
14.50	.5709	114	169	18.72	17.66
14.75	.5807	114	169	20.00	
15.00	.5906	114	169	20.00	19.08
15.25	.6004	120	178	22.34	
15.50	.6102	120	178	22.34	21.76
15.75	.6201	120	178	22.34	
16.00	.6299	120	178	22.34	21.76
16.25	.6398	125	184	23.88	
16.50	.6496	125	184	23.88	23.66

NOTE: Metric Jobber Length Drills are manufactured to metric ISO/DIN 338RN, BSS 328 specifications.

METRIC JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE**118° POINT****Metric Sizes (Straight Shank) 16.75mm to 20.00mm Dia.**

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
16.75	.6594	125	184	23.88	-
17.00	.6693	125	184	23.88	23.88
17.25	.6791	130	191	26.24	-
17.50	.6890	130	191	26.24	26.24
17.75	.6988	130	191	27.54	-
18.00	.7087	130	191	27.54	27.54
18.25	.7185	135	198	29.88	-

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDM	JDMP
18.50	.7283	135	198	29.88	29.88
18.75	.7382	135	198	29.88	-
19.00	.7480	135	198	29.88	29.88
19.25	.7579	140	205	33.06	-
19.50	.7677	140	205	33.06	33.06
19.75	.7776	140	205	33.06	-
20.00	.7874	140	205	33.06	33.06

METRIC (3/8" SHANK) JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE**118° POINT****Metric Sizes (Reduced Shank) 10.00mm to 20.00mm Dia.**

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDMTS	JDMPTS
10.00	.3937	87	133	8.72	8.72
10.50	.4134	87	133	9.78	9.78
11.00	.4331	94	142	10.76	10.76
11.50	.4528	94	142	11.66	11.66
12.00	.4724	101	151	13.30	13.30
12.50	.4921	101	151	13.30	13.30
13.00	.5118	101	151	15.64	15.64
13.50	.5315	108	160	18.82	18.82
14.00	.5512	108	160	21.06	21.06
14.50	.5709	114	169	21.06	21.06
15.00	.5906	114	169	22.34	22.34

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDMTS	JDMPTS
15.50	.6102	120	178	24.70	24.70
16.00	.6299	120	178	24.70	24.70
16.50	.6496	125	184	26.24	26.24
17.00	.6693	125	184	26.24	26.24
17.50	.6890	130	191	29.18	29.18
18.00	.7087	130	191	30.48	30.48
18.50	.7283	135	198	32.82	32.82
19.00	.7480	135	198	32.82	32.82
19.50	.7677	140	205	36.00	36.00
20.00	.7874	140	205	36.00	36.00

METRIC (1/2" SHANK) JOBBER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE**118° POINT****Metric Sizes (Reduced Shank) 13.00mm to 20.00mm Dia.**

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDMRS	JDMPRS
13.00	.5118	101	151	15.88	15.88
13.10	.5157	101	151	18.82	-
13.20	.5197	101	151	18.82	-
13.30	.5236	108	160	18.82	-
13.40	.5276	108	160	18.82	-
13.50	.5315	108	160	18.82	18.82
13.60	.5354	108	160	18.82	-
13.70	.5390	108	160	18.82	-
13.75	.5413	108	160	21.06	-
13.80	.5433	108	160	21.06	-
13.90	.5472	108	160	21.06	-
14.00	.5512	108	160	21.06	21.06
14.25	.5610	114	169	21.06	-
14.50	.5709	114	169	21.06	21.06
14.75	.5807	114	169	22.34	-
15.00	.5906	114	169	22.34	22.34
15.25	.6004	120	178	24.70	-
15.50	.6102	120	178	24.70	24.70

SIZE mm	DEC. EQUIV.	FLUTE LENGTH mm	OVERALL LENGTH mm	HIGH SPEED STEEL	
				OXIDE FINISH 118° POINT	BRIGHT FINISH 118° POINT
				JDMRS	JDMPRS
15.75	.6201	120	178	24.70	-
16.00	.6299	120	178	24.70	24.70
16.25	.6398	125	184	26.24	-
16.50	.6496	125	184	26.24	26.24
16.75	.6594	125	184	26.24	-
17.00	.6693	125	184	26.24	26.24
17.25	.6791	130	191	29.18	-
17.50	.6890	130	191	29.18	29.18
17.75	.6996	130	191	32.82	-
18.00	.7087	130	191	32.82	32.82
18.25	.7185	135	198	32.82	-
18.50	.7283	135	198	32.82	32.82
18.75	.7382	135	198	32.82	-
19.00	.7480	135	198	32.82	32.82
19.25	.7579	140	205	36.00	-
19.50	.7677	140	205	36.00	36.00
19.75	.7776	140	205	36.00	-
20.00	.7874	140	205	36.00	36.00

NOTE: Metric Jobber Length Drills are manufactured to metric ISO/DIN 338RN, BSS 328 specifications.

HIGH SPEED STEEL 1/4" HEX SHANK DRILLS

ICS USA

GENERAL PURPOSE

118° POINT



Hex Shank Drills are designed for use in cordless screwdrivers, handheld drills, and impact tools. Hex shank has a recessed snap-in ring to lock drills into drill chuck. For general purpose drilling.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	7/8	2-9/16	QHSD004	2.50
5/64	.0781	1	2-5/8	QHSD005	2.54
3/32	.0938	1-3/16	2-3/4	QHSD006	2.70
7/64	.1094	1-1/4	2-7/8	QHSD007	2.76
1/8	.1250	1-5/16	3	QHSD008	2.88
9/64	.1406	1-7/16	3-1/16	QHSD009	2.98
5/32	.1562	1-1/2	3-3/16	QHSD010	3.20
3/16	.1875	1-5/8	3-3/8	QHSD012	3.60

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7/32	.2188	1-3/4	3-3/4	QHSD014	4.50
1/4	.2500	2	3-13/16	QHSD016	5.00
9/32	.2812	2-15/16	4-1/4	QHSD018	6.00
5/16	.3125	3-3/16	4-1/2	QHSD020	6.54
3/8	.3750	3-5/8	5	QHSD024	8.70
7/16	.4375	4-1/16	5-1/2	QHSD028	10.00
1/2	.5000	4-1/2	6	QHSD032	12.40

HIGH SPEED STEEL 1/4" HEX SHANK DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT



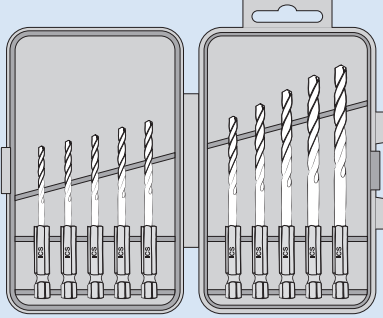
Hex Shank Drills are designed for use in cordless screwdrivers, handheld drills, and impact tools. Hex shank has a recessed snap-in ring to lock drills into drill chuck.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	7/8	2-9/16	QHSDHB004	3.20
5/64	.0781	1	2-5/8	QHSDHB005	3.20
3/32	.0938	1-3/16	2-3/4	QHSDHB006	3.20
7/64	.1094	1-1/4	2-7/8	QHSDHB007	3.00
1/8	.1250	1-5/16	3	QHSDHB008	3.00
9/64	.1406	1-7/16	3-1/16	QHSDHB009	3.00
5/32	.1562	1-1/2	3-3/16	QHSDHB010	3.20
3/16	.1875	1-5/8	3-3/8	QHSDHB012	4.00

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7/32	.2188	1-3/4	3-3/4	QHSDHB014	4.86
1/4	.2500	2	3-13/16	QHSDHB016	5.30
9/32	.2812	2-15/16	4-1/4	QHSDHB018	6.36
5/16	.3125	3-3/16	4-1/2	QHSDHB020	6.84
3/8	.3750	3-5/8	5	QHSDHB024	8.96
7/16	.4375	4-1/16	5-1/2	QHSDHB028	10.30
1/2	.5000	4-1/2	6	QHSDHB032	12.70

1/4" HEX SHANK DRILL SETS

PLASTIC INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
10 PC DRILL SETS Sizes 1/16 to 5/32 by 64ths 3/16 to 1/4 by 32nds  (Wt. .40 lbs.)	1/4" Hex Shank Drills - 118° Standard Point	DS-QHSD-10	39.32
	1/4" Hex Shank Drills - 135° Split Point	DS-QHSDH-10	43.84

HIGH SPEED STEEL JOBBER LENGTH DRILLS

MET-21

ICS WIS

HEAVY DUTY

118° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK STYLE
JDHA	 BRIGHT FINISH	For portable or machine drilling in mild steels, aluminum, and magnesium alloys. Mfr. to NAS 907-A specs.	M2,M7	118° Split Pt. Std. Spiral Hvy. Duty Web	Str. 3/8

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	7/8	1-7/8	JDHA004	1.06
5/64	.0781	1	2	JDHA005	1.06
3/32	.0938	1-1/4	2-1/4	JDHA006	1.06
7/64	.1094	1-1/2	2-5/8	JDHA007	1.06
1/8	.1250	1-5/8	2-3/4	JDHA008	1.10
9/64	.1406	1-3/4	2-7/8	JDHA009	1.18
5/32	.1562	2	3-1/8	JDHA010	1.44
11/64	.1719	2-1/8	3-1/4	JDHA011	1.50
3/16	.1875	2-5/16	3-1/2	JDHA012	1.72
13/64	.2031	2-7/16	3-5/8	JDHA013	2.02
7/32	.2188	2-1/2	3-3/4	JDHA014	2.14
15/64	.2344	2-5/8	3-7/8	JDHA015	2.30
1/4	.2500	2-3/4	4	JDHA016	2.40
17/64	.2656	2-7/8	4-1/8	JDHA017	2.94
9/32	.2812	2-15/16	4-1/4	JDHA018	3.12

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
19/64	.2969	3-1/16	4-3/8	JDHA019	3.60
5/16	.3125	3-3/16	4-1/2	JDHA020	3.80
21/64	.3281	3-5/16	4-5/8	JDHA021	4.08
11/32	.3438	3-7/16	4-3/4	JDHA022	4.82
23/64	.3594	3-1/2	4-7/8	JDHA023	5.36
3/8	.3750	3-5/8	5	JDHA024	5.56
25/64	.3906	3-3/4	5-1/8	JDHA025	6.14
13/32	.4062	3-7/8	5-1/4	JDHA026	6.44
27/64	.4219	3-15/16	5-3/8	JDHA027	6.86
7/16	.4375	4-1/16	5-1/2	JDHA028	7.72
29/64	.4531	4-3/16	5-5/8	JDHA029	8.48
15/32	.4688	4-5/16	5-3/4	JDHA030	9.02
31/64	.4844	4-3/8	5-7/8	JDHA031	9.26
1/2	.5000	4-1/2	6	JDHA032	9.64

HIGH SPEED STEEL 3/8" SHANK JOBBER LENGTH DRILLS

ICS WIS

HEAVY DUTY

118° SPLIT POINT



Fractional Sizes (Reduced Shank) 25/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
25/64	.3906	3-3/4	5-1/8	JDHATS025	8.48
13/32	.4062	3-7/8	5-1/4	JDHATS026	8.78
27/64	.4219	3-15/16	5-3/8	JDHATS027	9.20
7/16	.4375	4-1/16	5-1/2	JDHATS028	10.06

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
29/64	.4531	4-3/16	5-5/8	JDHATS025	10.84
15/32	.4688	4-5/16	5-3/4	JDHATS026	11.36
31/64	.4844	4-3/8	5-7/8	JDHATS027	11.62
1/2	.5000	4-1/2	6	JDHATS028	12.00

NOTE

Heavy Duty Type "A" Jobber Drills are designed for use on mild steels and soft metals.

DRILL SETS

Heavy Duty Jobber Length Drill Sets on pages 53-59

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS WIS

HEAVY DUTY

118° SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	2-5/8	3-7/8	JDHA#01	2.88
2	.2210	2-5/8	3-7/8	JDHA#02	2.88
3	.2130	2-1/2	3-3/4	JDHA#03	2.88
4	.2090	2-1/2	3-3/4	JDHA#04	2.88
5	.2055	2-1/2	3-3/4	JDHA#05	2.88
6	.2040	2-1/2	3-3/4	JDHA#06	2.88
7	.2010	2-7/16	3-5/8	JDHA#07	2.24
8	.1990	2-7/16	3-5/8	JDHA#08	2.24
9	.1960	2-7/16	3-5/8	JDHA#09	2.46
10	.1935	2-7/16	3-5/8	JDHA#10	2.46
11	.1910	2-5/16	3-1/2	JDHA#11	2.46
12	.1890	2-5/16	3-1/2	JDHA#12	2.46
13	.1850	2-5/16	3-1/2	JDHA#13	2.08
14	.1820	2-3/16	3-3/8	JDHA#14	2.08
15	.1800	2-3/16	3-3/8	JDHA#15	2.08
16	.1770	2-3/16	3-3/8	JDHA#16	2.08
17	.1730	2-3/16	3-3/8	JDHA#17	1.94
18	.1695	2-1/8	3-1/4	JDHA#18	1.76
19	.1660	2-1/8	3-1/4	JDHA#19	1.76
20	.1610	2-1/8	3-1/4	JDHA#20	1.76
21	.1590	2-1/8	3-1/4	JDHA#21	1.60
22	.1570	2	3-1/8	JDHA#22	1.60
23	.1540	2	3-1/8	JDHA#23	1.60
24	.1520	2	3-1/8	JDHA#24	1.60
25	.1495	1-7/8	3	JDHA#25	1.48
26	.1470	1-7/8	3	JDHA#26	1.52
27	.1440	1-7/8	3	JDHA#27	1.48
28	.1405	1-3/4	2-7/8	JDHA#28	1.44
29	.1360	1-3/4	2-7/8	JDHA#29	1.44
30	.1285	1-5/8	2-3/4	JDHA#30	1.44

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
31	.1200	1-5/8	2-3/4	JDHA#31	1.22
32	.1160	1-5/8	2-3/4	JDHA#32	1.22
33	.1130	1-1/2	2-5/8	JDHA#33	1.22
34	.1110	1-1/2	2-5/8	JDHA#34	1.22
35	.1100	1-1/2	2-5/8	JDHA#35	1.22
36	.1065	1-7/16	2-1/2	JDHA#36	1.22
37	.1040	1-7/16	2-1/2	JDHA#37	1.22
38	.1015	1-7/16	2-1/2	JDHA#38	1.22
39	.0995	1-3/8	2-3/8	JDHA#39	1.22
40	.0980	1-3/8	2-3/8	JDHA#40	1.22
41	.0960	1-3/8	2-3/8	JDHA#41	1.16
42	.0935	1-1/4	2-1/4	JDHA#42	1.16
43	.0890	1-1/4	2-1/4	JDHA#43	1.16
44	.0860	1-1/8	2-1/8	JDHA#44	1.16
45	.0820	1-1/8	2-1/8	JDHA#45	1.16
46	.0810	1-1/8	2-1/8	JDHA#46	1.16
47	.0785	1	2	JDHA#47	1.16
48	.0760	1	2	JDHA#48	1.16
49	.0730	1	2	JDHA#49	1.16
50	.0700	1	2	JDHA#50	1.16
51	.0670	1	2	JDHA#51	1.16
52	.0635	7/8	1-7/8	JDHA#52	1.16
53	.0595	7/8	1-7/8	JDHA#53	1.16
54	.0550	7/8	1-7/8	JDHA#54	1.16
55	.0520	7/8	1-7/8	JDHA#55	1.16
56	.0465	3/4	1-3/4	JDHA#56	1.52
57	.0430	3/4	1-3/4	JDHA#57	1.52
58	.0420	11/16	1-5/8	JDHA#58	1.52
59	.0410	11/16	1-5/8	JDHA#59	1.52
60	.0400	11/16	1-5/8	JDHA#60	1.52

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.2340	2-5/8	3-7/8	JDHA"A"	3.00
B	.2380	2-3/4	4	JDHA"B"	3.00
C	.2420	2-3/4	4	JDHA"C"	3.00
D	.2460	2-3/4	4	JDHA"D"	3.00
E	.2500	2-3/4	4	JDHA"E"	3.10
F	.2570	2-7/8	4-1/8	JDHA"F"	3.50
G	.2610	2-7/8	4-1/8	JDHA"G"	3.50
H	.2660	2-7/8	4-1/8	JDHA"H"	3.60
I	.2720	2-7/8	4-1/8	JDHA"I"	3.60
J	.2770	2-7/8	4-1/8	JDHA"J"	3.88
K	.2810	2-15/16	4-1/4	JDHA"K"	4.20
L	.2900	2-15/16	4-1/4	JDHA"L"	4.20
M	.2950	3-1/16	4-3/8	JDHA"M"	4.82

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.3020	3-1/16	4-3/8	JDHA"N"	4.82
O	.3160	3-3/16	4-1/2	JDHA"O"	4.82
P	.3230	3-5/16	4-5/8	JDHA"P"	5.18
Q	.3320	3-7/16	4-3/4	JDHA"Q"	5.18
R	.3390	3-7/16	4-3/4	JDHA"R"	5.40
S	.3480	3-1/2	4-7/8	JDHA"S"	5.68
T	.3580	3-1/2	4-7/8	JDHA"T"	6.22
U	.3680	3-5/8	5	JDHA"U"	6.44
V	.3770	3-5/8	5	JDHA"V"	6.44
W	.3860	3-3/4	5-1/8	JDHA"W"	7.12
X	.3970	3-3/4	5-1/8	JDHA"X"	8.34
Y	.4040	3-7/8	5-1/4	JDHA"Y"	9.54
Z	.4130	3-7/8	5-1/4	JDHA"Z"	9.74

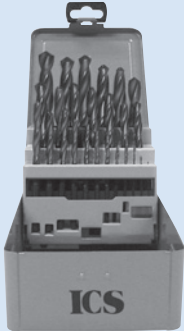
DOUBLE MARGIN JOBBER LENGTH DRILLS**ICS USA****HEAVY DUTY****118° SPLIT POINT**

Double Margin Jobber Drills are designed for drilling close tolerance holes. Their use often eliminates reaming. They are manufactured with two margins on each land. One on the leading edge and one on the heel. This gives four guide points for straighter and more accurate holes.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	1-5/8	2-3/4	JDDMHA008	2.10
9/64	.1406	1-3/4	2-7/8	JDDMHA009	2.34
5/32	.1562	2	3-1/8	JDDMHA010	2.42
11/64	.1719	2-1/8	3-1/4	JDDMHA011	2.60
3/16	.1875	2-5/16	3-1/2	JDDMHA012	2.80
13/64	.2031	2-7/16	3-5/8	JDDMHA013	3.28
7/32	.2188	2-1/2	3-3/4	JDDMHA014	3.44
15/64	.2344	2-5/8	3-7/8	JDDMHA015	3.70
1/4	.2500	2-3/4	4	JDDMHA016	3.84
17/64	.2656	2-7/8	4-1/8	JDDMHA017	4.90
9/32	.2812	2-15/16	4-1/4	JDDMHA018	5.28
19/64	.2969	3-1/16	4-3/8	JDDMHA019	5.88
5/16	.3125	3-3/16	4-1/2	JDDMHA020	6.18

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
21/64	.3281	3-5/16	4-5/8	JDDMHA021	6.82
11/32	.3438	3-7/16	4-3/4	JDDMHA022	7.56
23/64	.3594	3-1/2	4-7/8	JDDMHA023	8.40
3/8	.3750	3-5/8	5	JDDMHA024	8.92
25/64	.3906	3-3/4	5-1/8	JDDMHA025	9.86
13/32	.4062	3-7/8	5-1/4	JDDMHA026	10.28
27/64	.4219	3-15/16	5-3/8	JDDMHA027	11.28
7/16	.4375	4-1/16	5-1/2	JDDMHA028	11.90
29/64	.4531	4-3/16	5-5/8	JDDMHA029	13.20
15/32	.4688	4-5/16	5-3/4	JDDMHA030	14.26
31/64	.4844	4-3/8	5-7/8	JDDMHA031	14.80
1/2	.5000	4-1/2	6	JDDMHA032	15.12

DOUBLE MARGIN JOBBER LENGTH DRILL SETS**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
7 PC DRILL SET  Sizes 1/8 to 1/2 by 16ths (Wt. 1.40 lbs.)	Bright Finish Double Margin Jobber Drill 118° S/P	DS-JDDMHA-7	65.92
25 PC DRILL SET  Sizes 1/8 to 1/2 by 64ths (Wt. 3.30 lbs.)	Bright Finish Double Margin Jobber Drill 118° S/P	DS-JDDMHA-25	184.12

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
JDHB	 OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. Mfr. to NAS 907-B specs.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHP	 BRIGHT POLISHED FINISH	This drill was specifically designed for welders who need to drill stainless steel and aluminum without the fear of oxide contaminating their weld. Saves on cleanup time and machining cost.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHGF	 GOLD FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. Mfr. to NAS 907-B specs. Designed as an alternative to black oxide. Gold oxide film reduces friction between the tool and the work. Does not smear metal.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHDF	 BLACK/GOLD FINISH	This drill was designed for drilling work hardening 300 series stainless steels (except 303). Special thin web will penetrate work hardening stainless fast enough to cut beneath the chip which is hardening from deformation.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHT	 GOLD TITANIUM FINISH	This combination of titanium nitride coating with the heavy duty design enhances chip flow, finished hole quality and up to 700% more drill life.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL				TiN COAT
				OXIDE FINISH 135° S/P	BRIGHT FINISH 135° S/P	GOLD FINISH 135° S/P	BLACK/GOLD 135° S/P	GOLD COATED 135° S/P
				JDHB	JDHP	JDHGF	JDHDF	JDHT
*1/64	.0156	3/16	3/4	1.90	1.90	-	-	-
*1/32	.0313	1/2	1-3/8	1.68	1.68	-	-	-
*3/64	.0469	3/4	1-3/4	1.44	1.44	-	-	-
1/16	.0625	7/8	1-7/8	1.06	1.06	1.12	1.12	2.72
5/64	.0781	1	2	1.06	1.06	1.12	1.12	2.72
3/32	.0938	1-1/4	2-1/4	1.06	1.06	1.12	1.12	2.72
7/64	.1094	1-1/2	2-5/8	1.06	1.06	1.12	1.12	2.72
1/8	.1250	1-5/8	2-3/4	1.10	1.10	1.16	1.16	2.78
9/64	.1406	1-3/4	2-7/8	1.18	1.18	1.22	1.26	2.86
5/32	.1562	2	3-1/8	1.48	1.48	1.50	1.56	3.14
11/64	.1719	2-1/8	3-1/4	1.60	1.60	1.64	1.68	3.26
3/16	.1875	2-5/16	3-1/2	1.72	1.72	1.76	1.84	3.40
13/64	.2031	2-7/16	3-5/8	2.02	2.02	2.06	2.12	5.30
7/32	.2188	2-1/2	3-3/4	2.14	2.14	2.20	2.28	5.44
15/64	.2344	2-5/8	3-7/8	2.30	2.30	2.34	2.42	5.60
1/4	.2500	2-3/4	4	2.40	2.40	2.44	2.52	5.68
17/64	.2656	2-7/8	4-1/8	3.10	3.10	3.18	3.26	9.96
9/32	.2812	2-15/16	4-1/4	3.36	3.36	3.42	3.54	10.24
19/64	.2969	3-1/16	4-3/8	3.72	3.72	3.80	3.96	10.58
5/16	.3125	3-3/16	4-1/2	3.86	3.86	3.98	4.08	10.74
21/64	.3281	3-5/16	4-5/8	4.26	4.26	4.38	4.50	11.14
11/32	.3438	3-7/16	4-3/4	4.82	4.82	4.90	5.06	11.68
23/64	.3594	3-1/2	4-7/8	5.36	5.36	5.46	5.64	13.68
3/8	.3750	3-5/8	5	5.56	5.56	5.68	5.86	13.88
25/64	.3906	3-3/4	5-1/8	6.14	6.14	6.26	6.46	17.20
13/32	.4062	3-7/8	5-1/4	6.44	6.44	6.58	6.78	17.52
27/64	.4219	3-15/16	5-3/8	6.86	6.86	7.00	7.22	17.94
7/16	.4375	4-1/16	5-1/2	7.72	7.72	7.88	8.12	18.78
29/64	.4531	4-3/16	5-5/8	8.48	8.48	8.68	8.92	19.56
15/32	.4688	4-5/16	5-3/4	9.02	9.02	9.20	9.50	20.10
31/64	.4844	4-3/8	5-7/8	9.26	9.26	9.46	9.74	20.34
1/2	.5000	4-1/2	6	9.64	9.64	9.86	10.14	20.72

*Not Split Point

(Sizes continued on next page)

PACKAGING

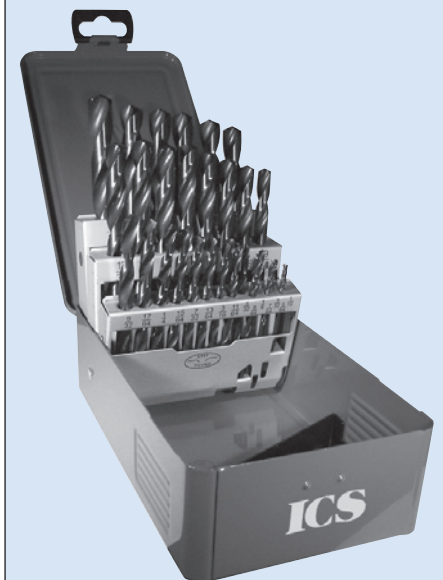
1/64 to 17/64 - 12 Drills/Envelope
9/32 to 1/2 - 6 Drills/Envelope
33/64 to 3/4 - 1 Drill/Tube

ORDERING NOTE

To complete your order we may substitute or interchange black or bright drills unless you have specified "no substitutions".
Orders accepted in less than package quantity are subject to a 15% surcharge.

DRILL SETS

A variety of Jobber Length Drill Sets can be found on pages 53 to 60.



HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (Straight Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH	GOLD FINISH
				135° S/P JDHB	135° S/P JDHT
33/64	.5156	4-13/16	6-5/8	22.98	36.06
17/32	.5312	4-13/16	6-5/8	24.04	37.16
35/64	.5469	4-13/16	6-5/8	25.36	38.46
9/16	.5625	4-13/16	6-5/8	26.26	39.36
37/64	.5781	4-13/16	6-5/8	26.34	39.44
19/32	.5938	5-3/16	7-1/8	26.90	39.98
39/64	.6094	5-3/16	7-1/8	28.98	42.08
5/8	.6250	5-3/16	7-1/8	28.98	42.08
41/64	.6406	5-3/16	7-1/8	30.90	44.00
21/32	.6562	5-3/16	7-1/8	30.90	44.00
43/64	.6719	5-5/8	7-5/8	33.96	47.04

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH	GOLD FINISH
				135° S/P JDHB	135° S/P JDHT
11/16	.6875	5-5/8	7-5/8	33.96	47.04
45/64	.7031	5-5/8	7-5/8	37.20	50.30
23/32	.7188	5-5/8	7-5/8	37.20	50.30
47/64	.7344	5-5/8	7-5/8	41.72	54.82
3/4	.7500	5-5/8	7-5/8	41.72	54.82
49/64	.7656	6	8-1/8	53.16	66.24
25/32	.7812	6	8-1/8	53.16	66.24
13/16	.8125	6-1/8	8-3/8	55.58	68.68
7/8	.8750	6-1/8	8-3/8	59.78	72.88
15/16	.9375	6-1/8	8-3/8	66.82	80.14
1	1.0000	6-3/8	9	75.54	88.64

HIGH SPEED STEEL 1/4" SHANK JOBBER LENGTH DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (Straight Shank) 17/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		
		OXIDE FINISH	BRIGHT FINISH	GOLD FINISH
		135° S/P JDHBQS	135° S/P JDHPQS	135° S/P JDHGFQS
17/64	.2656	6.08	6.08	6.22
9/32	.2812	6.08	6.08	6.22
19/64	.2969	6.36	6.36	6.52
5/16	.3125	6.86	6.86	7.00
21/64	.3281	7.52	7.52	7.00
11/32	.3438	7.80	7.80	7.96
23/64	.3594	8.38	8.38	8.58
3/8	.3750	8.38	8.38	8.58

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		
		OXIDE FINISH	BRIGHT FINISH	GOLD FINISH
		135° S/P JDHBQS	135° S/P JDHPQS	135° S/P JDHGFQS
25/64	.3906	8.48	8.48	8.68
13/32	.4062	8.78	8.78	8.98
27/64	.4219	9.20	9.20	8.98
7/16	.4375	10.06	10.06	10.28
29/64	.4531	10.84	10.84	11.08
15/32	.4688	11.36	11.36	11.64
31/64	.4844	11.62	11.62	11.84
1/2	.5000	12.00	12.00	12.24

HIGH SPEED STEEL 1/4" SHANK MECHANICS LENGTH DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT

4"
LENGTH

Fractional Sizes (Reduced Shank) 9/32" to 1/2" Dia.

SIZE	DEC. EQUIV.	LENGTH	HIGH SPEED STEEL	
			OXIDE FINISH	BRIGHT FINISH
			135° SPLIT POINT MLDHQS	135° SPLIT POINT MLDHPQS
9/32	.2812	4	6.08	6.08
5/16	.3125	4	6.86	6.86
11/32	.3438	4	7.80	7.80
3/8	.3750	4	8.38	8.38

SIZE	DEC. EQUIV.	LENGTH	HIGH SPEED STEEL	
			OXIDE FINISH	BRIGHT FINISH
			135° SPLIT POINT MLDHQS	135° SPLIT POINT MLDHPQS
13/32	.4062	4	8.88	8.88
7/16	.4375	4	10.06	10.06
15/32	.4688	4	11.36	11.36
1/2	.5000	4	12.00	12.00

HIGH SPEED STEEL MECHANICS LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

3 FLATS
ON SHANKBLACK/GOLD
FINISH

High Speed Steel Mechanics Length Drills are designed for drilling holes where a screw machine drill is too short and a jobber drill is too long for rigidity. They have 3 flats on the shank for positive grip and a 135° split point to keep drill centered without a pilot drill. The black and gold oxide coating adds wear resistance in most steel, stainless steel, cast iron, aluminum, brass, copper, and non-ferrous materials. They are sometimes referred to as Maintenance Length Drills.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	7/8	1-7/8	MLDHDF004	1.14
5/64	.0781	1	2	MLDHDF005	1.14
3/32	.0938	1-1/4	2-1/4	MLDHDF006	1.16
7/64	.1094	1-5/16	2-3/8	MLDHDF007	1.20
1/8	.1250	1-7/16	2-1/2	MLDHDF008	1.30
9/64	.1406	1-9/16	2-5/8	MLDHDF009	1.42
5/32	.1562	1-11/16	2-3/4	MLDHDF010	1.62
11/64	.1719	1-13/16	2-7/8	MLDHDF011	1.74
3/16	.1875	1-7/8	3	MLDHDF012	1.98
13/64	.2031	1-15/16	3-1/8	MLDHDF013	2.14
7/32	.2188	2	3-1/4	MLDHDF014	2.40
15/64	.2344	2-1/16	3-3/8	MLDHDF015	2.48
1/4	.2500	2	3-1/2	MLDHDF016	2.62
17/64	.2656	2-1/8	3-5/8	MLDHDF017	3.28
9/32	.2812	2-1/4	3-3/4	MLDHDF018	3.78

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
19/64	.2969	2-3/8	3-7/8	MLDHDF019	4.36
5/16	.3125	2-1/2	4	MLDHDF020	4.36
21/64	.3281	2-9/16	4-1/16	MLDHDF021	4.84
11/32	.3438	2-5/8	4-1/8	MLDHDF022	5.42
23/64	.3594	2-11/16	4-3/16	MLDHDF023	5.92
3/8	.3750	2-11/16	4-1/4	MLDHDF024	6.50
25/64	.3906	2-3/4	4-5/16	MLDHDF025	6.90
13/32	.4062	2-13/16	4-3/8	MLDHDF026	6.98
27/64	.4219	2-7/8	4-7/16	MLDHDF027	8.04
7/16	.4375	2-15/16	4-1/2	MLDHDF028	8.72
29/64	.4531	3	4-5/8	MLDHDF029	9.00
15/32	.4688	3-1/8	4-3/4	MLDHDF030	9.68
31/64	.4844	3-1/4	4-7/8	MLDHDF031	10.14
1/2	.5000	3-3/8	5	MLDHDF032	11.52

HIGH SPEED STEEL MECHANICS LENGTH DRILL KITS

PLASTIC INDEX CYLINDER

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
 Waterproof unbreakable plastic index Protects drills - Clips to belt	29 PC DRILL KIT Sizes 1/16 to 1/2 by 64ths	Black/Gold Finish 135° Split Point Mechanics Length	DSK-MLDHDF-29	147.72

HIGH SPEED STEEL 3/8" JOBBER LENGTH DRILLS

MET-27

ICS USA

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (Reduced Shank) 25/64" to 3/4" Dia.

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	OXIDE FINISH	BRIGHT FINISH	GOLD FINISH	BLACK/GOLD
		135° S/P JDHBTS	135° S/P JDHPTS	135° S/P JDHGFTS	135° S/P JDHDFTS
25/64	.3906	8.48	8.48	8.68	8.80
13/32	.4062	8.78	8.78	8.98	9.14
27/64	.4219	9.20	9.20	9.40	9.58
7/16	.4375	10.06	10.06	10.26	10.46
29/64	.4531	10.84	10.84	11.08	11.28
15/32	.4688	11.36	11.36	11.64	12.10
31/64	.4844	11.62	11.62	11.84	12.10
1/2	.5000	12.00	12.00	12.24	12.50
33/64	.5156	25.34	-	-	-
17/32	.5312	26.40	-	-	-
35/64	.5469	27.70	-	-	-
9/16	.5625	28.60	-	-	-

HSS		
SIZE	DEC. EQUIV.	OXIDE FINISH
		135° S/P JDHBTS
37/64	.5781	28.70
19/32	.5931	29.26
39/64	.6094	31.34
5/8	.6250	31.34
41/64	.6406	33.24
21/32	.6562	33.24
43/64	.6719	36.32
11/16	.6875	36.32
45/64	.7031	39.54
23/32	.7188	39.54
47/64	.7344	44.06
3/4	.7500	44.06

HIGH SPEED STEEL 1/2" SHANK JOBBER LENGTH DRILL SETS

ICS WIS

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (Reduced Shank) 33/64" to 1" Dia.

HSS				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	OXIDE FINISH
				135° S/P JDHBRS
33/64	.5156	4-13/16	6-5/8	25.34
17/32	.5312	4-13/16	6-5/8	26.40
35/64	.5469	4-13/16	6-5/8	27.70
9/16	.5625	4-13/16	6-5/8	28.50
37/64	.5781	4-13/16	6-5/8	28.70
19/32	.5938	5-3/16	7-1/8	29.26
39/64	.6094	5-3/16	7-1/8	31.34
5/8	.6250	5-3/16	7-1/8	31.34
41/64	.6406	5-3/16	7-1/8	33.24
21/32	.6562	5-3/16	7-1/8	33.24
43/64	.6719	5-5/8	7-5/8	36.32

HSS				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	OXIDE FINISH
				135° S/P JDHBRS
11/16	.6875	5-5/8	7-5/8	36.32
45/64	.7031	5-5/8	7-5/8	39.54
23/32	.7188	5-5/8	7-5/8	39.54
47/64	.7344	5-5/8	7-5/8	44.06
3/4	.7500	5-5/8	7-5/8	44.06
49/64	.7656	6	8-1/8	56.10
25/32	.7812	6	8-1/8	56.10
13/16	.8125	6-1/8	8-3/8	58.52
7/8	.8750	6-1/8	8-3/8	62.72
15/16	.9375	6-1/8	8-3/8	69.98
1	1.0000	6-3/8	9	78.48

NOTE

Reduced shank drills are used for drilling holes larger than the capacity of a 1/4, 3/8, or 1/2" drill chuck. A reduced shank drill should only be used for light to medium duty drilling applications as they do not have the torque strength of a straight shank drill. The shank is not as hard as the body of the drill to allow more flex and less breakage.

Quick Reference for Heavy Duty Reduced Shank Drills

DRILL TYPE	DRILL SETS	STUB LENGTH	JOBBER LENGTH	SILVER & DEMING	EXTRA LENGTH
PAGE NO. OF ITEMS AVAILABLE					
High Speed Steel	60-67	11, 12	30, 34-35, 37, 40-42, 46	69-70, 71-72, 76	106-107, 111
Cobalt	60, 62-63, 65	-	42, 45	73-74, 77	-
TiN Coated	-	-	34, 37	-	-

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS USA

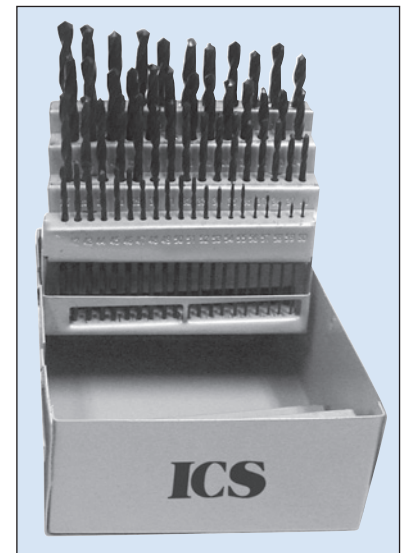
HEAVY DUTY

135° SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL				TIN COATED
				OXIDE FINISH	BRIGHT FINISH	GOLD FINISH	BLACK/GOLD	GOLD FINISH
				135° S/P	135° S/P	135° S/P	135° S/P	135° S/P
				JDHB	JDHP	JDHGF	JDHDF	JDHT
1	.2280	2-5/8	3-7/8	2.88	2.88	2.94	2.94	7.16
2	.2210	2-5/8	3-7/8	2.88	2.88	2.94	2.94	7.16
3	.2130	2-1/2	3-3/4	2.88	2.88	2.94	2.94	7.16
4	.2090	2-1/2	3-3/4	2.88	2.88	2.94	2.94	7.16
5	.2055	2-1/2	3-3/4	2.88	2.88	2.94	2.94	7.16
6	.2040	2-1/2	3-3/4	2.88	2.88	2.94	2.94	7.16
7	.2010	2-7/16	3-5/8	2.24	2.24	2.28	2.44	4.40
8	.1990	2-7/16	3-5/8	2.24	2.24	2.28	2.44	4.40
9	.1960	2-7/16	3-5/8	2.46	2.46	2.50	2.44	4.62
10	.1935	2-7/16	3-5/8	2.46	2.46	2.50	2.44	4.62
11	.1910	2-5/16	3-1/2	2.46	2.46	2.50	2.44	4.62
12	.1890	2-5/16	3-1/2	2.46	2.46	2.50	2.44	4.62
13	.1850	2-5/16	3-1/2	2.08	2.08	2.12	2.44	4.24
14	.1820	2-3/16	3-3/8	2.08	2.08	2.12	2.18	4.24
15	.1800	2-3/16	3-3/8	2.08	2.08	2.12	2.18	4.24
16	.1770	2-3/16	3-3/8	2.08	2.08	2.12	2.18	4.24
17	.1730	2-3/16	3-3/8	1.94	1.94	2.00	2.04	4.10
18	.1695	2-1/8	3-1/4	1.76	1.76	1.84	2.00	3.96
19	.1660	2-1/8	3-1/4	1.76	1.76	1.84	2.00	3.96
20	.1610	2-1/8	3-1/4	1.76	1.76	1.84	1.96	3.96
21	.1590	2-1/8	3-1/4	1.60	1.60	1.64	1.96	3.76
22	.1570	2	3-1/8	1.60	1.60	1.64	1.90	3.76
23	.1540	2	3-1/8	1.60	1.60	1.64	1.90	3.76
24	.1520	2	3-1/8	1.60	1.60	1.64	1.90	3.76
25	.1495	1-7/8	3	1.48	1.48	1.52	1.62	3.64
26	.1470	1-7/8	3	1.52	1.52	1.56	1.62	3.68
27	.1440	1-7/8	3	1.48	1.48	1.52	1.62	3.64
28	.1405	1-3/4	2-7/8	1.44	1.44	1.48	1.52	3.60
29	.1360	1-3/4	2-7/8	1.44	1.44	1.48	1.52	3.60
30	.1285	1-5/8	2-3/4	1.44	1.44	1.48	1.52	3.60
31	.1200	1-5/8	2-3/4	1.22	1.22	1.24	1.30	3.38
32	.1160	1-5/8	2-3/4	1.22	1.22	1.24	1.30	3.38
33	.1130	1-1/2	2-5/8	1.22	1.22	1.24	1.30	3.38
34	.1110	1-1/2	2-5/8	1.22	1.22	1.24	1.30	3.38
35	.1100	1-1/2	2-5/8	1.22	1.22	1.24	1.30	3.38
36	.1065	1-7/16	2-1/2	1.22	1.22	1.24	1.30	3.38
37	.1040	1-7/16	2-1/2	1.22	1.22	1.24	1.30	3.38
38	.1015	1-7/16	2-1/2	1.22	1.22	1.24	1.30	3.38
39	.0995	1-3/8	2-3/8	1.22	1.22	1.24	1.30	3.38
40	.0980	1-3/8	2-3/8	1.22	1.22	1.24	1.30	3.38
41	.0960	1-3/8	2-3/8	1.16	1.16	1.18	1.30	3.32
42	.0935	1-1/4	2-1/4	1.16	1.16	1.18	1.30	3.32
43	.0890	1-1/4	2-1/4	1.16	1.16	1.18	1.30	3.32
44	.0860	1-1/8	2-1/8	1.16	1.16	1.18	1.30	3.32
45	.0820	1-1/8	2-1/8	1.16	1.16	1.18	1.30	3.32
46	.0810	1-1/8	2-1/8	1.16	1.16	1.18	1.30	3.32
47	.0785	1	2	1.16	1.16	1.18	1.30	3.32
48	.0760	1	2	1.16	1.16	1.18	1.30	3.32
49	.0730	1	2	1.16	1.16	1.18	1.30	3.32
50	.0700	1	2	1.16	1.16	1.18	1.30	3.32
51	.0670	1	2	1.16	1.16	1.18	1.30	3.32
52	.0635	7/8	1-7/8	1.16	1.16	1.18	1.30	3.32
53	.0595	7/8	1-7/8	1.16	1.16	1.18	1.30	3.32
54	.0550	7/8	1-7/8	1.16	1.16	1.18	1.30	3.32
55	.0520	7/8	1-7/8	1.16	1.16	1.18	1.30	3.32
56	.0465	3/4	1-3/4	1.52	1.52	1.54	1.54	3.68
57	.0430	3/4	1-3/4	1.52	1.52	1.54	1.54	3.68
58	.0420	11/16	1-5/8	1.52	1.52	1.54	1.54	3.68
59	.0410	11/16	1-5/8	1.52	1.52	1.54	1.54	3.68
60	.0400	11/16	1-5/8	1.52	1.52	1.54	1.54	3.68



Heavy Duty
Wire Gauge Size
Drill Sets are on
page 57.

PACKAGING
#1 to #60
12 Drills/Envelope

NOTE

Add 15% for orders
accepted in less than
standard packaging.

JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

**Letter Sizes (Straight Shank) "A" to "Z" Dia.**

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL				TIN COATED	PACKAGE QUANTITY
				OXIDE FINISH	BRIGHT FINISH	GOLD FINISH	BLACK/GOLD	GOLD FINISH	
				135° S/P	135° S/P	135° S/P	135° S/P	135° S/P	
				JDHB	JDHP	JDHGF	JDHDF	JDHT	
A	.234	2-5/8	3-7/8	3.00	3.00	3.08	3.08	6.30	12
B	.238	2-3/4	4	3.00	3.00	3.08	3.08	6.30	12
C	.242	2-3/4	4	3.00	3.00	3.08	3.08	6.30	12
D	.246	2-3/4	4	3.00	3.00	3.08	3.08	6.30	12
E	.250	2-3/4	4	3.10	3.10	3.10	3.10	6.38	12
F	.257	2-7/8	4-1/8	3.50	3.50	3.58	3.58	10.36	12
G	.261	2-7/8	4-1/8	3.50	3.50	3.58	3.58	10.36	12
H	.266	2-7/8	4-1/8	3.60	3.60	3.66	3.66	10.46	12
I	.272	2-7/8	4-1/8	3.60	3.60	3.66	3.66	10.46	12
J	.277	2-7/8	4-1/8	3.88	3.88	3.98	3.98	10.76	12
K	.281	2-15/16	4-1/4	4.20	4.20	4.28	4.28	11.08	12
L	.290	2-15/16	4-1/4	4.20	4.20	4.28	4.28	11.08	12
M	.295	3-1/16	4-3/8	4.82	4.82	4.90	4.90	11.68	12
N	.302	3-1/16	4-3/8	4.82	4.82	4.90	4.90	11.68	6
O	.316	3-3/16	4-1/2	4.82	4.82	4.90	4.90	11.68	6
P	.323	3-5/16	4-5/8	5.18	5.18	5.26	5.26	12.04	6
Q	.332	3-7/16	4-3/4	5.18	5.18	5.26	5.26	12.04	6
R	.339	3-7/16	4-3/4	5.40	5.40	5.52	5.52	12.26	6
S	.348	3-1/2	4-7/8	5.68	5.68	5.80	5.80	14.02	6
T	.358	3-1/2	4-7/8	6.22	6.22	6.34	6.34	14.56	6
U	.368	3-5/8	5	6.44	6.44	6.58	6.58	14.76	6
V	.377	3-5/8	5	6.44	6.44	6.58	6.58	17.52	6
W	.386	3-3/4	5-1/8	7.12	7.12	7.24	7.24	18.20	6
X	.397	3-3/4	5-1/8	8.34	8.34	8.50	8.50	19.40	6
Y	.404	3-7/8	5-1/4	9.54	9.54	9.72	9.72	20.62	6
Z	.413	3-7/8	5-1/4	9.74	9.74	9.96	9.96	20.84	6

HIGH SPEED STEEL

3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

**Letter Sizes (Reduced Shank) "W" to "Z" Dia.**

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL			TIN COAT	PACKAGE QUANTITY
				OXIDE FINISH	BRIGHT FINISH	GOLD FINISH	GOLD FINISH	
				135° S/P	135° S/P	135° S/P	135° S/P	
				JDHBTS	JDHPTS	JDHGFTS	JDHTTS	
W	.386	3-3/4	5-1/8	9.48	9.48	9.60	20.54	6
X	.397	3-3/4	5-1/8	10.70	10.70	10.86	21.76	6
Y	.404	3-7/8	5-1/4	11.90	11.90	12.08	22.98	6
Z	.413	3-7/8	5-1/4	12.10	12.10	12.32	23.18	6

Quick Reference for Heavy Duty Letter Size Drills

DRILL TYPE	DRILL SETS	STUB LENGTH	JOBBER LENGTH	REDUCED SHANK	TAPER LENGTH	AIRCRAFT EXTENSION
High Speed Steel	58	5	16, 28, 32	28	71	110
Cobalt	58	10	36	36	75	110
TiN Coated	58	-	28	28	-	-

JOBBER LENGTH DRILLS - 3 FLATS ON SHANK

ICS WIS

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL TECHNICAL		
			SPECS	DATA	SHANK
JDHP3F	 BRIGHT POLISHED FINISH	This drill was specifically designed for welders who need to drill stainless steel and aluminum without the fear of oxide contaminating their weld. Saves on cleanup time and machining cost. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3 Flats
JDHT3F	 GOLD TITANIUM COATED	This combination of titanium nitride coating with the heavy duty design enhances chip flow, finished hole quality and up to 700% more drill life. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3 Flats

Fractional Sizes (Straight Shank - no Flats) 1/16" to 11/64" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD FINISH	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP	JDHT		
1/16	.0625	7/8	1-7/8	1.06	2.72		
5/64	.0781	1	2	1.06	2.72		
3/32	.0938	1-1/4	2-1/4	1.06	2.72		
7/64	.1094	1-1/2	2-5/8	1.06	2.72		

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD FINISH	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP	JDHT		
1/8	.1250	1-5/8	2-3/4	1.10	2.78		
9/64	.1406	1-3/4	2-7/8	1.18	2.86		
5/32	.1562	2	3-1/8	1.48	3.14		
11/64	.1719	2-1/8	3-1/4	1.60	3.26		

Fractional Sizes (Straight Shank - 3 Flats) 3/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD COAT	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP3F	JDHT3F		
3/16	.1875	2-5/16	3-1/2	2.14	3.72		
13/64	.2031	2-7/16	3-5/8	2.44	5.62		
7/32	.2188	2-1/2	3-3/4	2.58	5.76		
15/64	.2344	2-5/8	3-7/8	2.74	5.90		
1/4	.2500	2-3/4	4	2.84	5.98		
17/64	.2656	2-7/8	4-1/8	3.58	10.28		
9/32	.2812	2-15/16	4-1/4	3.84	10.54		
19/64	.2969	3-1/16	4-3/8	4.26	10.90		
5/16	.3125	3-3/16	4-1/2	4.40	11.06		
21/64	.3281	3-5/16	4-5/8	4.82	11.44		
11/32	.3438	3-7/16	4-3/4	5.38	12.00		

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD COAT	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP3F	JDHT3F		
23/64	.3594	3-1/2	4-7/8	5.94	14.00		
3/8	.3750	3-5/8	5	6.18	14.20		
25/64	.3906	3-3/4	5-1/8	6.76	17.52		
13/32	.4062	3-7/8	5-1/4	7.10	17.84		
27/64	.4219	3-15/16	5-3/8	7.54	18.26		
7/16	.4375	4-1/16	5-1/2	8.42	19.10		
29/64	.4531	4-3/16	5-5/8	9.24	19.88		
15/32	.4688	4-5/16	5-3/4	9.82	20.42		
31/64	.4844	4-3/8	5-7/8	10.06	20.64		
1/2	.5000	4-1/2	6	10.46	21.02		

NOTE: 29 pc. sets (1/16 - 1/2 by 64ths) can be ordered with 3 flats although sizes 1/16 - 11/64 will not have flats

JOBBER LENGTH DRILLS - 3 FLATS ON SHANK

ICS WIS

HEAVY DUTY

135° SPLIT POINT

**Fractional Sizes (3/8" Shank - 3 Flats) 25/64" to 1/2" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD COAT	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP3FTS	JDHT3FTS		
25/64	.3906	3-3/4	5-1/8	8.38	19.93		
13/32	.4062	3-7/8	5-1/4	8.66	20.18		
27/64	.4219	3-15/16	5-3/8	9.06	20.55		
7/16	.4375	4-1/16	5-1/2	9.88	21.25		

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		TiN COATED	
				BRIGHT FINISH		GOLD COAT	
				135° S/P	135° S/P	135° S/P	135° S/P
				JDHP3FTS	JDHT3FTS		
29/64	.4531	4-3/16	5-5/8	10.62	21.93		
15/32	.4688	4-5/16	5-3/4	11.12	22.38		
31/64	.4844	4-3/8	5-7/8	11.36	22.58		
1/2	.5000	4-1/2	6	11.72	23.00		

HIGH SPEED STEEL JOBBER LENGTH DRILLS - 3 FLATS ON SHANK

MET-31

ICS WIS

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL TECHNICAL		
			SPECS	DATA	SHANK
JDHB3F	 OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. Mfr. to NAS 907-B specs. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3 Flats
JDHDF3F	 BLACK/GOLD FINISH	This drill was designed for drilling work hardening 300 series stainless steels (except 303). Special thin web will penetrate work hardening stainless fast enough to cut beneath the chip which is hardening from deformation. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3 Flats
JDC3F	 GOLD COBALT FINISH	For portable or machine drilling in stainless steel, titanium, and other work hardening metals. Mfr. to NAS 907-J specs. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3 Flats

Fractional Sizes (Straight Shank - no Flats) 1/16" to 11/64" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB	JDHDF	JDC
1/16	.0625	7/8	1-7/8	1.06	1.06	1.72
5/64	.0781	1	2	1.06	1.06	1.72
3/32	.0938	1-1/4	2-1/4	1.06	1.06	1.72
7/64	.1094	1-1/2	2-5/8	1.06	1.06	1.92

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB	JDHDF	JDC
1/8	.1250	1-5/8	2-3/4	1.10	1.10	2.28
9/64	.1406	1-3/4	2-7/8	1.18	1.18	2.32
5/32	.1562	2	3-1/8	1.48	1.48	2.58
11/64	.1719	2-1/8	3-1/4	1.60	1.60	2.82

Fractional Sizes (Straight Shank - 3 Flats) 3/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB3F	JDHDF3F	JDC3F
3/16	.1875	2-5/16	3-1/2	2.04	2.14	3.40
13/64	.2031	2-7/16	3-5/8	2.36	2.44	4.00
7/32	.2188	2-1/2	3-3/4	2.46	2.58	4.50
15/64	.2344	2-5/8	3-7/8	2.60	2.74	4.98
1/4	.2500	2-3/4	4	2.72	2.84	5.12
17/64	.2656	2-7/8	4-1/8	3.40	3.58	5.84
9/32	.2812	2-15/16	4-1/4	3.68	3.84	6.44
19/64	.2969	3-1/16	4-3/8	4.04	4.26	7.10
5/16	.3125	3-3/16	4-1/2	4.18	4.40	7.48
21/64	.3281	3-5/16	4-5/8	4.58	4.82	8.32
11/32	.3438	3-7/16	4-3/4	5.12	5.38	9.18

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB3F	JDHDF3F	JDC3F
23/64	.3594	3-1/2	4-7/8	5.68	5.94	10.28
3/8	.3750	3-5/8	5	5.88	6.18	10.44
25/64	.3906	3-3/4	5-1/8	6.46	6.76	11.84
13/32	.4062	3-7/8	5-1/4	6.74	7.10	12.40
27/64	.4219	3-15/16	5-3/8	7.16	7.54	13.62
7/16	.4375	4-1/16	5-1/2	8.02	8.42	13.92
29/64	.4531	4-3/16	5-5/8	8.80	9.24	16.64
15/32	.4688	4-5/16	5-3/4	9.32	9.82	16.92
31/64	.4844	4-3/8	5-7/8	9.58	10.06	18.38
1/2	.5000	4-1/2	6	9.96	10.46	17.70

NOTE: 29 pc. sets (1/16 - 1/2 by 64ths) can be ordered with 3 flats although sizes 1/16 - 11/64 will not have flats

HIGH SPEED STEEL JOBBER LENGTH DRILLS - 3 FLATS ON SHANK

ICS WIS

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (3/8" Shank - 3 Flats) 25/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB3FTS	JDHDF3FTS	JDC3FTS
25/64	.3906	3-3/4	5-1/8	8.80	8.90	14.94
13/32	.4062	3-7/8	5-1/4	9.10	9.20	15.52
27/64	.4219	3-15/16	5-3/8	9.52	9.62	16.82
7/16	.4375	4-1/16	5-1/2	10.38	10.48	17.14

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS		COBALT
				OXIDE FINISH 135° S/P	BLACK/GOLD 135° S/P	COBALT 135° S/P
				JDHB3FTS	JDHDF3FTS	JDC3FTS
29/64	.4531	4-3/16	5-5/8	11.16	11.26	20.02
15/32	.4688	4-5/16	5-3/4	11.68	11.78	20.32
31/64	.4844	4-3/8	5-7/8	11.94	12.04	21.86
1/2	.5000	4-1/2	6	12.32	12.42	21.18

HIGH SPEED STEEL JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
JDHTC	 Gray Carbonitride Titanium Coated	Used for alloy steels, tool steels, and abrasive materials like cast iron and high silicon aluminum alloys.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHTA	 Purple Titanium Aluminum Nitride Coated	Used for titanium and nickel alloys, stainless steels, hard abrasive materials, and whenever excessive heat is generated on the cutting edge.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web
JDHZ	 Silver-Gold Zirconium Coated	Used for aluminum alloys, cast iron, high temperature alloys, stainless steels, and non-ferrous metals. Also very effective in glass filled plastics and wood.	M2, M7	135° Split Pt. Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO. TiCN (Gray Finish)	PRICE	ITEM NO. TiAlN (Purple Finish)	PRICE	ITEM NO. ZrN (Silver/Gold)	PRICE
1/16	.0625	7/8	1-7/8	JDHTC004	3.40	JDHTA004	3.54	JDHZ004	3.40
5/64	.0781	1	2	JDHTC005	3.40	JDHTA005	3.54	JDHZ005	3.40
3/32	.0938	1-1/4	2-1/4	JDHTC006	3.40	JDHTA006	3.54	JDHZ006	3.40
7/64	.1094	1-1/2	2-5/8	JDHTC007	3.40	JDHTA007	3.54	JDHZ007	3.40
1/8	.1250	1-5/8	2-3/4	JDHTC008	3.44	JDHTA008	3.60	JDHZ008	3.44
9/64	.1406	1-3/4	2-7/8	JDHTC009	3.54	JDHTA009	3.68	JDHZ009	3.54
5/32	.1562	2	3-1/8	JDHTC010	3.82	JDHTA010	3.98	JDHZ010	3.82
11/64	.1719	2-1/8	3-1/4	JDHTC011	3.96	JDHTA011	4.08	JDHZ011	3.96
3/16	.1875	2-5/16	3-1/2	JDHTC012	4.08	JDHTA012	4.22	JDHZ012	4.08
13/64	.2031	2-7/16	3-5/8	JDHTC013	6.62	JDHTA013	6.96	JDHZ013	6.62
7/32	.2188	2-1/2	3-3/4	JDHTC014	6.76	JDHTA014	7.10	JDHZ014	6.76
15/64	.2344	2-5/8	3-7/8	JDHTC015	6.92	JDHTA015	7.22	JDHZ015	6.92
1/4	.2500	2-3/4	4	JDHTC016	7.00	JDHTA016	7.34	JDHZ016	7.00
17/64	.2656	2-7/8	4-1/8	JDHTC017	12.68	JDHTA017	13.38	JDHZ017	12.68
9/32	.2812	2-15/16	4-1/4	JDHTC018	12.94	JDHTA018	13.64	JDHZ018	12.94
19/64	.2969	3-1/16	4-3/8	JDHTC019	13.32	JDHTA019	14.02	JDHZ019	13.32
5/16	.3125	3-3/16	4-1/2	JDHTC020	13.46	JDHTA020	14.16	JDHZ020	13.46
21/64	.3281	3-5/16	4-5/8	JDHTC021	13.86	JDHTA021	14.56	JDHZ021	13.86
11/32	.3438	3-7/16	4-3/4	JDHTC022	14.42	JDHTA022	15.08	JDHZ022	14.42
23/64	.3594	3-1/2	4-7/8	JDHTC023	17.14	JDHTA023	17.84	JDHZ023	17.14
3/8	.3750	3-5/8	5	JDHTC024	17.22	JDHTA024	18.06	JDHZ024	17.22
25/64	.3906	3-3/4	5-1/8	JDHTC025	21.62	JDHTA025	22.72	JDHZ025	21.62
13/32	.4062	3-7/8	5-1/4	JDHTC026	21.90	JDHTA026	23.04	JDHZ026	21.90
27/64	.4219	3-15/16	5-3/8	JDHTC027	22.32	JDHTA027	23.46	JDHZ027	22.32
7/16	.4375	4-1/16	5-1/2	JDHTC028	23.18	JDHTA028	24.30	JDHZ028	23.18
29/64	.4531	4-3/16	5-5/8	JDHTC029	23.96	JDHTA029	25.08	JDHZ029	23.96
15/32	.4688	4-5/16	5-3/4	JDHTC030	24.50	JDHTA030	25.62	JDHZ030	24.50
31/64	.4844	4-3/8	5-7/8	JDHTC031	24.74	JDHTA031	25.86	JDHZ031	24.74
1/2	.5000	4-1/2	6	JDHTC032	25.12	JDHTA032	26.24	JDHZ032	25.12

PACKAGING

1/64 to 17/64 - 12 Drills/Envelope • 9/32 to 1/2 - 6 Drills/Envelope

ORDERING NOTE

Orders accepted in less than package quantity are subject to a 15% surcharge.

DRILL SETS

A variety of Jobber Length Drill Sets can be found on pages 53 to 58.

HIGH SPEED STEEL JOBBER LENGTH DRILLS

MET-33

ICS USA

HEAVY DUTY

135° SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	TiCN	TiAlN	ZrN
				RED/BRONZE 135° S/P	PURPLE 135° S/P	SILVER/GOLD 135° S/P
				JDHTC	JDHTA	JDHZ
1	.2280	2-5/8	3-7/8	7.50	7.82	7.50
2	.2210	2-5/8	3-7/8	7.50	7.82	7.50
3	.2130	2-1/2	3-3/4	7.50	7.82	7.50
4	.2090	2-1/2	3-3/4	7.50	7.82	7.50
5	.2055	2-1/2	3-3/4	7.50	7.82	7.50
6	.2040	2-1/2	3-3/4	7.50	7.82	7.50
7	.2010	2-7/16	3-5/8	6.82	7.16	6.82
8	.1990	2-7/16	3-5/8	6.82	7.16	6.82
9	.1960	2-7/16	3-5/8	7.06	7.40	7.06
10	.1935	2-7/16	3-5/8	7.06	7.40	7.06
11	.1910	2-5/16	3-1/2	7.06	7.40	7.06
12	.1890	2-5/16	3-1/2	7.06	7.40	7.06
13	.1850	2-5/16	3-1/2	4.44	4.58	4.44
14	.1820	2-3/16	3-3/8	4.44	4.58	4.44
15	.1800	2-3/16	3-3/8	4.44	4.58	4.44
16	.1770	2-3/16	3-3/8	4.44	4.58	4.44
17	.1730	2-3/16	3-3/8	4.28	4.44	4.28
18	.1695	2-1/8	3-1/4	4.12	4.26	4.12
19	.1660	2-1/8	3-1/4	4.12	4.26	4.12
20	.1610	2-1/8	3-1/4	4.12	4.26	4.12
21	.1590	2-1/8	3-1/4	3.96	4.08	3.96
22	.1570	2	3-1/8	3.96	4.08	3.96
23	.1540	2	3-1/8	3.96	4.08	3.96
24	.1520	2	3-1/8	3.96	4.08	3.96
25	.1495	1-7/8	3	3.82	3.98	3.82
26	.1470	1-7/8	3	3.86	4.02	3.86
27	.1440	1-7/8	3	3.82	3.98	3.82
28	.1405	1-3/4	2-7/8	3.78	3.92	3.78
29	.1360	1-3/4	2-7/8	3.78	3.92	3.78
30	.1285	1-5/8	2-3/4	3.78	3.92	3.78

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	TiCN	TiAlN	ZrN
				RED/BRONZE 135° S/P	PURPLE 135° S/P	SILVER/GOLD 135° S/P
				JDHTC	JDHTA	JDHZ
31	.1200	1-5/8	2-3/4	3.58	3.70	3.58
32	.1160	1-5/8	2-3/4	3.58	3.70	3.58
33	.1130	1-1/2	2-5/8	3.58	3.70	3.58
34	.1110	1-1/2	2-5/8	3.58	3.70	3.58
35	.1100	1-1/2	2-5/8	3.58	3.70	3.58
36	.1065	1-7/16	2-1/2	3.58	3.70	3.58
37	.1040	1-7/16	2-1/2	3.58	3.70	3.58
38	.1015	1-7/16	2-1/2	3.58	3.70	3.58
39	.0995	1-3/8	2-3/8	3.58	3.70	3.58
40	.0980	1-3/8	2-3/8	3.58	3.70	3.58
41	.0960	1-3/8	2-3/8	3.52	3.66	3.52
42	.0935	1-1/4	2-1/4	3.52	3.66	3.52
43	.0890	1-1/4	2-1/4	3.52	3.66	3.52
44	.0860	1-1/8	2-1/8	3.52	3.66	3.52
45	.0820	1-1/8	2-1/8	3.52	3.66	3.52
46	.0810	1-1/8	2-1/8	3.52	3.66	3.52
47	.0785	1	2	3.52	3.66	3.52
48	.0760	1	2	3.52	3.66	3.52
49	.0730	1	2	3.52	3.66	3.52
50	.0700	1	2	3.52	3.66	3.52
51	.0670	1	2	3.52	3.66	3.52
52	.0635	7/8	1-7/8	3.52	3.66	3.52
53	.0595	7/8	1-7/8	3.52	3.66	3.52
54	.0550	7/8	1-7/8	3.52	3.66	3.52
55	.0520	7/8	1-7/8	3.52	3.66	3.52
56	.0465	3/4	1-3/4	3.86	4.02	3.86
57	.0430	3/4	1-3/4	3.86	4.02	3.86
58	.0420	11/16	1-5/8	3.86	4.02	3.86
59	.0410	11/16	1-5/8	3.86	4.02	3.86
60	.0400	11/16	1-5/8	3.86	4.02	3.86

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	TiCN	TiAlN	ZrN
				RED/BRONZE 135° S/P	PURPLE 135° S/P	SILVER/GOLD 135° S/P
				JDHTC	JDHTA	JDHZ
A	.2340	2-5/8	3-7/8	7.60	7.94	7.60
B	.2380	2-3/4	4	7.60	7.94	7.60
C	.2420	2-3/4	4	7.60	7.94	7.60
D	.2460	2-3/4	4	7.60	7.94	7.60
E	.2500	2-3/4	4	7.72	7.92	7.72
F	.2570	2-7/8	4-1/8	13.08	13.78	13.08
G	.2610	2-7/8	4-1/8	13.08	13.78	13.08
H	.2660	2-7/8	4-1/8	13.20	13.86	13.20
I	.2720	2-7/8	4-1/8	13.20	13.86	13.20
J	.2770	2-7/8	4-1/8	13.48	14.18	13.48
K	.2810	2-15/16	4-1/4	13.80	14.48	13.80
L	.2900	2-15/16	4-1/4	13.80	14.48	13.80
M	.2950	3-1/16	4-3/8	14.42	15.08	14.42

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	TiCN	TiAlN	ZrN
				RED/BRONZE 135° S/P	PURPLE 135° S/P	SILVER/GOLD 135° S/P
				JDHTC	JDHTA	JDHZ
N	.3020	3-1/16	4-3/8	14.42	15.08	14.42
O	.3160	3-3/16	4-1/2	14.42	15.08	14.42
P	.3230	3-5/16	4-5/8	14.76	15.44	14.76
Q	.3320	3-7/16	4-3/4	14.76	15.44	14.76
R	.3390	3-7/16	4-3/4	15.00	15.68	15.00
S	.3480	3-1/2	4-7/8	17.36	18.16	17.36
T	.3580	3-1/2	4-7/8	17.90	18.72	17.90
U	.3680	3-5/8	5	18.10	18.92	18.10
V	.3770	3-5/8	5	21.90	23.04	21.90
W	.3860	3-3/4	5-1/8	22.60	24.96	22.60
X	.3970	3-3/4	5-1/8	23.82	24.96	23.82
Y	.4040	3-7/8	5-1/4	25.02	26.14	25.02
Z	.4130	3-7/8	5-1/4	25.22	26.36	25.22

HIGH SPEED STEEL LEFT HAND JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDL	 GOLD FINISH	For portable or machine drilling where left hand rotation is required. Often used to drill out broken studs and screws.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3/8

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	7/8	1-7/8	JDL004	2.60
5/64	.0781	1	2	JDL005	2.60
3/32	.0938	1-1/4	2-1/4	JDL006	2.60
7/64	.1094	1-1/2	2-5/8	JDL007	2.60
1/8	.1250	1-5/8	2-3/4	JDL008	2.60
9/64	.1406	1-3/4	2-7/8	JDL009	2.60
5/32	.1562	2	3-1/8	JDL010	3.02
11/64	.1719	2-1/8	3-1/4	JDL011	3.32
3/16	.1875	2-5/16	3-1/2	JDL012	3.62
13/64	.2031	2-7/16	3-5/8	JDL013	4.04
7/32	.2188	2-1/2	3-3/4	JDL014	4.64
15/64	.2344	2-5/8	3-7/8	JDL015	4.88
1/4	.2500	2-3/4	4	JDL016	5.00
17/64	.2656	2-7/8	4-1/8	JDL017	6.14
9/32	.2812	2-15/16	4-1/4	JDL018	6.74

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
19/64	.2969	3-1/16	4-3/8	JDL019	7.34
5/16	.3125	3-3/16	4-1/2	JDL020	7.56
21/64	.3281	3-5/16	4-5/8	JDL021	8.18
11/32	.3438	3-7/16	4-3/4	JDL022	9.46
23/64	.3594	3-1/2	4-7/8	JDL023	10.76
3/8	.3750	3-5/8	5	JDL024	11.54
25/64	.3906	3-3/4	5-1/8	JDL025	12.68
13/32	.4062	3-7/8	5-1/4	JDL026	13.18
27/64	.4219	3-15/16	5-3/8	JDL027	14.36
7/16	.4375	4-1/16	5-1/2	JDL028	15.14
29/64	.4531	4-3/16	5-5/8	JDL029	17.38
15/32	.4688	4-5/16	5-3/4	JDL030	18.56
31/64	.4844	4-3/8	5-7/8	JDL031	19.16
1/2	.5000	4-1/2	6	JDL032	19.16

HIGH SPEED STEEL LEFT HAND 3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT



Fractional Sizes (Straight Shank) 25/64" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
25/64	.3906	3-3/4	5-1/8	JDLTS025	14.56
13/32	.4062	3-7/8	5-1/4	JDLTS026	15.02
27/64	.4219	3-15/16	5-3/8	JDLTS027	16.20
7/16	.4375	4-1/16	5-1/2	JDLTS028	16.96

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
29/64	.4531	4-3/16	5-5/8	JDLTS029	19.14
15/32	.4688	4-5/16	5-3/4	JDLTS030	20.32
31/64	.4844	4-3/8	5-7/8	JDLTS031	20.90
1/2	.5000	4-1/2	6	JDLTS032	20.90

NOTE

Left Hand Jobber Drills are not designed to replace the use of Screw Extractors found in the Threading Tools Catalog.

**DRILLS SETS**

LEFT HAND
JOBBER LENGTH
Drill Sets on pages 53 - 57.

HIGH SPEED STEEL METRIC JOBBER LENGTH DRILLS

MET-35

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDMHGF	 GOLD FINISH	This drill was specifically designed for welders who need to drill stainless steel and aluminum without the fear of oxide contaminating their weld. Saves on cleanup time and machining cost.	M2 M7	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3/8

Metric Sizes (Straight Shank) 1.00mm to 13.00mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
*1.00	.0394	11/16	1-5/8	JDMHGF01.00	1.86
*1.50	.0591	7/8	1-7/8	JDMHGF01.50	1.94
2.00	.0781	1	2-1/8	JDMHGF02.00	1.94
2.50	.0984	1-3/8	2-3/8	JDMHGF02.50	2.10
3.00	.1181	1-5/8	2-3/4	JDMHGF03.00	2.18
3.50	.1378	2	3-1/8	JDMHGF03.50	2.24
4.00	.1575	2	3-1/8	JDMHGF04.00	2.44
4.50	.1772	2-5/16	3-1/2	JDMHGF04.50	2.78
5.00	.1969	2-1/2	3-3/4	JDMHGF05.00	3.02
5.10	.2008	2-1/2	3-3/4	JDMHGF05.10	3.02
5.50	.2165	2-1/2	3-3/4	JDMHGF05.50	3.50
6.00	.2362	2-3/4	4	JDMHGF06.00	4.00
6.50	.2559	2-15/16	4-1/4	JDMHGF06.50	4.00
7.00	.2756	2-15/16	4-1/4	JDMHGF07.00	4.78

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7.50	.2953	3-3/16	4-1/2	JDMHGF07.50	5.52
7.75	.3051	3-3/16	4-1/2	JDMHGF07.75	6.12
8.00	.3150	3-3/16	4-1/2	JDMHGF08.00	6.76
8.50	.3346	3-7/16	4-3/4	JDMHGF08.50	7.52
9.00	.3543	3-5/8	5	JDMHGF09.00	8.42
9.50	.3740	3-5/8	5	JDMHGF09.50	8.72
9.70	.3819	3-7/8	5-1/4	JDMHGF09.70	9.86
10.00	.3937	3-7/8	5-1/4	JDMHGF10.00	10.14
10.50	.4134	4-1/16	5-1/2	JDMHGF10.50	11.28
11.00	.4331	4-1/16	5-1/2	JDMHGF11.00	11.70
11.50	.4528	4-5/16	5-3/4	JDMHGF11.50	13.08
12.00	.4724	4-5/16	5-3/4	JDMHGF12.00	14.56
12.50	.4921	4-1/2	6	JDMHGF12.50	14.86
13.00	.5118	4-13/16	6-5/8	JDMHGF13.00	14.86

*Not Split Point

HIGH SPEED STEEL METRIC 3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT



Metric Sizes (Reduced Shank) 10.00mm to 13.00mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
10.00	.3937	3-7/8	5-1/4	JDMHGFTS10.00	12.36
10.50	.4134	4-1/16	5-1/2	JDMHGFTS10.50	13.46
11.00	.4331	4-1/16	5-1/2	JDMHGFTS11.00	13.88
11.50	.4528	4-5/16	5-3/4	JDMHGFTS11.50	15.28

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
12.00	.4724	4-5/16	5-3/4	JDMHGFTS12.00	16.74
12.50	.4921	4-1/2	6	JDMHGFTS12.50	17.06
13.00	.5118	4-13/16	6-5/8	JDMHGFTS13.00	17.06

NOTE

Heavy Duty Metric Jobber Drill Sets are on page 59.

COBALT JOBBER LENGTH DRILLS**ICS WIS****HEAVY DUTY****135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDC	 GOLD COBALT FINISH	For portable or machine drilling in stainless steel, titanium, and other work hardening metals. Mfr. to NAS 907-J specs.	M42	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3/8

Fractional Sizes (Straight Shank) 1/64" to 11/16" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
*1/64	.0156	3/16	3/4	JDC001	4.02
*1/32	.0313	1/2	1-3/8	JDC002	3.20
*3/64	.0469	3/4	1-3/4	JDC003	2.36
1/16	.0625	7/8	1-7/8	JDC004	1.72
5/64	.0781	1	2	JDC005	1.72
3/32	.0938	1-1/4	2-1/4	JDC006	1.72
7/64	.1094	1-1/2	2-5/8	JDC007	1.92
1/8	.1250	1-5/8	2-3/4	JDC008	2.28
9/64	.1406	1-3/4	2-7/8	JDC009	2.32
5/32	.1562	2	3-1/8	JDC010	2.58
11/64	.1719	2-1/8	3-1/4	JDC011	2.82
3/16	.1875	2-5/16	3-1/2	JDC012	3.10
13/64	.2031	2-7/16	3-5/8	JDC013	3.68
7/32	.2188	2-1/2	3-3/4	JDC014	4.18
15/64	.2344	2-5/8	3-7/8	JDC015	4.66
1/4	.2500	2-3/4	4	JDC016	4.82
17/64	.2656	2-7/8	4-1/8	JDC017	5.52
9/32	.2812	2-15/16	4-1/4	JDC018	6.12
19/64	.2969	3-1/16	4-3/8	JDC019	6.78
5/16	.3125	3-3/16	4-1/2	JDC020	7.16
21/64	.3281	3-5/16	4-5/8	JDC021	8.00
11/32	.3438	3-7/16	4-3/4	JDC022	8.76

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
23/64	.3594	3-1/2	4-7/8	JDC023	9.96
3/8	.3750	3-5/8	5	JDC024	10.12
25/64	.3906	3-3/4	5-1/8	JDC025	11.54
13/32	.4062	3-7/8	5-1/4	JDC026	12.08
27/64	.4219	3-15/16	5-3/8	JDC027	13.30
7/16	.4375	4-1/16	5-1/2	JDC028	13.62
29/64	.4531	4-3/16	5-5/8	JDC029	16.32
15/32	.4688	4-5/16	5-3/4	JDC030	16.60
31/64	.4844	4-3/8	5-7/8	JDC031	17.40
1/2	.5000	4-1/2	6	JDC032	17.40
33/64	.5156	4-13/16	6-5/8	JDC033	44.94
17/32	.5312	4-13/16	6-5/8	JDC034	47.26
35/64	.5469	4-13/16	6-5/8	JDC035	51.22
9/16	.5629	4-13/16	6-5/8	JDC036	53.56
37/64	.5781	4-13/16	6-5/8	JDC037	53.76
19/32	.5938	5-3/16	7-1/8	JDC038	55.12
39/64	.6094	5-3/16	7-1/8	JDC039	59.12
5/8	.6250	5-3/16	7-1/8	JDC040	59.12
41/64	.6406	5-3/16	7-1/8	JDC041	63.32
21/32	.6562	5-3/16	7-1/8	JDC042	66.38
43/64	.6719	5-5/8	7-5/8	JDC043	71.76
11/16	.6875	5-5/8	7-5/8	JDC044	71.76

* Not split point

COBALT 3/8" SHANK JOBBER LENGTH DRILLS**ICS USA****HEAVY DUTY****135° SPLIT POINT****Fractional Sizes (Straight Shank) 25/64" to 11/16" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
25/64	.3906	3-3/4	5-1/8	JDCTS025	14.62
13/32	.4062	3-7/8	5-1/4	JDCTS026	15.20
27/64	.4219	3-15/16	5-3/8	JDCTS027	16.52
7/16	.4375	4-1/16	5-1/2	JDCTS028	16.82
29/64	.4531	4-3/16	5-5/8	JDCTS029	19.70
15/32	.4688	4-5/16	5-3/4	JDCTS030	20.00
31/64	.4844	4-3/8	5-7/8	JDCTS031	20.86
1/2	.5000	4-1/2	6	JDCTS032	20.86
33/64	.5156	4-13/16	6-5/8	JDCTS033	47.04
17/32	.5312	4-13/16	6-5/8	JDCTS034	49.36

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
35/64	.5469	4-13/16	6-5/8	JDCTS035	53.32
9/16	.5629	4-13/16	6-5/8	JDCTS036	55.66
37/64	.5781	4-13/16	6-5/8	JDCTS037	55.86
19/32	.5938	5-3/16	7-1/8	JDCTS038	57.22
39/64	.6094	5-3/16	7-1/8	JDCTS039	61.22
5/8	.6250	5-3/16	7-1/8	JDCTS040	61.22
41/64	.6406	5-3/16	7-1/8	JDCTS041	65.42
21/32	.6562	5-3/16	7-1/8	JDCTS042	68.48
43/64	.6719	5-5/8	7-5/8	JDCTS043	73.86
11/16	.6875	5-5/8	7-5/8	JDCTS044	73.86

COBALT JOBBER LENGTH DRILLS

MET-37

ICS WIS

HEAVY DUTY

135° SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #80 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	2-5/8	3-7/8	JDC#01	5.42
2	.2210	2-5/8	3-7/8	JDC#02	5.44
3	.2130	2-1/2	3-3/4	JDC#03	4.86
4	.2090	2-1/2	3-3/4	JDC#04	5.06
5	.2055	2-1/2	3-3/4	JDC#05	5.06
6	.2040	2-1/2	3-3/4	JDC#06	5.06
7	.2010	2-7/16	3-5/8	JDC#07	3.92
8	.1990	2-7/16	3-5/8	JDC#08	3.98
9	.1960	2-7/16	3-5/8	JDC#09	4.46
10	.1935	2-7/16	3-5/8	JDC#10	3.98
11	.1910	2-5/16	3-1/2	JDC#11	4.18
12	.1890	2-5/16	3-1/2	JDC#12	4.18
13	.1850	2-5/16	3-1/2	JDC#13	3.78
14	.1820	2-3/16	3-3/8	JDC#14	3.92
15	.1800	2-3/16	3-3/8	JDC#15	3.92
16	.1770	2-3/16	3-3/8	JDC#16	3.62
17	.1730	2-3/16	3-3/8	JDC#17	3.58
18	.1695	2-1/8	3-1/4	JDC#18	3.18
19	.1660	2-1/8	3-1/4	JDC#19	3.12
20	.1610	2-1/8	3-1/4	JDC#20	3.02
21	.1590	2-1/8	3-1/4	JDC#21	2.90
22	.1570	2	3-1/8	JDC#22	2.94
23	.1540	2	3-1/8	JDC#23	3.20
24	.1520	2	3-1/8	JDC#24	2.94
25	.1495	1-7/8	3	JDC#25	2.72
26	.1470	1-7/8	3	JDC#26	2.68
27	.1440	1-7/8	3	JDC#27	2.72
28	.1405	1-3/4	2-7/8	JDC#28	2.50
29	.1360	1-3/4	2-7/8	JDC#29	2.50
30	.1285	1-5/8	2-3/4	JDC#30	2.32
31	.1200	1-5/8	2-3/4	JDC#31	2.42
32	.1160	1-5/8	2-3/4	JDC#32	2.32
33	.1130	1-1/2	2-5/8	JDC#33	2.28
34	.1110	1-1/2	2-5/8	JDC#34	2.28
35	.1100	1-1/2	2-5/8	JDC#35	2.28
36	.1065	1-7/16	2-1/2	JDC#36	2.14
37	.1040	1-7/16	2-1/2	JDC#37	2.28
38	.1015	1-7/16	2-1/2	JDC#38	2.06
39	.0995	1-3/8	2-3/8	JDC#39	2.06
40	.0980	1-3/8	2-3/8	JDC#40	2.06

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
41	.0960	1-3/8	2-3/8	JDC#41	2.06
42	.0935	1-1/4	2-1/4	JDC#42	2.02
43	.0890	1-1/4	2-1/4	JDC#43	2.14
44	.0860	1-1/8	2-1/8	JDC#44	2.02
45	.0820	1-1/8	2-1/8	JDC#45	2.02
46	.0810	1-1/8	2-1/8	JDC#46	2.02
47	.0785	1	2	JDC#47	2.02
48	.0760	1	2	JDC#48	2.02
49	.0730	1	2	JDC#49	2.02
50	.0700	1	2	JDC#50	2.02
51	.0670	1	2	JDC#51	2.02
52	.0635	7/8	1-7/8	JDC#52	2.02
53	.0595	7/8	1-7/8	JDC#53	2.14
54	.0550	7/8	1-7/8	JDC#54	2.14
55	.0520	7/8	1-7/8	JDC#55	1.82
56	.0465	3/4	1-3/4	JDC#56	2.14
57	.0430	3/4	1-3/4	JDC#57	2.46
58	.0420	11/16	1-5/8	JDC#58	2.68
59	.0410	11/16	1-5/8	JDC#59	2.72
60	.0400	11/16	1-5/8	JDC#60	3.08
61	.0390	11/16	1-5/8	JDC#61	3.12
62	.0380	5/8	1-1/2	JDC#62	3.12
63	.0370	5/8	1-1/2	JDC#63	3.12
64	.0360	5/8	1-1/2	JDC#64	3.12
65	.0350	5/8	1-1/2	JDC#65	3.12
66	.0330	1/2	1-3/8	JDC#66	3.26
67	.0320	1/2	1-3/8	JDC#67	3.26
68	.0310	1/2	1-3/8	JDC#68	3.26
69	.0292	1/2	1-3/8	JDC#69	3.30
70	.0280	3/8	1-1/4	JDC#70	3.70
71	.0260	3/8	1-1/4	JDC#71	3.70
72	.0250	5/16	1-1/8	JDC#72	3.70
73	.0240	5/16	1-1/8	JDC#73	3.70
74	.0225	1/4	1-1/8	JDC#74	3.70
75	.0210	1/4	1-1/8	JDC#75	4.08
76	.0200	3/16	7/8	JDC#76	4.08
77	.0180	3/16	7/8	JDC#77	4.08
78	.0160	3/16	7/8	JDC#78	4.08
79	.0145	3/16	3/4	JDC#79	4.08
80	.0135	3/16	3/4	JDC#80	4.08

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.2340	2-5/8	3-7/8	JDC"A"	5.98
B	.2380	2-3/4	4	JDC"B"	6.90
C	.2420	2-3/4	4	JDC"C"	6.90
D	.2460	2-3/4	4	JDC"D"	7.76
E	.2500	2-3/4	4	JDC"E"	4.96
F	.2570	2-7/8	4-1/8	JDC"F"	6.90
G	.2610	2-7/8	4-1/8	JDC"G"	6.90
H	.2660	2-7/8	4-1/8	JDC"H"	7.76
I	.2720	2-7/8	4-1/8	JDC"I"	7.30
J	.2770	2-7/8	4-1/8	JDC"J"	7.76
K	.2810	2-15/16	4-1/4	JDC"K"	7.76
L	.2900	2-15/16	4-1/4	JDC"L"	8.78
M	.2950	3-1/16	4-3/8	JDC"M"	9.32

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.3020	3-1/16	4-3/8	JDC"N"	9.32
O	.3160	3-3/16	4-1/2	JDC"O"	10.30
P	.3230	3-5/16	4-5/8	JDC"P"	10.94
Q	.3320	3-7/16	4-3/4	JDC"Q"	11.34
R	.3390	3-7/16	4-3/4	JDC"R"	11.34
S	.3480	3-1/2	4-7/8	JDC"S"	13.90
T	.3580	3-1/2	4-7/8	JDC"T"	13.90
U	.3680	3-5/8	5	JDC"U"	13.90
V	.3770	3-5/8	5	JDC"V"	15.36
W	.3860	3-3/4	5-1/8	JDC"W"	15.36
X	.3970	3-3/4	5-1/8	JDC"X"	15.36
Y	.4040	3-7/8	5-1/4	JDC"Y"	16.26
Z	.4130	3-7/8	5-1/4	JDC"Z"	17.70

ICS**USA****HEAVY DUTY****135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDCM	 GOLD COBALT FINISH	For portable or machine drilling in stainless steel, titanium, and other work hardening metals. Mfr. to NAS 907-J specs.	M42	135° Split Pt. Std. Spiral Hvy. Duty Web	Straight 3/8

Metric Sizes (Straight Shank) 1.00mm to 8.40mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1.00	.0394	11/16	1-5/8	JDCM01.00	2.72
1.05	.0413	11/16	1-5/8	JDCM01.05	2.72
1.10	.0433	3/4	1-3/4	JDCM01.05	2.72
1.15	.0452	3/4	1-3/4	JDCM01.15	2.72
1.20	.0472	7/8	1-7/8	JDCM01.20	2.72
1.25	.0492	7/8	1-7/8	JDCM01.25	2.72
1.30	.0512	7/8	1-7/8	JDCM01.30	2.72
1.35	.0531	7/8	1-7/8	JDCM01.35	2.72
1.40	.0551	7/8	1-7/8	JDCM01.40	2.72
1.45	.0570	7/8	1-7/8	JDCM01.45	2.72
1.50	.0591	7/8	1-7/8	JDCM01.50	2.72
1.55	.0610	7/8	1-7/8	JDCM01.55	2.72
1.60	.0630	7/8	1-7/8	JDCM01.60	2.72
1.65	.0650	1	2	JDCM01.65	2.72
1.70	.0669	1	2	JDCM01.70	2.72
1.75	.0689	1	2	JDCM01.75	2.72
1.80	.0709	1	2	JDCM01.80	2.72
1.85	.0728	1	2	JDCM01.85	2.72
1.90	.0748	1	2	JDCM01.90	2.72
1.95	.0767	1	2	JDCM01.95	2.72
2.00	.0787	1	2-1/8	JDCM02.00	2.72
2.05	.0807	1-1/8	2-1/8	JDCM02.05	2.72
2.10	.0827	1-1/8	2-1/8	JDCM02.10	2.72
2.15	.0846	1-1/8	2-1/8	JDCM02.15	2.72
2.20	.0866	1-1/4	2-1/4	JDCM02.20	2.72
2.25	.0886	1-1/4	2-1/4	JDCM02.25	2.72
2.30	.0906	1-1/4	2-1/4	JDCM02.30	2.72
2.35	.0925	1-1/4	2-1/4	JDCM02.35	2.72
2.40	.0945	1-3/8	2-3/8	JDCM02.40	2.72
2.45	.0964	1-3/8	2-3/8	JDCM02.45	2.72
2.50	.0984	1-3/8	2-3/8	JDCM02.50	2.72
2.60	.1024	1-7/16	2-1/2	JDCM02.60	2.72
2.65	.1043	1-7/16	2-1/2	JDCM02.65	2.72
2.70	.1063	1-7/16	2-1/2	JDCM02.70	2.72
2.80	.1102	1-1/2	2-5/8	JDCM02.80	3.20
2.90	.1142	1-5/8	2-3/4	JDCM02.90	3.20
3.00	.1181	1-5/8	2-3/4	JDCM03.00	3.20
3.10	.1220	1-5/8	2-3/4	JDCM03.10	3.20
3.20	.1260	1-5/8	2-3/4	JDCM03.20	3.20
3.25	.1280	1-5/8	2-3/4	JDCM03.25	3.20
3.30	.1299	2	3-1/8	JDCM03.30	3.20
3.40	.1339	2	3-1/8	JDCM03.40	3.20
3.50	.1378	2	3-1/8	JDCM03.50	3.20
3.60	.1417	2	3-1/8	JDCM03.60	3.78
3.70	.1457	2	3-1/8	JDCM03.70	3.78
3.75	.1476	2	3-1/8	JDCM03.75	3.78
3.80	.1496	2	3-1/8	JDCM03.80	3.78
3.90	.1536	2	3-1/8	JDCM03.90	3.78

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
4.00	.1575	2	3-1/8	JDCM04.00	4.02
4.10	.1614	2-5/16	3-1/2	JDCM04.10	4.02
4.20	.1654	2-5/16	3-1/2	JDCM04.20	4.02
4.25	.1673	2-5/16	3-1/2	JDCM04.25	4.02
4.30	.1693	2-5/16	3-1/2	JDCM04.30	4.02
4.40	.1732	2-5/16	3-1/2	JDCM04.40	4.38
4.50	.1772	2-5/16	3-1/2	JDCM04.50	4.38
4.60	.1811	2-5/16	3-1/2	JDCM04.60	4.38
4.70	.1850	2-5/16	3-1/2	JDCM04.70	4.38
4.80	.1890	2-5/16	3-1/2	JDCM04.80	4.38
4.90	.1929	2-1/2	3-3/4	JDCM04.90	5.30
5.00	.1969	2-1/2	3-3/4	JDCM05.00	5.30
5.10	.2008	2-1/2	3-3/4	JDCM05.10	5.30
5.20	.2047	2-1/2	3-3/4	JDCM05.20	5.88
5.25	.2067	2-1/2	3-3/4	JDCM05.25	5.88
5.30	.2087	2-1/2	3-3/4	JDCM05.30	5.88
5.40	.2126	2-1/2	3-3/4	JDCM05.40	5.88
5.50	.2165	2-1/2	3-3/4	JDCM05.50	6.24
5.60	.2205	2-1/2	3-3/4	JDCM05.60	6.24
5.70	.2244	2-3/4	4	JDCM05.70	6.24
5.80	.2283	2-3/4	4	JDCM05.80	6.24
5.90	.2323	2-3/4	4	JDCM05.90	6.24
6.00	.2362	2-3/4	4	JDCM06.00	6.60
6.10	.2402	2-3/4	4	JDCM06.10	6.60
6.20	.2441	2-3/4	4	JDCM06.20	6.60
6.30	.2480	2-3/4	4	JDCM06.30	6.60
6.40	.2520	2-3/4	4	JDCM06.40	7.42
6.50	.2560	2-15/16	4-1/4	JDCM06.50	7.42
6.60	.2598	2-15/16	4-1/4	JDCM06.60	7.42
6.70	.2638	2-15/16	4-1/4	JDCM06.70	7.42
6.75	.2657	2-15/16	4-1/4	JDCM06.75	7.78
6.80	.2677	2-15/16	4-1/4	JDCM06.80	7.78
6.90	.2717	2-15/16	4-1/4	JDCM06.90	7.78
7.00	.2756	2-15/16	4-1/4	JDCM07.00	7.78
7.10	.2795	2-15/16	4-1/4	JDCM07.10	7.78
7.20	.2835	2-15/16	4-1/4	JDCM07.20	9.66
7.30	.2874	3-3/16	4-1/2	JDCM07.30	9.66
7.40	.2913	3-3/16	4-1/2	JDCM07.40	9.66
7.50	.2953	3-3/16	4-1/2	JDCM07.50	9.66
7.60	.2992	3-3/16	4-1/2	JDCM07.60	10.26
7.70	.3031	3-3/16	4-1/2	JDCM07.70	10.26
7.80	.3071	3-3/16	4-1/2	JDCM07.80	10.26
7.90	.3110	3-3/16	4-1/2	JDCM07.90	10.26
8.00	.3150	3-3/16	4-1/2	JDCM08.00	11.18
8.10	.3189	3-7/16	4-3/4	JDCM08.10	11.18
8.20	.3228	3-7/16	4-3/4	JDCM08.20	11.18
8.30	.3268	3-7/16	4-3/4	JDCM08.30	11.18
8.40	.3307	3-7/16	4-3/4	JDCM08.40	12.24

COBALT METRIC JOBBER LENGTH DRILLS

MET-39

ICS USA

HEAVY DUTY

135° SPLIT POINT



Metric Sizes (Straight Shank) 8.50mm to 13.00mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
8.50	.3346	3-7/16	4-3/4	JDCM08.50	12.24
8.60	.3386	3-7/16	4-3/4	JDCM08.60	12.24
8.70	.3425	3-7/16	4-3/4	JDCM08.70	12.24
8.80	.3465	3-7/16	4-3/4	JDCM08.80	14.12
8.90	.3504	3-5/8	5	JDCM08.90	14.12
9.00	.3543	3-5/8	5	JDCM09.00	14.12
9.10	.3583	3-5/8	5	JDCM09.00	14.12
9.20	.3622	3-5/8	5	JDCM09.20	14.12
9.30	.3661	3-5/8	5	JDCM09.30	14.12
9.40	.3701	3-5/8	5	JDCM09.40	14.12
9.50	.3740	3-5/8	5	JDCM09.50	14.12
9.60	.3780	3-5/8	5	JDCM09.60	16.24
9.70	.3819	3-7/8	5-1/4	JDCM09.70	16.24

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9.80	.3858	3-7/8	5-1/4	JDCM09.80	16.24
9.90	.3898	3-7/8	5-1/4	JDCM09.90	16.24
10.00	.3957	3-7/8	5-1/4	JDCM10.00	16.74
10.20	.4016	3-7/8	5-1/4	JDCM10.20	17.30
10.50	.4134	3-7/8	5-1/4	JDCM10.50	18.48
10.80	.4252	3-7/8	5-1/4	JDCM10.80	18.48
11.00	.4331	4-1/16	5-1/2	JDCM11.00	18.82
11.20	.4409	4-1/16	5-1/2	JDCM11.20	22.70
11.50	.4528	4-1/16	5-1/2	JDCM11.50	22.70
12.00	.4724	4-5/16	5-3/4	JDCM12.00	23.78
12.50	.4921	4-1/2	6	JDCM12.50	24.12
13.00	.5118	4-13/16	6-5/8	JDCM13.00	31.50

COBALT METRIC 3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT



Metric Sizes (Reduced Shank) 10.00mm to 13.00mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
10.00	.3937	3-7/8	5-1/4	JDCM10.00	19.10
10.50	.4134	4-1/16	5-1/2	JDCM10.50	20.84
11.00	.4331	4-1/16	5-1/2	JDCM11.00	21.18
11.50	.4528	4-5/16	5-3/4	JDCM11.50	25.06

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
12.00	.4724	4-5/16	5-3/4	JDCM12.00	26.12
12.50	.4921	4-1/2	6	JDCM12.50	26.46
13.00	.5118	4-13/16	6-5/8	JDCM13.00	33.86

Quick Reference for Cobalt Drills

DRILL SETS	STUB LENGTH	JOBBER LENGTH	SILVER & DEMING	TAPER LENGTH	TAPER SHANK	EXTRA LENGTH	COMBINED DRILL & CSK
PAGE NO. OF ITEMS AVAILABLE							
53-59	9-10	35-38	65, 69	74-75	95	108-110	113

PARABOLIC FLUTE JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY - HIGH PERFORMANCE**135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDPDFD	 BLACK/GOLD FINISH	For deep hole drilling in a wide range of materials especially aluminum and mild steel. Parabolic flutes ease chip ejection. These drills are also known as Worm Pattern Drills.	M2	135° Split Pt. Spec. Fast Spiral Hvy. Duty Web	Straight 3/8
JDPFT	 GOLD TITANIUM COATED	The combination of titanium nitride coating with the parabolic flute design can increase deep hole drilling efficiency up to 700%.	M2	135° Split Pt. Spec. Fast Spiral Hvy. Duty Web	Straight

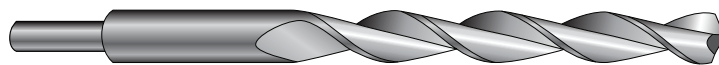
Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN
				BRIGHT FINISH 135°S/P	GOLD FINISH 135°S/P
				JDPDFD	JDPFT
1/16	.0625	7/8	1-7/8	1.90	2.84
5/64	.0781	1	2	2.00	2.94
3/32	.0938	1-1/4	2-1/4	2.10	3.04
7/64	.1094	1-1/2	2-5/8	2.14	3.20
1/8	.1250	1-5/8	2-3/4	2.32	3.26
9/64	.1406	1-3/4	2-7/8	2.26	3.54
5/32	.1562	2	3-1/8	2.52	3.68
11/64	.1719	2-1/8	3-1/4	2.84	3.92
3/16	.1875	2-5/16	3-1/2	3.04	4.06
13/64	.2031	2-7/16	3-5/8	3.46	5.56
7/32	.2188	2-1/2	3-3/4	3.68	5.78
15/64	.2344	2-5/8	3-7/8	4.10	6.10
1/4	.2500	2-3/4	4	4.30	6.30
17/64	.2656	2-7/8	4-1/8	5.26	8.56
9/32	.2812	2-15/16	4-1/4	5.98	9.46

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN
				BRIGHT FINISH 135°S/P	GOLD FINISH 135°S/P
				JDPDFD	JDPFT
19/64	.2969	3-1/16	4-3/8	6.40	10.30
5/16	.3125	3-3/16	4-1/2	6.72	10.82
21/64	.3281	3-5/16	4-5/8	7.14	11.56
11/32	.3438	3-7/16	4-3/4	7.56	12.28
23/64	.3594	3-1/2	4-7/8	7.78	14.92
3/8	.3750	3-5/8	5	9.24	15.08
25/64	.3906	3-3/4	5-1/8	9.46	16.48
13/32	.4062	3-7/8	5-1/4	10.72	16.70
27/64	.4219	3-15/16	5-3/8	12.28	18.48
7/16	.4375	4-1/16	5-1/2	13.34	18.82
29/64	.4531	4-3/16	5-5/8	15.34	21.10
15/32	.4688	4-5/16	5-3/4	15.54	21.64
31/64	.4844	4-3/8	5-7/8	16.38	22.26
1/2	.5000	4-1/2	6	16.48	22.36

PARABOLIC FLUTE 3/8" SHANK JOBBER LENGTH DRILLS

ICS USA

HEAVY DUTY**135° SPLIT POINT****Fractional Sizes (Straight Shank) 25/64" to 1/2" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS
				BRIGHT FINISH 135° S/P
				JDPFTS
25/64	.3906	3-3/4	5-1/8	11.34
13/32	.4062	3-7/8	5-1/4	12.60
27/64	.4219	3-15/16	5-3/8	14.18
7/16	.4375	4-1/16	5-1/2	15.22

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS
				BRIGHT FINISH 135° S/P
				JDPFTS
29/64	.4531	4-3/16	5-5/8	17.22
15/32	.4688	4-5/16	5-3/4	17.44
31/64	.4844	4-3/8	5-7/8	18.28
1/2	.5000	4-1/2	6	18.38

FAST/SLOW SPIRAL JOBBER LENGTH DRILLS**ICS USA****SPECIAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
JDF	 BRIGHT POLISHED FINISH	For portable or machine drilling low tensile strength materials such as aluminum, magnesium, copper, zinc, and similar materials producing long stringy swarf. Excellent chip-clearing when drilling deep holes.	M2	118° Point Fast Spiral Std. Web
JDS	 BRIGHT POLISHED FINISH	For portable or machine drilling in brass, copper, and similar alloys. Also for soft copper and aluminum sheet where breakout "snatch" or burr is a problem. Polished ground flutes ease chip ejection.	M2	118° Point Slow Spiral Std. Web

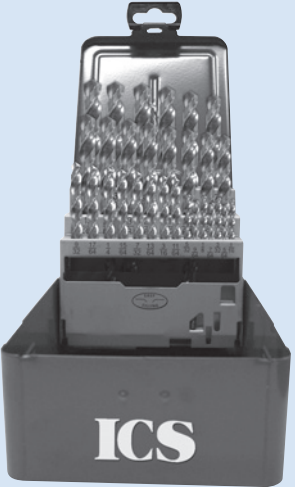
Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	BRIGHT FINISH 118° POINT	
				JDF	JDS
1/16	.0625	7/8	1-7/8	2.12	2.46
5/64	.0781	1	2	2.16	2.46
3/32	.0938	1-1/4	2-1/4	2.16	2.42
7/64	.1094	1-1/2	2-5/8	2.12	2.46
1/8	.1250	1-5/8	2-3/4	2.12	2.42
9/64	.1406	1-3/4	2-7/8	2.12	2.46
5/32	.1562	2	3-1/8	2.32	2.96
11/64	.1719	2-1/8	3-1/4	2.80	3.44
3/16	.1875	2-5/16	3-1/2	3.10	3.42
13/64	.2031	2-7/16	3-5/8	3.56	4.10
7/32	.2188	2-1/2	3-3/4	3.86	4.64
15/64	.2344	2-5/8	3-7/8	4.40	5.24
1/4	.2500	2-3/4	4	4.18	4.90
17/64	.2656	2-7/8	4-1/8	5.66	6.34
9/32	.2812	2-15/16	4-1/4	5.64	6.60

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	BRIGHT FINISH 118° POINT	
				JDF	JDS
19/64	.2969	3-1/16	4-3/8	6.52	7.82
5/16	.3125	3-3/16	4-1/2	6.70	8.12
21/64	.3281	3-5/16	4-5/8	7.78	8.86
11/32	.3438	3-7/16	4-3/4	8.26	9.82
23/64	.3594	3-1/2	4-7/8	10.26	13.24
3/8	.3750	3-5/8	5	9.94	11.70
25/64	.3906	3-3/4	5-1/8	11.92	14.66
13/32	.4062	3-7/8	5-1/4	11.62	13.48
27/64	.4219	3-15/16	5-3/8	13.86	17.20
7/16	.4375	4-1/16	5-1/2	13.64	15.62
29/64	.4531	4-3/16	5-5/8	14.94	20.12
15/32	.4688	4-5/16	5-3/4	15.36	19.18
31/64	.4844	4-3/8	5-7/8	16.82	22.64
1/2	.5000	4-1/2	6	16.26	20.02

HIGH SPEED STEEL

FAST/SLOW SPIRAL JOBBER LENGTH DRILL SETS

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
29 PC DRILL SETS  Sizes 1/16 to 1/2 by 64ths METAL INDEX	Fast Spiral Jobber Drill - 118° Pt	DS-JDF-29	182.20
	Slow Spiral Jobber Drill - 118° Pt	DS-JDS-29	210.66

FAST/SLOW SPIRAL JOBBER LENGTH DRILLS**ICS USA****SPECIAL PURPOSE****118° POINT****Wire Gauge Sizes (Straight Shank) #1 to #80 Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				BRIGHT FINISH 118° POINT	
				JDF	JDS
1	.2280	2-5/8	3-7/8	4.34	5.72
2	.2210	2-5/8	3-7/8	4.46	5.72
3	.2130	2-1/2	3-3/4	4.18	5.50
4	.2090	2-1/2	3-3/4	4.18	5.50
5	.2055	2-1/2	3-3/4	4.18	5.50
6	.2040	2-1/2	3-3/4	4.18	5.50
7	.2010	2-7/16	3-5/8	3.40	4.70
8	.1990	2-7/16	3-5/8	3.52	4.70
9	.1960	2-7/16	3-5/8	3.42	4.70
10	.1935	2-7/16	3-5/8	3.42	4.70
11	.1910	2-5/16	3-1/2	3.24	4.40
12	.1890	2-5/16	3-1/2	3.44	4.40
13	.1850	2-5/16	3-1/2	3.24	4.10
14	.1820	2-3/16	3-3/8	3.24	4.10
15	.1800	2-3/16	3-3/8	3.14	4.10
16	.1770	2-3/16	3-3/8	3.14	4.10
17	.1730	2-3/16	3-3/8	3.22	4.10
18	.1695	2-1/8	3-1/4	2.78	3.64
19	.1660	2-1/8	3-1/4	2.72	3.64
20	.1610	2-1/8	3-1/4	2.72	3.64
21	.1590	2-1/8	3-1/4	2.50	3.54
22	.1570	2	3-1/8	2.56	3.54
23	.1540	2	3-1/8	2.40	3.54
24	.1520	2	3-1/8	2.28	3.40
25	.1495	1-7/8	3	2.28	3.40
26	.1470	1-7/8	3	2.28	3.12
27	.1440	1-7/8	3	2.28	3.12
28	.1405	1-3/4	2-7/8	2.20	3.12
29	.1360	1-3/4	2-7/8	2.10	2.72
30	.1285	1-5/8	2-3/4	2.10	2.72
31	.1200	1-5/8	2-3/4	2.16	2.72
32	.1160	1-5/8	2-3/4	2.16	2.72
33	.1130	1-1/2	2-5/8	2.24	2.72
34	.1110	1-1/2	2-5/8	2.24	2.72
35	.1100	1-1/2	2-5/8	2.16	2.72
36	.1065	1-7/16	2-1/2	2.24	2.72
37	.1040	1-7/16	2-1/2	2.16	2.72
38	.1015	1-7/16	2-1/2	2.16	2.72
39	.0995	1-3/8	2-3/8	2.16	2.72
40	.0980	1-3/8	2-3/8	2.10	2.72

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				BRIGHT FINISH 118° POINT	
				JDF	JDS
41	.0960	1-3/8	2-3/8	2.26	2.76
42	.0935	1-1/4	2-1/4	2.26	2.76
43	.0890	1-1/4	2-1/4	2.14	2.76
44	.0860	1-1/8	2-1/8	2.20	2.76
45	.0820	1-1/8	2-1/8	2.20	2.76
46	.0810	1-1/8	2-1/8	2.20	2.76
47	.0785	1	2	2.26	2.76
48	.0760	1	2	2.18	2.76
49	.0730	1	2	2.26	2.76
50	.0700	1	2	2.18	2.76
51	.0670	1	2	2.18	2.76
52	.0635	7/8	1-7/8	2.18	2.76
53	.0595	7/8	1-7/8	2.18	2.68
54	.0550	7/8	1-7/8	2.18	2.68
55	.0520	7/8	1-7/8	2.12	2.68
56	.0465	3/4	1-3/4	2.18	2.68
57	.0430	3/4	1-3/4	2.26	2.68
58	.0420	11/16	1-5/8	2.26	2.68
59	.0410	11/16	1-5/8	2.26	2.68
60	.0400	11/16	1-5/8	2.26	2.68
61	.0390	11/16	1-5/8	2.60	3.32
62	.0380	5/8	1-1/2	2.60	3.32
63	.0370	5/8	1-1/2	2.60	3.32
64	.0360	5/8	1-1/2	2.60	3.32
65	.0350	5/8	1-1/2	2.46	3.32
66	.0330	1/2	1-3/8	2.60	3.32
67	.0320	1/2	1-3/8	2.46	3.32
68	.0310	1/2	1-3/8	2.46	3.32
69	.0292	1/2	1-3/8	2.76	3.66
70	.0280	3/8	1-1/4	2.76	3.66
71	.0260	3/8	1-1/4	3.60	4.80
72	.0250	5/16	1-1/8	3.38	4.80
73	.0240	5/16	1-1/8	3.38	4.80
74	.0225	1/4	1-1/8	3.38	4.80
75	.0210	1/4	1-1/8	3.38	4.80
76	.0200	3/16	7/8	3.38	4.80
77	.0180	3/16	7/8	3.38	4.80
78	.0160	3/16	7/8	3.38	4.80
79	.0145	3/16	3/4	3.96	5.68
80	.0135	3/16	3/4	3.96	5.68

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				BRIGHT FINISH 118° POINT	
				JDF	JDS
A	.234	2-5/8	3-7/8	4.96	7.08
B	.238	2-3/4	4	4.82	7.08
C	.242	2-3/4	4	4.42	7.08
D	.246	2-3/4	4	4.42	7.08
E	.250	2-3/4	4	4.18	4.90
F	.257	2-7/8	4-1/8	5.14	7.08
G	.261	2-7/8	4-1/8	5.46	7.48
H	.266	2-7/8	4-1/8	6.16	9.90
I	.272	2-7/8	4-1/8	5.34	10.30
J	.277	2-7/8	4-1/8	6.16	10.30
K	.281	2-15/16	4-1/4	7.74	10.30
L	.290	2-15/16	4-1/4	6.68	10.30
M	.295	3-1/16	4-3/8	7.20	11.14

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				BRIGHT FINISH 118° POINT	
				JDF	JDS
N	.302	3-1/16	4-3/8	6.58	11.14
O	.316	3-3/16	4-1/2	7.10	12.14
P	.323	3-5/16	4-5/8	7.46	12.14
Q	.332	3-7/16	4-3/4	7.46	12.08
R	.339	3-7/16	4-3/4	7.74	13.94
S	.348	3-1/2	4-7/8	8.40	14.60
T	.358	3-1/2	4-7/8	9.84	14.60
U	.368	3-5/8	5	9.84	14.60
V	.377	3-5/8	5	10.36	15.18
W	.386	3-3/4	5-1/8	10.60	17.96
X	.397	3-3/4	5-1/8	12.08	17.96
Y	.404	3-7/8	5-1/4	14.08	20.14
Z	.413	3-7/8	5-1/4	14.66	20.14

AUTOMOTIVE (TANG) JOBBER LENGTH DRILLS**ICS USA****SPECIAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK
JDAT	 OXIDE FINISH	For applications where Automotive Jobber Length Drills with a tanged shank will be used with positive drive split sleeve drivers.	M2	118° Point Std. Spiral Std. Web	TANG

Fractional Sizes (Tanged Shank) 1/8" to 11/16" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	1-5/8	2-3/4	JDAT008	2.00
9/64	.1406	1-3/4	2-7/8	JDAT009	2.00
5/32	.1562	2	3-1/8	JDAT010	2.34
11/64	.1719	2-1/8	3-1/4	JDAT011	2.66
3/16	.1875	2-5/16	3-1/2	JDAT012	3.00
13/64	.2031	2-7/16	3-5/8	JDAT013	3.38
7/32	.2188	2-1/2	3-3/4	JDAT014	3.72
15/64	.2344	2-5/8	3-7/8	JDAT015	4.00
1/4	.2500	2-3/4	4	JDAT016	4.26
17/64	.2656	2-7/8	4-1/8	JDAT017	4.98
9/32	.2812	2-15/16	4-1/4	JDAT018	5.60
19/64	.2969	3-1/16	4-3/8	JDAT019	5.88
5/16	.3125	3-3/16	4-1/2	JDAT020	6.48
21/64	.3281	3-5/16	4-5/8	JDAT021	7.10
11/32	.3438	3-7/16	4-3/4	JDAT022	7.48
23/64	.3594	3-1/2	4-7/8	JDAT023	8.40
3/8	.3750	3-5/8	5	JDAT024	8.90
25/64	.3906	3-3/4	5-1/8	JDAT025	9.68
13/32	.4062	3-7/8	5-1/4	JDAT026	10.12

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
27/64	.4219	3-15/16	5-3/8	JDAT008	11.36
7/16	.4375	4-1/16	5-1/2	JDAT028	11.84
29/64	.4531	4-3/16	5-5/8	JDAT029	13.70
15/32	.4688	4-5/16	5-3/4	JDAT030	14.54
31/64	.4844	4-3/8	5-7/8	JDAT031	15.22
1/2	.5000	4-1/2	6	JDAT032	15.22
33/64	.5156	4-13/16	6-5/8	JDAT033	25.98
17/32	.5312	4-13/16	6-5/8	JDAT034	27.32
35/64	.5469	4-13/16	6-5/8	JDAT035	29.88
9/16	.5625	4-13/16	6-5/8	JDAT036	31.74
37/64	.5781	4-13/16	6-5/8	JDAT037	32.12
19/32	.5938	5-3/16	7-1/8	JDAT038	32.12
39/64	.6094	5-3/16	7-1/8	JDAT039	34.92
5/8	.6250	5-3/16	7-1/8	JDAT040	34.92
41/64	.6406	5-3/16	7-1/8	JDAT041	36.84
21/32	.6562	5-3/16	7-1/8	JDAT042	36.84
43/64	.6719	5-5/8	7-5/8	JDAT043	42.48
11/16	.6875	5-5/8	7-5/8	JDAT044	42.48

PACKAGING

1/8 to 17/64 - 12 Drills/Envelope

9/32 to 1/2 - 6 Drills/Envelope

33/64 to 11/16 - 1 Drill/Tube

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	2-5/8	3-7/8	JDAT"A"	4.70
B	.238	2-3/4	4	JDAT"B"	4.70
C	.242	2-3/4	4	JDAT"C"	4.70
D	.246	2-3/4	4	JDAT"D"	4.70
E	.250	2-3/4	4	JDAT"E"	4.26
F	.257	2-7/8	4-1/8	JDAT"F"	5.06
G	.261	2-7/8	4-1/8	JDAT"G"	5.76
H	.266	2-7/8	4-1/8	JDAT"H"	5.76
I	.272	2-7/8	4-1/8	JDAT"I"	5.76
J	.277	2-7/8	4-1/8	JDAT"J"	6.02
K	.281	2-15/16	4-1/4	JDAT"K"	6.78
L	.290	2-15/16	4-1/4	JDAT"L"	6.78
M	.295	3-1/16	4-3/8	JDAT"M"	6.78

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	3-1/16	4-3/8	JDAT"N"	7.22
O	.316	3-3/16	4-1/2	JDAT"O"	7.22
P	.323	3-5/16	4-5/8	JDAT"P"	7.64
Q	.332	3-7/16	4-3/4	JDAT"Q"	7.78
R	.339	3-7/16	4-3/4	JDAT"R"	7.78
S	.348	3-1/2	4-7/8	JDAT"S"	9.26
T	.358	3-1/2	4-7/8	JDAT"T"	10.10
U	.368	3-5/8	5	JDAT"U"	10.10
V	.377	3-5/8	5	JDAT"V"	10.84
W	.386	3-3/4	5-1/8	JDAT"W"	10.84
X	.397	3-3/4	5-1/8	JDAT"X"	13.08
Y	.404	3-7/8	5-1/4	JDAT"Y"	13.08
Z	.413	3-7/8	5-1/4	JDAT"Z"	14.08

PACKAGING

A to M - 12 Drills/Envelope

N to Z - 6 Drills/Envelope

AUTOMOTIVE (TANG) JOBBER LENGTH DRILLS

ICS

USA

SPECIAL PURPOSE**118° POINT****Wire Gauge Sizes (Straight Shank) #1 to #50 Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	2-5/8	3-7/8	JDAT#01	4.26
2	.2210	2-5/8	3-7/8	JDAT#02	4.26
3	.2130	2-1/2	3-3/4	JDAT#03	3.82
4	.2090	2-1/2	3-3/4	JDAT#04	3.82
5	.2055	2-1/2	3-3/4	JDAT#05	3.82
6	.2040	2-1/2	3-3/4	JDAT#06	3.82
7	.2010	2-7/16	3-5/8	JDAT#07	3.82
8	.1990	2-7/16	3-5/8	JDAT#08	3.38
9	.1960	2-7/16	3-5/8	JDAT#09	3.38
10	.1935	2-7/16	3-5/8	JDAT#10	3.38
11	.1910	2-5/16	3-1/2	JDAT#11	3.00
12	.1890	2-5/16	3-1/2	JDAT#12	3.00
13	.1850	2-5/16	3-1/2	JDAT#13	3.00
14	.1820	2-3/16	3-3/8	JDAT#14	3.00
15	.1800	2-3/16	3-3/8	JDAT#15	3.00
16	.1770	2-3/16	3-3/8	JDAT#16	3.00
17	.1730	2-3/16	3-3/8	JDAT#17	3.00
18	.1695	2-1/8	3-1/4	JDAT#18	2.66
19	.1660	2-1/8	3-1/4	JDAT#19	2.66
20	.1610	2-1/8	3-1/4	JDAT#20	2.66

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
21	.1590	2-1/8	3-1/4	JDAT#21	2.66
22	.1570	2	3-1/8	JDAT#22	2.66
23	.1540	2	3-1/8	JDAT#23	2.80
24	.1520	2	3-1/8	JDAT#24	2.24
25	.1495	1-7/8	3	JDAT#25	2.24
26	.1470	1-7/8	3	JDAT#26	2.18
27	.1440	1-7/8	3	JDAT#27	2.18
28	.1405	1-3/4	2-7/8	JDAT#28	2.00
29	.1360	1-3/4	2-7/8	JDAT#29	2.00
30	.1285	1-5/8	2-3/4	JDAT#30	2.00
32	.1160	1-5/8	2-3/4	JDAT#32	2.00
37	.1040	1-7/16	2-1/2	JDAT#37	2.08
43	.0890	1-1/4	2-1/4	JDAT#43	2.08
46	.0810	1-1/8	2-1/8	JDAT#46	2.08
48	.0760	1	2	JDAT#48	2.08
50	.0700	1	2	JDAT#50	2.08

* Prices quoted on request

PACKAGING

1 to #50 - 12 Drills/Envelope

TANG SPECIFICATIONS

All Automotive Drills and other Straight SHANK Drills will be furnished with tapered shanks as follows:

DIMENSIONS OF TANGS

SHANK DIAMETER INCHES	THICKNESS		LENGTH
	A		B
	MIN	MAX	
1/8 through 3/16	.090	.094	9/32
Over 3/16 through 1/4	.118	.122	5/16
Over 1/4 through 5/16	.158	.162	11/32
Over 5/16 through 3/8	.199	.203	3/8
Over 3/8 through 15/32	.239	.243	7/16
Over 15/32 through 9/16	.297	.303	1/2

SHANK DIAMETER INCHES	THICKNESS		LENGTH
	A		B
	MIN	MAX	
Over 9/16 through 21/32	.367	.373	9/16
Over 21/32 through 3/4	.437	.443	5/8
Over 3/4 through 7/8	.508	.514	11/16
Over 7/8 through 1	.601	.609	3/4
Over 1 through 1-3/16	.692	.700	13/16
Over 1-3/16 through 1-3/8	.809	.817	7/8

CARBIDE TIPPED JOBBER LENGTH DRILLS

MET-45

ICS USA

SPECIAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
CTJD	 POLISHED FINISH	For production drilling of cast iron, non-ferrous metals, and non-metals. Does not need rigid set-up like solid carbide.	M1 (Body) CARBIDE TIPPED	118° Point Std. Spiral Std. Web

Fractional Sizes (Tanged Shank) 7/64" to 11/16" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7/64	.1094	1-1/2	2-5/8	CTJD007	22.94
1/8	.1250	1-5/8	2-3/4	CTJD008	17.12
9/64	.1406	1-3/4	2-7/8	CTJD009	18.50
5/32	.1562	2	3-1/8	CTJD010	18.12
11/64	.1719	2-1/8	3-1/4	CTJD011	19.70
3/16	.1875	2-5/16	3-1/2	CTJD012	19.30
13/64	.2031	2-7/16	3-5/8	CTJD013	21.08
7/32	.2188	2-1/2	3-3/4	CTJD014	21.08
15/64	.2344	2-5/8	3-7/8	CTJD015	22.78
1/4	.2500	2-3/4	4	CTJD016	22.78
17/64	.2656	2-7/8	4-1/8	CTJD017	23.58
9/32	.2812	2-15/16	4-1/4	CTJD018	26.80
19/64	.2969	3-1/16	4-3/8	CTJD019	29.56
5/16	.3125	3-3/16	4-1/2	CTJD020	28.98
21/64	.3281	3-5/16	4-5/8	CTJD021	30.86
11/32	.3438	3-7/16	4-3/4	CTJD022	30.86
23/64	.3594	3-1/2	4-7/8	CTJD023	32.82
3/8	.3750	3-5/8	5	CTJD024	32.82
25/64	.3906	3-3/4	5-1/8	CTJD025	35.64

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
13/32	.4062	3-7/8	5-1/4	CTJD026	35.64
27/64	.4219	3-15/16	5-3/8	CTJD027	38.74
7/16	.4375	4-1/16	5-1/2	CTJD028	38.74
29/64	.4531	4-3/16	5-5/8	CTJD029	44.42
15/32	.4688	4-5/16	5-3/4	CTJD030	44.42
31/64	.4844	4-3/8	5-7/8	CTJD031	48.66
1/2	.5000	4-1/2	6	CTJD032	48.66
33/64	.5156	4-13/16	6-5/8	CTJD033	69.72
17/32	.5312	4-13/16	6-5/8	CTJD034	69.72
35/64	.5469	4-13/16	6-5/8	CTJD035	70.44
9/16	.5625	4-13/16	6-5/8	CTJD036	70.44
37/64	.5781	4-13/16	6-5/8	CTJD037	77.78
19/32	.5938	5-3/16	7-1/8	CTJD038	75.52
39/64	.6094	5-3/16	7-1/8	CTJD039	89.24
5/8	.6250	5-3/16	7-1/8	CTJD040	85.58
41/64	.6406	5-3/16	7-1/8	CTJD041	98.70
21/32	.6562	5-3/16	7-1/8	CTJD042	86.96
43/64	.6719	5-5/8	7-5/8	CTJD043	113.28
11/16	.6875	5-5/8	7-5/8	CTJD044	88.68

Wire Gauge Sizes (Straight Shank) #1 to #40 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	2-5/8	3-7/8	CTJD#01	21.60
2	.2210	2-5/8	3-7/8	CTJD#02	22.00
3	.2130	2-1/2	3-3/4	CTJD#03	21.08
4	.2090	2-1/2	3-3/4	CTJD#04	20.94
5	.2055	2-1/2	3-3/4	CTJD#05	21.08
6	.2040	2-1/2	3-3/4	CTJD#06	20.94
7	.2010	2-7/16	3-5/8	CTJD#07	20.48
8	.1990	2-7/16	3-5/8	CTJD#08	20.48
9	.1960	2-7/16	3-5/8	CTJD#09	20.48
10	.1935	2-7/16	3-5/8	CTJD#10	20.08
11	.1910	2-5/16	3-1/2	CTJD#11	20.48
12	.1890	2-5/16	3-1/2	CTJD#12	20.08
13	.1850	2-5/16	3-1/2	CTJD#13	19.30
14	.1820	2-3/16	3-3/8	CTJD#14	19.30
15	.1800	2-3/16	3-3/8	CTJD#15	20.12
16	.1770	2-3/16	3-3/8	CTJD#16	19.30
17	.1730	2-3/16	3-3/8	CTJD#17	19.70
18	.1695	2-1/8	3-1/4	CTJD#18	19.70
19	.1660	2-1/8	3-1/4	CTJD#19	19.70
20	.1610	2-1/8	3-1/4	CTJD#20	19.70

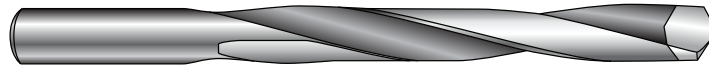
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
21	.1590	2-1/8	3-1/4	CTJD#21	19.30
22	.1570	2	3-1/8	CTJD#22	20.12
23	.1540	2	3-1/8	CTJD#23	18.22
24	.1520	2	3-1/8	CTJD#24	18.68
25	.1495	1-7/8	3	CTJD#25	17.40
26	.1470	1-7/8	3	CTJD#26	17.40
27	.1440	1-7/8	3	CTJD#27	18.68
28	.1405	1-3/4	2-7/8	CTJD#28	18.22
29	.1360	1-3/4	2-7/8	CTJD#29	17.94
30	.1285	1-5/8	2-3/4	CTJD#30	17.50
31	.1200	1-5/8	2-3/4	CTJD#31	16.60
32	.1160	1-5/8	2-3/4	CTJD#32	18.50
33	.1130	1-1/2	2-5/8	CTJD#33	22.94
34	.1110	1-1/2	2-5/8	CTJD#34	22.94
35	.1100	1-1/2	2-5/8	CTJD#35	22.94
36	.1065	1-7/16	2-1/2	CTJD#36	22.94
37	.1040	1-7/16	2-1/2	CTJD#37	22.94
38	.1015	1-7/16	2-1/2	CTJD#38	22.94
39	.0995	1-3/8	2-3/8	CTJD#39	22.94
40	.0980	1-3/8	2-3/8	CTJD#40	22.94

CARBIDE TIPPED JOBBER LENGTH DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



Letter Sizes (Straight Shank) "A" to "Z" Dia.

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJD
A	.234	2-5/8	3-7/8 23.82
B	.238	2-3/4	4 23.82
C	.242	2-3/4	4 23.82
D	.246	2-3/4	4 23.38
E	.250	2-3/4	4 22.78
F	.257	2-7/8	4-1/8 26.88
G	.261	2-7/8	4-1/8 27.44
H	.266	2-7/8	4-1/8 28.06
I	.272	2-7/8	4-1/8 27.44

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJD
J	.277	2-7/8	4-1/8 28.06
K	.281	2-15/16	4-1/4 28.06
L	.290	2-15/16	4-1/4 28.06
M	.295	3-1/16	4-3/8 30.96
N	.302	3-1/16	4-3/8 30.26
O	.316	3-3/16	4-1/2 29.72
P	.323	3-5/16	4-5/8 31.70
Q	.332	3-7/16	4-3/4 32.40
R	.339	3-7/16	4-3/4 31.70

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJD
S	.348	3-1/2	4-7/8 34.24
T	.358	3-1/2	4-7/8 34.92
U	.368	3-5/8	5 33.50
V	.377	3-5/8	5 34.24
W	.386	3-3/4	5-1/8 37.46
X	.397	3-3/4	5-1/8 35.92
Y	.404	3-7/8	5-1/4 37.46
Z	.413	3-7/8	5-1/4 41.46

Metric Sizes (Straight Shank) 3.00mm to 13.00mm Dia.

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJDM
3.00	.1181	1-5/8	2-3/4 24.20
3.10	.1220	1-5/8	2-3/4 25.20
3.20	.1260	1-5/8	2-3/4 25.20
3.30	.1299	2	3-1/8 25.20
3.40	.1339	2	3-1/8 25.20
3.50	.1378	2	3-1/8 23.16
3.60	.1417	2	3-1/8 24.20
3.70	.1457	2	3-1/8 24.20
3.80	.1496	2	3-1/8 24.20
3.90	.1536	2	3-1/8 24.20
4.00	.1575	2	3-1/8 22.70
4.10	.1614	2-5/16	3-1/2 21.86
4.20	.1654	2-5/16	3-1/2 23.16
4.30	.1693	2-5/16	3-1/2 23.16
4.40	.1732	2-5/16	3-1/2 23.16
4.50	.1772	2-5/16	3-1/2 24.20
4.60	.1811	2-5/16	3-1/2 26.30
4.70	.1850	2-5/16	3-1/2 19.30
4.80	.1890	2-5/16	3-1/2 20.08
4.90	.1929	2-1/2	3-3/4 26.30
5.00	.1969	2-1/2	3-3/4 25.20
5.10	.2008	2-1/2	3-3/4 27.68
5.20	.2047	2-1/2	3-3/4 27.68
5.30	.2087	2-1/2	3-3/4 27.68
5.40	.2126	2-1/2	3-3/4 27.68
5.50	.2165	2-1/2	3-3/4 26.80
5.60	.2205	2-1/2	3-3/4 28.30
5.70	.2244	2-3/4	4 28.30
5.80	.2283	2-3/4	4 28.30
5.90	.2323	2-3/4	4 28.30
6.00	.2362	2-3/4	4 27.72
6.10	.2402	2-3/4	4 29.32
6.20	.2441	2-3/4	4 29.32
6.30	.2480	2-3/4	4 29.32

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJDM
6.40	.2520	2-3/4	4 29.32
6.50	.2559	2-15/16	4-1/4 28.76
6.60	.2598	2-15/16	4-1/4 30.74
6.70	.2638	2-15/16	4-1/4 30.74
6.80	.2677	2-15/16	4-1/4 31.10
6.90	.2717	2-15/16	4-1/4 31.10
7.00	.2756	2-15/16	4-1/4 30.06
7.10	.2795	2-15/16	4-1/4 31.50
7.20	.2835	2-15/16	4-1/4 31.50
7.30	.2874	3-3/16	4-1/2 31.50
7.40	.2913	3-3/16	4-1/2 31.50
7.50	.2953	3-3/16	4-1/2 31.50
7.60	.2992	3-3/16	4-1/2 33.00
7.70	.3031	3-3/16	4-1/2 33.00
7.80	.3071	3-3/16	4-1/2 33.00
7.90	.3110	3-3/16	4-1/2 33.00
8.00	.3150	3-3/16	4-1/2 32.24
8.10	.3189	3-7/16	4-3/4 35.18
8.20	.3228	3-7/16	4-3/4 35.18
8.30	.3268	3-7/16	4-3/4 35.18
8.40	.3307	3-7/16	4-3/4 35.18
8.50	.3346	3-7/16	4-3/4 33.70
8.60	.3386	3-7/16	4-3/4 35.18
8.70	.3425	3-7/16	4-3/4 35.18
8.80	.3465	3-7/16	4-3/4 35.18
8.90	.3504	3-5/8	5 35.18
9.00	.3543	3-5/8	5 34.44
9.10	.3583	3-5/8	5 38.12
9.20	.3622	3-5/8	5 38.12
9.30	.3661	3-5/8	5 38.12
9.40	.3701	3-5/8	5 38.12
9.50	.3740	3-5/8	5 37.36
9.60	.3780	3-5/8	5 38.74
9.70	.3819	3-7/8	5-1/4 38.74

DEC.	FLUTE	OVERALL	
SIZE	EQUIV.	LENGTH	LENGTH CTJDM
9.80	.3858	3-7/8	5-1/4 38.74
9.90	.3898	3-7/8	5-1/4 38.74
10.00	.3937	3-7/8	5-1/4 38.74
10.10	.3976	3-7/8	5-1/4 46.16
10.20	.4016	3-7/8	5-1/4 46.16
10.30	.4055	3-7/8	5-1/4 46.16
10.40	.4094	3-7/8	5-1/4 46.16
10.50	.4134	4-1/16	5-1/2 44.62
10.60	.4173	4-1/16	5-1/2 50.56
10.70	.4213	4-1/16	5-1/2 50.56
10.80	.4252	4-1/16	5-1/2 50.56
10.90	.4291	4-1/16	5-1/2 50.56
11.00	.4331	4-1/16	5-1/2 48.34
11.10	.4370	4-1/16	5-1/2 56.38
11.20	.4409	4-1/16	5-1/2 56.38
11.30	.4449	4-5/16	5-3/4 56.38
11.40	.4488	4-5/16	5-3/4 56.38
11.50	.4528	4-5/16	5-3/4 54.22
11.60	.4567	4-5/16	5-3/4 61.54
11.70	.4606	4-5/16	5-3/4 61.54
11.80	.4646	4-5/16	5-3/4 61.54
11.90	.4685	4-5/16	5-3/4 61.54
12.00	.4724	4-5/16	5-3/4 58.66
12.10	.4764	4-1/2	6 63.78
12.20	.4803	4-1/2	6 63.78
12.30	.4848	4-1/2	6 63.78
12.40	.4882	4-1/2	6 63.78
12.50	.4921	4-1/2	6 60.82
12.60	.4961	4-1/2	6 66.00
12.80	.5039	4-1/2	6 66.00
12.90	.5079	4-13/16	6-5/8 66.00
13.00	.5118	4-13/16	6-5/8 62.30

SOLID CARBIDE JOBBER LENGTH DRILLS

MET-47

ICS USA

SPECIAL PURPOSE

118° & 150° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SCJD (2 Flute)	 BRIGHT POLISHED FINISH	For precision drilling of cast iron, non-ferrous metals, and non-metals. Needs rigid set-up for best results.	MICRO GRAIN CARBIDE 10% COBALT	Four Facet 118° Point Std. Spiral Std. Web
SCJD3F (3 Flute)	 BRIGHT POLISHED FINISH	For precision (reamer quality) drilling in cast iron, high silicon aluminum, alloy steels and non-ferrous materials. Three flute design removes more material per revolution, tracks straighter in hole, drill at very high feed rates, and does not need to be run on a super rigid set-up like other carbide drills. This self-centering drill is ideal for CNC Machine Center.	MICRO GRAIN CARBIDE 10% COBALT	Self-Centering 150° Point 30° Spiral Heavy Web

Fractional Sizes (Straight Shank) 1/32" to 3/4" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJD	SCJD3F
1/32	.0313	5/16	1-1/4	16.74	-
3/64	.0469	3/4	1-1/2	16.74	-
1/16	.0625	3/4	1-1/2	14.24	-
5/64	.0781	7/8	1-3/4	14.96	-
3/32	.0938	1	1-3/4	16.46	-
7/64	.1094	1-1/4	2	18.70	25.28
1/8	.1250	1-1/4	2	20.00	27.52
9/64	.1406	1-3/8	2-1/2	22.14	32.14
5/32	.1562	1-3/8	2-1/2	24.70	34.02
11/64	.1719	1-5/8	2-3/4	29.28	36.46
3/16	.1875	1-5/8	2-3/4	30.12	40.32
13/64	.2031	1-3/4	3	34.68	48.76
7/32	.2188	1-3/4	3	38.52	50.12
15/64	.2344	2	3-1/4	43.62	53.74
1/4	.2500	2	3-1/4	45.94	54.58
17/64	.2656	2-1/8	3-1/2	51.82	60.14
9/32	.2812	2-1/8	3-1/2	54.16	67.34

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJD	SCJD3F
19/64	.2969	2-3/8	3-3/4	60.62	74.60
5/16	.3125	2-3/8	3-3/4	63.62	78.96
21/64	.3281	2-1/2	4	70.52	86.14
11/32	.3438	2-1/2	4	76.42	95.50
23/64	.3594	2-3/4	4-1/4	87.08	104.26
3/8	.3750	2-3/4	4-1/4	91.82	121.32
25/64	.3906	2-7/8	4-1/2	108.20	127.78
13/32	.4062	2-7/8	4-1/2	117.68	141.80
27/64	.4219	2-7/8	4-1/2	124.72	147.70
7/16	.4375	2-7/8	4-1/2	135.22	154.72
29/64	.4531	3	4-3/4	150.66	162.30
15/32	.4688	3	4-3/4	162.34	169.82
31/64	.4844	3	4-3/4	166.92	177.30
1/2	.5000	3	4-3/4	166.92	183.92
9/16	.5625	3	4-3/4	-	290.90
5/8	.6250	3-1/2	5-3/4	-	355.06
3/4	.7500	4-1/2	5-3/4	-	504.48

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJD	SCJD3F
A	.234	2	3-1/4	42.40	52.82
B	.238	2	3-1/4	44.20	54.04
C	.242	2	3-1/4	44.54	47.12
D	.246	2	3-1/4	45.18	54.44
E	.250	2	3-1/4	49.12	54.58
F	.257	2	3-1/4	52.08	57.30
G	.261	2-1/8	3-1/2	53.24	58.72
H	.266	2-1/8	3-1/2	53.24	61.32
I	.272	2-1/8	3-1/2	54.16	63.70
J	.277	2-1/8	3-1/2	55.66	65.52
K	.281	2-1/8	3-1/2	56.14	65.24
L	.290	2-1/8	3-1/2	59.28	70.26
M	.295	2-3/8	3-3/4	60.42	71.68

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJD	SCJD3F
N	.302	2-3/8	3-3/4	64.26	76.76
O	.316	2-3/8	3-3/4	67.76	81.84
P	.323	2-3/8	3-3/4	70.20	84.72
Q	.332	2-1/2	4	72.88	89.26
R	.339	2-1/2	4	76.12	93.94
S	.348	2-1/2	4	81.10	99.02
T	.358	2-3/4	4-1/4	83.88	102.50
U	.368	2-3/4	4-1/4	88.06	105.42
V	.377	2-3/4	4-1/4	97.52	113.64
W	.386	2-7/8	4-1/2	104.90	120.72
X	.397	2-7/8	4-1/2	114.62	133.40
Y	.404	2-7/8	4-1/2	118.50	139.00
Z	.413	2-7/8	4-1/2	128.30	144.18

SOLID CARBIDE JOBBER LENGTH DRILLS**ICS USA****SPECIAL PURPOSE****118° & 150° POINT****Wire Gauge Sizes (Straight Shank) #1 to #80 Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJD	SCJD3F
1	.2280	1-3/4	3	40.48	51.92
2	.2210	1-3/4	3	39.00	51.04
3	.2130	1-3/4	3	37.30	49.74
4	.2090	1-3/4	3	36.44	49.52
5	.2055	1-3/4	3	35.58	49.06
6	.2040	1-3/4	3	35.58	48.96
7	.2010	1-3/4	3	34.68	44.38
8	.1990	1-3/4	3	34.28	43.88
9	.1960	1-3/4	3	33.82	42.68
10	.1935	1-5/8	2-3/4	33.32	42.08
11	.1910	1-5/8	2-3/4	32.98	41.50
12	.1890	1-5/8	2-3/4	32.98	40.92
13	.1850	1-5/8	2-3/4	32.40	39.98
14	.1820	1-5/8	2-3/4	31.72	39.66
15	.1800	1-5/8	2-3/4	31.10	39.30
16	.1770	1-5/8	2-3/4	31.10	38.56
17	.1730	1-5/8	2-3/4	29.66	38.20
18	.1695	1-5/8	2-3/4	27.82	36.18
19	.1660	1-5/8	2-3/4	27.34	35.94
20	.1610	1-3/8	2-1/2	26.18	35.40
21	.1590	1-3/8	2-1/2	26.18	35.14
22	.1570	1-3/8	2-1/2	25.20	34.62
23	.1540	1-3/8	2-1/2	25.20	33.56
24	.1520	1-3/8	2-1/2	24.28	33.06
25	.1495	1-3/8	2-1/2	23.52	32.60
26	.1470	1-3/8	2-1/2	23.52	32.50
27	.1440	1-3/8	2-1/2	23.18	32.26
28	.1405	1-3/8	2-1/2	22.44	31.66
29	.1360	1-3/8	2-1/2	22.44	30.64
30	.1285	1-1/4	2-1/4	21.18	28.54
31	.1200	1-1/4	2-1/4	19.68	27.20
32	.1160	1-1/4	2-1/4	19.92	26.56
33	.1130	1-1/4	2-1/4	19.60	26.24
34	.1110	1-1/4	2-1/4	18.90	25.94
35	.1100	1-1/4	2-1/4	18.90	25.62
36	.1065	1-1/4	2-1/4	18.90	24.98
37	.1040	1-1/4	2-1/4	18.30	-
38	.1015	1-1/4	2-1/4	17.84	-
39	.0995	1-1/4	2-1/4	17.84	-
40	.0980	1	2	17.36	-

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	
				SCJD	
41	.0960	1	2	17.14	
42	.0935	1	2	16.70	
43	.0890	1	2	16.46	
44	.0860	1	2	16.02	
45	.0820	7/8	1-3/4	15.46	
46	.0810	7/8	1-3/4	15.46	
47	.0785	7/8	1-3/4	15.14	
48	.0760	7/8	1-3/4	15.14	
49	.0730	7/8	1-3/4	14.78	
50	.0700	7/8	1-3/4	14.78	
51	.0670	3/4	1-1/2	14.70	
52	.0635	3/4	1-1/2	14.70	
53	.0595	3/4	1-1/2	14.70	
54	.0550	3/4	1-1/2	14.70	
55	.0520	3/4	1-1/2	14.70	
56	.0465	3/4	1-1/2	14.70	
57	.0430	3/4	1-1/2	18.20	
58	.0420	3/4	1-1/2	18.20	
59	.0410	3/4	1-1/2	18.20	
60	.0400	3/4	1-1/2	18.20	
61	.0390	5/8	1-1/2	18.46	
62	.0380	5/8	1-1/2	18.74	
63	.0370	5/8	1-1/2	18.98	
64	.0360	5/8	1-1/2	19.36	
65	.0350	5/8	1-1/2	19.68	
66	.0330	1/2	1-1/4	19.92	
67	.0320	1/2	1-1/4	20.16	
68	.0310	1/2	1-1/4	20.48	
69	.0292	1/2	1-1/4	20.76	
70	.0280	1/2	1-1/4	21.02	
71	.0260	5/16	1	21.40	
72	.0250	5/16	1	21.66	
73	.0240	1/4	7/8	21.92	
74	.0225	1/4	7/8	22.20	
75	.0210	1/4	7/8	22.48	
76	.0200	1/4	7/8	22.94	
77	.0180	3/16	3/4	23.04	
78	.0160	3/16	3/4	23.38	
79	.0145	3/16	3/4	23.66	
80	.0135	3/16	3/4	23.96	

Metric Sizes (Straight Shank) .70mm to 12.00mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJDM	SCJDM3F
.70	.0276	1/2	1-1/4	17.74	-
.80	.0315	1/2	1-1/4	17.74	-
.90	.0354	5/8	1-3/8	17.74	-
1.00	.0394	3/4	1-1/2	17.74	-
1.50	.0591	3/4	1-1/2	17.94	-
2.00	.0781	7/8	1-3/4	19.06	-
2.50	.0984	1	2	21.82	-
3.00	.1181	1-1/4	2-1/4	24.44	26.88
3.50	.1378	1-3/8	2-1/2	26.56	31.12
4.00	.1575	1-3/8	2-1/2	32.72	34.86
4.50	.1772	1-5/8	2-3/4	35.00	38.92
5.00	.1969	1-3/4	3	38.74	43.28
5.50	.2165	1-3/4	3	45.92	49.92

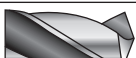
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE	
				BRIGHT FINISH 118° POINT	BRIGHT FINISH 150° POINT
				SCJDM	SCJDM3F
6.00	.2362	2	3-1/4	48.54	53.90
6.50	.2559	2	3-1/4	54.42	55.94
7.00	.2756	2-1/8	3-1/2	59.56	64.60
7.50	.2953	2-3/8	3-3/4	65.06	73.14
8.00	.3150	2-3/8	3-3/4	73.36	81.84
8.50	.3346	2-1/2	4	80.32	90.80
9.00	.3543	2-3/4	4-1/4	91.20	100.74
9.50	.3740	2-3/4	4-1/4	104.12	106.02
10.00	.3937	2-7/8	4-1/2	119.54	130.62
10.50	.4134	2-7/8	4-1/2	133.62	145.34
11.00	.4331	2-7/8	4-1/2	159.04	152.38
11.50	.4528	2-7/8	4-1/2	163.84	158.52
12.00	.4724	3	4-3/4	181.82	173.56

SPECIAL POINT JOBBER LENGTH DRILLS

ICS USA

SPECIAL PURPOSE

SPECIAL POINT

ITEM NO.	DRILL POINT ILLUSTRATION	CUTTING APPLICATION & FEATURES	STEEL SPECS
JD-FF118P	 Four Facet 118° Point	Four Facet (Pyrcon) Points have a primary cutting lip facet and a secondary heel clearance facet. It is the same geometry used on end mills and is designed for long life and harder metals. The secondary facet is ground to the midway point of the chisel to produce a self-centering point. It is one of the most accurate points for CNC Machine Centers.	M2
JD-FF135P	 Four Facet 135° Point	Note: Use 118° Point for general purpose drilling. Use 135° Point for drilling work hardening metals.	M2
JD-HS118P	 Helical "S" 118° Point	Helical Points have an S-shaped chisel which offers exceptional self-centering capability and reduced thrust. It was one of the first drill point geometries developed to save drilling time on CNC Machining Centers. Its four cutting edges will cut so close to actual diameter that reaming can be eliminated or reduced. Drill life is extended because the helical point wears evenly and will drill up to 15 times more holes than a conventional 118° point.	M2
JD-HS135P	 Helical "S" 135° Point	Note: Use 118° Point for general purpose drilling. Use 135° Point for drilling work hardening metals.	M2
JD-HFBP	 Helical Flat Bottom Point	Helical Flat Bottom Points have the features of both the helical and flat bottom point. They combine the self-centering point, long life, and the secondary reaming ability of the helical point with the burr-free breakthrough and the flat bottom or blind hole drilling ability of a flat bottom point. It can be used for plastic, wood, or metal.	M2

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL				
				FOUR FACET 118° POINT	FOUR FACET 135° POINT	HELICAL "S" 118° POINT	HELICAL "S" 135° POINT	HELICAL FLAT BOTTOM POINT
				JD-FF118P	JD-FF135P	JD-HS118P	JD-HS135P	JD-HFBP
1/16	.0625	7/8	1-7/8	3.36	3.36	2.68	2.68	-
5/64	.0781	1	2	3.36	3.36	2.68	2.68	-
3/32	.0938	1-1/4	2-1/4	3.36	3.36	2.68	2.68	-
7/64	.1094	1-1/2	2-5/8	3.36	3.36	2.68	2.68	-
1/8	.1250	1-5/8	2-3/4	3.36	3.36	2.68	2.68	2.68
9/64	.1406	1-3/4	2-7/8	3.50	3.50	2.92	2.92	2.92
5/32	.1562	2	3-1/8	3.78	3.78	3.32	3.32	3.32
11/64	.1719	2-1/8	3-1/4	3.88	3.88	3.66	3.66	3.66
3/16	.1875	2-5/16	3-1/2	4.08	4.08	3.84	3.84	3.84
13/64	.2031	2-7/16	3-5/8	4.78	4.78	4.18	4.18	4.18
7/32	.2188	2-1/2	3-3/4	5.02	5.02	4.44	4.44	4.44
15/64	.2344	2-5/8	3-7/8	5.22	5.22	4.62	4.62	4.62
1/4	.2500	2-3/4	4	5.26	5.26	4.66	4.66	4.66
17/64	.2656	2-7/8	4-1/8	5.88	5.88	5.30	5.30	5.30
9/32	.2812	2-15/16	4-1/4	6.14	6.14	5.54	5.54	5.54
19/64	.2969	3-1/16	4-3/8	6.54	6.54	5.94	5.94	5.94
5/16	.3125	3-3/16	4-1/2	6.72	6.72	6.14	6.14	6.14
21/64	.3281	3-5/16	4-5/8	7.12	7.12	6.54	6.54	6.54
11/32	.3438	3-7/16	4-3/4	7.38	7.38	6.78	6.78	6.78
23/64	.3594	3-1/2	4-7/8	7.80	7.80	7.20	7.20	7.20
3/8	.3750	3-5/8	5	8.20	8.20	7.60	7.60	7.60
25/64	.3906	3-3/4	5-1/8	8.38	8.38	7.80	7.80	7.80
13/32	.4062	3-7/8	5-1/4	9.18	9.18	8.60	8.60	8.60
27/64	.4219	3-15/16	5-3/8	9.70	9.70	9.12	9.12	9.12
7/16	.4375	4-1/16	5-1/2	10.06	10.06	9.48	9.48	9.48
29/64	.4531	4-3/16	5-5/8	10.58	10.58	10.00	10.00	10.00
15/32	.4688	4-5/16	5-3/4	11.24	11.24	10.66	10.66	10.66
31/64	.4844	4-3/8	5-7/8	11.64	11.64	11.06	11.06	11.06
1/2	.5000	4-1/2	6	12.14	12.14	11.56	11.56	11.56

PACKAGING

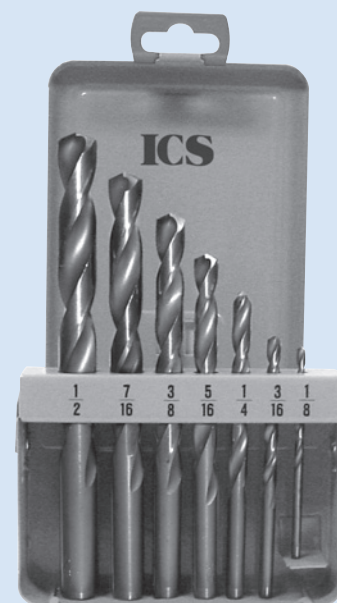
1/64 to 17/64 - 12 Drills/Envelope
9/32 to 1/2 - 6 Drills/Envelope

ORDERING NOTE

Orders accepted in less than package quantity are subject to a 15% surcharge.

DRILL SETS

Special Point Jobber Length Drill Sets can be found on page 58.

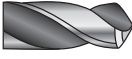


HIGH SPEED STEEL SPECIAL POINT JOBBER LENGTH DRILLS

ICS USA

SPECIAL PURPOSE

SPECIAL POINT

ITEM NO.	DRILL POINT ILLUSTRATION	CUTTING APPLICATION & FEATURES	STEEL SPECS
JD-PP	 Perfect Point®	Perfect Point® Drills have 6 cutting edges and were initially developed by ICS to drill through layers of metal and wood with no metal burr breakthrough or wood grain tears and splinters. It will drill a perfectly round hole in metal, wood, and plastic. They combine the best features of metal and wood cutting drills and can be used to replace over a dozen styles of drill points for cutting.	M2
JD-DAP	 Double Angle Point	Double Angle (Cast Iron) Points have the features of both the conventional 118° point and the low angle 90° point. The secondary 90° point angle reduces wear and chipping to the outside cutting lip corners. This point will improve hole size and finish and may produce 3 times the number of holes before sharpening, compared to a conventional 118° point. It is used primarily for drilling cast iron, abrasive materials and to reduce breakthrough burr in soft materials and mild steel.	M2

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	ITEM NO.	PRICE
				PERFECT POINT®		DOUBLE ANGLE POINT	
1/16	.0625	7/8	1-7/8	JD-PP004	3.36	JD-DAP004	2.68
5/64	.0781	1	2	JD-PP005	3.36	JD-DAP005	2.68
3/32	.0938	1-1/4	2-1/4	JD-PP006	3.36	JD-DAP006	2.68
7/64	.1094	1-1/2	2-5/8	JD-PP007	3.36	JD-DAP007	2.68
1/8	.1250	1-5/8	2-3/4	JD-PP008	3.36	JD-DAP008	2.68
9/64	.1406	1-3/4	2-7/8	JD-PP009	3.50	JD-DAP009	2.60
5/32	.1562	2	3-1/8	JD-PP010	3.78	JD-DAP010	2.96
11/64	.1719	2-1/8	3-1/4	JD-PP011	3.88	JD-DAP011	3.26
3/16	.1875	2-5/16	3-1/2	JD-PP012	4.08	JD-DAP012	3.42
13/64	.2031	2-7/16	3-5/8	JD-PP013	4.18	JD-DAP013	3.72
7/32	.2188	2-1/2	3-3/4	JD-PP014	4.44	JD-DAP014	3.96
15/64	.2344	2-5/8	3-7/8	JD-PP015	4.62	JD-DAP015	4.12
1/4	.2500	2-3/4	4	JD-PP016	4.66	JD-DAP016	4.16
17/64	.2656	2-7/8	4-1/8	JD-PP017	5.30	JD-DAP017	4.72
9/32	.2812	2-15/16	4-1/4	JD-PP018	5.54	JD-DAP018	4.94
19/64	.2969	3-1/16	4-3/8	JD-PP019	5.94	JD-DAP019	5.30
5/16	.3125	3-3/16	4-1/2	JD-PP020	6.14	JD-DAP020	5.46
21/64	.3281	3-5/16	4-5/8	JD-PP021	6.54	JD-DAP021	5.82
11/32	.3438	3-7/16	4-3/4	JD-PP022	6.78	JD-DAP022	6.06
23/64	.3594	3-1/2	4-7/8	JD-PP023	7.20	JD-DAP023	6.44
3/8	.3750	3-5/8	5	JD-PP024	7.60	JD-DAP024	6.78
25/64	.3906	3-3/4	5-1/8	JD-PP025	7.80	JD-DAP025	6.96
13/32	.4062	3-7/8	5-1/4	JD-PP026	8.60	JD-DAP026	7.66
27/64	.4219	3-15/16	5-3/8	JD-PP027	9.12	JD-DAP027	8.14
7/16	.4375	4-1/16	5-1/2	JD-PP028	9.48	JD-DAP028	8.44
29/64	.4531	4-3/16	5-5/8	JD-PP029	10.00	JD-DAP029	8.92
15/32	.4688	4-5/16	5-3/4	JD-PP030	10.66	JD-DAP030	9.50
31/64	.4844	4-3/8	5-7/8	JD-PP031	11.06	JD-DAP031	9.86
1/2	.5000	4-1/2	6	JD-PP032	11.56	JD-DAP032	10.32

PACKAGING

1/64 to 17/64 - 12 Drills/Envelope • 9/32 to 1/2 - 6 Drills/Envelope

ORDERING NOTE

Orders accepted in less than package quantity are subject to a 15% surcharge.

DRILL SETS

Special Point Jobber Length Drill Sets can be found on pages 58.

HIGH SPEED STEEL GROUND DRILL BLANKS

ICS WIS

GENERAL PURPOSE

PARALLEL GROUND

Ground drill blanks are the same length as jobber length drills and hardened (RC 63-65) and parallel ground (no taper) to tolerances shown. All blanks have a bright finish. They are used for the sizing of holes, stock for router bits, and other small tools, and can be used for gauges, drifts, punches, rollers, locating pins and spindles, knockout pins, etc.

Sizes 1/64" to 3/4" Dia. & #1 to #80 Dia.

DEC. SIZE	OVERALL EQUIV.	ITEM LENGTH	NO.	PRICE
1/64	.0156	3/4	GDB001	1.10
1/32	.0312	1-3/8	GDB002	1.10
3/64	.0469	1-3/4	GDB003	1.14
1/16	.0625	1-7/8	GDB004	1.14
5/64	.0781	2	GDB005	1.14
3/32	.0938	2-1/4	GDB006	1.14
7/64	.1094	2-5/8	GDB007	1.18
1/8	.1250	2-3/4	GDB008	1.18
9/64	.1406	2-7/8	GDB009	1.24
5/32	.1562	3-1/8	GDB010	1.28
11/64	.1719	3-1/4	GDB011	1.28
3/16	.1875	3-1/2	GDB012	1.54
13/64	.2031	3-5/8	GDB013	1.72
7/32	.2188	3-3/4	GDB014	1.88
15/64	.2344	3-7/8	GDB015	2.04
1/4	.2500	4	GDB016	2.12
17/64	.2656	4-1/8	GDB017	2.54
9/32	.2812	4-1/4	GDB018	2.72
19/64	.2969	4-3/8	GDB019	3.04
5/16	.3125	4-1/2	GDB020	3.30
21/64	.3281	4-5/8	GDB021	3.72
11/32	.3438	4-3/4	GDB022	4.04
23/64	.3594	4-7/8	GDB023	4.54
3/8	.3750	5	GDB024	4.70
25/64	.3906	5-1/8	GDB025	5.22
13/32	.4062	5-1/4	GDB026	5.54
27/64	.4219	5-3/8	GDB027	6.14
7/16	.4375	5-1/2	GDB028	6.30
29/64	.4531	5-5/8	GDB029	7.06
15/32	.4688	5-3/4	GDB030	7.32
31/64	.4844	5-7/8	GDB031	8.16
1/2	.5000	6	GDB032	8.16
9/16	.5625	6	GDB036	13.88
5/8	.6250	6	GDB040	16.14
11/16	.6875	6	GDB044	20.54
3/4	.7500	6	GDB048	23.30

DEC. SIZE	OVERALL EQUIV.	ITEM LENGTH	NO.	PRICE
1	.2280	3-7/8	GDB#01	2.28
2	.2210	3-7/8	GDB#02	2.28
3	.2130	3-3/4	GDB#03	2.08
4	.2090	3-3/4	GDB#04	2.08
5	.2055	3-3/4	GDB#05	2.08
6	.2040	3-3/4	GDB#06	2.08
7	.2010	3-5/8	GDB#07	1.84
8	.1990	3-5/8	GDB#08	1.84
9	.1960	3-5/8	GDB#09	1.88
10	.1935	3-5/8	GDB#10	1.84
11	.1910	3-1/2	GDB#11	1.72
12	.1890	3-1/2	GDB#12	1.72
13	.1850	3-1/2	GDB#13	1.60
14	.1820	3-3/8	GDB#14	1.70
15	.1800	3-3/8	GDB#15	1.68
16	.1770	3-3/8	GDB#16	1.68
17	.1730	3-3/8	GDB#17	1.68
18	.1695	3-1/4	GDB#18	1.46
19	.1660	3-1/4	GDB#19	1.46
20	.1610	3-1/4	GDB#20	1.46
21	.1590	3-1/4	GDB#21	1.28
22	.1570	3-1/8	GDB#22	1.28
23	.1540	3-1/8	GDB#23	1.28
24	.1520	3-1/8	GDB#24	1.28
25	.1495	3	GDB#25	1.24
26	.1470	3	GDB#26	1.24
27	.1440	3	GDB#27	1.18
28	.1405	2-7/8	GDB#28	1.14
29	.1360	2-7/8	GDB#29	1.14
30	.1285	2-3/4	GDB#30	1.14
31	.1200	2-3/4	GDB#31	1.14
32	.1160	2-3/4	GDB#32	1.14
33	.1130	2-5/8	GDB#33	1.14
34	.1110	2-5/8	GDB#34	1.14
35	.1100	2-5/8	GDB#35	1.14
36	.1065	2-1/2	GDB#36	1.14
37	.1040	2-1/2	GDB#37	1.14
38	.1015	2-1/2	GDB#38	1.14
39	.0995	2-3/8	GDB#39	1.14
40	.0980	2-3/8	GDB#40	1.14

DEC. SIZE	OVERALL EQUIV.	ITEM LENGTH	NO.	PRICE
41	.0960	2-3/8	GDB#41	1.14
42	.0935	2-1/4	GDB#42	1.14
43	.0890	2-1/4	GDB#43	1.14
44	.0860	2-1/8	GDB#44	1.14
45	.0820	2-1/8	GDB#45	1.14
46	.0810	2-1/8	GDB#46	1.14
47	.0785	2	GDB#47	1.14
48	.0760	2	GDB#48	1.14
49	.0730	2	GDB#49	1.14
50	.0700	2	GDB#50	1.14
51	.0670	2	GDB#51	1.14
52	.0635	1-7/8	GDB#52	1.14
53	.0595	1-7/8	GDB#53	1.14
54	.0550	1-7/8	GDB#54	1.14
55	.0520	1-7/8	GDB#55	1.14
56	.0465	1-3/4	GDB#56	1.14
57	.0430	1-3/4	GDB#57	1.14
58	.0420	1-5/8	GDB#58	1.14
59	.0410	1-5/8	GDB#59	1.14
60	.0400	1-5/8	GDB#60	1.14
61	.0390	1-5/8	GDB#61	1.18
62	.0380	1-1/2	GDB#62	1.18
63	.0370	1-1/2	GDB#63	1.18
64	.0360	1-1/2	GDB#64	1.18
65	.0350	1-1/2	GDB#65	1.18
66	.0330	1-3/8	GDB#66	1.18
67	.0320	1-3/8	GDB#67	1.18
68	.0310	1-3/8	GDB#68	1.18
69	.0292	1-3/8	GDB#69	1.18
70	.0280	1-1/4	GDB#70	1.18
71	.0260	1-1/4	GDB#71	1.18
72	.0250	1-1/8	GDB#72	1.18
73	.0240	1-1/8	GDB#73	1.18
74	.0225	1	GDB#74	1.18
75	.0210	1	GDB#75	1.18
76	.0200	7/8	GDB#76	1.18
77	.0180	7/8	GDB#77	1.18
78	.0160	7/8	GDB#78	1.18
79	.0145	3/4	GDB#79	1.18
80	.0135	3/4	GDB#80	1.18

PACKAGING

Sizes 1/64 to 17/64 - 12 Ea./Envelope • 9/32 to 1/2 - 6 Ea./Envelope • 9/16 to 3/4 - 1 Ea./Tube
#1 to #80 - 12 Ea./Envelope

HIGH SPEED STEEL GROUND DRILL BLANKS

MET-52

ICS WIS

GENERAL PURPOSE

PARALLEL GROUND



Letter Sizes "A" to "Z" Dia.

SIZE	DEC. EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	3-7/8	GDB"A"	2.42
B	.238	4	GDB"B"	2.42
C	.242	4	GDB"C"	2.42
D	.246	4	GDB"D"	2.42
E	.250	4	GDB"E"	2.12
F	.257	4-1/8	GDB"F"	2.62
G	.261	4-1/8	GDB"G"	2.86
H	.266	4-1/8	GDB"H"	2.86
I	.272	4-1/8	GDB"I"	3.22
J	.277	4-1/8	GDB"J"	3.04
K	.281	4-1/4	GDB"K"	3.36
L	.290	4-1/4	GDB"L"	3.36
M	.295	4-3/8	GDB"M"	3.60

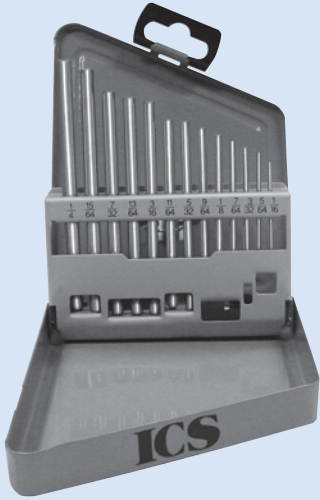
Sizes A to M - 12 Ea./Envelope

SIZE	DEC. EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	4-3/8	GDB"N"	3.60
O	.316	4-1/2	GDB"O"	3.60
P	.323	4-5/8	GDB"P"	4.08
Q	.332	4-3/4	GDB"Q"	4.08
R	.339	4-3/4	GDB"R"	4.30
S	.348	4-7/8	GDB"S"	4.62
T	.358	4-7/8	GDB"T"	5.22
U	.368	5	GDB"U"	5.22
V	.377	5	GDB"V"	5.30
W	.386	5-1/8	GDB"W"	5.56
X	.397	5-1/8	GDB"X"	6.66
Y	.404	5-1/4	GDB"Y"	7.76
Z	.413	5-1/4	GDB"Z"	8.06

Sizes N to Z - 6 Ea./Envelope

HIGH SPEED STEEL GROUND DRILL BLANK SETS

METAL INDEX

ILLUSTRATION	RANGE OF SIZES	NO. OF BLANKS	ITEM NO.	PRICE
	1/16 to 1/4 by 64ths	13	GDBS-13	23.00
	1/16 to 1/2 by 32nds	15	GDBS-15	59.36
	1/16 to 1/2 by 64ths	29	GDBS-29	102.58
	Wire Gauge Sizes: #1 to #60	60	GDBS-60	89.08
	Wire Gauge Sizes: #61 to #80	20	GDBS-20	29.18
	Letter Sizes: A to Z	26	GDBS-26	112.98

DRILL BLANK TOLERANCES

DIAMETER		TOLERANCE	
OVER	UP TO	HIGH +	LOW -
#80	1/4	.0000	.0005
1/4	25/64	.0000	.0009
25/64	3/4	.0000	.0010

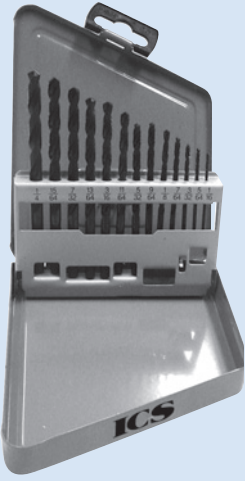
MANUFACTURING NOTES

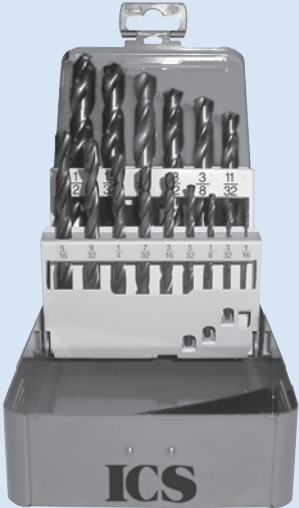
Blanks to tolerances other than listed may be made to special order.

Blanks may be supplied with coned or square ends according to diameter or manufacturing method. If important, please check before ordering.

JOBBER LENGTH DRILL SETS

METAL INDEX

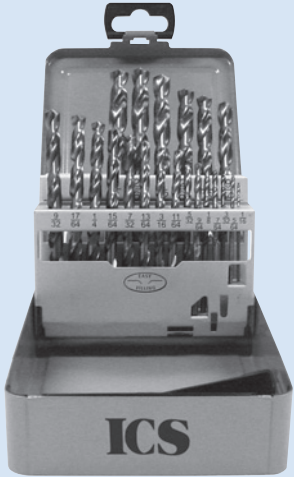
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
13 PC DRILL SET  Sizes 1/16 to 1/4 by 64ths (Wt. .80 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-13	17.64
	Bright Finish Jobber Drill 118° Pt	DS-JDP-13	18.24
	Black Finish Jobber Drill 118° Pt	DS-JDG-13	18.24
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-13	48.22
	Zirconium Nitride Coated Jobber Drill 118° Pt	DS-JDZ-13	63.56
	HEAVY DUTY - HIGH SPEED STEEL		
	Bright Finish Jobber Drill 118° S/Pt	DS-JDHA-13	23.30
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-13	23.30
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-13	23.30
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-13	23.30
	Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-13	27.06
	HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-13	51.04
	HEAVY DUTY - LEFT HAND - HIGH SPEED STEEL		
	Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-13	51.04
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-13	37.64

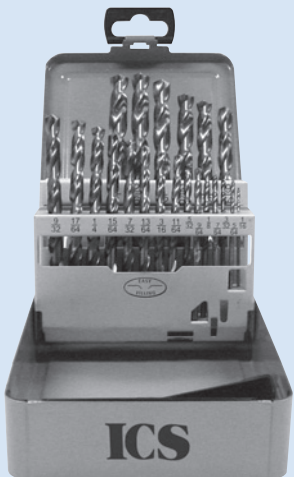
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
15 PC DRILL SET  Sizes 1/16 to 1/2 by 32nds (Wt. 2.10 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-15	51.74
	Bright Finish Jobber Drill 118° Pt	DS-JDP-15	52.92
	Black Finish Jobber Drill 118° Pt	DS-JDG-15	52.92
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-15	131.72
	Zirconium Nitride Coated Jobber Drill 118° Pt	DS-JDZ-15	211.54
	GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 1/4" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRQS-15	59.98
	Bright Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDPQS-15	63.82
	Black Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDGQS-15	63.82
	Black Finish 3/8" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRTS-15	57.62
	Bright Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDPTS-15	61.30
	Black Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDGTS-15	61.30
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 118° S/Pt	DS-JDHA-15	63.50
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-15	63.50
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-15	63.50
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-15	66.86
	Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-15	72.10
	HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-15	152.00
	HEAVY DUTY - LEFT HAND - HIGH SPEED STEEL		
	Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-15	121.98
	HEAVY DUTY - COBALT - STRAIGHT SHANK & REDUCED		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-15	105.84
	Gold Finish 3/8" SHANK Cobalt Jobber Drill 135° S/Pt	DS-JDCTS-15	132.30
	HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHBQS-15	88.20
	Bright Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDH PQS-15	88.20
	Gold Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHGFS-15	92.86
	Black Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHBTS-15	76.44
	Bright Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHPTS-15	76.44
	Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHGFTS-15	76.44
	Black & Gold Dual Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHDFTS-15	88.20

JOBBER LENGTH DRILL SETS

MET-54

METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
21 PC DRILL SET  Sizes 1/16 to 3/8 by 64ths (Wt. 1.70 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-21	44.70
	Bright Finish Jobber Drill 118° Pt	DS-JDP-21	47.04
	Black Finish Jobber Drill 118° Pt	DS-JDG-21	47.04
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-21	132.10
	Zirconium Nitride Coated Jobber Drill 118° Pt	DS-JDZ-21	169.90
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 118° S/Pt	DS-JDHA-21	56.46
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-21	56.46
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-21	56.46
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-21	60.06
	Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-21	63.50
	HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-21	138.10
	HEAVY DUTY - LEFT HAND - HIGH SPEED STEEL		
	Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-21	132.58
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-21	96.44

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
21 PC DRILL SET  Sizes 1/16 to 1/4 by 64ths 9/32 to 1/2 by 32nds (Wt. 2.40 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-21A	64.68
	Bright Finish Jobber Drill 118° Pt	DS-JDP-21A	68.84
	Black Finish Jobber Drill 118° Pt	DS-JDG-21A	68.84
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-21A	156.26
	GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 1/4" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRQS-21A	70.56
	Bright Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDPQS-21A	75.06
	Black Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDGQS-21A	75.06
	Black Finish 1/4" SHANK Mechanics Jobber Drill 118° Pt	DS-MLDQS-21A	87.62
	Bright Finish 1/4" SHANK Mechanics Jobber Drill 118° Pt	DS-MLDPQS-21A	87.62
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 118° S/Pt	DS-JDHA-21A	75.86
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-21A	75.86
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-21A	75.86
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-21A	80.70
	Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-21A	85.32
	HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-21A	189.60
	HEAVY DUTY - LEFT HAND - HIGH SPEED STEEL		
	Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-21A	155.16
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-21A	128.18
	HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHBQS-21A	101.38
	Bright Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHPQS-21A	101.38
	Gold Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHGFQS-21A	106.70
	Black Finish 1/4" SHANK Mechanics Jobber Drill 135° S/Pt	DS-MLDHQS-21A	101.38
	Bright Finish 1/4" SHANK Mechanics Jobber Drill 135° S/Pt	DS-MLDHPQS-21A	101.38

JOBBER LENGTH DRILL SETS

METAL INDEX

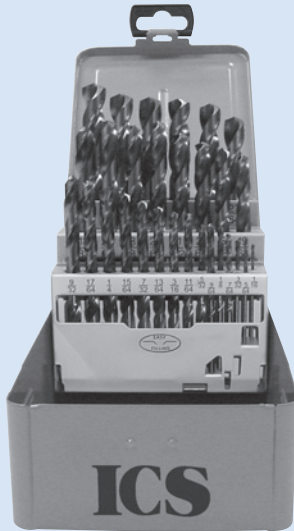
DESCRIPTION

TYPE OF DRILL

ITEM NO.

PRICE

29 PC DRILL SET



Sizes

1/16 to 1/2 by 64ths
(Wt. 3.30 lbs.)

GENERAL PURPOSE - HIGH SPEED STEEL

Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-29	88.20
Bright Finish Jobber Drill 118° Pt	DS-JDP-29	90.56
Black Finish Jobber Drill 118° Pt	DS-JDG-29	90.56

GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL

Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-29	276.44
Zirconium Nitride Coated Jobber Drill 118° Pt	DS-JDZ-29	342.74

GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL

Black Finish 1/4" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRQS-29	108.20
Bright Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDPQS-129	110.54
Black Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDGQS-29	110.54
Black Finish 3/8" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRTS-29	103.50
Bright Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDPTS-29	105.84
Black Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDGTS-29	105.84

HEAVY DUTY - HIGH SPEED STEEL

Black Finish Jobber Drill 118° S/Pt	DS-JDHA-29	112.90
Black Finish Jobber Drill 135° S/Pt	DS-JDHB-29	118.12
Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-29	112.90
Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-29	115.26
Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-29	129.36

HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL

Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-29	291.66

HEAVY DUTY - LEFT HAND/REDUCED SHANK - HIGH SPEED STEEL

Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-29	248.18
Gold Finish Left Hand 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDLTS-29	265.10

HEAVY DUTY - COBALT/REDUCED SHANK

Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-29	176.40
Gold Finish Cobalt 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDCTS-29	211.68

HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL

Black Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHBQS-29	160.40
Bright Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHPQS-29	160.40
Gold Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHGFS-29	155.86
Black & Gold Dual Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHDFS-29	CALL
Black Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHBTS-29	136.72
Bright Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHPTS-29	136.72
Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHGFTS-29	139.50
Black & Gold Dual Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHDFTS-29	152.88

SPECIAL PURPOSE - HIGH SPEED STEEL

Bright Finish Fast Spiral Jobber Drill 118° Pt	DS-JDF-29	182.20
Bright Finish Slow Spiral Jobber Drill 118° Pt	DS-JDS-29	210.66

SPECIAL VALUE PACK - HIGH SPEED STEEL

Black Finish Roll Fluted Jobber Drill 118° Pt and 16' Power Tape (Shrink Wrapped)	DS-JDR-29VP	88.20

GUARANTEED BEST IMPORT - HIGH SPEED STEEL

Black Finish Roll Fluted Jobber Drill 118° Pt	DS-IJDR-29	52.92

PERFECT POINT - HIGH SPEED STEEL

Bright Finish Jobber Drill - Perfect Point®	DS-JD-PP-29	220.50

METAL INDEX

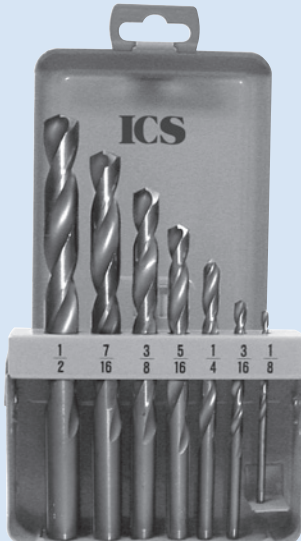
DESCRIPTION

TYPE OF DRILL

ITEM NO.

PRICE

7 PC DRILL SET



Sizes

1/8 to 1/2 by 16ths
(Wt. 1.40 lbs.)

GENERAL PURPOSE - HIGH SPEED STEEL

Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-7	44.04
Bright Finish Jobber Drill 118° Pt	DS-JDP-07	45.58
Black Finish Jobber Drill 118° Pt	DS-JDG-07	45.58

GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL

Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-7	91.00
Zirconium Nitride Coated Jobber Drill 118° Pt	DS-JDZ-7	91.00
Titanium Carbonitride Coated Jobber Drill 118° Pt	DS-JDTC-7	135.00
Titanium Aluminum Nitride Jobber Drill 118° Pt	DS-JDTAL-7	135.00

GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL

Black Finish 1/4" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRQS-7	49.74
Bright Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDPQS-7	53.48
Black Finish 1/4" SHANK Jobber Drill 118° Pt	DS-JDGQS-7	53.48
Black Finish 3/8" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRTS-7	46.94
Bright Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDPTS-7	49.78
Black Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDGTS-7	49.78

HEAVY DUTY - HIGH SPEED STEEL

Black Finish Jobber Drill 118° S/Pt	DS-JDHA-7	51.80
Black Finish Jobber Drill 135° S/Pt	DS-JDHB-7	51.80
Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-7	51.80
Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-7	51.80
Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-7	53.76

HEAVY DUTY - SPECIAL COATING - HIGH SPEED STEEL

Titanium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHT-7	97.46
Zirconium Nitride Coated Jobber Drill 135° S/Pt	DS-JDHZ-7	115.92
Titanium Carbonitride Coated Jobber Drill 135° S/Pt	DS-JDHTC-7	145.34
Titanium Aluminum Nitride Coated Jobber Drill 135° S/Pt	DS-JDHTA-7	145.34

HEAVY DUTY - LEFT HAND/REDUCED SHANK - HIGH SPEED STEEL

Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-7	80.90
Gold Finish Left Hand 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDLTS-7	85.14

HEAVY DUTY - COBALT/REDUCED SHANK

Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-7	77.76
Gold Finish Cobalt 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDCTS-7	85.14

HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL

Black Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHBQS-7	62.02
Bright Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHPQS-7	62.02
Gold Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHGFS-7	62.02
Black & Gold Dual Finish 1/4" SHANK Jobber Drill 135° S/Pt	DS-JDHDFS-7	CALL
Black Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHBTS-7	56.02
Bright Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHPTS-7	56.02
Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHGFTS-7	56.02
Black & Gold Dual Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHDFS-7	58.86

SPECIAL PURPOSE - HIGH SPEED STEEL

Bright Finish Fast Spiral Jobber Drill 118° Pt	DS-JDF-7	62.26
Bright Finish Slow Spiral Jobber Drill 118° Pt	DS-JDS-7	68.52

SPECIAL PURPOSE - CARBIDE TIPPED

Bright Finish Carbide Tipped Jobber Drill 118° Pt	DS-CTJD-7	225.96

SPECIAL PURPOSE - SOLID CARBIDE

Bright Finish Solid Carbide Jobber Drill 118° Pt	DS-SCJD-7	571.18

SPECIAL POINT - HIGH SPEED STEEL

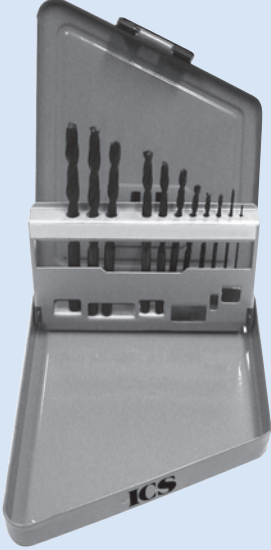
Oxide Finish Jobber Drill - Bickford® Point	DS-JD-BP-7	73.76
Oxide Finish Jobber Drill - Racon® Point	DS-JD-RP-7	64.68
Oxide Finish Jobber Drill - Six Shooter® Point	DS-JD-SSP-7	64.44

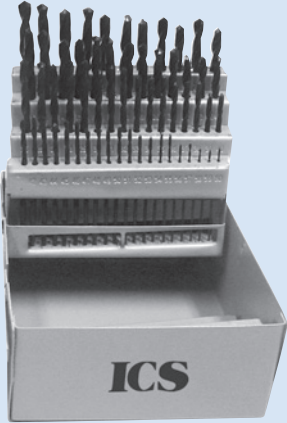
PERFECT POINT - HIGH SPEED STEEL

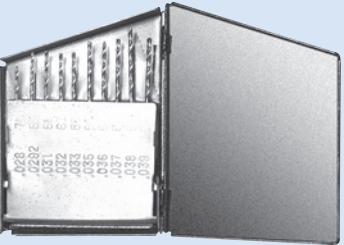
Bright Finish Jobber Drill - Perfect Point®	DS-JD-PP-7	64.66

JOBBER LENGTH DRILL SETS

METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
11 PC DRILL SET  Sizes 1/16 to 3/8 by 32nds (Wt. 1.30 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-11	29.40
	Bright Finish Jobber Drill 118° Pt	DS-JDP-11	29.40
	Black Finish Jobber Drill 118° Pt	DS-JDG-11	29.40
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-11	76.10
	HEAVY DUTY - HIGH SPEED STEEL		
	Bright Finish Jobber Drill 118° S/Pt	DS-JDHA-11	35.54
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-11	37.78
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-11	37.78
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-11	38.96
	HEAVY DUTY - LEFT HAND - HIGH SPEED STEEL		
	Gold Finish Left Hand Jobber Drill 135° S/Pt	DS-JDL-11	63.18
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-11	56.60

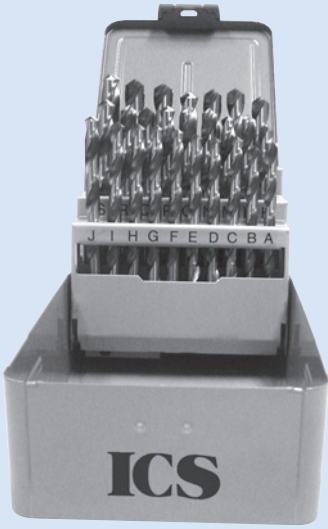
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
60 PC DRILL SET  Wire Gauge Sizes 1 to 60 (Wt. 1.10 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-60	74.10
	Bright Finish Jobber Drill 118° Pt	DS-JDP-60	78.84
	Black Finish Jobber Drill 118° Pt	DS-JDG-60	78.84
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-60	192.84
	HEAVY DUTY - HIGH SPEED STEEL		
	Bright Finish Jobber Drill 118° S/Pt	DS-JDHA-60	97.60
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-60	97.60
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-60	97.60
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-60	112.22
	Black & Gold Dual Finish Jobber Drill 135° S/Pt	DS-JDHDF-60	112.22
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-60	135.24

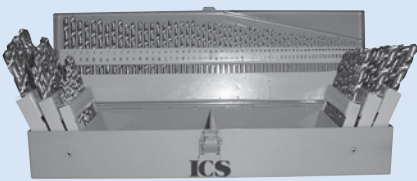
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
20 PC DRILL SET  Wire Gauge Sizes 61 to 80 (Wt. .060 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-20	29.40
	Bright Finish Jobber Drill 118° Pt	DS-JDP-20	31.30
	Black Finish Jobber Drill 118° Pt	DS-JDG-20	31.30
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 135° Pt	DS-JDHB-20	CALL
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° Pt	DS-JDC-20	71.32

JOBBER LENGTH DRILL SETS

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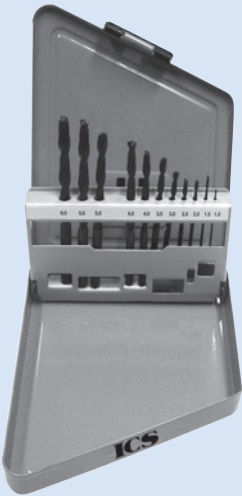
METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
26 PC DRILL SET  Letter Sizes A to Z (Wt. 2.90 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-26	88.20
	Bright Finish Jobber Drill 118° Pt	DS-JDP-26	99.96
	Black Finish Jobber Drill 118° Pt	DS-JDG-26	99.96
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-26	280.48
	GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 3/8" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRTS-26	108.44
	Bright Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDPTS-26	114.62
	Black Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDGTS-26	114.62
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 118° S/Pt	DS-JDHA-26	117.60
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-26	117.60
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-26	117.60
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-26	123.48
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-26	188.16
	HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHBTS-26	139.84
	Bright Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHPTS-26	139.84
	Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHGFTS-26	147.20

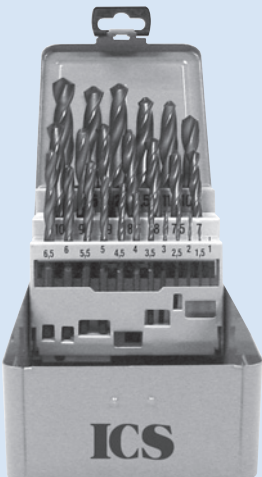
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
115 PC DRILL SET  Sizes 1/16 to 1/2 by 64ths Wire Gauge Sizes 1 to 60 Letter Sizes A to Z (Wt. 8.20 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDR-115	264.60
	Bright Finish Jobber Drill 118° Pt	DS-JDP-115	264.60
	Black Finish Jobber Drill 118° Pt	DS-JDG-115	282.24
	GENERAL PURPOSE - SPECIAL COATING - HIGH SPEED STEEL		
	Titanium Nitride Coated Jobber Drill 118° Pt	DS-JDT-115	788.52
	GENERAL PURPOSE - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 3/8" SHANK Roll Fluted Jobber Drill 118° Pt	DS-JDRTS-115	305.76
	Bright Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDPTS-115	305.76
	Black Finish 3/8" SHANK Jobber Drill 118° Pt	DS-JDGTS-115	305.76
	HEAVY DUTY - HIGH SPEED STEEL		
	Black Finish Jobber Drill 118° S/Pt	DS-JDHA-115	365.32
	Black Finish Jobber Drill 135° S/Pt	DS-JDHB-115	343.40
	Bright Finish Jobber Drill 135° S/Pt	DS-JDHP-115	343.40
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-115	365.32
	HEAVY DUTY - COBALT/REDUCED SHANK		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDC-115	635.04
	Gold Finish Cobalt 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDCTS-115	694.40
	HEAVY DUTY - REDUCED SHANK - HIGH SPEED STEEL		
	Black Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHBTS-115	391.66
	Bright Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHPTS-115	391.66
	Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDHGFTS-115	412.28

METRIC JOBBER LENGTH DRILL SETS

METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
11 PC DRILL SET  Metric Sizes 1.0 to 6.0 by 0.5mm (Wt. .240 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDM-11	21.28
	HEAVY DUTY - HIGH SPEED STEEL		
	Gold Finish Jobber Drill 135° S/Pt	DS-JDMHGF-11	36.98
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDCM-11	44.56

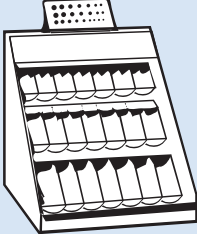
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
19 PC DRILL SET (Not Illustrated) Metric Sizes 1.0 to 10.0 by 0.5mm (Wt. 1.7845 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDM-19	62.58
	HEAVY DUTY - HIGH SPEED STEEL		
	Gold Finish Jobber Drill 135° S/Pt	DS-JDMHGF-19	92.26
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDCM-19	126.02

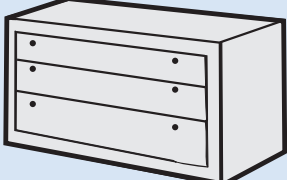
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
25 PC DRILL SET  Metric Sizes 1.0 to 13.0 by 0.5mm (Wt. 3.3125 lbs.)	GENERAL PURPOSE - HIGH SPEED STEEL		
	Black Finish Roll Fluted Jobber Drill 118° Pt	DS-JDM-25	112.90
	GENERAL PURPOSE - REDUCED SHANK-HSS		
	Black Finish 3/8" Shank Roll Fluted Jobber Drill 118° Pt	DS-JDMTS-25	143.86
	HEAVY DUTY - HIGH SPEED STEEL		
	Gold Finish Jobber Drill 135° S/Pt	DS-JDHGF-25	CALL
	HEAVY DUTY - COBALT		
	Gold Finish Cobalt Jobber Drill 135° S/Pt	DS-JDCM-25	252.36
	HEAVY DUTY - REDUCED SHANK - HSS		
	Gold Finish 3/8" SHANK Jobber Drill 135° S/Pt	DS-JDMHGFTS-25	191.42

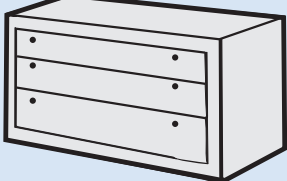
DRILL DISPLAYS & DISPENSERS

MET-60

METAL CASES

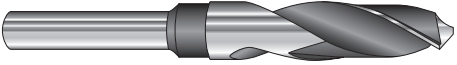
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
264 PC DRILL DISPLAY 12 Ea. 1/16 to 9/32 6 Ea. 19/64 to 1/2  Bright Red Display Case With Lock. Size Embossed on Front of Each Bin. SIZE: 14-1/4 x 14 x 12-3/4	Bright Finish Jobber Drills 118° Pt	DCD-JDP-264	-
	Black Finish Jobber Drills 118° Pt	DCD-JDG-264	-
	Black Finish Jobber Drills 118° Pt	DCD-JDR-264	-
	Heavy Duty Jobber Drills 118° S/Pt	DCD-JDHA-264	-
	Heavy Duty Jobber Drills 135° S/Pt	DCD-JDHB-264	-
	Left Hand Jobber Drills 135° S/Pt	DCD-JDL-264	CALL FOR PRICE
	Cobalt Jobber Drills 135° S/Pt	DCD-JDC-264	-
	Titanium Nitride Coated Jobber Drills 118° Pt	DCD-JDT-264	-
	1/4" SHANK Jobber Drills 118° Pt - Black Finish	DCD-JDGQS-264	-
	3/8" SHANK Jobber Drills 118° Pt - Black Finish	DCD-JDGTS-264	-
	Screw Machine Drills 135° S/Pt	DCD-SMR-264	-
	Display Only (Wt. 14 lbs.)	DCD-264	-

264 PC DRILL DISPENSER 12 Ea. 1/16 to 9/32 6 Ea. 19/64 to 1/2  Cabinet Has Gray Texture Plastic Finish. Sizes Embossed on Drawer Fronts. SIZE: 7-3/8 x 7-3/4 x 14-5/8	Bright Finish Jobber Drills 118° Pt	DD-JDP-264	-
	Black Finish Jobber Drills 118° Pt	DD-JDG-264	-
	Black Finish Jobber Drills 118° Pt	DD-JDR-264	-
	Heavy Duty Jobber Drills 118° S/Pt	DD-JDHA-264	-
	Heavy Duty Jobber Drills 135° S/Pt	DD-JDHB-264	-
	Left Hand Jobber Drills 135° S/Pt	DD-JDL-264	CALL FOR PRICE
	Cobalt Jobber Drills 135° S/Pt	DD-JDC-264	-
	Titanium Nitride Coated Jobber Drills 118° Pt	DD-JDT-264	-
	1/4" SHANK Jobber Drills 118° Pt - Black Finish	DD-JDGQS-264	-
	3/8" SHANK Jobber Drills 118° Pt - Black Finish	DD-JDGTS-264	-
	Screw Machine Drills 135° S/Pt	DD-SMR-264	-
	Dispenser Only (Wt. 10-1/4 lbs.)	D-JD-264	-

234 PC DRILL DISPENSER 12 Ea. Letter Sizes A to M 6 Ea. Letter Sizes N to Z  Cabinet Has Gray Texture Plastic Finish. Sizes Embossed on Drawer Fronts. SIZE: 7-3/8 x 7-3/4 x 14-5/8	Bright Finish Jobber Drills 118° Pt	DD-JDP-234	-
	Black Finish Jobber Drills 118° Pt	DD-JDG-234	-
	Heavy Duty Jobber Drills 118° S/Pt	DD-JDHA-234	-
	Heavy Duty Jobber Drills 135° S/Pt	DD-JDHB-234	CALL FOR PRICE
	Cobalt Jobber Drills 135° S/Pt	DD-JDC-234	-
	Titanium Nitride Coated Jobber Drills 118° Pt	DD-JDT-234	-
	Dispenser Only (Wt. 10-1/4 lbs.)	D-JD-234	-

720 PC DRILL DISPENSER 12 Ea. Wire Gauge Sizes 1 to 60 6 Ea. Letter Sizes N to Z  Cabinet Has Gray Texture Plastic Finish. Sizes Embossed on Drawer Fronts. SIZE: 7-3/8 x 7-3/4 x 14-5/8	Bright Finish Jobber Drills 118° Pt	DD-JDP-720	-
	Black Finish Jobber Drills 118° Pt	DD-JDG-720	-
	Black Finish Jobber Drills 118° Pt	DD-JDR-720	-
	Heavy Duty Jobber Drills 118° S/Pt	DD-JDHA-720	-
	Heavy Duty Jobber Drills 135° S/Pt	DD-JDHB-720	-
	Cobalt Jobber Drills 135° S/Pt	DD-JDC-720	CALL FOR PRICE
	Titanium Nitride Coated Jobber Drills 118° Pt	DD-JDT-720	-
	Screw Machine Drills 135° S/Pt	DD-SMR-720	-
	Dispenser Only (Wt. 10-1/4 lbs.)	D-JD-720	-

1/2" SHANK SILVER & DEMING DRILLS**ICS WIS****GENERAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SND	 OXIDE FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc.	M2	118° Point Std. Spiral
SND3F	 OXIDE FINISH	Flats are ground on three sides of drill shank for positive holding in 3-Jaw Chucks.	M2	118° Point Std. Spiral
SNDT	 GOLD TITANIUM COATED	Titanium nitride coated Silver & Deming drills will drill 200 to 700% more holes than uncoated tools.	M2	118° Point Std. Spiral

Fractional Sizes (Reduced Shank) 33/64" to 1-1/2" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		TIN COATED
		ROUND SHANK 118° PT	3 FLAT SHANK 118° PT	ROUND SHANK 118° PT
		SND	SND3F	SNDT
33/64	.5156	16.38	19.92	36.38
17/32	.5312	16.38	19.92	36.38
35/64	.5469	17.48	21.00	37.46
9/16	.5625	17.48	21.00	37.46
37/64	.5781	18.74	22.26	38.72
19/32	.5938	18.74	22.26	38.72
39/64	.6094	19.60	23.12	39.60
5/8	.6250	19.60	23.12	39.60
41/64	.6406	20.74	24.26	40.72
21/32	.6562	20.74	24.26	40.72
43/64	.6719	21.74	25.26	41.74
11/16	.6875	21.74	25.26	41.74
45/64	.7031	22.78	26.32	42.78
23/32	.7188	22.78	26.32	42.78
47/64	.7344	23.88	27.40	43.88
3/4	.7500	23.88	37.02	43.88
49/64	.7656	25.04	28.56	48.56
25/32	.7812	25.04	28.56	48.56
51/64	.7969	26.10	29.64	49.62
13/16	.8125	26.10	29.64	49.62
53/64	.8281	27.14	30.66	50.66
27/32	.8438	27.14	30.66	50.66
55/64	.8594	28.18	31.72	51.70
7/8	.8750	28.18	31.72	51.70
57/64	.8906	29.32	32.84	52.84
29/32	.9062	29.32	32.84	52.84
59/64	.9219	31.48	35.02	55.00
15/16	.9375	31.48	35.02	55.00
61/64	.9531	33.38	36.90	60.42
31/32	.9688	33.38	36.90	60.42
63/64	.9844	36.76	40.28	63.80
1	1.0000	36.76	40.28	63.80

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		TIN COATED
		ROUND SHANK 118° PT	3 FLAT SHANK 118° PT	ROUND SHANK 118° PT
		SND	SND3F	SNDT
1-1/64	1.0156	43.30	46.84	70.36
1-1/32	1.0312	43.30	46.84	63.80
1-3/64	1.0469	45.56	49.08	72.60
1-1/16	1.0625	45.56	49.08	72.60
1-5/64	1.0781	48.76	52.30	75.82
1-3/32	1.0938	48.76	52.30	75.82
1-7/64	1.1094	49.82	53.34	76.86
1-1/8	1.1250	49.82	53.34	76.86
1-9/64	1.1406	52.78	56.30	86.88
1-5/32	1.1562	52.78	56.30	86.88
1-11/64	1.1719	54.34	57.86	88.44
1-3/16	1.1875	54.34	57.86	88.44
1-13/64	1.2031	55.12	58.66	89.24
1-7/32	1.2188	55.12	58.66	89.24
1-15/64	1.2344	58.48	62.02	92.60
1-1/4	1.2500	58.48	62.02	92.60
1-17/64	1.2656	64.04	67.56	98.14
1-9/32	1.2812	64.04	67.56	98.14
1-19/64	1.2969	65.86	69.38	99.96
1-5/16	1.3125	65.86	69.38	99.96
1-21/64	1.3281	67.60	71.14	101.70
1-11/32	1.3438	67.60	71.14	101.70
1-23/64	1.3594	69.70	73.24	103.80
1-3/8	1.3750	69.70	73.24	103.80
1-25/64	1.3906	77.46	80.98	111.56
1-13/32	1.4062	77.46	80.98	111.56
1-27/64	1.4219	80.32	83.86	114.44
1-7/16	1.4375	80.32	83.86	114.44
1-29/64	1.4531	84.68	88.20	118.78
1-15/32	1.4688	84.68	88.20	118.78
1-31/64	1.4844	87.02	90.56	121.14
1-1/2	1.5000	87.02	90.56	121.14

Silver & Deming drills are all purpose drills and are used wherever the maximum chuck capacity is 1/2". They are also called Blacksmith Drills or Prentice Drills (Canada). All S & D Drills are 6" overall length with 3" flute length.

METRIC 1/2" SHANK SILVER & DEMING DRILLS**ICS WIS****GENERAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SNDM	 BLACK & SILVER FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc.	M2	118° Point Std. Spiral
SNDM3F	 BLACK & SILVER FINISH	Flats are ground on three sides of drill shank for positive holding in 3-Jaw Chucks.	M2	118° Point Std. Spiral

Metric Sizes (Reduced Shank) 13.00mm to 38.00mm Dia.

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 118° PT	3 FLAT SHANK 118° PT
		SNDM	SNDM3F
13.00	.5118	22.50	27.58
13.50	.5315	22.50	27.58
14.00	.5512	23.80	28.86
14.50	.5709	25.30	30.42
15.00	.5906	25.30	30.42
15.50	.6102	26.34	31.44
16.00	.6299	26.34	31.44
16.50	.6496	28.92	34.00
17.00	.6693	28.92	34.00
17.50	.6890	30.18	35.24
18.00	.7087	30.18	35.24
18.50	.7283	31.48	36.58
19.00	.7480	31.48	36.58
19.50	.7677	34.16	39.24
20.00	.7874	34.16	39.24
20.50	.8071	35.40	40.46
21.00	.8268	35.40	40.46

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 118° PT	3 FLAT SHANK 118° PT
		SNDM	SNDM3F
21.50	.8465	36.64	41.76
22.00	.8661	36.64	41.76
22.50	.8858	38.02	43.10
23.00	.9055	38.02	43.10
23.50	.9252	42.88	47.94
24.00	.9449	42.88	47.94
24.50	.9646	46.94	52.02
25.00	.9843	46.94	52.02
25.50	1.0039	54.80	59.90
26.00	1.0236	54.80	59.90
26.50	1.0433	57.50	62.56
27.00	1.0630	57.50	62.56
27.50	1.0837	62.60	67.66
28.00	1.1024	62.60	67.66
28.50	1.1220	66.16	71.24
29.00	1.1417	66.16	71.24
29.50	1.1614	68.02	73.08

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 118° PT	3 FLAT SHANK 118° PT
		SNDM	SNDM3F
30.00	1.1811	68.02	73.08
30.50	1.2008	68.98	74.06
31.00	1.2205	68.98	74.06
31.50	1.2402	73.02	78.08
32.00	1.2598	73.02	78.08
32.50	1.2795	81.86	86.94
33.00	1.2992	81.86	86.94
33.50	1.3189	83.96	89.04
34.00	1.3386	83.96	89.04
34.50	1.3583	86.48	91.56
35.00	1.3780	86.48	91.56
35.50	1.3976	95.76	100.84
36.00	1.4173	95.76	100.84
36.50	1.4370	99.22	104.32
37.00	1.4567	99.22	104.32
37.50	1.4764	118.60	112.36
38.00	1.4961	107.28	112.36

METRIC 1/2" SHANK SILVER & DEMING DRILL SETS**WOOD STAND**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
13 PC DRILL SET 13.0,13.5, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 24.0, 25.0 	Metric S & D Drills 118° Pt Heavy Duty Metric S & D Drills 135° S/Pt	DSW-SNDM-13 DSW-SNDMH-13	CALL FOR PRICE

NOTE: Metric 3/8" Shank (Silver & Deming) Drills are available upon request.

METRIC 1/2" SHANK SILVER & DEMING DRILLS

ICS WIS

HEAVY DUTY**135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SNDMH	 BLACK & SILVER FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips.	M2	135° Split Point
SNDMH3F	 BLACK & SILVER FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Flats are ground on three sides of drill shank for positive holding in 3-Jaw Chucks.	M2	135° Split Point

Metric Sizes (Reduced Shank) 13.00mm to 25.50mm Dia.

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 135° S/P	3 FLAT SHANK 135° S/P
		SNDMH	SNDMH3F
13.00	.5118	29.16	34.24
13.50	.5315	29.16	34.24
14.00	.5512	30.46	35.52
14.50	.5709	31.96	37.04
15.00	.5906	31.96	37.04
15.50	.6102	33.02	38.10
16.00	.6299	33.02	38.10
16.50	.6496	35.60	40.66
17.00	.6693	35.60	40.66

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 135° S/P	3 FLAT SHANK 135° S/P
		SNDMH	SNDMH3F
17.50	.6890	36.84	41.92
18.00	.7087	36.84	41.92
18.50	.7283	38.16	43.22
19.00	.7480	38.16	43.22
19.50	.7677	46.58	51.66
20.00	.7874	46.58	51.66
20.50	.8071	47.84	52.90
21.00	.8268	47.84	52.90
21.50	.8465	49.10	54.18

SIZE mm	DEC. EQUIV.	HIGH SPEED STEEL	
		ROUND SHANK 135° S/P	3 FLAT SHANK 135° S/P
		SNDMH	SNDMH3F
22.00	.8661	49.10	54.18
22.50	.8858	50.46	55.54
23.00	.9055	50.46	55.54
23.50	.9252	55.32	60.40
24.00	.9449	55.32	60.40
24.50	.9646	59.40	64.46
25.00	.9843	59.40	64.46
118° SPLIT POINT			
25.50	1.0039	67.24	72.32

METRIC 1/2" SHANK SILVER & DEMING DRILL SETS**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL SET Sizes 13.0, 14.0, 16.0, 18.0, 20.0, 22.0, 24.0, 25.0 	Metric S & D Drills 118° Pt	DS-SNDM-8	253.76
	Heavy Duty Metric S & D Drills 135° S/Pt	DS-SNDMH-8	317.46

Quick Reference for Metric Drills

DRILL TYPE	DRILL SETS	STUB LENGTH	JOBBER LENGTH	REDUCED SHANK	TAPER LENGTH	TAPER SHANK	EXTRA LENGTH
	PAGE NO. OF ITEMS AVAILABLE						
High Speed Steel	59	7	17-19, 34	19, 34, 63	72-73	92-94	97, 100, 110
Cobalt	59	-	37-38	37-38, 65, 69	-	-	-
Carbide Tipped	-	-	46	-	77	-	-
Solid Carbide	-	-	48	-	-	-	-

1/2" SHANK SILVER & DEMING DRILLS**ICS WIS****HEAVY DUTY****SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SNDHD	 OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 1" are 118° split point.	M2	135° or 118° Split Point
SNDDF	 BLACK & GOLD FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 1" are 118° split point. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M2, M7	135° or 118° Split Point
SNDHDA	 OXIDE FINISH	For portable or machine drilling in mild steels, aluminum, and magnesium alloys. Mfr. to NAS 907-A specs.	M2	118° Split Point

Fractional Sizes (Straight Shank) 33/64" to 1-1/2" Dia.

HIGH SPEED STEEL				
SIZE	DEC. EQUIV.	ROUND SHANK 135° S/P	3 FLAT SHANK 135° S/P	ROUND SHANK 118° S/P
		SNDHD	SNDDF	SNDHDA
33/64	.5156	20.24	23.78	-
17/32	.5312	20.24	24.96	-
35/64	.5469	21.72	25.44	-
9/16	.5625	21.72	25.44	-
37/64	.5781	24.08	27.60	-
19/32	.5938	24.08	27.60	-
39/64	.6094	24.70	28.22	-
5/8	.6250	24.70	28.22	-
41/64	.6406	25.48	29.00	-
21/32	.6562	25.48	29.00	-
43/64	.6719	26.12	29.66	-
11/16	.6875	26.12	29.66	-
45/64	.7031	27.50	31.02	-
23/32	.7188	27.50	31.02	-
47/64	.7344	27.54	31.06	-
3/4	.7500	35.42	38.94	-
49/64	.7656	37.76	41.30	-
25/32	.7812	37.76	41.30	-
51/64	.7969	38.54	42.06	-
13/16	.8125	38.54	42.06	-
53/64	.8281	39.26	42.78	-
27/32	.8438	39.26	42.78	-
55/64	.8594	39.94	43.48	-
7/8	.8750	39.94	43.48	-
57/64	.8906	40.66	44.18	-
29/32	.9062	40.66	44.18	-

CALL
FOR
PRICE

HIGH SPEED STEEL				
SIZE	DEC. EQUIV.	ROUND SHANK 135° S/P	3 FLAT SHANK 135° S/P	ROUND SHANK 118° S/P
		SNDHD	SNDDF	SNDHDA
59/64	.9219	41.88	45.40	-
15/16	.9375	41.88	45.40	-
61/64	.9531	44.24	47.76	-
31/32	.9688	44.24	47.76	-
63/64	.9844	46.70	50.24	-
1	1.0000	46.70	50.24	-
118° SPLIT POINT				
1-1/64	1.0156	-	60.82	-
1-1/32	1.0312	57.30	60.82	-
1-3/64	1.0469	57.30	-	-
1-1/16	1.0625	56.42	59.94	-
1-5/64	1.0781	-	-	-
1-3/32	1.0938	67.22	70.76	-
1-7/64	1.1094	67.22	70.76	-
1-1/8	1.1250	62.30	65.82	-
1-9/64	1.1406	68.92	-	-
1-5/32	1.1562	68.92	72.46	-
1-11/64	1.1719	68.92	72.46	-
1-3/16	1.1875	68.92	72.46	-
1-13/64	1.2031	-	-	-
1-7/32	1.2188	70.76	74.28	-
1-15/64	1.2344	-	-	-
1-1/4	1.2500	70.76	74.28	-
1-5/16	1.3125	97.02	100.56	-
1-3/8	1.3750	103.16	106.68	-
1-7/16	1.4375	109.96	113.48	-
1-1/2	1.5000	118.20	121.72	-

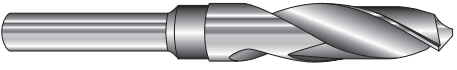
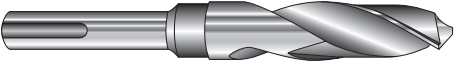
CALL
FOR
PRICE**NOTE**

Silver & Deming Drills are not recommended for enlarging holes. They have a tendency to grab, bind, chip the drill on the cutting edge, or break the drill. If a pilot hole is required, it should not exceed 75% of the required finish hole.

**DRILLS SETS**

SILVER & DEMING
DRILLS SETS
on page 66.

COBALT 1/2" SHANK SILVER & DEMING DRILLS**ICS WIS****HEAVY DUTY****135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SNDC	 GOLD COBALT FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 1" are 118° split point.	M42	135° Split Point or Notched Point
SNDC3F	 GOLD COBALT FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 1" are 118° split point. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	M42	135° Split Point or Notched Point

Fractional Sizes (Reduced Shank) 33/64" to 1-1/2" Dia.

DEC. SIZE	EQUIV.	ITEM NO.	PRICE	ITEM NO.	PRICE
		ROUND SHANK		3 FLAT SHANK	
135° SPLIT POINT					
33/64	.5156	SNDC033	45.76	SNDC3F033	52.82
17/32	.5312	SNDC034	45.76	SNDC3F034	52.82
35/64	.5469	SNDC035	48.70	SNDC3F035	54.58
9/16	.5625	SNDC036	48.70	SNDC3F036	54.58
37/64	.5781	SNDC037	52.28	SNDC3F037	58.16
19/32	.5938	SNDC038	52.28	SNDC3F038	58.16
39/64	.6094	SNDC039	54.76	SNDC3F039	60.64
5/8	.6250	SNDC040	54.76	SNDC3F040	60.64
41/64	.6406	SNDC041	58.44	SNDC3F041	64.32
21/32	.6562	SNDC042	58.44	SNDC3F042	66.74
43/64	.6719	SNDC043	60.70	SNDC3F043	66.58
11/16	.6875	SNDC044	60.70	SNDC3F044	66.58
45/64	.7031	SNDC045	64.36	SNDC3F045	70.26
23/32	.7188	SNDC046	64.36	SNDC3F046	70.26
47/64	.7344	SNDC047	66.98	SNDC3F047	72.86
3/4	.7500	SNDC048	66.98	SNDC3F048	72.86
49/64	.7656	SNDC049	70.52	SNDC3F049	76.40
25/32	.7812	SNDC050	70.52	SNDC3F050	76.40
51/64	.7969	SNDC051	74.10	SNDC3F051	79.98
13/16	.8125	SNDC052	74.10	SNDC3F052	79.98
53/64	.8281	SNDC053	77.34	SNDC3F053	83.22
27/32	.8438	SNDC054	77.34	SNDC3F054	83.22
55/64	.8594	SNDC055	80.28	SNDC3F055	86.16
7/8	.8750	SNDC056	80.28	SNDC3F056	86.16
57/64	.8906	SNDC057	83.86	SNDC3F057	89.74

DEC. SIZE	EQUIV.	ITEM NO.	PRICE	ITEM NO.	PRICE
		ROUND SHANK		3 FLAT SHANK	
135° SPLIT POINT					
29/32	.9062	SNDC058	83.86	SNDC3F058	89.74
59/64	.9219	SNDC059	89.74	SNDC3F059	95.62
15/16	.9375	SNDC060	89.74	SNDC3F060	95.62
61/64	.9531	SNDC061	94.78	SNDC3F061	100.66
31/32	.9688	SNDC062	94.78	SNDC3F062	100.66
63/64	.9844	SNDC063	104.56	SNDC3F063	110.44
1	1.0000	SNDC100	104.56	SNDC3F100	110.44
118° SPLIT POINT					
1-1/32	1.0312	SNDC102	114.72	SNDC3F102	120.60
1-1/16	1.0625	SNDC104	122.68	SNDC3F104	128.56
1-3/32	1.0938	SNDC106	132.40	SNDC3F106	138.28
1-1/8	1.1250	SNDC108	139.52	SNDC3F108	145.40
1-5/32	1.1562	SNDC110	147.72	SNDC3F110	153.60
1-3/16	1.1875	SNDC112	153.06	SNDC3F112	158.94
1-7/32	1.2188	SNDC114	162.82	SNDC3F114	168.70
1-1/4	1.2500	SNDC116	169.48	SNDC3F116	175.36
1-9/32	1.2812	SNDC118	241.68	SNDC3F118	247.56
1-5/16	1.3125	SNDC120	241.68	SNDC3F120	247.56
1-11/32	1.3438	SNDC122	245.20	SNDC3F122	251.08
1-3/8	1.3750	SNDC124	245.20	SNDC3F124	251.08
1-13/32	1.4062	SNDC126	264.96	SNDC3F126	270.84
1-7/16	1.4375	SNDC128	264.96	SNDC3F128	270.84
1-15/32	1.4688	SNDC130	271.42	SNDC3F130	277.32
1-1/2	1.5000	SNDC132	271.48	SNDC3F132	277.32

HIGH SPEED STEEL - COBALT**1/2" SHANK SILVER & DEMING DRILL MERCHANDISERS**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL DISPLAY Sizes 9/16 to 1 by 16ths 	Round Shank S & D Drills 118° Pt.	DM-SND-8	221.60
	3 Flat Shank S & D Drills 118° Pt.	DM-SND3F-8	249.82

METRIC COBALT 1/2" SHANK SILVER & DEMING DRILLS**ICS WIS****HEAVY DUTY****135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SNDM	 BLACK & GOLD FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 25mm are 118° split point.	Cobalt M42	135° Split Point or Notched Point
SNDM3F	 BLACK & GOLD FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips. Sizes over 25mm are 118° split point. Flats are ground on three sides of drill shank for positive holding in 3 Jaw Chucks.	Cobalt M42	135° Split Point or Notched Point

Metric Sizes (Reduced Shank) 13.00mm to 38.00mm Dia.

SIZE mm	DEC. EQUIV.	COBALT	
		ROUND SHANK	3 FLAT SHANK
		SND ~~CM~~	SND ~~CM~~ 3F
135° SPLIT POINT			
13.00	.5118	37.22	42.26
13.50	.5315	41.34	46.38
14.00	.5512	41.34	46.38
14.50	.5709	46.82	51.86
15.00	.5906	46.82	51.86
15.50	.6102	47.26	52.30
16.00	.6299	51.20	56.24
16.50	.6496	51.20	56.24
17.00	.6693	53.06	58.10
17.50	.6890	59.04	64.08
18.00	.7087	59.04	64.08
18.50	.7283	60.16	65.20
19.00	.7480	60.16	65.20
19.50	.7677	68.62	73.66
20.00	.7874	73.10	78.14
20.50	.8071	73.10	78.14
21.00	.8268	74.24	79.28

SIZE mm	DEC. EQUIV.	COBALT	
		ROUND SHANK SND ~~CM~~	3 FLAT SHANK SND ~~CM~~ 3F
135° SPLIT POINT			
21.50	.8465	77.04	82.08
22.00	.8661	77.04	82.08
22.50	.8858	78.44	83.48
23.00	.9055	78.44	83.48
23.50	.9252	84.52	89.56
24.00	.9449	89.80	94.84
24.50	.9646	89.80	94.84
25.00	.9843	92.04	97.08
118° SPLIT POINT			
25.50	1.0039	103.18	108.22
26.00	1.0236	103.18	108.22
26.50	1.0433	103.18	108.22
27.00	1.0630	111.16	116.20
27.50	1.0837	111.16	116.20
28.00	1.1024	111.16	116.20
28.50	1.1220	123.52	128.56
29.00	1.1417	123.52	128.56
29.50	1.1614	123.52	128.56

SIZE mm	DEC. EQUIV.	COBALT	
		ROUND SHANK	3 FLAT SHANK
		SND ^{CM}	SND ^{CM} 3F
118° SPLIT POINT			
30.00	1.1811	140.26	145.30
30.50	1.2008	140.26	145.30
31.00	1.2205	140.26	145.30
31.50	1.2402	161.34	166.38
32.00	1.2598	161.34	166.38
32.50	1.2795	161.34	166.38
33.00	1.2992	161.34	166.38
33.50	1.3189	166.52	171.56
34.00	1.3386	166.52	171.56
34.50	1.3583	166.52	171.56
35.00	1.3780	186.38	191.42
35.50	1.3976	186.38	191.42
36.00	1.4173	186.38	191.42
36.50	1.4370	193.94	198.98
37.00	1.4567	193.94	198.98
37.50	1.4764	193.94	198.98
38.00	1.4961	193.94	198.98

METRIC COBALT 1/2" SHANK SILVER & DEMING DRILL SETS**WOOD STAND**

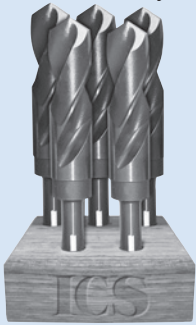
DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
13 PC DRILL SET 13.0, 13.5, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 24.0, 25.0 	Heavy Duty Metric Cobalt S & D Drills 135° S/Pt	DSW-SNDM-13	CALL FOR PRICE

NOTE: Metric 3/8" Shank Cobalt Silver & Deming Drills are available upon request.

1/2" SHANK SILVER & DEMING DRILL SETS**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL DISPLAY Sizes 9/16 to 1 by 16ths 	Round SHANK S & D Drills 118° Pt	DS-SND-8	257.64
	3 Flat SHANK S & D Drills 118° Pt	DS-SND3F-8	265.70
	Cobalt S & D Drills 135° S/Pt	DS-SNDC-8	564.62
	Heavy Duty S & D Drills 135° S/Pt	DS-SNDHD-8	328.16
	Heavy Duty S & D Drills 135° Helical Pt	DS-SNDHP-8	281.64
	Titanium Nitride Coated S & D Drills 118° Pt	DS-SNDT-8	415.04

WOOD STAND

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL SET Sizes 9/16 to 1 by 16ths 	Round SHANK S & D Drills 118° Pt	DSW-SND-8	246.74
	3 Flat SHANK S & D Drills 118° Pt	DSW-SND3F-8	271.76
	Cobalt S & D Drills 135° S/Pt	DSW-SNDC-8	564.62
	Heavy Duty S & D Drills 135° S/Pt	DSW-SNDHD-8	317.26
	Heavy Duty S & D Drills 135° Helical Pt	DSW-SNDHP-8	288.72
	Titanium Nitride Coated S & D Drills 118° Pt.	DSW-SNDT-8	430.66
13 PC DRILL SET Sizes 17/32 to 3/4 by 32nds 13/16 to 1 by 16ths & 31/32 	Round SHANK S & D Drills 118° Pt	DSW-SND-13	361.68
	3 Flat SHANK S & D Drills 118° Pt	DSW-SND3F-13	410.48
	Cobalt S & D Drills - 135° S/Pt	DSW-SNDC-13	875.76
	Heavy Duty S & D Drills 135° S/Pt	DSW-SNDHD-13	467.34
	Heavy Duty S & D Drills 135° Helical Pt	DSW-SNDHP-13	435.86
	Titanium Nitride Coated S & D Drills 118° Pt	DSW-SNDT-13	664.42
32 PC DRILL SET Sizes 33/64 to 1 by 64ths (NOT ILLUSTRATED)	Round SHANK S & D Drills 118° Pt	DSW-SND-32	888.74
	3 Flat SHANK S & D Drills 118° Pt	DSW-SND3F-32	1008.86
	Cobalt S & D Drills - 135° S/Pt	DSW-SNDC-32	2251.94
	Heavy Duty S & D Drills 135° S/Pt	DSW-SNDHD-32	1168.66
	Heavy Duty S & D Drills 135° Helical Pt	DSW-SNDHP-32	1087.32
	Titanium Nitride Coated S & D Drills 118° Pt	DSW-SNDT-32	1566.08
5 PC DRILL SET Sizes 1 to 1-1/2 by 8ths 	Round SHANK S & D Drills 118° Pt	DSW-SND-5	347.26
	3 Flat SHANK S & D Drills 118° Pt	DSW-SND3F-5	366.04
	Titanium Nitride Coated S & D Drills 118° Pt	DSW-SNDT-5	513.64

HIGH SPEED STEEL

MET-68

1/2" SHANK JUMBO SILVER & DEMING DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
SND	 OXIDE FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc. All sizes 6" overall length with 3" flute length.	M2	118° Point Std. Spiral

Fractional Sizes (Reduced Shank) 1-9/16" to 2" Dia.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
*1-9/16	1.5625	SND136	131.72
1-5/8	1.6250	SND140	145.82
1-11/16	1.6875	SND144	164.64
*1-23/32	1.7187	SND146	170.52

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
1-3/4	1.7500	SND148	170.52
*1-25/32	1.7812	SND150	179.94
1-13/16	1.8125	SND152	179.94
1-7/8	1.8750	SND156	190.52

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
*1-29/32	1.9062	SND158	201.10
1-15/16	1.9375	SND160	201.10
2	2.0000	SND200	210.50

HIGH SPEED STEEL

3/4" SHANK SILVER & DEMING DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TQSD	 OXIDE FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc. All sizes 6" overall length with 3" flute length.	M2	118° Point Std. Spiral

Fractional Sizes (Reduced Shank) 25/32" to 2" Dia.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
25/32	.7812	TQSD050	-
13/16	.8125	TQSD052	-
27/32	.8438	TQSD054	-
7/8	.8750	TQSD056	CALL
29/32	.9062	TQSD058	FOR
15/16	.9375	TQSD060	PRICE
31/32	.9688	TQSD062	-
1	1.0000	TQSD100	-
1-1/16	1.0625	TQSD104	-

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
1-1/8	1.1250	TQSD108	-
1-3/16	1.1875	TQSD112	-
1-1/4	1.2500	TQSD116	-
1-5/16	1.3125	TQSD120	CALL
1-3/8	1.3750	TQSD124	FOR
1-7/16	1.4219	TQSD128	PRICE
1-1/2	1.5000	TQSD132	-
1-9/16	1.5625	TQSD136	-
1-5/8	1.6250	TQSD140	-

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
1-11/16	1.6875	TQSD144	-
1-23/32	1.7187	TQSD146	-
1-3/4	1.7500	TQSD148	-
1-25/32	1.7812	TQSD150	CALL
1-13/16	1.8125	TQSD152	FOR
1-7/8	1.8750	TQSD156	PRICE
1-29/32	1.9062	TQSD158	-
1-15/16	1.9375	TQSD160	-
2	2.0000	TQSD200	-

Other sizes available upon request.

HIGH SPEED STEEL

3/4" SHANK SILVER & DEMING DRILL SETS

WOOD STAND

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	5 PC DRILL SET 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2	HSS 3/4" S&D Drills	DSW-TQSD-5	CALL
	5 PC DRILL SET 1, 1-1/4, 1-1/2, 1-3/4, 2	HSS 3/4" S&D Drills	DSW-TQSD-5A	CALL

HIGH SPEED STEEL 3/8" SHANK SILVER & DEMING DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
RSD	 OXIDE FINISH	For portable or machine drilling in ferrous or non-ferrous metals. Ground oxide finish flutes retain lubricants and ease chip welding when drilling cast iron, steel, etc.	M2	118° Point Std. Spiral

When ordering, specify 3/8" shank with 1/2" step shank (illustrated above) or 3/8" straight shank.

Fractional Sizes (Reduced Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
33/64	.5156	RSD033	18.74
17/32	.5312	RSD034	18.74
35/64	.5469	RSD035	19.82
9/16	.5625	RSD036	19.82
37/64	.5781	RSD037	21.08
19/32	.5938	RSD038	21.08
39/64	.6094	RSD039	21.94
5/8	.6250	RSD040	21.94
41/64	.6460	RSD041	23.08
21/32	.6562	RSD042	23.08
43/64	.6719	RSD043	24.10

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
11/16	.6875	RSD044	24.10
45/64	.7031	RSD045	25.14
23/32	.7188	RSD046	25.14
47/64	.7344	RSD047	26.24
3/4	.7500	RSD048	26.24
49/64	.7656	RSD049	27.38
25/32	.7812	RSD050	27.38
51/64	.7969	RSD051	28.46
13/16	.8125	RSD052	28.46
53/64	.8281	RSD053	29.48
27/32	.8438	RSD054	29.48

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
55/64	.8594	RSD055	30.54
7/8	.8750	RSD056	30.54
57/64	.8906	RSD057	31.68
29/32	.9062	RSD058	31.68
59/64	.9219	RSD059	33.84
15/16	.9375	RSD060	33.84
61/64	.9531	RSD061	35.72
31/32	.9688	RSD062	35.72
63/64	.9844	RSD063	39.10
1	1.0000	RSD100	39.10

*All S & D Drills are 6" overall length with 3" flute length.

HIGH SPEED STEEL 3/8" SHANK SILVER & DEMING DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
RSDHB	 OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips.	M2	135° Split Point

When ordering, specify 3/8" shank with 1/2" step shank (illustrated above) or 3/8" straight shank.

Fractional Sizes (Reduced Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
33/64	.5156	RSDHB033	24.28
17/32	.5312	RSDHB034	24.28
35/64	.5469	RSDHB035	25.38
9/16	.5625	RSDHB036	25.38
37/64	.5781	RSDHB037	26.64
19/32	.5938	RSDHB038	26.64
39/64	.6094	RSDHB039	27.52
5/8	.6250	RSDHB040	27.52
41/64	.6460	RSDHB041	28.64
21/32	.6562	RSDHB042	28.64
43/64	.6719	RSDHB043	29.66

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
11/16	.6875	RSDHB044	29.66
45/64	.7031	RSDHB045	30.68
23/32	.7188	RSDHB046	30.68
47/64	.7344	RSDHB047	31.80
3/4	.7500	RSDHB048	31.80
49/64	.7656	RSDHB049	37.76
25/32	.7812	RSDHB050	37.76
51/64	.7969	RSDHB051	38.82
13/16	.8125	RSDHB052	38.82
53/64	.8281	RSDHB053	39.86
27/32	.8438	RSDHB054	39.86

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
55/64	.8594	RSDHB055	40.92
7/8	.8750	RSDHB056	40.92
57/64	.8906	RSDHB057	42.04
29/32	.9062	RSDHB058	42.04
59/64	.9219	RSDHB059	44.20
15/16	.9375	RSDHB060	44.20
61/64	.9531	RSDHB061	46.10
31/32	.9688	RSDHB062	46.10
63/64	.9844	RSDHB063	49.48
1	1.0000	RSDHB100	49.48

*All S & D Drills are 6" overall length with 3" flute length.

COBALT 3/8" SHANK SILVER & DEMING DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
RSDC	 GOLD COBALT FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips.	M42	135° Split Point or Notched Point

When ordering, specify 3/8" shank with 1/2" step shank (illustrated above) or 3/8" straight shank.

Fractional Sizes (Reduced Shank) 33/64" to 1" Dia.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE	SIZE	DEC. EQUIV.	ITEM NO.	PRICE	SIZE	DEC. EQUIV.	ITEM NO.	PRICE
33/64	.5156	RSDC033	48.34	11/16	.6875	RSDC044	63.28	55/64	.8594	RSDC055	83.58
17/32	.5312	RSDC034	48.34	45/64	.7031	RSDC045	66.96	7/8	.8750	RSDC056	83.58
35/64	.5469	RSDC035	51.28	23/32	.7188	RSDC046	66.96	57/64	.8906	RSDC057	87.16
9/16	.5625	RSDC036	51.28	47/64	.7344	RSDC047	69.56	29/32	.9062	RSDC058	87.16
37/64	.5781	RSDC037	54.86	3/4	.7500	RSDC048	69.56	59/64	.9219	RSDC059	93.04
19/32	.5938	RSDC038	54.86	49/64	.7656	RSDC049	73.82	15/16	.9375	RSDC060	93.04
39/64	.6094	RSDC039	57.34	25/32	.7812	RSDC050	73.82	61/64	.9531	RSDC061	98.08
5/8	.6250	RSDC040	57.34	51/64	.7969	RSDC051	77.38	31/32	.9688	RSDC062	98.08
41/64	.6460	RSDC041	61.04	13/16	.8125	RSDC052	77.38	63/64	.9844	RSDC063	107.86
21/32	.6562	RSDC042	61.04	53/64	.8281	RSDC053	80.64	1	1.0000	RSDC100	107.86
43/64	.6719	RSDC043	63.28	27/32	.8438	RSDC054	80.64				

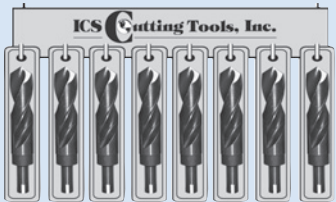
HIGH SPEED STEEL and COBALT

3/8" SHANK SILVER & DEMING DRILL SETS

METAL INDEX

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL SET Sizes 9/16 to 1 by 16ths 	General Purpose 3/8 shank S & D Drills - 118° Pt. Heavy Duty 3/8 shank S & D Drills - 135° Split Pt. Cobalt 3/8 shank S & D Drills - 135° Split Pt.	DSW-RSD-8 DSW-RSDHB-8 DSW-RSDC-8	247.46 311.16 559.60

3/8" SHANK SILVER & DEMING DRILL MERCHANDISER

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL DISPLAY Sizes 9/16 to 1 by 16ths Size: 18 x 12-1/2 	General Purpose - 3/8 shank S & D Drills - 118° Point	DM-RSD-8	252.54

HIGH SPEED STEEL TAPER LENGTH DRILLS

ICS USA

GENERAL PURPOSE

118° POINT

Taper Length Drills are general purpose drills with increased cutting length. They are manufactured with straight shanks of the same diameter as that of the flute diameter. Taper length drills derive their name from having the same flute length as taper shank drills. In Europe these drills are known as Long Series Drills or Long Jobber Drills.

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TLD	 OXIDE FINISH	For general purpose drilling where a longer than jobber length drill is required.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Straight Shank) 1/16" to 2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	1-3/4	3	TLD004	2.84
5/64	.0781	2	3-3/4	TLD005	3.10
3/32	.0938	2-1/4	4-1/4	TLD006	3.78
7/64	.1094	2-1/2	4-5/8	TLD007	4.70
1/8	.1250	2-3/4	5-1/8	TLD008	4.84
9/64	.1406	3	5-3/8	TLD009	6.34
5/32	.1562	3	5-3/8	TLD010	5.78
11/64	.1719	3-3/8	5-3/4	TLD011	6.78
3/16	.1875	3-3/8	5-3/4	TLD012	5.86
13/64	.2031	3-5/8	6	TLD013	7.84
7/32	.2188	3-5/8	6	TLD014	8.38
15/64	.2344	3-3/4	6-1/8	TLD015	8.38
1/4	.2500	3-3/4	6-1/8	TLD016	6.90
17/64	.2656	3-7/8	6-1/4	TLD017	8.78
9/32	.2812	3-7/8	6-1/4	TLD018	8.38
19/64	.2969	4	6-3/8	TLD019	9.58
5/16	.3125	4	6-3/8	TLD020	8.38
21/64	.3281	4-1/8	6-1/2	TLD021	9.86
11/32	.3438	4-1/8	6-1/2	TLD022	9.58
23/64	.3594	4-1/4	6-3/4	TLD023	11.30
3/8	.3750	4-1/4	6-3/4	TLD024	11.30
25/64	.3906	4-3/8	7	TLD025	11.86
13/32	.4062	4-3/8	7	TLD026	11.86
27/64	.4219	4-5/8	7-1/4	TLD027	13.02
7/16	.4375	4-5/8	7-1/4	TLD028	13.24
29/64	.4531	4-3/4	7-1/2	TLD029	14.68
15/32	.4688	4-3/4	7-1/2	TLD030	15.58
31/64	.4844	4-3/4	7-3/4	TLD031	17.06
1/2	.5000	4-3/4	7-3/4	TLD032	16.46
33/64	.5156	4-3/4	8	TLD033	27.30
17/32	.5312	4-3/4	8	TLD034	28.80
35/64	.5469	4-7/8	8-1/4	TLD035	30.24
9/16	.5625	4-7/8	8-1/4	TLD036	30.24
37/64	.5781	4-7/8	8-1/4	TLD037	35.18
19/32	.5938	4-7/8	8-3/4	TLD038	35.18
39/64	.6094	4-7/8	8-3/4	TLD039	36.40
5/8	.6250	4-7/8	8-3/4	TLD040	36.40
41/64	.6406	5-1/8	9	TLD041	41.64
21/32	.6562	5-1/8	9	TLD042	41.64
43/64	.6719	5-3/8	9-1/4	TLD043	49.00
11/16	.6875	5-3/8	9-1/4	TLD044	49.58

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
45/64	.7031	5-5/8	9-1/2	TLD045	51.60
23/32	.7188	5-5/8	9-1/2	TLD046	51.60
47/64	.7344	5-7/8	9-3/4	TLD047	55.28
3/4	.7500	5-7/8	9-3/4	TLD048	55.28
49/64	.7656	6	9-7/8	TLD049	60.34
25/32	.7812	6	9-7/8	TLD050	60.34
51/64	.7969	6-1/8	10	TLD051	64.92
13/16	.8125	6-1/8	10	TLD052	64.92
53/64	.8281	6-1/8	10	TLD053	68.22
27/32	.8438	6-1/8	10	TLD054	68.22
55/64	.8594	6-1/8	10	TLD055	71.74
7/8	.8750	6-1/8	10	TLD056	65.86
57/64	.8906	6-1/8	10	TLD057	74.76
29/32	.9062	6-1/8	10	TLD058	74.76
59/64	.9219	6-1/8	10-3/4	TLD059	81.34
15/16	.9375	6-1/8	10-3/4	TLD060	81.34
61/64	.9531	6-3/8	11	TLD061	89.74
31/32	.9688	6-3/8	11	TLD062	89.74
63/64	.9844	6-3/8	11	TLD063	93.54
1	1.0000	6-3/8	11	TLD100	93.54
1-1/32	1.0312	6-1/2	11-1/8	TLD102	112.00
1-1/16	1.0625	6-5/8	11-1/4	TLD004	115.82
1-3/32	1.0938	6-7/8	11-1/2	TLD006	124.26
1-1/8	1.1250	7-1/8	1-3/4	TLD108	139.88
1-5/32	1.1562	7-1/4	11-7/8	TLD110	140.36
1-3/16	1.1875	7-3/8	12	TLD112	151.12
1-7/32	1.2188	7-1/2	12-1/8	TLD114	155.62
1-1/4	1.2500	7-7/8	12-1/2	TLD116	161.88
1-5/16	1.3125	8-5/8	14-1/4	TLD120	193.16
1-3/8	1.3750	8-7/8	14-1/2	TLD124	207.14
1-7/16	1.4375	9-1/8	14-3/4	TLD128	225.74
1-1/2	1.5000	9-3/8	15	TLD132	253.08
1-9/16	1.5625	9-5/8	15-1/4	TLD136	283.16
1-5/8	1.6250	9-7/8	15-5/8	TLD140	319.72
1-11/16	1.6875	10	15-3/4	TLD144	362.68
1-3/4	1.7500	10-1/2	16-1/4	TLD148	385.28
1-13/16	1.8125	10-1/2	16-1/4	TLD152	459.34
1-7/8	1.8750	10-3/4	16-1/2	TLD156	520.58
1-15/16	1.9375	10-3/4	16-5/8	TLD160	520.58
2	2.0000	10-3/4	16-5/8	TLD200	520.58

PACKAGING

1/16 to 1/4 - 12 Drills/Envelope • 17/64 to 3/8 - 6 Drills/Tube • 25/64 to 2" - 1 Drill/Tube

HIGH SPEED STEEL TAPER LENGTH DRILLS

MET-72

ICS USA

GENERAL PURPOSE

118° POINT



Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	3-3/4	6-1/8	TLD#01	10.88
2	.2210	3-3/4	6-1/8	TLD#02	10.88
3	.2130	3-5/8	6	TLD#03	10.50
4	.2090	3-5/8	6	TLD#04	10.50
5	.2055	3-5/8	6	TLD#05	10.50
6	.2040	3-5/8	6	TLD#06	10.50
7	.2010	3-5/8	6	TLD#07	10.50
8	.1990	3-5/8	6	TLD#08	10.50
9	.1960	3-5/8	6	TLD#09	10.50
10	.1935	3-5/8	6	TLD#10	10.50
11	.1910	3-5/8	6	TLD#11	10.50
12	.1890	3-5/8	6	TLD#12	10.50
13	.1850	3-3/8	5-3/4	TLD#13	9.52
14	.1820	3-3/8	5-3/4	TLD#14	9.52
15	.1800	3-3/8	5-3/4	TLD#15	9.52
16	.1770	3-3/8	5-3/4	TLD#16	9.52
17	.1730	3-3/8	5-3/4	TLD#17	9.52
18	.1695	3-3/8	5-3/4	TLD#18	9.52
19	.1660	3-3/8	5-3/4	TLD#19	9.52
20	.1610	3-3/8	5-3/4	TLD#20	9.52
21	.1590	3-3/8	5-3/4	TLD#21	9.52
22	.1570	3-3/8	5-3/4	TLD#22	9.52
23	.1549	3	5-3/8	TLD#23	9.52
24	.1520	3	5-3/8	TLD#24	9.52
25	.1490	3	5-3/8	TLD#25	9.52
26	.1470	3	5-3/8	TLD#26	9.52
27	.1440	3	5-3/8	TLD#27	9.52
28	.1405	3	5-3/8	TLD#28	9.64
29	.1360	3	5-3/8	TLD#29	9.64
30	.1285	3	5-3/8	TLD#30	9.64

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
31	.1200	2-3/4	5-1/8	TLD#31	9.64
32	.1160	2-3/4	5-1/8	TLD#32	9.64
33	.1130	2-3/4	5-1/8	TLD#33	9.64
34	.1110	2-3/4	5-1/8	TLD#34	9.64
35	.1100	2-3/4	5-1/8	TLD#35	9.64
36	.1055	2-1/2	4-5/8	TLD#36	7.00
37	.1040	2-1/2	4-5/8	TLD#37	7.00
38	.1010	2-1/2	4-5/8	TLD#38	7.00
39	.0995	2-1/2	4-5/8	TLD#39	6.14
40	.0980	2-1/2	4-5/8	TLD#40	6.14
41	.0960	2-1/2	4-5/8	TLD#41	6.14
42	.0935	2-1/4	4-1/4	TLD#42	5.22
43	.0890	2-1/4	4-1/4	TLD#43	5.22
44	.0860	2-1/4	4-1/4	TLD#44	5.22
45	.0820	2-1/4	4-1/4	TLD#45	5.22
46	.0810	2-1/4	4-1/4	TLD#46	5.22
47	.0785	2-1/4	4-1/4	TLD#47	5.22
48	.0760	2	3-3/4	TLD#48	4.40
49	.0730	2	3-3/4	TLD#49	4.40
50	.0700	2	3-3/4	TLD#50	4.40
51	.0670	2	3-3/4	TLD#51	4.40
52	.0635	2	3-3/4	TLD#52	4.40
53	.0595	1-3/4	3	TLD#53	4.40
54	.0550	1-3/4	3	TLD#54	4.40
55	.0520	1-3/4	3	TLD#55	4.40
56	.0465	1-1/8	2-1/4	TLD#56	4.40
57	.0430	1-1/8	2-1/4	TLD#57	4.40
58	.0420	1-1/8	2-1/4	TLD#58	4.40
59	.0410	1-1/8	2-1/4	TLD#59	4.40
60	.0400	1-1/8	2-1/4	TLD#60	4.40

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	3-3/4	6-1/8	TLD"A"	12.68
B	.238	3-3/4	6-1/8	TLD"B"	12.68
C	.242	3-3/4	6-1/8	TLD"C"	12.68
D	.246	3-3/4	6-1/8	TLD"D"	12.82
E	.250	3-3/4	6-1/8	TLD"E"	8.70
F	.257	3-7/8	6-1/4	TLD"F"	13.94
G	.261	3-7/8	6-1/4	TLD"G"	13.94
H	.266	3-7/8	6-1/4	TLD"H"	14.46
I	.272	3-7/8	6-1/4	TLD"I"	14.46
J	.277	3-7/8	6-1/4	TLD"J"	14.46
K	.281	3-7/8	6-1/4	TLD"K"	14.46
L	.290	4	6-3/8	TLD"L"	15.48
M	.295	4	6-3/8	TLD"M"	15.48

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	4	6-3/8	TLD"N"	15.78
O	.316	4-1/8	6-1/2	TLD"O"	15.78
P	.323	4-1/8	6-1/2	TLD"P"	15.78
Q	.332	4-1/8	6-1/2	TLD"Q"	15.78
R	.339	4-1/8	6-1/2	TLD"R"	16.62
S	.348	4-1/4	6-3/4	TLD"S"	16.62
T	.358	4-1/4	6-3/4	TLD"T"	16.62
U	.368	4-1/4	6-3/4	TLD"U"	17.50
V	.377	4-3/8	7	TLD"V"	17.50
W	.386	4-3/8	7	TLD"W"	17.50
X	.397	4-3/8	7	TLD"X"	18.00
Y	.404	4-3/8	7	TLD"Y"	18.00
Z	.413	4-5/8	7-1/4	TLD"Z"	18.70

PACKAGING

#1 to #60 - 12 Drills/Envelope • A to I - 12 Drills/Envelope • J to Z - 6 Drills/Tube

HIGH SPEED STEEL METRIC TAPER LENGTH DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TLDM	 OXIDE FINISH	For general purpose drilling where a longer than jobber length drill is required.	M2	118° Point Std. Spiral Std. Web

Metric Sizes (Straight Shank) 1.00mm to 14.25mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1.00	.0394	1-1/8	2-1/4	TLDM01.00	3.82
1.05	.0413	1-1/8	2-1/4	TLDM01.05	4.30
1.10	.0433	1-1/8	2-1/4	TLDM01.10	4.16
1.15	.0453	1-1/8	2-1/4	TLDM01.15	4.30
1.20	.0472	1-3/4	3	TLDM01.20	4.50
1.25	.0492	1-3/4	3	TLDM01.25	4.48
1.30	.0512	1-3/4	3	TLDM01.30	4.50
1.35	.0531	1-3/4	3	TLDM01.35	4.68
1.40	.0551	1-3/4	3	TLDM01.40	4.50
1.45	.0571	1-3/4	3	TLDM01.45	4.68
1.50	.0591	1-3/4	3	TLDM01.50	4.12
1.55	.0610	1-3/4	3	TLDM01.55	4.80
1.60	.0630	2	3-3/4	TLDM01.60	5.20
1.65	.0650	2	3-3/4	TLDM01.65	5.40
1.70	.0669	2	3-3/4	TLDM01.70	5.20
1.75	.0689	2	3-3/4	TLDM01.75	5.40
1.80	.0709	2	3-3/4	TLDM01.80	5.20
1.85	.0728	2	3-3/4	TLDM01.85	5.40
1.90	.0748	2	3-3/4	TLDM01.90	5.20
1.95	.0768	2	3-3/4	TLDM01.95	5.40
2.00	.0787	2-1/4	4-1/4	TLDM02.00	5.66
2.05	.0807	2-1/4	4-1/4	TLDM02.05	6.54
2.10	.0827	2-1/4	4-1/4	TLDM02.10	6.28
2.15	.0846	2-1/4	4-1/4	TLDM02.15	6.54
2.20	.0866	2-1/4	4-1/4	TLDM02.20	6.28
2.25	.0886	2-1/4	4-1/4	TLDM02.25	6.54
2.30	.0906	2-1/4	4-1/4	TLDM02.30	6.28
2.35	.0925	2-1/4	4-1/4	TLDM02.35	6.52
2.40	.0945	2-1/2	4-5/8	TLDM02.40	7.84
2.45	.0965	2-1/2	4-5/8	TLDM02.45	8.12
2.50	.0984	2-1/2	4-5/8	TLDM02.50	7.02
2.60	.1024	2-1/2	4-5/8	TLDM02.60	7.84
2.70	.1063	2-1/2	4-5/8	TLDM02.70	7.84
2.80	.1102	2-3/4	5-1/8	TLDM02.80	8.12
2.90	.1142	2-3/4	5-1/8	TLDM02.90	8.12
3.00	.1181	2-3/4	5-1/8	TLDM03.00	7.28
3.10	.1220	2-3/4	5-1/8	TLDM03.10	8.12
3.20	.1260	3	5-3/8	TLDM03.20	8.80
3.30	.1299	3	5-3/8	TLDM03.30	8.80
3.40	.1339	3	5-3/8	TLDM03.40	9.42
3.50	.1378	3	5-3/8	TLDM03.50	8.80
3.60	.1417	3	5-3/8	TLDM03.60	9.82
3.70	.1457	3	5-3/8	TLDM03.70	9.82
3.80	.1496	3	5-3/8	TLDM03.80	9.82
3.90	.1535	3	5-3/8	TLDM03.90	9.82
4.00	.1575	3-3/8	5-3/4	TLDM04.00	8.80
4.10	.1614	3-3/8	5-3/4	TLDM04.10	9.82
4.20	.1654	3-3/8	5-3/4	TLDM04.20	8.80
4.30	.1693	3-3/8	5-3/4	TLDM04.30	9.84
4.40	.1732	3-3/8	5-3/4	TLDM04.40	9.84
4.50	.1772	3-3/8	5-3/4	TLDM04.50	8.80

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
4.60	.1811	3-3/8	5-3/4	TLDM04.60	9.82
4.70	.1850	3-3/8	5-3/4	TLDM04.70	9.82
4.80	.1890	3-5/8	6	TLDM04.80	11.02
4.90	.1929	3-5/8	6	TLDM04.90	11.52
5.00	.1968	3-5/8	6	TLDM05.00	10.30
5.10	.2008	3-5/8	6	TLDM05.10	11.52
5.20	.2047	3-5/8	6	TLDM05.20	11.52
5.30	.2087	3-5/8	6	TLDM05.30	11.52
5.40	.2126	3-5/8	6	TLDM05.40	11.52
5.50	.2165	3-5/8	6	TLDM05.50	10.30
5.60	.2205	3-3/4	6-1/8	TLDM05.60	11.52
5.70	.2244	3-3/4	6-1/8	TLDM05.70	11.52
5.80	.2283	3-3/4	6-1/8	TLDM05.80	11.52
5.90	.2323	3-3/4	6-1/8	TLDM05.90	13.50
6.00	.2362	3-3/4	6-1/8	TLDM06.00	11.00
6.10	.2402	3-3/4	6-1/8	TLDM06.10	11.52
6.20	.2441	3-3/4	6-1/8	TLDM06.20	10.52
6.30	.2480	3-3/4	6-1/8	TLDM06.30	11.16
6.40	.2520	3-7/8	6-1/4	TLDM06.40	12.86
6.50	.2559	3-7/8	6-1/4	TLDM06.50	12.56
6.80	.2677	3-7/8	6-1/4	TLDM06.80	12.86
7.00	.2756	3-7/8	6-1/4	TLDM07.00	12.56
7.20	.2835	4	6-3/8	TLDM07.20	13.02
7.50	.2953	4	6-3/8	TLDM07.50	13.02
7.80	.3071	4	6-3/8	TLDM07.80	14.22
8.00	.3150	4-1/8	6-1/2	TLDM08.00	14.60
8.20	.3228	4-1/8	6-1/2	TLDM08.20	16.30
8.50	.3346	4-1/8	6-1/2	TLDM08.50	14.60
8.80	.3465	4-1/4	6-3/4	TLDM08.80	19.16
9.00	.3543	4-1/4	6-3/4	TLDM09.00	17.18
9.20	.3622	4-1/4	6-3/4	TLDM09.20	19.16
9.50	.3740	4-1/4	6-3/4	TLDM09.50	17.58
9.80	.3858	4-3/8	7	TLDM09.80	20.02
10.00	.3937	4-3/8	7	TLDM10.00	17.92
10.20	.4016	4-3/8	7	TLDM10.20	18.34
10.50	.4134	4-5/8	7-1/4	TLDM10.50	19.34
10.80	.4252	4-5/8	7-1/4	TLDM10.80	22.02
11.00	.4331	4-5/8	7-1/4	TLDM11.00	19.72
11.20	.4409	4-3/4	7-1/2	TLDM11.20	24.44
11.50	.4528	4-3/4	7-1/2	TLDM11.50	21.90
11.80	.4646	4-3/4	7-1/2	TLDM11.80	25.96
12.00	.4724	4-3/4	7-1/2	TLDM12.00	24.24
12.20	.4803	4-3/4	7-1/2	TLDM12.20	27.08
12.50	.4921	4-3/4	7-1/2	TLDM12.50	24.24
12.80	.5039	4-3/4	8	TLDM12.80	36.74
13.00	.5118	4-3/4	8	TLDM13.00	34.34
13.20	.5197	4-3/4	8	TLDM13.20	37.42
13.50	.5315	4-3/4	8	TLDM13.50	38.64
13.80	.5433	4-7/8	8-1/4	TLDM13.80	39.36
14.00	.5512	4-7/8	8-1/4	TLDM14.00	36.12
14.25	.5610	4-7/8	8-1/4	TLDM14.25	39.36

(Sizes continued on next page)

HIGH SPEED STEEL METRIC TAPER LENGTH DRILLS

MET-74

ICS WIS

GENERAL PURPOSE

118° POINT



Metric Sizes (Straight Shank) 14.50mm to 38.00mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
14.50	.5709	4-7/8	8-3/4	TLDM14.50	45.18
14.75	.5807	4-7/8	8-3/4	TLDM14.75	45.98
15.00	.5906	4-7/8	8-3/4	TLDM15.00	45.16
15.25	.6004	4-7/8	8-3/4	TLDM15.25	47.60
15.50	.6102	4-7/8	8-3/4	TLDM15.50	46.72
15.75	.6201	4-7/8	8-3/4	TLDM15.75	47.62
16.00	.6299	5-1/8	9	TLDM16.00	53.28
16.25	.6398	5-1/8	9	TLDM16.25	54.26
16.50	.6496	5-1/8	9	TLDM16.50	53.28
16.75	.6594	5-3/8	9-1/4	TLDM16.75	63.72
17.00	.6693	5-3/8	9-1/4	TLDM17.00	62.54
17.25	.6791	5-3/8	9-1/4	TLDM17.25	64.52
17.50	.6890	5-5/8	9-1/2	TLDM17.50	66.78
18.00	.7087	5-5/8	9-1/2	TLDM18.00	66.78
18.50	.7283	5-7/8	9-3/4	TLDM18.50	76.36
19.00	.7480	5-7/8	9-3/4	TLDM19.00	73.16
19.50	.7677	6	9-7/8	TLDM19.50	77.68
20.00	.7874	6-1/8	10	TLDM20.00	83.38
20.50	.8071	6-1/8	10	TLDM20.50	88.60
21.00	.8268	6-1/8	10	TLDM21.00	90.10
21.50	.8465	6-1/8	10	TLDM21.50	96.36
22.00	.8661	6-1/8	10	TLDM22.00	90.70
22.50	.8858	6-1/8	10	TLDM22.50	98.62
23.00	.9055	6-1/8	10	TLDM23.00	98.62
23.50	.9252	6-1/8	10-3/4	TLDM23.50	109.28
24.00	.9449	6-3/8	11	TLDM24.00	118.40
24.50	.9646	6-3/8	11	TLDM24.50	120.58

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
25.00	.9843	6-3/8	11	TLDM25.00	119.24
25.50	1.0039	6-1/2	11-1/8	TLDM25.50	150.44
26.00	1.0236	6-1/2	11-1/8	TLDM26.00	147.74
26.50	1.0433	6-5/8	11-1/4	TLDM26.50	155.64
27.00	1.0630	6-5/8	11-1/4	TLDM27.00	163.90
27.50	1.0827	6-5/8	11-1/2	TLDM27.50	166.94
28.00	1.1024	7-1/8	11-3/4	TLDM28.00	170.14
28.50	1.1220	7-1/8	11-3/4	TLDM28.50	173.30
29.00	1.1417	7-1/4	11-7/8	TLDM29.00	185.14
29.50	1.1614	7-3/8	12	TLDM29.50	203.06
30.00	1.1811	7-3/8	12	TLDM30.00	199.38
30.50	1.2008	7-1/2	12-1/8	TLDM30.50	211.22
31.00	1.2205	7-7/8	12-1/2	TLDM31.00	215.52
31.50	1.2402	7-7/8	12-1/2	TLDM31.50	219.52
32.00	1.2598	8-1/2	14-1/8	TLDM32.00	252.62
32.50	1.2795	8-1/2	14-1/8	TLDM32.50	252.62
33.00	1.2992	8-5/8	14-1/4	TLDM33.00	261.96
33.50	1.3189	8-3/4	14-3/8	TLDM33.50	269.32
34.00	1.3386	8-3/4	14-3/8	TLDM34.00	269.32
34.50	1.3583	8-7/8	14-1/2	TLDM34.50	280.66
35.00	1.3780	9	14-5/8	TLDM35.00	295.64
35.50	1.3976	9	14-5/8	TLDM35.50	295.64
36.00	1.4173	9-1/8	14-3/4	TLDM36.00	305.00
36.50	1.4370	9-1/8	14-3/4	TLDM36.50	305.00
37.00	1.4567	9-1/4	14-7/8	TLDM37.00	331.36
37.50	1.4764	9-3/8	15	TLDM37.50	339.08
38.00	1.4961	9-3/8	15	TLDM38.00	339.08

PACKAGING

1.00mm to 7.00mm - 12 Drills/Envelope • 7.20mm to 13.00mm - 6 Drills/Tube • 13.20mm to 38.00mm - 1 Drill/Tube

HIGH SPEED STEEL TAPER LENGTH DRILL SETS

METAL INDEX

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	16 PC DRILL SET Sizes: 33/64 to 3/4 by 64ths	Taper Length Drill - HSS	DS-TLD-16	651.50
	16 PC DRILL SET Sizes: 49/64 to 1 by 64ths	Taper Length Drill - HSS	DS-TLD-16A	1144.18
	26 PC DRILL SET Letter Sizes: A to Z	Taper Length Drill - HSS	DS-TLD-26	393.96
	29 PC DRILL SET Sizes: 1/16 to 1/2 by 64ths	Taper Length Drill - HSS	DS-TLD-29	340.46
	60 PC DRILL SET Wire Gauge Sizes: 1 to 60	Taper Length Drill - HSS	DS-TLD-16	488.04

HIGH SPEED STEEL COBALT TAPER LENGTH DRILLS

MET-75

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TLDC	 GOLD COBALT FINISH	For portable or machine drilling in stainless steel, titanium, and other work hardening metals.	M42	135° Split Pt. Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/16" to 1" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	1-3/4	3	TLDC004	6.46
5/64	.0781	2	3-3/4	TLDC005	7.54
3/32	.0938	2-1/4	4-1/4	TLDC006	9.00
7/64	.1094	2-1/2	4-5/8	TLDC007	11.32
1/8	.1250	2-3/4	5-1/8	TLDC008	11.64
9/64	.1406	3	5-3/8	TLDC009	14.18
5/32	.1562	3	5-3/8	TLDC010	14.18
11/64	.1719	3-3/8	5-3/4	TLDC011	14.18
3/16	.1875	3-3/8	5-3/4	TLDC012	14.18
13/64	.2031	3-5/8	6	TLDC013	16.56
7/32	.2188	3-5/8	6	TLDC014	16.56
15/64	.2344	3-3/4	6-1/8	TLDC015	16.56
1/4	.2500	3-3/4	6-1/8	TLDC016	16.56
17/64	.2656	3-7/8	6-1/4	TLDC017	20.04
9/32	.2812	3-7/8	6-1/4	TLDC018	20.04
19/64	.2969	4	6-3/8	TLDC019	20.04
5/16	.3125	4	6-3/8	TLDC020	20.04
21/64	.3281	4-1/8	6-1/2	TLDC021	23.04
11/32	.3438	4-1/8	6-1/2	TLDC022	23.04
23/64	.3594	4-1/4	6-3/4	TLDC023	27.18
3/8	.3750	4-1/4	6-3/4	TLDC024	27.18
25/64	.3906	4-3/8	7	TLDC025	28.22
13/32	.4062	4-3/8	7	TLDC026	28.22
27/64	.4219	4-5/8	7-1/4	TLDC027	30.64
7/16	.4375	4-5/8	7-1/4	TLDC028	31.28
29/64	.4531	4-3/4	7-1/2	TLDC029	34.70
15/32	.4688	4-3/4	7-1/2	TLDC030	36.70
31/64	.4844	4-3/4	7-3/4	TLDC031	38.46
1/2	.5000	4-3/4	7-3/4	TLDC032	38.46
33/64	.5156	4-3/4	8	TLDC033	49.34
17/32	.5312	4-3/4	8	TLDC034	49.34

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
35/64	.5469	4-7/8	8-1/4	TLDC035	53.30
9/16	.5625	4-7/8	8-1/4	TLDC036	53.30
37/64	.5781	4-7/8	8-1/4	TLDC037	62.22
19/32	.5938	4-7/8	8-3/4	TLDC038	62.22
39/64	.6094	4-7/8	8-3/4	TLDC039	62.22
5/8	.6250	4-7/8	8-3/4	TLDC040	62.22
41/64	.6406	5-1/8	9	TLDC041	68.68
21/32	.6562	5-1/8	9	TLDC042	68.68
43/64	.6719	5-3/8	9-1/4	TLDC043	80.30
11/16	.6875	5-3/8	9-1/4	TLDC044	80.30
45/64	.7031	5-5/8	9-1/2	TLDC045	87.88
23/32	.7188	5-5/8	9-1/2	TLDC046	87.88
47/64	.7344	5-7/8	9-3/4	TLDC047	92.90
3/4	.7500	5-7/8	9-3/4	TLDC048	92.90
49/64	.7656	6	9-7/8	TLDC049	109.52
25/32	.7812	6	9-7/8	TLDC050	109.52
51/64	.7969	6-1/8	10	TLDC051	117.74
13/16	.8125	6-1/8	10	TLDC052	117.74
53/64	.8281	6-1/8	10	TLDC053	121.86
27/32	.8438	6-1/8	10	TLDC054	121.86
55/64	.8594	6-1/8	10	TLDC055	128.04
7/8	.8750	6-1/8	10	TLDC056	128.04
57/64	.8906	6-1/8	10	TLDC057	133.38
29/32	.9062	6-1/8	10	TLDC058	133.38
59/64	.9219	6-1/8	10-3/4	TLDC059	145.12
15/16	.9375	6-1/8	10-3/4	TLDC060	145.12
61/64	.9531	6-3/8	11	TLDC061	160.20
31/32	.9688	6-3/8	11	TLDC062	160.20
63/64	.9844	6-3/8	11	TLDC063	166.96
1	1.0000	6-3/8	11	TLDC100	166.96

PACKAGING

1/16 to 1/4 - 12 Drills/Envelope • 17/64 to 3/8 - 6 Drills/Tube • 25/64 to 1" - 1 Drill/Tube

Quick Reference for Cobalt Drills

DRILL SETS	STUB LENGTH	JOBBER LENGTH	SILVER & DEMING	TAPER LENGTH	TAPER SHANK	EXTRA LENGTH	COMBINED DRILL & CSK
PAGE NO. OF ITEMS AVAILABLE							
53-59	9-10	35-38	65, 69	74-75	95	108-110	113

COBALT TAPER LENGTH DRILLS**ICS****USA****HEAVY DUTY****135° SPLIT POINT****Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	3-3/4	6-1/8	TLDC#01	22.22
2	.2210	3-3/4	6-1/8	TLDC#02	22.22
3	.2130	3-5/8	6	TLDC#03	22.22
4	.2090	3-5/8	6	TLDC#04	22.22
5	.2055	3-5/8	6	TLDC#05	22.22
6	.2040	3-5/8	6	TLDC#06	22.22
7	.2010	3-5/8	6	TLDC#07	22.22
8	.1990	3-5/8	6	TLDC#08	22.22
9	.1960	3-5/8	6	TLDC#09	22.22
10	.1935	3-5/8	6	TLDC#10	22.22
11	.1910	3-5/8	6	TLDC#11	22.22
12	.1890	3-5/8	6	TLDC#12	22.22
13	.1850	3-3/8	5-3/4	TLDC#13	20.30
14	.1820	3-3/8	5-3/4	TLDC#14	20.30
15	.1800	3-3/8	5-3/4	TLDC#15	20.30
16	.1770	3-3/8	5-3/4	TLDC#16	20.30
17	.1730	3-3/8	5-3/4	TLDC#17	20.30
18	.1695	3-3/8	5-3/4	TLDC#18	20.30
19	.1660	3-3/8	5-3/4	TLDC#19	20.30
20	.1610	3-3/8	5-3/4	TLDC#20	20.30
21	.1590	3-3/8	5-3/4	TLDC#21	20.30
22	.1570	3-3/8	5-3/4	TLDC#22	20.30
23	.1549	3	5-3/8	TLDC#23	20.30
24	.1520	3	5-3/8	TLDC#24	20.30
25	.1490	3	5-3/8	TLDC#25	20.30
26	.1470	3	5-3/8	TLDC#26	20.30
27	.1440	3	5-3/8	TLDC#27	20.30
28	.1405	3	5-3/8	TLDC#28	20.30
29	.1360	3	5-3/8	TLDC#29	20.30
30	.1285	3	5-3/8	TLDC#30	20.30

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
31	.1200	2-3/4	5-1/8	TLDC#31	16.70
32	.1160	2-3/4	5-1/8	TLDC#32	16.70
33	.1130	2-3/4	5-1/8	TLDC#33	16.70
34	.1110	2-3/4	5-1/8	TLDC#34	16.70
35	.1100	2-3/4	5-1/8	TLDC#35	16.70
36	.1055	2-1/2	4-5/8	TLDC#36	16.22
37	.1040	2-1/2	4-5/8	TLDC#37	16.22
38	.1010	2-1/2	4-5/8	TLDC#38	16.22
39	.0995	2-1/2	4-5/8	TLDC#39	16.22
40	.0980	2-1/2	4-5/8	TLDC#40	16.22
41	.0960	2-1/2	4-5/8	TLDC#41	16.22
42	.0935	2-1/4	4-1/4	TLDC#42	16.22
43	.0890	2-1/4	4-1/4	TLDC#43	16.22
44	.0860	2-1/4	4-1/4	TLDC#44	16.22
45	.0820	2-1/4	4-1/4	TLDC#45	16.22
46	.0810	2-1/4	4-1/4	TLDC#46	16.22
47	.0785	2-1/4	4-1/4	TLDC#47	16.22
48	.0760	2	3-3/4	TLDC#48	16.22
49	.0730	2	3-3/4	TLDC#49	16.22
50	.0700	2	3-3/4	TLDC#50	16.22
51	.0670	2	3-3/4	TLDC#51	16.22
52	.0635	2	3-3/4	TLDC#52	16.22
53	.0595	1-3/4	3	TLDC#53	16.22
54	.0550	1-3/4	3	TLDC#54	16.22
55	.0520	1-3/4	3	TLDC#55	16.22
56	.0465	1-1/8	2-1/4	TLDC#56	16.22
57	.0430	1-1/8	2-1/4	TLDC#57	16.22
58	.0420	1-1/8	2-1/4	TLDC#58	16.22
59	.0410	1-1/8	2-1/4	TLDC#59	16.22
60	.0400	1-1/8	2-1/4	TLDC#60	16.22

#53 - #60 are not split point.

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	3-3/4	6-1/8	TLDC"A"	25.26
B	.238	3-3/4	6-1/8	TLDC"B"	25.26
C	.242	3-3/4	6-1/8	TLDC"C"	25.26
D	.246	3-3/4	6-1/8	TLDC"D"	25.26
E	.250	3-3/4	6-1/8	TLDC"E"	19.38
F	.257	3-7/8	6-1/4	TLDC"F"	30.06
G	.261	3-7/8	6-1/4	TLDC"G"	30.06
H	.266	3-7/8	6-1/4	TLDC"H"	30.06
I	.272	3-7/8	6-1/4	TLDC"I"	30.06
J	.277	3-7/8	6-1/4	TLDC"J"	30.06
K	.281	3-7/8	6-1/4	TLDC"K"	30.06
L	.290	4	6-3/8	TLDC"L"	30.06
M	.295	4	6-3/8	TLDC"M"	30.06

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	4	6-3/8	TLDC"N"	30.06
O	.316	4-1/8	6-1/2	TLDC"O"	33.04
P	.323	4-1/8	6-1/2	TLDC"P"	33.04
Q	.332	4-1/8	6-1/2	TLDC"Q"	33.04
R	.339	4-1/8	6-1/2	TLDC"R"	33.04
S	.348	4-1/4	6-3/4	TLDC"S"	40.72
T	.358	4-1/4	6-3/4	TLDC"T"	40.72
U	.368	4-1/4	6-3/4	TLDC"U"	40.72
V	.377	4-3/8	7	TLDC"V"	42.10
W	.386	4-3/8	7	TLDC"W"	42.10
X	.397	4-3/8	7	TLDC"X"	42.10
Y	.404	4-3/8	7	TLDC"Y"	42.10
Z	.413	4-5/8	7-1/4	TLDC"Z"	42.10

PACKAGING

#1 to #60 - 12 Drills/Envelope • A to I - 12 Drills/Envelope • J to Z - 6 Drills/Tube

HIGH SPEED STEEL TAPER LENGTH DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TLDHB	 OXIDE FINISH	For deep hole drilling in hard steels, stainless steels and other hard materials. Mfr. to NAS 907-B specs.	M2	135° Split Pt. Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
* 1/16	.0625	1-3/4	3	TLDHB004	4.30
* 5/64	.0781	2	3-3/4	TLDHB005	4.30
3/32	.0938	2-1/4	4-1/4	TLDHB006	5.22
7/64	.1094	2-1/2	4-5/8	TLDHB007	7.06
1/8	.1250	2-3/4	5-1/8	TLDHB008	7.90
9/64	.1406	3	5-3/8	TLDHB009	8.80
5/32	.1562	3	5-3/8	TLDHB010	8.80
11/64	.1719	3-3/8	5-3/4	TLDHB011	9.98
3/16	.1875	3-3/8	5-3/4	TLDHB012	9.98
13/64	.2031	3-5/8	6	TLDHB013	11.08
7/32	.2188	3-5/8	6	TLDHB014	11.08
15/64	.2344	3-3/4	6-1/8	TLDHB015	11.34
1/4	.2500	3-3/4	6-1/8	TLDHB016	11.34
17/64	.2656	3-7/8	6-1/4	TLDHB017	12.22
9/32	.2812	3-7/8	6-1/4	TLDHB018	12.22
19/64	.2969	4	6-3/8	TLDHB019	12.66
5/16	.3125	4	6-3/8	TLDHB020	12.66
21/64	.3281	4-1/8	6-1/2	TLDHB021	13.96
11/32	.3438	4-1/8	6-1/2	TLDHB022	13.96
23/64	.3594	4-1/4	6-3/4	TLDHB023	15.34
3/8	.3750	4-1/4	6-3/4	TLDHB024	15.34
25/64	.3906	4-3/8	7	TLDHB025	18.06
13/32	.4062	4-3/8	7	TLDHB026	18.06
27/64	.4219	4-5/8	7-1/4	TLDHB027	19.70
7/16	.4375	4-5/8	7-1/4	TLDHB028	19.70
29/64	.4531	4-3/4	7-1/2	TLDHB029	23.52
15/32	.4688	4-3/4	7-1/2	TLDHB030	23.52
31/64	.4844	4-3/4	7-3/4	TLDHB031	25.18
1/2	.5000	4-3/4	7-3/4	TLDHB032	25.18

* Not Split Point

AUTOMOTIVE (TANG) TAPER LENGTH DRILLS**ICS USA****SPECIAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	SHANK SPECS
TLDAT	 OXIDE FINISH	For applications where a longer than jobber length drill is required. The tapered shanks are for use with positive drive split sleeve drivers.	M2	118° Point Std. Spiral Std. Web	TANG

Fractional Sizes (Tanged Shank) 1/8" to 3/4" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	2-3/4	5-1/8	TLDAT008	6.58
9/64	.1406	3	5-3/8	TLDAT009	7.58
5/32	.1562	3	5-3/8	TLDAT010	8.20
11/64	.1719	3-3/8	5-3/8	TLDAT011	8.20
3/16	.1875	3-3/8	5-3/4	TLDAT012	7.94
13/64	.2031	3-5/8	6	TLDAT013	9.18
7/32	.2188	3-5/8	6	TLDAT014	9.66
15/64	.2344	3-3/4	6-1/8	TLDAT015	9.90
1/4	.2500	3-3/4	6-1/8	TLDAT016	10.92
17/64	.2656	3-7/8	6-1/4	TLDAT017	11.76
9/32	.2812	3-7/8	6-1/4	TLDAT018	11.24
19/64	.2969	4	6-3/8	TLDAT019	11.24
5/16	.3125	4	6-3/8	TLDAT020	11.24
21/64	.3281	4-1/8	6-1/2	TLDAT021	13.12
11/32	.3438	4-1/8	6-1/2	TLDAT022	12.86
23/64	.3594	4-1/4	6-3/4	TLDAT023	15.40
3/8	.3750	4-1/4	6-3/4	TLDAT024	15.34
25/64	.3906	4-3/8	7	TLDAT025	16.72
13/32	.4062	4-3/8	7	TLDAT026	16.72
27/64	.4219	4-5/8	7-1/4	TLDAT027	18.58

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7/16	.4375	4-5/8	7-1/4	TLDAT028	19.12
29/64	.4531	4-3/4	7-1/2	TLDAT029	20.78
15/32	.4688	4-3/4	7-1/2	TLDAT030	22.18
31/64	.4844	4-3/4	7-3/4	TLDAT031	24.36
1/2	.5000	4-3/4	7-3/4	TLDAT032	23.24
33/64	.5156	4-3/4	8	TLDAT033	31.16
17/32	.5312	4-3/4	8	TLDAT034	31.16
35/64	.5469	4-7/8	8-1/4	TLDAT035	32.52
9/16	.5625	4-7/8	8-1/4	TLDAT036	32.52
37/64	.5781	4-7/8	8-1/4	TLDAT037	38.56
19/32	.5938	4-7/8	8-3/4	TLDAT038	38.56
39/64	.6094	4-7/8	8-3/4	TLDAT039	38.56
5/8	.6250	4-7/8	8-3/4	TLDAT040	38.56
41/64	.6406	5-1/8	9	TLDAT041	43.50
21/32	.6562	5-1/8	9	TLDAT042	43.50
43/64	.6719	5-3/8	9-1/4	TLDAT043	46.80
11/16	.6875	5-3/8	9-1/4	TLDAT044	46.80
45/64	.7031	5-5/8	9-1/2	TLDAT045	52.56
23/32	.7188	5-5/8	9-1/2	TLDAT046	56.02
3/4	.7500	5-7/8	9-3/4	TLDAT048	53.56

Wire Gauge Sizes (Tanged Shank) #1 to #30 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	3-3/4	6-1/8	TLDAT#01	11.74
2	.2210	3-3/4	6-1/8	TLDAT#02	11.74
3	.2130	3-5/8	6	TLDAT#03	11.32
4	.2090	3-5/8	6	TLDAT#04	11.32
5	.2055	3-5/8	6	TLDAT#05	11.32
6	.2040	3-5/8	6	TLDAT#06	11.32
7	.2010	3-5/8	6	TLDAT#07	11.32
8	.1990	3-5/8	6	TLDAT#08	11.32
9	.1960	3-5/8	6	TLDAT#09	11.32
10	.1935	3-5/8	6	TLDAT#10	11.32
11	.1910	3-5/8	6	TLDAT#11	11.32
12	.1890	3-5/8	6	TLDAT#12	11.32
13	.1850	3-3/8	5-3/4	TLDAT#13	10.24
14	.1820	3-3/8	5-3/4	TLDAT#14	10.24
15	.1800	3-3/8	5-3/4	TLDAT#15	10.24

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
16	.1770	3-3/8	5-3/4	TLDAT#16	10.24
17	.1730	3-3/8	5-3/4	TLDAT#17	10.24
18	.1695	3-3/8	5-3/4	TLDAT#18	10.24
19	.1660	3-3/8	5-3/4	TLDAT#19	10.24
20	.1610	3-3/8	5-3/4	TLDAT#20	10.24
21	.1590	3-3/8	5-3/4	TLDAT#21	10.24
22	.1570	3-3/8	5-3/4	TLDAT#22	10.24
23	.1549	3	5-3/8	TLDAT#23	10.24
24	.1520	3	5-3/8	TLDAT#24	10.24
25	.1490	3	5-3/8	TLDAT#25	10.24
26	.1470	3	5-3/8	TLDAT#26	10.24
27	.1440	3	5-3/8	TLDAT#27	10.24
28	.1405	3	5-3/8	TLDAT#28	10.42
29	.1360	3	5-3/8	TLDAT#29	10.42
30	.1285	3	5-3/8	TLDAT#30	10.42

PACKAGING

1/8 to 1/4 - 12 Drills/Envelope • 17/64 to 3/8 - 6 Drills/Tube • 25/64 to 3/4 - 1 Drill/Tube
 #1 to #30 - 12 Drills/Envelope

AUTOMOTIVE (TANG) TAPER LENGTH DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT

**Letter Sizes (Straight Shank) "A" to "Z" Dia.**

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	3-3/4	6-1/8	TLDAT"A"	15.12
B	.238	3-3/4	6-1/8	TLDAT"B"	13.22
C	.242	3-3/4	6-1/8	TLDAT"C"	13.22
D	.246	3-3/4	6-1/8	TLDAT"D"	13.22
E	.250	3-3/4	6-1/8	TLDAT"E"	9.32
F	.257	3-7/8	6-1/4	TLDAT"F"	15.62
G	.261	3-7/8	6-1/4	TLDAT"G"	15.62
H	.266	3-7/8	6-1/4	TLDAT"H"	16.12
I	.272	3-7/8	6-1/4	TLDAT"I"	15.12
J	.277	3-7/8	6-1/4	TLDAT"J"	15.12
K	.281	3-7/8	6-1/4	TLDAT"K"	16.06
L	.290	4	6-3/8	TLDAT"L"	16.44
M	.295	4	6-3/8	TLDAT"M"	17.54

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	4	6-3/8	TLDAT"N"	16.06
O	.316	4-1/8	6-1/2	TLDAT"O"	17.04
P	.323	4-1/8	6-1/2	TLDAT"P"	17.04
Q	.332	4-1/8	6-1/2	TLDAT"Q"	16.44
R	.339	4-1/8	6-1/2	TLDAT"R"	16.44
S	.348	4-1/4	6-3/4	TLDAT"S"	18.80
T	.358	4-1/4	6-3/4	TLDAT"T"	19.98
U	.368	4-1/4	6-3/4	TLDAT"U"	19.08
V	.377	4-3/8	7	TLDAT"V"	19.70
W	.386	4-3/8	7	TLDAT"W"	20.96
X	.397	4-3/8	7	TLDAT"X"	19.38
Y	.404	4-3/8	7	TLDAT"Y"	20.84
Z	.413	4-5/8	7-1/4	TLDAT"Z"	21.74

PACKAGING

A to I - 12 Drills/Envelope • J to Z - 6 Drills/Tube

FAST SPIRAL TAPER LENGTH DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TLDF	 BRIGHT POLISHED FINISH	For deep hole drilling low tensile strength materials such as aluminum, magnesium, copper, zinc, and similar materials producing long stringy swarf. Excellent chip-clearing.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Straight Shank) 1/16" to 1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	1-3/4	3	TLDF004	4.70
5/64	.0781	2	3-3/4	TLDF005	5.14
3/32	.0938	2-1/4	4-1/4	TLDF006	5.22
7/64	.1094	2-1/2	4-5/8	TLDF007	7.06
1/8	.1250	2-3/4	5-1/8	TLDF008	7.90
9/64	.1406	3	5-3/8	TLDF009	9.34
5/32	.1562	3	5-3/8	TLDF010	9.34
11/64	.1719	3-3/8	5-3/4	TLDF011	10.64
3/16	.1875	3-3/8	5-3/4	TLDF012	10.64
13/64	.2031	3-5/8	6	TLDF013	11.50
7/32	.2188	3-5/8	6	TLDF014	11.50
15/64	.2344	3-3/4	6-1/8	TLDF015	12.48
1/4	.2500	3-3/4	6-1/8	TLDF016	12.48
17/64	.2656	3-7/8	6-1/4	TLDF017	13.02
9/32	.2812	3-7/8	6-1/4	TLDF018	13.02

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
19/64	.2969	4	6-3/8	TLDF019	13.42
5/16	.3125	4	6-3/8	TLDF020	13.42
21/64	.3281	4-1/8	6-1/2	TLDF021	14.76
11/32	.3438	4-1/8	6-1/2	TLDF022	14.76
23/64	.3594	4-1/4	6-3/4	TLDF023	16.34
3/8	.3750	4-1/4	6-3/4	TLDF024	16.34
25/64	.3906	4-3/8	7	TLDF025	18.06
13/32	.4062	4-3/8	7	TLDF026	18.06
27/64	.4219	4-5/8	7-1/4	TLDF027	20.82
7/16	.4375	4-5/8	7-1/4	TLDF028	20.82
29/64	.4531	4-3/4	7-1/2	TLDF029	23.66
15/32	.4688	4-3/4	7-1/2	TLDF030	23.66
31/64	.4844	4-3/4	7-3/4	TLDF031	25.44
1/2	.5000	4-3/4	7-3/4	TLDF032	25.44

HIGH SPEED STEEL TAPER LENGTH CORE DRILLS

MET-80

ICS USA

GENERAL PURPOSE

118° CHAMFER

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
CD3FSS (3 Flute)	 OXIDE FINISH	Three flute core drills have more chip clearing than four flute core drills. They are used for deep holes and for holes requiring substantial enlarging.	M2	*90° Point (small sizes) 118° Chamfer Std. Spiral Hvy. Duty Web
CD4FSS (4 Flute)	 OXIDE FINISH	Four flute core drills have a better surface finish than three flute core drills and can be run at higher metal removal rates. They are used for holes requiring light to medium enlarging. Most users find them easier to resharpen and measure.	M2	118° Chamfer Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/4" to 2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	
				3 FLUTE	4 FLUTE
1/4	.2500	3-3/4	6-1/8	CD3FSS016	CD4FSS016
17/64	.2656	3-7/8	6-1/4	CD3FSS017	CD4FSS017
9/32	.2812	3-7/8	6-1/4	CD3FSS018	CD4FSS018
19/64	.2969	4	6-3/8	CD3FSS019	CD4FSS019
5/16	.3125	4	6-3/8	CD3FSS020	CD4FSS020
21/64	.3281	4-1/8	6-1/2	CD3FSS021	CD4FSS021
11/32	.3438	4-1/8	6-1/2	CD3FSS022	CD4FSS022
23/64	.3594	4-1/4	6-3/4	CD3FSS023	CD4FSS023
3/8	.3750	4-1/4	6-3/4	CD3FSS024	CD4FSS024
25/64	.3906	4-3/8	7	CD3FSS025	CD4FSS025
13/32	.4062	4-3/8	7	CD3FSS026	CD4FSS026
27/64	.4219	4-5/8	7-1/4	CD3FSS027	CD4FSS027
7/16	.4375	4-5/8	7-1/4	CD3FSS028	CD4FSS028
29/64	.4531	4-3/4	7-1/2	CD3FSS029	CD4FSS029
15/32	.4688	4-3/4	7-1/2	CD3FSS030	CD4FSS030
31/64	.4844	4-3/4	7-3/4	CD3FSS031	CD4FSS031
1/2	.5000	4-3/4	7-3/4	CD3FSS032	CD4FSS032
33/64	.5156	4-3/4	8	CD3FSS033	CD4FSS033
17/32	.5312	4-3/4	8	CD3FSS034	CD4FSS034
35/64	.5469	4-7/8	8-1/4	CD3FSS035	CD4FSS035
9/16	.5625	4-7/8	8-1/4	CD3FSS036	CD4FSS036
19/32	.5938	4-7/8	8-3/4	CD3FSS038	CD4FSS038
39/64	.6094	4-7/8	8-3/4	CD3FSS039	CD4FSS039
5/8	.6250	4-7/8	8-3/4	CD3FSS040	CD4FSS040
41/64	.6406	5-1/8	9	CD3FSS041	CD4FSS041
21/32	.6562	5-1/8	9	CD3FSS042	CD4FSS042
43/64	.6719	5-3/8	9-1/4	CD3FSS043	CD4FSS043
11/16	.6875	5-3/8	9-1/4	CD3FSS044	CD4FSS044
45/64	.7031	5-5/8	9-1/2	CD3FSS045	CD4FSS045
23/32	.7188	5-5/8	9-1/2	CD3FSS046	CD4FSS046
3/4	.7500	5-7/8	9-3/4	CD3FSS048	CD4FSS048
49/64	.7656	6	9-7/8	CD3FSS049	CD4FSS049
25/32	.7812	6	9-7/8	CD3FSS050	CD4FSS050
51/64	.7969	6-1/8	10	CD3FSS051	CD4FSS051
13/16	.8125	6-1/8	10	CD3FSS052	CD4FSS052
27/32	.8438	6-1/8	10	CD3FSS054	CD4FSS054
55/64	.8594	6-1/8	10	CD3FSS055	CD4FSS055
7/8	.8750	6-1/8	10	CD3FSS056	CD4FSS056
57/64	.8906	6-1/8	10	CD3FSS057	CD4FSS057
29/32	.9062	6-1/8	10	CD3FSS058	CD4FSS058
59/64	.9219	6-1/8	10-3/4	CD3FSS059	CD4FSS059
15/16	.9375	6-1/8	10-3/4	CD3FSS060	CD4FSS060
61/64	.9531	6-3/8	11	CD3FSS061	CD4FSS061
31/32	.9688	6-3/8	11	CD3FSS062	CD4FSS062
63/64	.9844	6-3/8	11	CD3FSS063	CD4FSS063
1	1.0000	6-3/8	11	CD3FSS100	CD4FSS100
1-1/32	1.0312	6-1/2	11-1/8	CD3FSS102	CD4FSS102
1-1/16	1.0625	6-5/8	11-1/4	CD3FSS104	CD4FSS104
1-3/32	1.0938	6-7/8	11-1/2	CD3FSS106	CD4FSS106
1-1/8	1.1250	7-1/8	11-3/4	CD3FSS108	CD4FSS108
1-9/64	1.1406	7-1/4	11-7/8	CD3FSS109	CD4FSS109
1-5/32	1.1562	7-1/4	11-7/8	CD3FSS110	CD4FSS110
1-11/64	1.1719	7-3/8	12	CD3FSS111	CD4FSS111
1-3/16	1.1875	7-3/8	12	CD3FSS112	CD4FSS112
1-7/32	1.2188	7-1/2	12-1/8	CD3FSS114	CD4FSS114
1-1/4	1.2500	7-7/8	12-1/2	CD3FSS116	CD4FSS116
1-9/32	1.2812	8-1/2	14-1/8	CD3FSS118	CD4FSS118
1-5/16	1.3125	8-5/8	14-1/4	CD3FSS120	CD4FSS120
1-11/32	1.3438	8-3/4	14-3/8	CD3FSS122	CD4FSS122
1-3/8	1.3750	8-7/8	14-1/2	CD3FSS124	CD4FSS124
1-13/32	1.4062	9	14-5/8	CD3FSS126	CD4FSS126
1-7/16	1.4375	9-1/8	14-3/4	CD3FSS128	CD4FSS128
1-15/32	1.4688	9-1/4	14-7/8	CD3FSS130	CD4FSS130
1-1/2	1.5000	9-3/8	15	CD3FSS132	CD4FSS132
1-5/8	1.6250	9-7/8	15-5/8	CD3FSS140	CD4FSS140
1-11/16	1.6875	10	15-3/4	CD3FSS144	CD4FSS144
1-23/32	1.7188	10-1/2	16-1/4	CD3FSS146	CD4FSS146
1-3/4	1.7500	10-1/2	16-1/4	CD3FSS148	CD4FSS148
1-13/16	1.8125	10-1/2	16-1/4	CD3FSS152	CD4FSS152
1-27/32	1.8438	10-3/4	16-1/2	CD3FSS154	CD4FSS154
1-7/8	1.8750	10-3/4	16-1/2	CD3FSS156	CD4FSS156
2	2.0000	10-3/4	16-3/4	CD3FSS200	CD4FSS200

CALL FOR PRICE

NOTE: Core drilling should be executed at approximately the same drilling speeds as would be employed in using a 2 flute drill. Feeds should be intermediate between those recommended for a drill and for a reamer for similar circumstances.

HIGH SPEED STEEL TAPER SHANK CORE DRILLS

ICS USA

GENERAL PURPOSE

118° CHAMFER

Core drills are designed to enlarge previously drilled, cored, or punched holes as small as 60% of the tool diameter. Three and four flute core drills have better hole size control than two flute drills and produce a very good surface finish, although not to the standard produced by a reamer. Note: Core drills cannot drill an original hole.

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
CD3FTS (3 Flute)	 OXIDE FINISH	Three flute core drills have more chip clearing than four flute core drills. They are used for deep holes and for holes requiring substantial enlarging.	M2	*90° Point (small sizes) 118° Chamfer Std. Spiral Hvy. Duty Web
CD4FTS (4 Flute)	 OXIDE FINISH	Four flute core drills have a better surface finish than three flute core drills and can be run at higher metal removal rates. They are used for holes requiring light to medium enlarging. Most users find them easier to sharpen and measure.	M2	118° Chamfer Std. Spiral Hvy. Duty Web

Fractional Sizes (Straight Shank) 1/4" to 3" Dia.

				HIGH SPEED STEEL	
	DEC.	FLUTE	OVERALL	OXIDE FINISH	OXIDE FINISH
SIZE	EQUIV.	LENGTH	LENGTH	3 FLUTE	4 FLUTE
				CD3FTS	CD4FTS
#1 MT SHANK					
*1/4	.2500	2-7/8	6-1/8	28.76	-
*9/32	.2812	3	6-1/4	28.96	-
*5/16	.3125	3-1/8	6-3/8	30.84	-
*11/32	.3438	3-1/4	6-1/2	38.16	-
3/8	.3750	3-1/2	6-3/4	38.16	-
13/32	.4062	3-5/8	7	36.54	-
7/16	.4375	3-7/8	7-1/4	38.28	-
15/32	.4688	4-1/8	7-1/2	40.66	-
#2 MT SHANK					
1/2	.5000	4-3/8	8-1/4	52.66	51.34
17/32	.5312	4-5/8	8-1/2	46.20	43.06
9/16	.5625	4-7/8	8-3/4	50.24	46.34
37/64	.5781	4-7/8	8-3/4	54.56	53.24
19/32	.5938	4-7/8	8-3/4	52.50	50.76
5/8	.6250	4-7/8	8-3/4	55.10	53.76
21/32	.6562	5-1/8	9	58.96	57.52
11/16	.6875	5-3/8	9-1/4	63.04	61.52
23/32	.7188	5-5/8	9-1/2	68.18	66.54
3/4	.7500	5-7/8	9-3/4	76.64	70.94
25/32	.7812	6	9-7/8	82.32	77.28
#3 MT SHANK					
13/16	.8125	6-1/8	10-3/4	95.36	87.88
27/32	.8438	6-1/8	10-3/4	96.76	91.86
55/64	.8594	6-1/8	10-3/4	-	97.74
7/8	.8750	6-1/8	10-3/4	103.06	95.74
29/32	.9062	6-1/8	10-3/4	107.30	103.62
15/16	.9375	6-1/8	10-3/4	106.96	103.74
31/32	.9688	6-3/8	11	119.12	116.20
1	1.0000	6-3/8	11	129.02	121.64
1-1/32	1.0312	6-1/2	11-1/8	146.06	130.80
1-1/16	1.0625	6-5/8	11-1/4	148.30	136.10
1-5/64	1.0781	6-7/8	11-1/2	-	158.80
#4 MT SHANK					
1-3/32	1.0938	6-7/8	12-1/2	175.08	152.54
1-1/8	1.1250	7-1/8	12-3/4	174.38	161.90
1-5/32	1.1562	7-1/4	12-7/8	185.58	171.36
1-3/16	1.1875	7-3/8	13	194.86	178.98
1-7/32	1.2188	7-1/2	13-1/8	224.42	191.48
1-1/4	1.2500	7-7/8	13-1/2	224.42	208.08
1-9/32	1.2812	8-1/2	14-1/8	302.02	239.60
1-5/16	1.3125	8-5/8	14-1/4	313.66	249.06

				HIGH SPEED STEEL	
				OXIDE FINISH 3 FLUTE	OXIDE FINISH 4 FLUTE
				CD3FTS	CD4FTS
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH		
#4 MT SHANK					
1-11/32	1.3438	8-3/4	14-3/8	333.82	381.18
1-3/8	1.3750	8-7/8	14-1/2	333.82	264.90
1-13/32	1.4062	9	14-5/8	366.22	277.20
1-7/16	1.4375	9-1/8	14-3/4	366.22	290.62
1-15/32	1.4688	9-1/4	14-7/8	395.26	304.64
1-1/2	1.5000	9-3/8	15	395.26	313.76
#5 MT SHANK					
1-17/32	1.5312	9-3/8	16-3/8	438.02	352.78
1-9/16	1.5625	9-5/8	16-5/8	438.02	376.52
1-19/32	1.5938	9-7/8	16-7/8	467.50	527.28
1-39/64	1.6094	10	17	-	417.52
1-5/8	1.6250	10	17	-	428.72
1-21/32	1.6562	10-1/8	17-1/8	-	423.40
1-11/16	1.6875	10-1/8	17-1/8	490.66	439.24
1-23/32	1.7188	10-1/8	17-1/8	-	438.20
1-3/4	1.7500	10-1/8	17-1/8	-	467.10
1-25/32	1.7812	10-1/8	17-1/8	-	486.84
1-13/16	1.8125	10-1/8	17-1/8	-	500.72
1-27/32	1.8438	10-1/8	17-1/8	-	523.40
1-7/8	1.8750	10-3/8	17-3/8	602.62	544.14
1-29/32	1.9062	10-3/8	17-3/8	-	569.52
1-15/16	1.9375	10-3/8	17-3/8	-	580.04
1-31/32	1.9688	10-3/8	17-3/8	632.70	595.34
2	2.0000	10-3/8	17-3/8	-	615.54
2-1/32	2.0312	10-3/8	17-3/8	-	657.68
2-1/16	2.0625	10-1/4	17-3/8	-	657.68
2-1/8	2.1250	10-1/4	17-3/8	-	673.74
2-3/16	2.1875	10-1/4	17-3/8	-	735.06
2-1/4	2.2500	10-1/8	17-3/8	773.70	745.72
2-5/16	2.3125	10-1/8	17-3/8	-	822.68
2-3/8	2.3750	10-1/8	17-3/8	-	838.98
2-7/16	2.4375	11-1/4	18-3/4	-	1028.96
2-1/2	2.5000	11-1/4	18-3/4	-	1050.90
2-9/16	2.5625	11-7/8	19-1/2	-	1128.96
2-5/8	2.6250	11-7/8	19-1/2	-	1192.46
2-11/16	2.6875	12-3/4	20-3/8	-	1293.74
2-3/4	2.7500	12-3/4	20-3/8	1592.74	1327.30
2-13/16	2.8125	13-3/8	21-1/8	-	1584.08
2-7/8	2.8750	13-3/8	21-1/8	-	1598.16
2-15/16	2.9375	14	21-3/4	-	1711.08
3	3.0000	14	21-3/4	-	1792.86

HIGH SPEED STEEL TAPER LENGTH OIL HOLE DRILLS

MET-82

ICS USA

SPECIAL PURPOSE

PERFECT POINT



Perfect Point® Taper Length Oil Hole Drills are designed for tough jobs when higher feeds and increased speeds of 30% or more are used. They were originally used for high production work on screw machines and turret lathes. Coolants such as air, oil, or vapor mist make oil hole drills adaptable to a wide range of drilling operations. All ICS oil hole drills are compatible with all standard coolant delivery systems. For extra (100-300%) wear, specify titanium nitride coated oil hole drills. The Perfect Point® was specifically designed for high production work in steel drilling machines and will drill twice as many holes as cobalt oil hole drills. Up to 1500 drilled holes per drill is not uncommon.

Fractional Sizes (Straight Shank) 15/64" to 2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH PERFECT PT.	OXIDE FINISH PERFECT PT.
				OHD-SS	OHD-SST
15/64	.2344	3-3/8	5-3/4	219.32	-
1/4	.2500	3-3/4	6-1/8	219.32	-
9/32	.2812	4	6-3/8	219.32	-
19/64	.2969	4	6-3/8	219.32	-
5/16	.3125	4	6-3/8	219.32	-
21/64	.3281	4-1/8	6-1/2	219.32	-
11/32	.3438	4-1/8	6-1/2	219.32	-
23/64	.3594	4-1/4	6-3/4	219.32	-
3/8	.3750	4-1/4	6-3/4	218.32	-
25/64	.3906	4-3/8	7	222.40	-
13/32	.4062	4-3/8	7	222.40	-
27/64	.4219	4-5/8	7-1/4	230.54	-
7/16	.4375	4-5/8	7-1/4	230.54	-
29/64	.4531	4-7/8	7-1/2	235.38	-
15/32	.4688	4-7/8	7-1/2	235.38	-
31/64	.4844	5	7-3/4	238.38	-
1/2	.5000	5	7-3/4	238.38	255.42
33/64	.5156	5-1/4	8	238.38	270.12
17/32	.5312	5-1/4	8	238.38	270.12
35/64	.5469	5-3/8	8-1/4	247.56	275.78
9/16	.5625	5-3/8	8-1/4	247.56	275.78
37/64	.5781	5-5/8	8-1/2	250.34	278.56
19/32	.5938	5-5/8	8-1/2	250.34	278.56
39/64	.6094	5-3/4	8-3/4	262.42	290.64
5/8	.6250	5-3/4	8-3/4	262.42	290.64
41/64	.6406	5-7/8	9	262.42	299.46
21/32	.6562	5-7/8	9	262.42	299.46
43/64	.6719	6	9-1/4	268.38	305.42
11/16	.6875	6	9-1/4	268.38	305.42
45/64	.7031	6-3/16	9-1/2	275.36	312.40
23/32	.7188	6-3/16	9-1/2	275.36	312.40
47/64	.7344	6-3/8	9-3/4	294.42	331.46
3/4	.7500	6-3/8	9-3/4	294.42	331.46
49/64	.7656	6-1/2	9-7/8	299.46	353.56
25/32	.7812	6-1/2	9-7/8	299.46	353.56
51/64	.7969	6-5/8	10	306.48	360.58
13/16	.8125	6-5/8	10	306.48	360.58
53/64	.8281	6-3/4	10-1/4	312.54	366.64
27/32	.8438	6-3/4	10-1/4	312.54	366.64
55/64	.8594	7	10-1/2	338.36	392.46
7/8	.8750	7	10-1/2	338.36	392.46
57/64	.8906	7	10-5/8	362.50	416.60

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH PERFECT PT.	OXIDE FINISH PERFECT PT.
				OHD-SS	OHD-SST
29/32	.9062	7	10-5/8	362.50	416.60
59/64	.9219	7	10-3/4	387.58	441.68
15/16	.9375	7	10-3/4	387.58	441.68
61/64	.9531	7-1/8	10-7/8	406.50	460.60
31/32	.9688	7-1/8	10-7/8	406.50	460.60
63/64	.9844	7-3/16	11	426.66	480.76
1	1.0000	7-3/16	11	426.66	480.76
1-1/64	1.0156	7-5/16	11-1/8	450.56	521.12
1-1/32	1.0312	7-5/16	11-1/8	450.56	521.12
1-3/64	1.0469	7-3/8	11-1/4	468.78	539.34
1-1/16	1.0625	7-3/8	11-1/4	468.78	539.34
1-5/64	1.0781	7-5/8	11-1/2	487.72	558.30
1-3/32	1.0938	7-5/8	11-1/2	487.72	558.30
1-7/64	1.1094	7-7/8	11-3/4	512.64	583.20
1-1/8	1.1250	7-7/8	11-3/4	512.64	583.20
1-9/64	1.1406	8	11-7/8	537.80	608.36
1-5/32	1.1562	8	11-7/8	537.80	608.36
1-11/64	1.1719	8-1/8	12	562.84	633.40
1-3/16	1.1875	8-1/8	12	562.84	633.40
1-13/64	1.2031	8-1/8	12-1/8	587.80	658.36
1-7/32	1.2188	8-1/8	12-1/8	627.00	658.36
1-15/64	1.2344	8-1/2	12-1/2	611.88	682.44
1-1/4	1.2500	8-1/2	12-1/2	611.88	682.44
1-17/64	1.2656	9-1/4	14-1/8	651.28	792.40
1-9/32	1.2812	9-1/4	14-1/8	651.28	792.40
1-19/64	1.2969	9-1/4	14-1/4	678.92	820.04
1-5/16	1.3125	9-1/4	14-1/4	678.92	820.04
1-21/64	1.3281	9-1/2	14-3/8	722.66	863.78
1-11/32	1.3438	9-1/2	14-3/8	722.66	863.78
1-23/64	1.3594	9-1/2	14-1/2	762.16	903.28
1-3/8	1.3750	9-1/2	14-1/2	762.16	903.28
1-13/32	1.4062	9-1/2	14-5/8	853.24	994.36
1-7/16	1.4375	9-1/8	14-3/4	853.24	994.36
1-15/32	1.4688	9-1/8	14-7/8	923.20	1064.32
1-1/2	1.5000	9-5/8	15	923.20	1064.32
1-9/16	1.5625	9-5/8	15-1/4	1023.40	1164.52
1-5/8	1.6250	9-7/8	15-5/8	1107.66	1248.76
1-11/16	1.6875	10	15-3/4	1258.22	1399.34
1-3/4	1.7500	10-1/2	16-1/4	1329.16	1470.28
1-13/16	1.8125	10-1/2	16-1/4	1340.02	1551.70
1-7/8	1.8750	10-3/4	16-1/2	1473.64	1614.76
1-15/16	1.9375	10-3/4	16-5/8	1582.62	1723.74
2	2.0000	10-3/4	16-5/8	1662.14	1803.26

STRAIGHT SHANK END TAPPED WITH A PIPE THREAD
 1/2 to 3/4 - 1/8 Taper Pipe Tap
 49/64 to 1-1/4 - 1/4 Taper Pipe Tap
 1-17/64 to 2 - 3/8 Taper Pipe Tap

SPECIAL SIZE OIL HOLE DRILLS CAN BE MADE TO YOUR REQUIREMENTS. LEFT HAND, COBALT, AND SLOW HELIX OIL HOLE DRILLS ARE ALSO AVAILABLE.

HIGH SPEED STEEL TAPER SHANK OIL HOLE DRILLS

ICS USA

SPECIAL PURPOSE

PERFECT POINT



Perfect Point® Taper Shank Oil Hole Drills are designed for hole drilling and where heavy feed conditions are required. Coolant flow virtually eliminates chip packing and other problems common to deep hole drilling applications. The Perfect Point® was specifically designed for high production work in steel drilling machines and will drill twice as many holes as cobalt oil hole drills. Up to 1500 drilled holes per drill is not uncommon.

Fractional Sizes (Regular MT Shanks) 3/8" to 2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH PERFECT PT.	OXIDE FINISH PERFECT PT.
				OHD-TS	OHD-TST
#2 MT SHANK					
3/8	.3750	3-1/2	7-5/8	375.92	-
25/64	.3906	3-5/8	8	375.92	CALL
13/32	.4062	3-5/8	8	375.92	FOR
27/64	.4219	3-7/8	8-1/8	375.92	PRICE
7/16	.4375	3-7/8	8-3/8	375.92	-
29/64	.4531	4-1/8	8-3/4	375.92	-
#3 MT SHANK					
15/32	.4688	4-1/8	8-3/4	352.36	-
31/64	.4844	4-3/8	9	352.36	-
1/2	.5000	4-3/8	9	352.36	-
33/64	.5156	4-5/8	9-1/4	352.36	-
17/32	.5312	4-5/8	9-1/4	352.36	-
35/64	.5469	4-7/8	9-1/2	352.36	-
9/16	.5625	4-7/8	9-1/2	315.32	-
37/64	.5781	4-7/8	9-1/2	352.36	-
19/32	.5938	4-7/8	9-1/2	315.32	-
39/64	.6094	4-7/8	9-1/2	315.32	-
5/8	.6250	4-7/8	9-1/2	315.32	-
41/64	.6406	5-1/8	9-3/4	315.32	-
21/32	.6562	5-1/8	9-3/4	315.32	-
43/64	.6719	5-3/8	10	320.24	-
11/16	.6875	5-3/8	10	320.24	CALL
45/64	.7031	5-5/8	10-1/4	324.64	FOR
23/32	.7188	5-5/8	10-1/4	324.64	PRICE
47/64	.7344	5-7/8	10-1/2	324.64	-
3/4	.7500	5-7/8	10-1/2	324.64	-
49/64	.7656	6	10-5/8	327.82	-
25/32	.7812	6	10-5/8	327.82	-
51/64	.7969	6-1/8	10-3/4	327.82	-
13/16	.8125	6-1/8	10-3/4	327.82	-
53/64	.8281	6-1/8	10-3/4	356.74	-
27/32	.8438	6-1/8	10-3/4	356.74	-
55/64	.8594	6-1/8	10-3/4	356.74	-
7/8	.8750	6-1/8	10-3/4	356.74	-
57/64	.8906	6-1/8	10-3/4	357.80	-
29/32	.9062	6-1/8	10-3/4	357.80	-
59/64	.9219	6-1/8	10-3/4	357.80	-
15/16	.9375	6-1/8	10-3/4	357.80	-
61/64	.9531	6-3/8	11	421.88	-
31/32	.9688	6-3/8	11	421.88	-
63/64	.9844	6-3/8	11	421.88	-

PACKAGING: 1Drill/Plastic Tube

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TIN COAT
				OXIDE FINISH PERFECT PT.	OXIDE FINISH PERFECT PT.
				OHD-TS	OHD-TST
#3 MT SHANK					
1	1.0000	6-3/8	11	421.88	-
1-1/64	1.0156	6-1/2	11-1/8	457.00	CALL FOR PRICE
1-1/32	1.0312	6-1/2	11-1/8	457.00	
1-3/64	1.0469	6-5/8	11-1/4	457.00	
1-1/16	1.0625	6-5/8	11-1/4	457.00	
#4 MT SHANK					
1-5/64	1.0781	6-7/8	12-1/2	539.84	-
1-3/32	1.0938	6-7/8	12-1/2	539.84	-
1-7/64	1.1094	7-1/8	12-3/4	590.46	-
1-1/8	1.1250	7-1/8	12-3/4	590.46	-
1-9/64	1.1406	7-1/4	12-7/8	590.46	-
1-5/32	1.1562	7-1/4	12-7/8	590.46	-
1-11/64	1.1719	7-3/8	13	594.10	-
1-3/16	1.1875	7-3/8	13	594.10	-
1-13/64	1.2031	7-1/2	13-1/8	676.06	-
1-7/32	1.2188	7-1/2	13-1/8	676.06	-
1-15/64	1.2344	7-7/8	13-1/2	676.06	-
1-1/4	1.2500	7-7/8	13-1/2	676.06	-
1-17/64	1.2656	8-1/2	14-1/8	821.78	CALL FOR PRICE
1-9/32	1.2812	8-1/2	14-1/8	821.78	
1-19/64	1.2969	8-5/8	14-1/4	982.24	
1-5/16	1.3125	8-5/8	14-1/4	884.14	
1-21/64	1.3281	8-3/4	14-3/8	884.14	-
1-11/32	1.3437	8-3/4	14-3/8	884.14	-
1-23/64	1.3594	8-7/8	14-1/2	978.66	-
1-3/8	1.3750	8-7/8	14-1/2	978.66	-
1-13/32	1.4062	9	14-5/8	978.66	-
1-7/16	1.4375	9-1/8	14-3/4	978.66	-
1-15/32	1.4688	9-1/4	14-7/8	1021.62	-
1-1/2	1.5000	9-3/8	15	1021.62	-
1-9/16	1.5625	9-5/8	15-1/4	1070.18	-
1-5/8	1.6250	10	15-5/8	1150.98	-
1-11/16	1.6875	10-1/8	15-3/4	1352.90	-
1-3/4	1.7500	10-1/8	16	1393.30	-
#5 MT SHANK					
1-13/16	1.8125	10-1/8	17-1/8	1453.84	- CALL FOR PRICE
1-7/8	1.8750	10-3/8	17-3/8	1534.64	
1-15/16	1.9375	10-3/8	17-3/8	1625.48	
2	2.0000	10-3/8	17-3/8	1665.88	

Special size oil hole drills can be made to your requirements. Left hand, cobalt, and slow helix oil hole drills are also available.

EXTRA LENGTH TAPER SHANK OIL HOLE DRILLS

ICS USA

SPECIAL PURPOSE

PERFECT POINT



Perfect Point® Extra Length Taper Shank Oil Hole Drills are designed for hole drilling and where heavy feed conditions are required. Coolant flow virtually eliminates chip packing and other problems common to deep hole drilling applications. The Perfect Point® was specifically designed for high production work in steel drilling machines and will drill twice as many holes as cobalt oil hole drills. Up to 1500 drilled holes per drill is not uncommon.

Fractional Sizes (Regular MT Shanks) 31/64" to 1-1/4" Dia.

HIGH SPEED STEEL				
SIZE	DEC. EQUIV.	10-1/2" OAL 6" FLUTE	12-1/2" OAL 8" FLUTE	14-1/2" OAL 10" FLUTE
		OHD-10L	OHD-12L	OHD-14L
#3 MT SHANK				
31/64	.4844	361.00	-	-
1/2	.5000	361.00	377.36	448.96
33/64	.5156	361.00	377.36	448.96
17/32	.5312	361.00	377.36	448.96
9/16	.5625	448.96	377.36	448.96
19/32	.5938	448.96	377.36	448.96
5/8	.6250	448.96	377.36	448.96
41/64	.6406	448.96	377.36	448.96
21/32	.6562	448.96	377.36	448.96
11/16	.6875	448.96	377.36	448.96
23/32	.7188	448.96	377.36	448.96
47/64	.7344	448.96	377.36	448.96
3/4	.7500	448.96	377.36	448.96
49/64	.7656	466.64	396.22	582.38

HIGH SPEED STEEL				
SIZE	DEC. EQUIV.	10-1/2" OAL 6" FLUTE	12-1/2" OAL 8" FLUTE	14-1/2" OAL 10" FLUTE
		OHD-10L	OHD-12L	OHD-14L
#3 MT SHANK				
25/32	.7812	465.88	396.22	465.88
13/16	.8125	-	396.22	465.88
27/32	.8438	-	406.32	479.22
7/8	.8750	479.22	411.50	479.22
29/32	.9062	-	411.50	488.18
15/16	.9375	488.18	411.50	488.18
31/32	.9688	506.62	433.36	506.62
63/64	.9844	548.60	471.12	548.60
1	1.0000	548.60	471.12	548.60
1-1/32	1.0312	-	488.30	567.28
1-1/16	1.0625	567.28	-	707.94
#4 MT SHANK				
1-1/8	1.1250	711.48	-	711.48
1-3/16	1.1875	763.22	-	763.22
1-1/4	1.2500	846.50	-	846.50

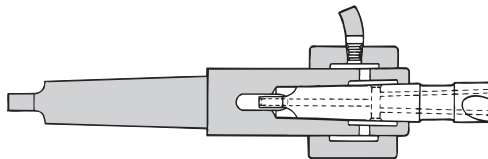
31/64 to 1-1/16 have #3 MT Shank. 1-1/8 to 1-1/4 have #4 MT Shank.

COOLANT INDUCOR SOCKET

ICS USA

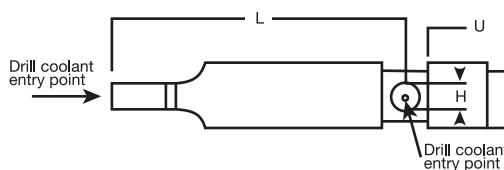
ADAPTER

SIDE SHANK FEED



Coolant Inducor Sockets are for adapting taper shank oil hole drills to morse taper coolant fed adapters. Oil is fed through the side of shank via internal oil holes within adapter. Adapter is designed with a slip ring to which the oil line can be connected when drill is rotating.

MORSE TAPER			
ITEM NO.	HOLE & SHANK SIZE	OVERALL LENGTH	PRICE EACH
CIS#2	2	6-7/8	211.74
CIS#3	3	8-1/2	258.94
CIS#4	4	10-1/2	654.46
CIS#5	5	13-3/4	1106.88



SPECIFICATIONS			
TAPER	L	H	U
MTS #2	2-3/16	5/32	3/8
MTS #3	2-7/32	5/32	1/2
MTS #4	3-5/8	7/32	5/8
MTS #5	4-3/4	9/32	3/4

NOTE: When side shank feed is used, set screw must remain in end of tang to block off tang end oil feed hole. To use tang end feed, simply remove set screw and insert into end feed holder. Side shank feed hole does not need to be blocked when using tang end feed.

HIGH SPEED STEEL MORSE TAPER EXTENSION SOCKETS

ICS USA

ADAPTERS

GROUND FINISH



HARDENED TANG ONLY
(Ground Externally)

INSIDE HOLE

OUTSIDE TAPER



HARDENED THROUGHOUT
(Ground Externally & Internally)

Morse Taper Extension Sockets are designed to adapt morse taper shank tools to larger or smaller morse taper holders. They can also be used to extend the length of taper shank tools. The concentricity between external and internal tapers is within .002". This tool is also referred to as a Fitted Socket.

SIZE	INSIDE HOLE TAPER	OUTSIDE TAPER SHANK	OVERALL LENGTH	HIGH SPEED STEEL	
				HARD TANG	HARD/GROUND
				MTES	MTESH
1 TO 2	1	2	6-3/4	29.14	39.98
1 TO 3	1	3	7-1/2	35.42	58.80
1 TO 4	1	4	8-3/4	42.46	58.80
1 TO 5	1	5	10	66.70	58.80
2 TO 1	2	1	6-1/4	33.88	39.98
2 TO 2	2	2	7-1/2	33.88	39.98
2 TO 3	2	3	8	33.88	47.04
2 TO 4	2	4	9-1/4	44.58	58.80
2 TO 5	2	5	10-3/4	61.74	101.86
3 TO 2	3	2	8-1/4	42.10	58.80
3 TO 3	3	3	9	42.10	58.80
3 TO 4	3	4	10	42.10	58.80

SIZE	INSIDE HOLE TAPER	OUTSIDE TAPER SHANK	OVERALL LENGTH	HIGH SPEED STEEL	
				HARD TANG	HARD/GROUND
				MTES	MTESH
3 TO 5	3	5	11-1/2	65.98	101.86
4 TO 2	4	2	8-1/2	64.58	70.56
4 TO 3	4	3	10-5/8	64.58	94.08
4 TO 4	4	4	11-5/8	64.58	94.08
4 TO 5	4	5	12-1/2	80.68	164.64
4 TO 6	4	6	14	184.04	235.20
5 TO 3	5	3	10-1/2	144.24	164.64
5 TO 4	5	4	13-1/8	144.24	164.64
5 TO 5	5	5	14-1/2	151.02	169.34
5 TO 6	5	6	16	184.04	275.18
6 TO 5	6	5	16	352.80	411.60

HIGH SPEED STEEL MORSE TAPER SLEEVES

ICS USA

ADAPTERS

GROUND FINISH



HARDENED TANG ONLY
(Ground Externally)

INSIDE HOLE

OUTSIDE TAPER



HARDENED THROUGHOUT
(Ground Externally & Internally)

Morse Taper Sleeves are designed to adapt morse taper shank tools to larger morse taper holders. The concentricity between external and internal tapers is within .001". They are sometimes referred to as Shell Sockets, Reduction Sleeves, Drill Sleeves or Drill Sockets.

SIZE	INSIDE HOLE TAPER	OUTSIDE TAPER SHANK	OVERALL LENGTH	HIGH SPEED STEEL	
				HARD TANG	HARD/GROUND
				MTS	MTSH
1 TO 2	1	2	3-5/8	15.06	24.60
1 TO 3	1	3	3-7/8	17.06	32.32
1 TO 4	1	4	4-7/8	26.46	52.00
1 TO 5	1	5	6-1/8	47.04	79.38
2 TO 3	2	3	4-3/8	17.06	32.34
2 TO 4	2	4	5	22.94	55.86

SIZE	INSIDE HOLE TAPER	OUTSIDE TAPER SHANK	OVERALL LENGTH	HIGH SPEED STEEL	
				HARD TANG	HARD/GROUND
				MTS	MTSH
2 TO 5	2	5	6-1/8	47.04	79.38
3 TO 4	3	4	5-1/2	26.72	56.00
3 TO 5	3	5	6-1/8	47.04	79.38
4 TO 5	4	5	6-3/4	60.56	79.38
4 TO 6	4	6	8-5/8	115.84	211.68
5 TO 6	5	6	8-5/8	125.84	211.68

MORSE TAPER ADAPTERS



Morse Taper Adapters are designed to adapt drills with 1/2" chucks for use with #2, 3, or 4 morse taper drills, reamers, countersinks, etc...

INSIDE HOLE TAPER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO	PRICE
2	1/2	5-3/4	MTA#2	39.64
3	1/2	6-1/2	MTA#3	46.34
4	1/2	7-7/8	MTA#4	65.96

MORSE TAPER SOLID SOCKETS

HARDENED AND GROUND THROUGHOUT



Morse Taper Solid Sockets are designed for adapting morse taper shank tools to machines with straight holes such as turret lathes, etc.

SIZE	INSIDE HOLE TAPER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
1	1	1	3-1/2	MTSS#01	25.84
2	1	1-1/4	3-1/2	MTSS#02	31.68
3	1	1-1/2	3-1/2	MTSS#03	29.60
4	2	1	4	MTSS#04	29.60
5	2	1-1/4	4	MTSS#05	32.48
6	2	1-1/2	4	MTSS#06	34.48
7	2	1-3/4	4	MTSS#07	37.68
8	2	2	4	MTSS#08	39.56
9	3	1-1/4	4-3/4	MTSS#09	39.56
10	3	1-1/2	4-3/4	MTSS#10	42.68
11	3	1-3/4	4-3/4	MTSS#11	46.66
12	3	2	4-3/4	MTSS#12	50.86
13	4	1-1/2	6	MTSS#13	50.86
14	4	1-3/4	6	MTSS#14	55.38
15	4	2	6	MTSS#15	58.96
16	5	2-1/4	7-3/8	MTSS#16	71.58
17	5	2-1/2	7-3/8	MTSS#17	84.00
18	6	3-1/4	10-1/8	MTSS#18	139.98
19	6	3-1/2	10-1/8	MTSS#19	139.98

HIGH SPEED STEEL TAPER SHANK DRILLS

ICS USA

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-R	 OXIDE FINISH	Taper Shank Drills have a tapered conical shank to fit directly into the tapered holes of drill press spindles, driving sleeves or sockets. They are designed for general purpose drilling in ferrous or non-ferrous metals.	M2	118° Point Std. Spiral Std. Web
TSD-T	 GOLD TITANIUM COATED	Titanium Nitride Coated Taper Shank Drills are designed for high production drilling of ferrous and non-ferrous metals. Titanium Nitride Coating enhances chip flow, finished hole quality and extends life of drill up to 700%.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Regular MT Shanks) 1/8" to 1-1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN COATED
				OXIDE FINISH 118° PT	GOLD FINISH 118° PT
				TSD-R	TSD-T
#1 MT SHANK					
1/8	.1250	1-7/8	5-1/8	14.02	-
9/64	.1406	2-1/8	5-3/8	14.02	-
5/32	.1562	2-1/8	5-3/8	14.02	-
11/64	.1719	2-1/8	5-3/4	14.02	-
3/16	.1875	2-1/2	5-3/4	11.48	-
13/64	.2031	2-3/4	6	12.24	-
7/32	.2188	2-3/4	6	12.24	-
15/64	.2344	2-7/8	6-1/8	13.52	-
1/4	.2500	2-7/8	6-1/8	13.08	-
17/64	.2656	3	6-1/4	13.52	-
9/32	.2812	3	6-1/4	17.58	-
19/64	.2969	3-1/8	6-3/8	17.58	-
5/16	.3125	3-1/8	6-3/8	14.22	-
21/64	.3281	3-1/4	6-1/2	19.18	-
11/32	.3438	3-1/4	6-1/2	20.36	-
23/64	.3594	3-1/2	6-3/4	22.24	-
3/8	.3750	3-1/2	6-3/4	22.24	-
25/64	.3906	3-5/8	7	23.16	-
13/32	.4062	3-5/8	7	22.24	-
27/64	.4219	3-7/8	7-1/4	23.70	-
7/16	.4375	3-7/8	7-1/4	24.26	-
29/64	.4531	4-1/8	7-1/2	26.46	-
15/32	.4688	4-1/8	7-1/2	27.64	-
#2 MT SHANK					
31/64	.4844	4-3/8	8-1/4	30.66	70.86
1/2	.5000	4-3/8	8-1/4	29.12	69.68
33/64	.5156	4-5/8	8-1/2	33.42	73.08
17/32	.5312	4-5/8	8-1/2	32.86	72.56
35/64	.5469	4-7/8	8-3/4	36.46	75.68
9/16	.5625	4-7/8	8-3/4	35.62	75.02
37/64	.5781	4-7/8	8-3/4	38.66	77.56
19/32	.5937	4-7/8	8-3/4	38.12	77.00
39/64	.6094	4-7/8	8-3/4	40.32	79.02
5/8	.6250	4-7/8	8-3/4	38.82	77.86
41/64	.6406	5-1/8	9	44.46	82.48
21/32	.6562	5-1/8	9	43.06	81.28
43/64	.6719	5-3/8	9-1/4	47.94	85.20
11/16	.6875	5-3/8	9-1/4	45.40	83.16
45/64	.7031	5-5/8	9-1/2	49.72	86.92
23/32	.7187	5-5/8	9-1/2	48.08	85.44
47/64	.7344	5-7/8	9-3/4	53.18	89.44
3/4	.7500	5-7/8	9-3/4	53.18	89.44
49/64	.7656	6	9-7/8	62.68	97.74
25/32	.7812	6	9-7/8	62.68	97.46

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN COATED
				OXIDE FINISH 118° PT	GOLD FINISH 118° PT
				TSD-R	TSD-T
#3 MT SHANK					
51/64	.7969	6-1/8	10-3/4	67.40	125.30
13/16	.8125	6-1/8	10-3/4	63.82	121.80
53/64	.8281	6-1/8	10-3/4	71.12	127.72
27/32	.8437	6-1/8	10-3/4	68.88	125.82
55/64	.8594	6-1/8	10-3/4	73.58	129.84
7/8	.8750	6-1/8	10-3/4	71.12	127.72
57/64	.8906	6-1/8	10-3/4	75.24	131.22
29/32	.9062	6-1/8	10-3/4	75.24	132.62
59/64	.9219	6-1/8	10-3/4	76.68	133.40
15/16	.9375	6-1/8	10-3/4	71.12	129.30
61/64	.9531	6-3/8	11	78.06	135.20
31/32	.9687	6-3/8	11	78.06	134.76
63/64	.9844	6-3/8	11	82.24	139.40
1	1.0000	6-3/8	11	79.38	136.56
1-1/64	1.0156	6-1/2	11-1/8	90.56	147.00
1-1/32	1.0312	6-1/2	11-1/8	89.22	144.10
1-3/64	1.0469	6-5/8	11-1/4	96.18	151.02
1-1/16	1.0625	6-5/8	11-1/4	91.98	147.00
#4 MT SHANK					
1-5/64	1.0781	6-7/8	12-1/2	108.36	171.36
1-3/32	1.0937	6-7/8	12-1/2	105.92	167.84
1-7/64	1.1094	7-1/8	12-3/4	115.60	175.16
1-1/8	1.1250	7-1/8	12-3/4	112.88	172.44
1-9/64	1.1406	7-1/4	12-7/8	122.56	181.18
1-5/32	1.1562	7-1/4	12-7/8	117.08	176.04
1-11/64	1.1719	7-3/8	13	124.08	182.34
1-3/16	1.1875	7-3/8	13	122.62	181.18
1-13/64	1.2031	7-1/2	13-1/8	129.24	189.86
1-7/32	1.2187	7-1/2	13-1/8	131.00	188.16
1-15/64	1.2344	7-7/8	13-1/2	144.96	200.30
1-1/4	1.2500	7-7/8	13-1/2	137.96	194.46
1-17/64	1.2656	8-1/2	14-1/8	164.50	294.48
1-9/32	1.2812	8-1/2	14-1/8	161.12	293.30
1-19/64	1.2969	8-5/8	14-1/4	175.58	303.84
1-5/16	1.3125	8-5/8	14-1/4	167.24	295.52
1-21/64	1.3281	8-3/4	14-3/8	183.96	309.00
1-11/32	1.3437	8-3/4	14-3/8	175.58	303.84
1-23/64	1.3594	8-7/8	14-1/2	186.74	312.46
1-3/8	1.3750	8-7/8	14-1/2	181.10	306.12
1-25/64	1.3906	9	14-5/8	192.64	318.34
1-13/32	1.4062	9	14-5/8	192.62	318.34
1-27/64	1.4219	9-1/8	14-3/4	197.88	322.82
1-7/16	1.4375	9-1/8	14-3/4	194.70	318.80
1-29/64	1.4531	9-1/4	14-7/8	209.06	331.80
1-15/32	1.4687	9-1/4	14-7/8	206.24	329.98
1-31/64	1.4844	9-3/8	15	214.62	336.50
1-1/2	1.5000	9-3/8	15	208.16	331.20

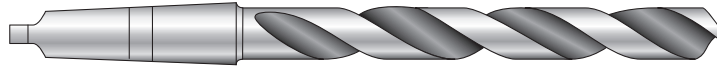
HIGH SPEED STEEL TAPER SHANK DRILLS

MET-88

ICS USA

GENERAL PURPOSE

118° POINT



Fractional Sizes (Regular MT Shanks) 1-33/64" to 4" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN COAT
				OXIDE FINISH 118° PT	GOLD FINISH 118° PT
				TSD-R	TSD-T
#5 MT SHANK					
1-33/64	1.5156	9-3/8	16-3/8	244.74	428.18
1-17/32	1.5312	9-3/8	16-3/8	244.74	428.28
1-35/64	1.5469	9-5/8	16-5/8	256.14	438.56
1-9/16	1.5625	9-5/8	16-5/8	256.14	438.56
1-37/64	1.5781	9-7/8	16-7/8	275.78	455.76
1-19/32	1.5937	9-7/8	16-7/8	275.78	455.76
1-39/64	1.6094	10	17	281.32	461.00
1-5/8	1.6250	10	17	281.32	461.00
1-41/64	1.6406	10-1/8	17-1/8	295.96	473.60
1-21/32	1.6562	10-1/8	17-1/8	295.96	473.60
1-43/64	1.6719	10-1/8	17-1/8	332.70	479.94
1-11/16	1.6875	10-1/8	17-1/8	304.00	479.94
1-45/64	1.7031	10-1/8	17-1/8	332.70	492.90
1-23/32	1.7187	10-1/8	17-1/8	317.88	492.90
1-47/64	1.7344	10-1/8	17-1/8	332.70	498.48
1-3/4	1.7500	10-1/8	17-1/8	326.00	498.48
1-49/64	1.7656	10-1/8	17-1/8	337.58	-
1-25/32	1.7812	10-1/8	17-1/8	337.58	509.34
1-51/64	1.7969	10-1/8	17-1/8	346.00	-
1-13/16	1.8125	10-1/8	17-1/8	346.00	512.14
1-53/64	1.8281	10-1/8	17-1/8	362.90	-
1-27/32	1.8437	10-1/8	17-1/8	362.90	530.08
1-55/64	1.8594	10-3/8	17-3/8	357.24	-
1-7/8	1.8750	10-3/8	17-3/8	357.24	531.32
1-57/64	1.8906	10-3/8	17-3/8	379.74	-
1-29/32	1.9062	10-3/8	17-3/8	379.74	544.22
1-59/64	1.9219	10-3/8	17-3/8	391.02	-
1-15/16	1.9375	10-3/8	17-3/8	391.02	554.36
1-61/64	1.9531	10-3/8	17-3/8	399.48	-
1-31/32	1.9687	10-3/8	17-3/8	399.48	561.70
1-63/64	1.9844	10-3/8	17-3/8	402.20	-
2	2.0000	10-3/8	17-3/8	402.20	564.46
2-1/64	2.0156	10-3/8	17-3/8	424.80	-
2-1/32	2.0312	10-3/8	17-3/8	424.80	-
2-1/16	2.0625	10-1/4	17-3/8	434.64	-
2-3/32	2.0938	10-1/4	17-3/8	453.94	-
2-1/8	2.1250	10-1/4	17-3/8	452.90	-
2-5/32	2.1562	10-1/4	17-3/8	483.92	-
2-3/16	2.1875	10-1/4	17-3/8	492.28	-

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS
				OXIDE FINISH 118° PT
				TSD-R
#5 MT SHANK				
2-7/32	2.1287	10-1/8	17-3/8	509.14
2-1/4	2.2500	10-1/8	17-3/8	514.76
2-9/32	2.2812	10-1/8	17-3/8	548.50
2-5/16	2.3125	10-1/8	17-3/8	548.54
2-11/32	2.3438	10-1/8	17-3/8	571.04
2-3/8	2.3750	10-1/8	17-3/8	571.04
2-13/32	2.4060	11-1/4	18-3/4	720.14
2-7/16	2.4375	11-1/4	18-3/4	720.14
2-15/32	2.4688	11-1/4	18-3/4	758.52
2-1/2	2.5000	11-1/4	18-3/4	742.62
2-17/32	2.5312	11-7/8	19-1/2	857.08
2-9/16	2.5625	11-7/8	19-1/2	812.92
2-19/32	2.5938	11-7/8	19-1/2	872.06
2-5/8	2.6250	11-7/8	19-1/2	872.06
2-21/32	2.6562	12-3/4	20-3/8	936.68
2-11/16	2.6875	12-3/4	20-3/8	936.68
2-23/32	2.7188	12-3/4	20-3/8	999.60
2-3/4	2.7500	12-3/4	20-3/8	1088.10
2-25/32	2.7812	13-3/8	21-1/8	1055.54
2-13/16	2.8125	13-3/8	21-1/8	1055.54
2-27/32	2.8438	13-3/8	21-1/8	1150.38
2-7/8	2.8750	13-3/8	21-1/8	1015.28
2-15/16	2.9375	14	21-3/4	1069.10
2-31/32	2.9687	14	21-3/4	1093.68
3	3.0000	14	21-3/4	1116.74
#6 MT SHANK				
3-1/16	3.0625	14-5/8	24-1/2	1744.02
3-1/8	3.1250	14-5/8	24-1/2	1743.72
3-3/16	3.1875	14-5/8	24-1/2	1751.06
3-1/4	3.2500	15-1/2	25-1/2	1751.06
3-5/16	3.3125	15-1/2	25-1/2	2061.54
3-3/8	3.3750	15-1/2	25-1/2	2203.82
3-7/16	3.4325	15-1/2	25-1/2	2348.48
3-1/2	3.5000	16-3/8	26-1/2	2544.86
3-9/16	3.5625	16-3/8	26-1/2	2871.80
3-5/8	3.6250	16-3/8	26-1/2	2871.80
3-3/4	3.7500	16-3/8	26-1/2	3522.12
3-7/8	3.8750	16-3/8	26-1/2	4057.20
4	4.0000	17-1/2	27-1/2	4433.52

DRILL DRIFTS

ICS USA

KEYS

DROP FORGED



Drill Drifts are designed to safely eject taper shank tools out of morse taper holders without damage to the tool's tang. They are drop forged and fully hardened. They are sometimes referred to as Center Keys, Drift Keys, or Ejecting Keys.

SIZE	TO EJECT TAPER SHANK	ITEM NO.	PRICE
1	1	DD#1	7.34
2	2	DD#2	8.80

SIZE	TO EJECT TAPER SHANK	ITEM NO.	PRICE
3	3	DD#3	9.80
4	4-5-6	DD#4	15.08

HIGH SPEED STEEL TAPER SHANK (UNDERSIZE SHANK) DRILLS

ICS

USA

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-US	 OXIDE FINISH	Taper shank drills with shank one size smaller than usual for use in undersize drilling spindles where there is not sufficient room to accommodate an extension socket.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Undersize MT Shank) 31/64" to 4" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1 MT SHANK					
31/64	.4844	4-3/8	7-3/4	TSD-US031	31.42
1/2	.5000	4-3/8	7-3/4	TSD-US032	30.16
33/64	.5156	4-5/8	8	TSD-US033	34.82
17/32	.5312	4-5/8	8	TSD-US034	34.82
35/64	.5469	4-7/8	8-1/4	TSD-US035	37.22
9/16	.5625	4-7/8	8-1/4	TSD-US036	38.06
37/64	.5781	4-7/8	8-1/4	TSD-US037	45.52
#2 MT SHANK					
51/64	.7969	6-1/8	10	TSD-US051	68.16
13/16	.8125	6-1/8	10	TSD-US052	68.16
53/64	.8281	6-1/8	10	TSD-US053	72.52
27/32	.8438	6-1/8	10	TSD-US054	72.52
55/64	.8594	6-1/8	10	TSD-US055	75.64
7/8	.8750	6-1/8	10	TSD-US056	74.98
57/64	.8906	6-1/8	10	TSD-US057	77.98
29/32	.9062	6-1/8	10	TSD-US058	77.98
15/16	.9375	6-1/8	10-1/4	TSD-US060	-
1	1.0000	6-1/4	10-1/8	TSD-US100	81.14
#3 MT SHANK					
1-5/64	1.0781	6-7/8	11-1/2	TSD-US105	120.68
1-3/32	1.0938	6-7/8	11-1/2	TSD-US106	114.96
1-7/64	1.1094	7-1/8	11-3/4	TSD-US107	122.44
1-1/8	1.1250	7-1/8	11-3/4	TSD-US108	119.50
1-9/64	1.1406	7-1/4	11-7/8	TSD-US109	129.96
1-5/32	1.1562	7-1/4	11-7/8	TSD-US110	129.96
1-11/64	1.1719	7-3/8	12	TSD-US111	134.42
1-3/16	1.1875	7-3/8	12	TSD-US112	132.78
1-13/64	1.2031	7-1/2	12-1/8	TSD-US113	144.24
1-7/32	1.2188	7-1/2	12-1/8	TSD-US114	142.60
1-15/64	1.2344	7-7/8	12-1/2	TSD-US115	157.12
1-1/4	1.2500	7-7/8	12-1/2	TSD-US116	156.42
1-5/16	1.3125	8-5/8	13-1/4	TSD-US120	171.70
1-3/8	1.3750	8-7/8	13-1/2	TSD-US124	183.46
1-7/16	1.4375	9-1/8	13-3/4	TSD-US128	197.12
1-1/2	1.5000	9-3/8	14	TSD-US132	219.92
#4 MT SHANK					
1-33/64	1.5156	9-3/8	15	TSD-US133	253.20
1-17/32	1.5312	9-3/8	15	TSD-US134	250.26
1-35/64	1.5469	9-5/8	15-1/4	TSD-US135	269.42
1-9/16	1.5625	9-5/8	15-1/4	TSD-US136	267.88
1-37/64	1.5781	9-7/8	15-1/2	TSD-US137	286.30
1-19/32	1.5938	9-7/8	15-1/2	TSD-US138	286.30
1-39/64	1.6094	10	15-5/8	TSD-US139	297.36
1-5/8	1.6250	10	15-5/8	TSD-US140	292.80

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4 MT SHANK					
1-41/64	1.6406	10-1/8	15-3/4	TSD-US141	320.46
1-21/32	1.6562	10-1/8	15-3/4	TSD-US142	319.06
1-43/64	1.6719	10-1/8	15-3/4	TSD-US143	332.70
1-11/16	1.6875	10-1/8	15-3/4	TSD-US144	317.46
1-45/64	1.7031	10-1/8	15-3/4	TSD-US145	342.70
1-23/32	1.7188	10-1/8	15-3/4	TSD-US146	326.64
1-47/64	1.7344	10-3/8	16-1/4	TSD-US147	339.82
1-3/4	1.7500	10-3/8	16-1/4	TSD-US148	330.96
1-25/32	1.7812	10-3/8	16-1/4	TSD-US150	350.74
1-13/16	1.8125	10-3/8	16-1/4	TSD-US152	351.30
1-27/32	1.8438	10-3/8	16-1/4	TSD-US154	364.10
1-7/8	1.8750	10-1/2	16-1/2	TSD-US156	379.26
1-57/64	1.8906	10-1/2	16-1/2	TSD-US157	394.44
1-29/32	1.9062	10-1/2	16-1/2	TSD-US158	391.40
1-15/16	1.9375	10-5/8	16-5/8	TSD-US160	401.92
1-31/32	1.9688	10-5/8	16-5/8	TSD-US162	409.40
2	2.0000	10-5/8	16-5/8	TSD-US200	414.32
2-1/32	2.0312	10-3/8	16-1/4	TSD-US202	431.50
2-1/16	2.0625	10-1/4	16-1/4	TSD-US204	433.94
2-3/32	2.0938	10-1/4	16-1/4	TSD-US206	457.46
2-1/8	2.1250	10-1/4	16-1/4	TSD-US208	457.46
2-5/32	2.1562	10-1/4	16-1/4	TSD-US210	488.04
2-3/16	2.1875	10-1/4	16-1/4	TSD-US212	498.62
2-7/32	2.2188	10-1/8	16-1/4	TSD-US214	512.16
2-1/4	2.2500	10-1/8	16-1/8	TSD-US216	517.34
2-5/16	2.3150	10-1/8	16-1/8	TSD-US220	552.08
2-3/8	2.3750	10-1/8	16-1/8	TSD-US224	575.72
2-7/16	2.4375	11-1/4	17-1/4	TSD-US228	727.94
2-1/2	2.5000	11-1/4	17-1/4	TSD-US232	747.70
2-5/8	2.6250	11-7/8	18	TSD-US240	846.72
2-3/4	2.7500	12-3/4	19-1/8	TSD-US248	934.92
#5 MT SHANK					
3-1/16	3.0625	14-1/4	22	TSD-US304	1669.92
3-1/8	3.1250	14-1/4	22	TSD-US308	1744.02
3-3/16	3.1875	14-1/4	22	TSD-US312	1761.66
3-1/4	3.2500	15-1/4	23	TSD-US316	1761.66
3-5/16	3.3125	15-1/4	23	TSD-US320	2058.00
3-3/8	3.3750	15-1/4	23	TSD-US324	2175.60
3-7/16	3.4375	15-1/4	23	TSD-US328	2340.24
3-1/2	3.5000	16-1/4	24	TSD-US332	2528.40
3-5/8	3.6250	16-1/4	24	TSD-US340	2822.40
3-3/4	3.7500	16-1/4	25-5/8	TSD-US348	3422.16
3-7/8	3.8750	16-1/2	29	TSD-US356	3998.40
4	4.0000	16-1/2	29	TSD-US400	

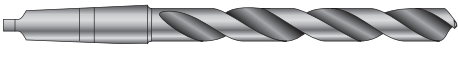
NOTE: Letter and number size taper shank drills are available upon request.

TAPER SHANK (OVERSIZE SHANK) DRILLS

ICS USA

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-OS	 OXIDE FINISH	Taper shank drills with shank one size larger than usual provides more torque strength for heavy duty work. They also reduce time to change drill sizes.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Oversize MT Shank) 3/8" to 1-1/16" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#2 MT SHANK					
3/8	.3750	3-1/2	7-3/8	TSD-OS024	27.70
25/64	.3906	3-5/8	7-1/2	TSD-OS025	27.70
13/32	.4062	3-5/8	7-1/2	TSD-OS026	27.70
27/64	.4219	3-7/8	7-3/4	TSD-OS027	27.70
7/16	.4375	3-7/8	7-3/4	TSD-OS028	29.38
29/64	.4531	4-1/8	8	TSD-OS029	30.12
15/32	.4688	4-1/8	8	TSD-OS030	31.76
#3 MT SHANK					
41/64	.6406	5-1/8	9-3/4	TSD-OS041	52.92
21/32	.6562	5-1/8	9-3/4	TSD-OS042	53.64
43/64	.6719	5-1/8	10	TSD-OS043	56.80

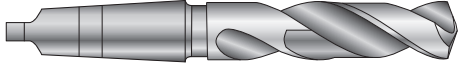
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#3 MT SHANK					
11/16	.6875	5-3/8	10	TSD-OS044	58.70
45/64	.7031	5-5/8	10-1/4	TSD-OS045	71.96
23/32	.7188	5-5/8	10-1/4	TSD-OS046	63.08
47/64	.7344	5-7/8	10-1/2	TSD-OS047	66.58
3/4	.7500	5-7/8	10-1/2	TSD-OS048	67.34
49/64	.7656	6	10-5/8	TSD-OS049	74.02
25/32	.7812	6	10-5/8	TSD-OS050	74.02
#4 MT SHANK					
1	1.0000	6-3/8	12	TSD-OS100	105.78
1-1/32	1.0312	6-1/2	12-1/8	TSD-OS102	116.00
1-1/16	1.0625	6-5/8	12-1/4	TSD-OS104	124.56

STUB LENGTH TAPER SHANK DRILLS

ICS WIS

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-S	 OXIDE FINISH	Stub length taper shank drills have short overall length and short flute length. They are ideal for use in boring mills, screw machines, and lathes or where space is limited.	M2	118° Point Std. Spiral Std. Web

Fractional Sizes (Regular MT Shank) 2" to 3-1/2" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4 MT SHANK					
2	2.0000	5	12	TSD-S200	256.90
2-1/16	2.0625	5	12	TSD-S204	281.56
2-1/8	2.1250	5	12	TSD-S208	281.82
2-3/16	2.1875	5	12	TSD-S212	329.44
2-1/4	2.2500	5	12	TSD-S216	329.88
2-5/16	2.3125	5	12	TSD-S220	352.78
2-3/8	2.3750	5	12	TSD-S224	353.46
2-7/16	2.4375	5	12	TSD-S228	400.88
2-1/2	2.5000	5	12	TSD-S232	403.44
2-5/8	2.6250	5	12	TSD-S240	447.72
#5 MT SHANK					
2	2.0000	5	12	TSD-SR200	256.90
2-1/16	2.0625	5	12	TSD-SR204	281.56
2-1/8	2.1250	5	12	TSD-SR208	281.82
2-3/16	2.1875	5	12	TSD-SR212	329.44

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#5 MT SHANK					
2-1/4	2.2500	5	12	TSD-SR216	329.88
2-5/16	2.3125	5	12	TSD-SR220	352.78
2-3/8	2.3750	5	12	TSD-SR224	353.46
2-7/16	2.4375	5	12	TSD-SR228	400.88
2-1/2	2.5000	5	12	TSD-SR232	403.44
2-9/16	2.5625	5	12	TSD-SR236	403.44
2-5/8	2.6250	5	12	TSD-SR240	447.72
2-11/16	2.6875	5	12	TSD-SR244	447.72
2-3/4	2.7500	5	12	TSD-SR248	518.36
2-13/16	2.8125	5	12	TSD-SR252	518.36
2-7/8	2.8750	5	12	TSD-SR256	588.66
2-15/16	2.9375	5	12	TSD-SR260	588.66
3	3.0000	5	12	TSD-SR300	658.46
3-1/8	3.1250	5	12	TSD-SR308	780.94
3-1/4	3.2500	5	12	TSD-SR316	879.50
3-1/2	3.5000	5	12	TSD-SR332	1156.60

HIGH SPEED STEEL TAPER SHANK DRILLS

ICS

WIS

SPECIAL PURPOSE

PERFECT POINT®

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-PP	 OXIDE FINISH	The Perfect Point® Taper Shank Drill was specifically designed for high production work. Up to 1500 drilled holes per drill is not uncommon.	M2	Perfect Point® Std. Spiral Std. Web

Fractional Sizes (Regular Shank) 7/16" to 1-1/4" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1 MT SHANK					
7/16	.4375	3-7/8	7-1/4	TSD-PP028	28.96
#2 MT SHANK					
1/2	.5000	4-3/8	8-1/4	TSD-PP032	33.82
9/16	.5625	4-7/8	8-3/4	TSD-PP036	40.32
5/8	.6250	4-7/8	8-3/4	TSD-PP040	43.52
11/16	.6875	5-3/8	9-1/4	TSD-PP044	50.12
3/4	.7500	5-7/8	9-3/4	TSD-PP048	59.06
13/16	.8125	6-1/8	10-3/4	TSD-PP052	72.06
#3 MT SHANK					
7/8	.8750	6-1/8	10-3/4	TSD-PP056	80.52
15/16	.9375	6-1/8	10-3/4	TSD-PP060	80.52
1	1.0000	6-3/8	11	TSD-PP100	88.80
1-1/16	1.0625	6-5/8	11-1/4	TSD-PP104	103.74
#4 MT SHANK					
1-1/8	1.1250	7-1/8	12-3/4	TSD-PP108	124.64
1-3/16	1.1875	7-3/8	13	TSD-PP112	134.38
1-1/4	1.2500	7-7/8	13-1/2	TSD-PP116	149.72

Larger sizes also available. Please inquire for price and delivery.

HIGH SPEED STEEL TAPER SHANK DRILLS

MET-92

ICS USA

HEAVY DUTY

135° SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-H	 OXIDE FINISH	This drill was designed for drilling work hardening 300 series stainless steels (except 303). Special thin web will penetrate work hardening stainless fast enough to cut beneath the chip which is hardening from deformation.	M2	135° Split Pt. Std. Spiral Special Web
TSD-HT	 GOLD TITANIUM COATED	This combination of titanium nitride coating with the heavy duty design enhances chip flow, finished hole quality and up to 700% more drill life.	M2	135° Split Pt. Std. Spiral Special Web

Fractional Sizes (Regular MT Shank) 1/2" to 1" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN COATED
				OXIDE FINISH 135° S/P	GOLD FINISH 135° S/P
				TSD-H	TSD-HT
#2 MT SHANK					
1/2	.5000	4-3/8	8-1/4	34.66	79.70
33/64	.5156	4-5/8	8-1/2	38.96	83.98
17/32	.5312	4-5/8	8-1/2	38.42	83.46
35/64	.5469	4-7/8	8-3/4	42.02	87.08
9/16	.5625	4-7/8	8-3/4	41.16	86.18
37/64	.5781	4-7/8	8-3/4	44.20	89.26
19/32	.5937	4-7/8	8-3/4	43.66	88.66
39/64	.6094	4-7/8	8-3/4	45.86	90.92
5/8	.6250	4-7/8	8-3/4	44.38	89.42
41/64	.6406	5-1/8	9	53.56	98.58
21/32	.6562	5-1/8	9	48.60	93.64
43/64	.6719	5-3/8	9-1/4	53.50	98.54
11/16	.6875	5-3/8	9-1/4	50.96	96.00
45/64	.7031	5-5/8	9-1/2	55.26	100.30
23/32	.7187	5-5/8	9-1/2	53.62	98.04
47/64	.7344	5-7/8	9-3/4	58.72	103.76

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HSS	TiN COATED
				OXIDE FINISH 135° S/P	GOLD FINISH 135° S/P
				TSD-H	TSD-HT
#3 MT SHANK					
3/4	.7500	5-7/8	9-3/4	63.56	108.58
49/64	.7656	6	9-7/8	73.06	122.82
25/32	.7812	6	9-7/8	73.06	116.94
51/64	.7969	6-1/8	10-3/4	77.76	144.98
13/16	.8125	6-1/8	10-3/4	74.20	141.78
53/64	.8281	6-1/8	10-3/4	81.48	149.06
27/32	.8437	6-1/8	10-3/4	79.26	146.80
55/64	.8594	6-1/8	10-3/4	83.96	151.50
7/8	.8750	6-1/8	10-3/4	81.48	149.06
57/64	.8906	6-1/8	10-3/4	85.62	153.20
29/32	.9062	6-1/8	10-3/4	85.62	153.18
59/64	.9219	6-1/8	10-3/4	87.02	154.58
15/16	.9375	6-1/8	10-3/4	81.48	149.06
61/64	.9531	6-3/8	11	88.44	155.98
31/32	.9687	6-3/8	11	88.44	156.00
63/64	.9844	6-3/8	11	92.62	160.20
1	1.0000	6-3/8	11	89.76	157.32

Metric Sizes (Regular MT Shank) 12.50mm to 25.00mm Dia.

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1 MT SHANK					
12.50	.4921	3-31/32	7-5/32	TSD-MH12.50	43.78
12.80	.5039	3-31/32	7-5/32	TSD-MH12.80	43.78
13.00	.5118	3-31/32	7-5/32	TSD-MH13.00	43.78
13.20	.5197	4-1/4	7-7/16	TSD-MH13.20	48.56
13.50	.5315	4-1/4	7-7/16	TSD-MH13.50	48.56
13.80	.5433	4-1/4	7-7/16	TSD-MH13.80	48.56
14.00	.5512	4-1/4	7-7/16	TSD-MH14.00	48.56
#2 MT SHANK					
14.25	.5610	4-1/2	8-3/8	TSD-MH14.25	52.36
14.50	.5709	4-1/2	8-3/8	TSD-MH14.50	52.36
14.75	.5807	4-1/2	8-3/8	TSD-MH14.75	52.36
15.00	.5906	4-1/2	8-3/8	TSD-MH15.00	52.36
15.25	.6004	4-3/4	8-5/8	TSD-MH15.25	54.66
15.50	.6102	4-3/4	8-5/8	TSD-MH15.50	54.66
15.75	.6201	4-3/4	8-5/8	TSD-MH15.75	56.88
16.00	.6299	4-3/4	8-5/8	TSD-MH16.00	56.88
16.25	.6398	4-3/4	8-3/4	TSD-MH16.25	56.88
16.50	.6496	4-3/4	8-3/4	TSD-MH16.50	58.54
16.75	.6594	4-3/4	8-3/4	TSD-MH16.75	58.54

SIZE mm	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#2 MT SHANK					
17.00	.6693	4-7/8	8-3/4	TSD-MH17.00	58.54
17.25	.6791	5-1/8	9	TSD-MH17.25	63.10
17.50	.6890	5-1/8	9	TSD-MH17.50	63.50
18.00	.7087	5-1/8	9	TSD-MH18.00	63.50
18.50	.7283	5-1/4	9-1/8	TSD-MH18.50	68.40
19.00	.7480	5-1/4	9-1/8	TSD-MH19.00	68.40
19.50	.7677	5-1/2	9-3/8	TSD-MH19.50	84.40
20.00	.7874	5-1/2	9-3/8	TSD-MH20.00	84.40
20.50	.8071	5-3/4	9-5/8	TSD-MH20.50	90.74
21.00	.8268	5-3/4	9-5/8	TSD-MH21.00	90.74
21.50	.8465	5-7/8	9-3/4	TSD-MH21.50	97.10
22.00	.8661	5-7/8	9-3/4	TSD-MH22.00	97.10
22.50	.8858	6-1/8	10	TSD-MH22.50	100.30
#3 MT SHANK					
23.00	.9055	6-1/8	10	TSD-MH23.00	100.30
23.50	.9252	6-1/8	10-7/8	TSD-MH23.50	102.98
24.00	.9449	6-1/4	11	TSD-MH24.00	102.98
24.50	.9646	6-1/4	11	TSD-MH24.50	107.26
25.00	.9843	6-1/4	11	TSD-MH25.00	107.26

HIGH SPEED STEEL METRIC TAPER SHANK DRILLS

ICS USA

GENERAL PURPOSE

118° POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-M	 OXIDE FINISH	Taper Shank Drills have a tapered conical shank to fit directly into the tapered holes of drill press spindles, driving sleeves or sockets. They are designed for general purpose drilling in ferrous or non-ferrous metals.	M2	118° Point Std. Spiral Std. Web

Metric Sizes (Regular Shank) 3.00mm to 22.50mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1 MT SHANK					
3.00	.1181	1-5/16	4-1/2	TSD-M03.0	15.60
3.20	.1260	1-7/16	4-5/8	TSD-M03.2	16.30
3.50	.1378	1-17/32	4-3/4	TSD-M03.5	16.30
3.80	.1496	1-11/16	4-27/32	TSD-M03.8	16.30
4.00	.1575	1-11/16	4-27/32	TSD-M04.0	16.30
4.20	.1654	1-11/16	4-27/32	TSD-M04.2	16.30
4.50	.1772	1-27/32	5-1/32	TSD-M04.5	13.80
4.80	.1890	2-1/16	5-1/4	TSD-M04.8	13.80
5.00	.1969	2-1/16	5-1/4	TSD-M05.0	13.80
5.20	.2047	2-1/16	5-1/4	TSD-M05.2	13.80
5.50	.2165	2-1/4	5-7/16	TSD-M05.5	13.80
5.80	.2283	2-1/4	5-7/16	TSD-M05.8	13.80
6.00	.2362	2-1/4	5-7/16	TSD-M06.0	13.80
6.20	.2441	2-1/2	5-11/16	TSD-M06.2	13.80
6.50	.2559	2-1/2	5-11/16	TSD-M06.5	13.80
6.80	.2677	2-23/32	5-29/32	TSD-M06.8	15.60
7.00	.2756	2-23/32	5-29/32	TSD-M07.0	15.60
7.20	.2835	2-23/32	5-29/32	TSD-M07.2	16.68
7.40	.2913	2-23/32	5-29/32	TSD-M07.4	20.80
7.50	.2953	2-23/32	5-29/32	TSD-M07.5	16.68
7.80	.3071	2-15/16	6-1/8	TSD-M07.8	18.98
8.00	.3150	2-15/16	6-1/8	TSD-M08.0	22.52
8.20	.3228	2-15/16	6-1/8	TSD-M08.2	23.84
8.50	.3346	2-15/16	6-1/8	TSD-M08.5	23.84
8.80	.3465	3-3/16	6-3/8	TSD-M08.8	27.22
9.00	.3543	3-3/16	6-3/8	TSD-M09.0	27.22
9.20	.3622	3-3/16	6-3/8	TSD-M09.2	27.22
9.50	.3740	3-3/16	6-3/8	TSD-M09.5	28.96
9.70	.3819	3-7/16	6-5/8	TSD-M09.7	28.96
9.80	.3858	3-7/16	6-5/8	TSD-M09.8	28.96
10.00	.3937	3-7/16	6-5/8	TSD-M10.0	29.58
10.20	.4016	3-7/16	6-5/8	TSD-M10.2	29.58
10.25	.4075	3-7/16	6-5/8	TSD-M10.25	33.60
10.50	.4134	3-7/16	6-5/8	TSD-M10.5	30.84
10.80	.4252	3-11/16	6-7/8	TSD-M10.8	30.84
11.00	.4331	3-11/16	6-7/8	TSD-M11.0	30.84

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#1 MT SHANK					
11.20	.4409	3-11/16	6-7/8	TSD-M11.2	32.92
11.50	.4528	3-11/16	6-7/8	TSD-M11.5	32.92
11.80	.4646	3-11/16	6-7/8	TSD-M11.8	32.92
12.00	.4724	3-31/32	7-5/32	TSD-M12.0	32.92
12.20	.4803	3-31/32	7-5/32	TSD-M12.2	39.58
12.50	.4921	3-31/32	7-5/32	TSD-M12.5	39.58
12.80	.5039	3-31/32	7-5/32	TSD-M12.8	39.58
13.00	.5118	3-31/32	7-5/32	TSD-M13.0	39.58
13.20	.5197	4-1/4	7-7/16	TSD-M13.2	44.36
13.50	.5315	4-1/4	7-7/16	TSD-M13.5	44.36
13.80	.5433	4-1/4	7-7/16	TSD-M13.8	44.36
14.00	.5512	4-1/4	7-7/16	TSD-M14.0	44.36
#2 MT SHANK					
14.25	.5610	4-1/2	8-3/8	TSD-M14.25	48.16
14.50	.5709	4-1/2	8-3/8	TSD-M14.5	48.16
14.75	.5807	4-1/2	8-3/8	TSD-M14.75	48.16
15.00	.5906	4-1/2	8-3/8	TSD-M15.0	48.16
15.25	.6004	4-3/4	8-5/8	TSD-M15.25	50.46
15.50	.6102	4-3/4	8-5/8	TSD-M15.5	50.46
15.75	.6201	4-3/4	8-5/8	TSD-M15.75	52.68
16.00	.6299	4-3/4	8-5/8	TSD-M16.0	52.68
16.25	.6398	4-7/8	8-3/4	TSD-M16.25	52.68
16.50	.6496	4-7/8	8-3/4	TSD-M16.5	54.34
16.75	.6594	4-7/8	8-3/4	TSD-M16.75	54.34
17.00	.6693	4-7/8	8-3/4	TSD-M17.0	54.34
17.25	.6791	5-1/8	9	TSD-M17.25	58.90
17.50	.6890	5-1/8	9	TSD-M17.5	59.30
18.00	.7087	5-1/8	9	TSD-M18.0	59.30
18.50	.7283	5-1/4	9-1/8	TSD-M18.5	63.16
19.00	.7480	5-1/4	9-1/8	TSD-M19.0	63.16
19.50	.7677	5-1/2	9-3/8	TSD-M19.5	79.14
20.00	.7874	5-1/2	9-3/8	TSD-M20.0	79.14
20.50	.8071	5-3/4	9-5/8	TSD-M20.5	85.48
21.00	.8268	5-3/4	9-5/8	TSD-M21.0	85.48
21.50	.8465	5-7/8	9-3/4	TSD-M21.5	91.86
22.00	.8661	5-7/8	9-3/4	TSD-M22.0	91.86
22.50	.8858	6-1/8	10	TSD-M22.5	95.04

HIGH SPEED STEEL METRIC TAPER SHANK DRILLS

MET-94

ICS USA

GENERAL PURPOSE

118° POINT

Metric Sizes (Regular Shank) 23.00mm to 100.00mm Dia.

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
#3 MT SHANK				
23.00	.9055	6-1/8	10	TSD-M23.0 95.04
23.50	.9252	6-1/8	10-7/8	TSD-M23.5 97.74
24.00	.9449	6-1/4	11	TSD-M24.0 97.74
24.50	.9646	6-1/4	11	TSD-M24.5 102.02
25.00	.9843	6-1/4	11	TSD-M25.0 102.02
25.50	1.0039	6-1/2	11-1/4	TSD-M25.5 107.46
26.00	1.0236	6-1/2	11-1/4	TSD-M26.0 107.46
26.50	1.0433	6-1/2	11-1/4	TSD-M26.5 130.40
27.00	1.0630	6-5/8	11-3/8	TSD-M27.0 130.40
27.50	1.0827	6-5/8	11-3/8	TSD-M27.5 135.20
28.00	1.1024	6-5/8	11-3/8	TSD-M28.0 135.20
28.50	1.1220	6-7/8	11-5/8	TSD-M28.5 145.70
29.00	1.1417	6-7/8	11-5/8	TSD-M29.0 149.50
29.50	1.1614	6-7/8	11-5/8	TSD-M29.5 152.86
30.00	1.1811	6-7/8	11-5/8	TSD-M30.0 152.86
30.50	1.2008	7-1/8	11-7/8	TSD-M30.5 166.36
31.00	1.2205	7-1/8	11-7/8	TSD-M31.0 166.36
31.50	1.2402	7-1/8	11-7/8	TSD-M31.5 190.70
#4 MT SHANK				
32.00	1.2598	7-1/4	13-1/8	TSD-M32.0 190.70
32.50	1.2795	7-1/4	13-1/8	TSD-M32.5 215.34
33.00	1.2992	7-1/4	13-1/8	TSD-M33.0 218.82
33.50	1.3189	7-1/4	13-1/8	TSD-M33.5 224.92
34.00	1.3386	7-1/2	13-3/8	TSD-M34.0 224.92
34.50	1.3583	7-1/2	13-3/8	TSD-M34.5 242.60
35.00	1.3780	7-1/2	13-3/8	TSD-M35.0 242.60
35.50	1.3976	7-1/2	13-3/8	TSD-M35.5 256.50
36.00	1.4173	7-5/8	13-1/2	TSD-M36.0 256.50
36.50	1.4370	7-5/8	13-1/2	TSD-M36.5 274.04
37.00	1.4567	7-5/8	13-1/2	TSD-M37.0 274.04
37.50	1.4764	7-5/8	13-1/2	TSD-M37.5 284.52
38.00	1.4961	7-7/8	13-3/4	TSD-M38.0 284.52
38.50	1.5157	7-7/8	13-3/4	TSD-M38.5 381.24
39.00	1.5354	7-7/8	13-3/4	TSD-M39.0 357.00
39.50	1.5551	7-7/8	13-3/4	TSD-M39.5 381.24
40.00	1.5748	7-7/8	13-3/4	TSD-M40.0 357.00
40.50	1.5945	7-7/8	13-3/4	TSD-M40.5 381.24
41.00	1.6142	8-1/8	14	TSD-M41.0 381.24
41.50	1.6338	8-1/8	14	TSD-M41.5 429.96
42.00	1.6535	8-1/8	14	TSD-M42.0 409.30
42.50	1.6732	8-1/8	14	TSD-M42.5 478.54

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
#4 MT SHANK				
43.00	1.6929	8-1/4	14-1/8	TSD-M43.0 409.30
43.50	1.7125	8-1/4	14-1/8	TSD-M43.5 478.54
44.00	1.7323	8-1/4	14-1/8	TSD-M44.0 478.54
44.50	1.7519	8-1/4	14-1/8	TSD-M44.5 478.54
45.00	1.7717	8-1/4	14-1/8	TSD-M45.0 478.54
46.00	1.8110	8-1/2	14-3/8	TSD-M46.0 547.48
47.00	1.8504	8-1/2	14-3/8	TSD-M47.0 519.84
48.00	1.8898	8-5/8	14-1/2	TSD-M48.0 534.10
49.00	1.9291	8-5/8	14-1/2	TSD-M49.0 534.10
49.50	1.9488	8-5/8	14-1/2	TSD-M49.5 534.10
50.00	1.9685	8-5/8	14-1/2	TSD-M50.0 534.10
#5 MT SHANK				
51.00	2.0079	8-7/8	14-3/4	TSD-M51.0 623.70
52.00	2.0472	8-7/8	14-3/4	TSD-M52.0 -
54.00	2.1260	9	16-3/8	TSD-M54.0 -
55.00	2.1653	9	16-3/8	TSD-M55.0 754.68
56.00	2.2047	9	16-3/8	TSD-M56.0 -
57.00	2.2441	9-1/4	16-5/8	TSD-M57.0 788.98
58.00	2.2835	9-1/4	16-5/8	TSD-M58.0 -
59.00	2.3228	9-1/4	16-5/8	TSD-M59.0 847.30
60.00	2.3622	9-1/4	16-5/8	TSD-M60.0 1200.62
62.00	2.4409	9-1/2	16-7/8	TSD-M62.0 -
65.00	2.5591	9-5/8	17	TSD-M65.0 1200.62
66.00	2.5984	9-5/8	17	TSD-M66.0 1256.80
69.00	2.7165	9-7/8	17-1/4	TSD-M69.0 1509.58
70.00	2.7559	9-7/8	17-1/4	TSD-M70.0 1595.20
72.00	2.8346	10	17-3/8	TSD-M72.0 1657.14
76.00	2.9921	10-1/4	17-5/8	TSD-M76.0 -
80.00	3.1496	10-1/4	20-1/4	TSD-M80.0 -
90.00	3.5433	10-5/8	20-5/8	TSD-M90.0 -
#6 MT SHANK				
81.00	3.1890	10-3/8	20-3/8	TSD-M81.0 -
83.00	3.2677	10-3/8	20-3/8	TSD-M83.0 1806.00
85.00	3.3465	10-3/8	20-3/8	TSD-M85.0 -
88.00	3.4646	10-5/8	20-5/8	TSD-M88.0 -
90.00	3.5433	10-5/8	20-5/8	TSD-M90.0*
95.00	3.7402	10-7/8	20-7/8	TSD-M95.0 -
100.00	3.9370	11	21	TSD-M100.0 -

Please inquire for price and delivery for sizes listed without pricing.

COBALT TAPER SHANK DRILLS**ICS USA****HEAVY DUTY****135° SPLIT POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
TSD-C	 GOLD COBALT FINISH	For drilling in hard steels, stainless steels and other hard materials. The split point is self centering and breaks up chips.	M42	135° Split Point or Notched Point

Fractional Sizes (Regular & Oversize Shanks) 1/4" to 2" Dia.

COBALT				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	GOLD FINISH 135° S/P TSD-C
#1 MT SHANK				
1/4	.2500	2-7/8	6-1/8	28.34
9/32	.2812	3	6-1/4	31.86
5/16	.3125	3-1/8	6-3/8	31.86
11/32	.3437	3-1/4	6-1/2	37.38
#2 MT SHANK				
3/8	.3750	3-1/2	7-3/8	43.26
13/32	.4062	3-5/8	7-1/2	45.92
7/16	.4375	3-7/8	7-3/4	49.56
15/32	.4687	4-1/8	8	53.06
31/64	.4844	4-3/8	8-1/4	58.60
1/2	.5000	4-3/8	8-1/4	54.92
33/64	.5156	4-5/8	8-1/2	67.16
17/32	.5312	4-5/8	8-1/2	62.38
35/64	.5469	4-7/8	8-3/4	70.26
9/16	.5625	4-7/8	8-3/4	65.24
37/64	.5781	4-7/8	8-3/4	74.56
19/32	.5937	4-7/8	8-3/4	72.56
39/64	.6094	4-7/8	8-3/4	82.18
5/8	.6250	4-7/8	8-3/4	74.22

COBALT				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	GOLD FINISH 135° S/P TSD-C
#3 MT SHANK				
41/64	.6406	5-1/8	9-3/4	93.98
21/32	.6562	5-1/8	9-3/4	84.90
43/64	.6719	5-3/8	10	100.40
11/16	.6875	5-3/8	10	90.72
45/64	.7031	5-5/8	10-1/4	109.50
23/32	.7187	5-5/8	10-1/4	100.80
47/64	.7344	5-7/8	10-1/2	111.16
3/4	.7500	5-7/8	10-1/2	105.18
49/64	.7656	6	10-5/8	119.12
25/32	.7812	6	10-5/8	110.64
51/64	.7969	6-1/8	10-3/4	126.42
13/16	.8125	6-1/8	10-3/4	114.20
53/64	.8281	6-1/8	10-3/4	147.28
27/32	.8437	6-1/8	10-3/4	135.62
55/64	.8594	6-1/8	10-3/4	147.26
7/8	.8750	6-1/8	10-3/4	135.62
57/64	.8906	6-1/8	10-3/4	147.26
29/32	.9062	6-1/8	10-3/4	133.06
59/64	.9219	6-1/8	10-3/4	173.14
15/16	.9375	6-1/8	10-3/4	156.42

COBALT				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	GOLD FINISH 135° S/P TSD-C
#3 MT SHANK				
61/64	.9531	6-3/8	11	196.00
31/32	.9687	6-3/8	11	185.50
63/64	.9844	6-3/8	11	190.62
1	1.0000	6-3/8	11	177.00
#4 MT SHANK				
1-1/32	1.0312	6-1/2	12-1/8	237.52
1-1/16	1.0625	6-5/8	12-1/4	226.76
1-3/32	1.0937	6-7/8	12-1/2	259.72
1-1/8	1.1250	7-1/8	12-3/4	248.18
1-5/32	1.1562	7-1/4	12-7/8	294.70
1-3/16	1.1875	7-3/8	13	281.32
1-7/32	1.2187	7-1/2	13-1/8	335.82
1-1/4	1.2500	7-7/8	13-1/2	326.68
1-5/16	1.3125	8-5/8	15-5/8	391.66
1-3/8	1.3750	8-7/8	15-7/8	421.06
1-7/16	1.4375	9-1/8	16-1/8	497.72
1-1/2	1.5000	9-3/8	16-3/8	534.46
1-5/8	1.6250	10	17	628.96
1-3/4	1.7500	10-1/8	17-1/8	787.50
2	2.0000	10-3/8	17-3/8	960.76

**CARBIDE TIPPED
TAPER SHANK DRILLS****ICS USA****SPECIAL PURPOSE****118° POINT**

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
CTTSD	 BRIGHT POLISHED FINISH	For production drilling of cast iron, non-ferrous metals, and non-metals. They are recommended for drilling steel or other ferrous metals.	M1 (Body) CARBIDE TIPPED	118° Std. Spiral Std. Web

Fractional Sizes (Regular MT Shank) 1/4" to 1-1/4" Dia.

CARB. TIPPED				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	BRIGHT FINISH 118° PT CTTSD
#1 MT SHANK				
1/4	.2500	2-7/8	6-1/8	-
9/32	.2812	3	6-1/4	-
5/16	.3125	3-1/8	6-3/8	-
11/32	.3438	3-1/4	6-1/2	CALL FOR PRICE
3/8	.3750	3-1/2	6-3/4	FOR PRICE
13/32	.4062	3-5/8	7	FOR PRICE
7/16	.4375	3-7/8	7-1/4	-
15/32	.4688	4-1/8	7-1/2	-

CARB. TIPPED				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	BRIGHT FINISH 118° PT CTTSD
#2 MT SHANK				
1/2	.5000	4-3/8	8-1/4	-
17/32	.5312	4-5/8	8-1/2	-
9/16	.5625	4-7/8	8-3/4	-
19/32	.5938	4-7/8	8-3/4	CALL FOR PRICE
5/8	.6250	4-7/8	8-3/4	FOR PRICE
21/32	.6562	5-1/8	9	FOR PRICE
11/16	.6875	5-3/8	9-1/4	-
23/32	.7188	5-5/8	9-1/2	-
3/4	.7500	5-7/8	9-3/4	-
25/32	.7812	6	9-7/8	-

CARB. TIPPED				
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	BRIGHT FINISH 118° PT CTTSD
#3 MT SHANK				
13/16	.8125	6-1/8	10-3/4	-
27/32	.8435	6-1/8	10-3/4	-
7/8	.8750	6-1/8	10-3/4	CALL FOR PRICE
29/32	.9062	6-1/8	10-3/4	FOR PRICE
15/16	.9375	6-1/8	10-3/4	FOR PRICE
31/32	.9688	6-3/8	11	-
1	1.0000	6-3/8	11	-
#4 MT SHANK				
1-1/16	1.0625	6-5/8	11-1/4	CALL FOR PRICE
1-1/8	1.1250	7-1/8	12-3/4	FOR PRICE
1-3/16	1.1875	7-3/8	13	FOR PRICE
1-1/4	1.2500	7-7/8	13-1/2	-

Other sizes available. Please inquire for price and delivery.

EXTRA LENGTH TAPER SHANK DRILLS**ICS USA****GENERAL PURPOSE****118° POINT**

High Speed Steel Extra Length Taper Shank Drills with a 118° point are designed for drilling very deep holes in ferrous or non-ferrous metals, or drilling in difficult to reach locations. Extra length taper shank drills are preferred for drilling medium to large diameter deep holes as they can require a huge amount of rotational power on the shank for drilling.

Fractional Sizes (Regular MT Shank) 1/4" to 1" Dia.

SIZE	DEC. EQUIV.	MORSE TAPER NO.	12" OVERALL		15" OVERALL		18" OVERALL		24" OVERALL		30" OVERALL	
			FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT
			TSD-12		TSD-15		TSD-18		TSD-24		TSD-30	
1/4	.2500	1	9	68.46	12	80.56	15	105.26		-		-
17/64	.2656	1	9	72.32	12	82.32	15	110.54		-		-
9/32	.2812	1	9	72.32	12	86.14	15	110.54		-		-
19/64	.2969	1	9	73.86	12	86.14	15	112.86		-		-
5/16	.3125	1	9	73.86	12	86.14	15	123.48		-		-
21/64	.3281	1	9	81.68	12	97.62	15	123.48		-		-
11/32	.3438	1	9	81.68	12	97.62	15	129.96		-		-
23/64	.3594	1	9	86.38	12	103.50	15	129.96		-		-
3/8	.3750	1	9	86.38	12	103.50	15	135.54	21	169.88		-
25/64	.3906	1	9	89.50	12	107.44	15	135.54	21	169.88		-
13/32	.4062	1	9	89.50	12	107.44	15	135.54	21	169.88		-
27/64	.4219	1	9	92.68	12	111.38	15	138.60	21	169.88		-
7/16	.4375	1	9	92.68	12	111.38	15	138.60	21	174.94		-
29/64	.4531	1	9	97.32	12	117.60	15	138.60	21	174.94		-
15/32	.4688	1	9	97.32	12	117.60	15	138.60	21	174.94		-
31/64	.4844	2	8	107.50	11	120.78	14	131.50	20	174.94		-
1/2	.5000	2	8	107.50	11	120.78	14	131.50	20	174.94		-
33/64	.5156	2	8	107.50	11	120.78	14	131.50	20	174.94		-
17/32	.5312	2	8	107.50	11	120.78	14	131.50	20	174.94		-
35/64	.5469	2	8	109.04	11	122.44	14	133.48	20	174.94		-
9/16	.5625	2	8	109.04	11	122.44	14	133.48	20	174.94		-
37/64	.5781	2	8	110.44	11	124.08	14	135.14	20	185.00		-
19/32	.5938	2	8	110.44	11	124.08	14	135.14	20	185.00		-
39/64	.6094	2	8	117.60	11	132.56	14	144.66	20	189.92		-
5/8	.6250	2	8	117.60	11	132.56	14	144.66	20	189.92		-
41/64	.6406	2	8	125.84	11	142.00	14	155.48	20	216.80		-
21/32	.6562	2	8	125.84	11	142.00	14	155.48	20	216.80		-
43/64	.6719	2	8	137.54	11	155.48	14	170.42	20	222.98		-
11/16	.6875	2	8	137.54	11	155.48	14	170.42	20	222.98		-
45/64	.7031	2	8	146.32	11	160.82	14	183.36	20	237.46		-
23/32	.7188	2	8	146.32	11	160.82	14	183.36	20	250.00		-
47/64	.7344	2	8	152.12	11	172.28	14	189.18	20	245.36		-
3/4	.7500	2	8	152.12	11	172.28	14	189.18	20	245.36	26	323.40
49/64	.7656	2	8	160.52	11	181.70	14	189.18	20	255.44		-
25/32	.7812	2	8	160.52	11	181.70	14	199.44	20	255.44		-
51/64	.7969	3	7	160.52	10	173.24	13	212.70	19	287.70		-
13/16	.8125	3	7	160.52	10	173.24	13	212.70	19	287.70	25	378.68
53/64	.8281	3	7	160.52	10	174.64	13	213.94	19	320.00		-
27/32	.8438	3	7	160.52	10	174.64	13	213.94	19	320.00		-
55/64	.8594	3	7	160.52	10	180.82	13	221.58	19	352.80		-
7/8	.8750	3	7	160.52	10	180.82	13	221.58	19	352.80	25	431.60
57/64	.8906	3	7	160.52	10	186.92	13	229.32	19	352.80		-
29/32	.9062	3	7	160.52	10	186.92	13	229.32	19	352.80		-
59/64	.9219	3	7	164.06	10	189.92	13	233.14	19	352.80		-
15/16	.9375	3	7	164.06	10	189.92	13	233.14	19	352.80	25	468.06
61/64	.9531	3	-	-	10	192.86	13	236.96	19	392.62		-
31/32	.9688	3	7	167.00	10	192.86	13	236.96	19	392.62		-
63/64	.9844	3	-	-	10	203.74	13	250.50	19	392.62		-
1	1.0000	3	7	175.22	10	203.74	13	250.50	19	392.62	25	755.00

PACKAGING: (All Sizes - 1Drill/Tube)

(Sizes continued on next page)

HIGH SPEED STEEL EXTRA LENGTH TAPER SHANK DRILLS

ICS USA

GENERAL PURPOSE

118° POINT



High Speed Steel Extra Length Taper Shank Drills with a 118° point are designed for drilling very deep holes in ferrous or non-ferrous metals, or drilling in difficult to reach locations. Extra length taper shank drills are preferred for drilling medium to large diameter deep holes as they can require a huge amount of rotational power on the shank for drilling.

Fractional Sizes (Regular MT Shank) 1-1/16" to 2" Dia.

SIZE	DEC. EQUIV.	MORSE TAPER NO.	15" OVERALL		18" OVERALL		24" OVERALL		30" OVERALL	
			FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT
			TSD-15		TSD-18		TSD-24		TSD-30	
1-1/16	1.0625	3	10	210.00	13	271.66	19	432.74	25	512.74
1-1/8	1.1250	4	10	230.16	12	274.86	18	453.02	24	862.02
1-3/16	1.1875	4	10	257.54	12	298.60	18	480.70	24	644.46
1-1/4	1.2500	4	9	282.14	12	318.40	18	497.70	24	1017.24
1-5/16	1.3125	4	-	-	12	355.16	18	500.82	24	787.92
1-3/8	1.3750	4	-	-	12	385.62	18	532.90	24	850.26
1-7/16	1.4375	4	-	-	12	392.68	18	548.60	24	882.00
1-1/2	1.5000	4	-	-	12	416.02	18	671.56	24	926.70
1-5/8	1.6250	5	-	-	10	502.74	17	680.62	23	1033.70
1-3/4	1.7500	5	-	-	10	563.66	17	766.12	23	1111.32
1-7/8	1.8750	5	-	-	10	626.06	17	842.44	23	1170.38
2	2.0000	5	-	-	-	-	17	943.74	23	1366.52

Metric Sizes (Regular MT Shank) 6.00mm to 50.00mm Dia.

SIZE mm	DEC. EQUIV.	MORSE TAPER NO.	315mm OAL (12")		400mm OAL (15")		500mm OAL (19-1/2")		630mm OAL (25")	
			FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT	FLUTE LENGTH	OXIDE FINISH 118° POINT
			TSDM-12		TSDM-15		TSDM-19		TSDM-25	
6.00	.2362	1	8	175.14	-	-	-	-	-	-
6.50	.2559	1	-	-	-	-	-	-	-	-
7.00	.2756	1	-	-	-	-	-	-	-	-
7.50	.2953	1	-	-	-	-	-	-	-	-
8.00	.3150	1	8	93.82	12	106.72	16	163.14	-	-
8.50	.3346	1	8	93.82	12	129.28	-	-	-	-
9.00	.3543	1	8	116.90	-	-	-	-	-	-
9.50	.3740	1	-	-	-	-	-	-	-	-
10.00	.3937	1	8	112.66	12	190.02	16	225.14	-	-
11.00	.4331	1	8	118.16	12	212.36	16	254.28	-	-
12.00	.4724	1	8	102.76	12	169.70	16	219.80	-	-
13.00	.5118	1	8	115.52	12	210.34	16	375.46	-	-
14.00	.5512	1	8	129.78	12	181.70	16	242.84	-	-
15.00	.5906	2	8	145.78	12	196.36	16	273.14	-	-
16.00	.6299	2	8	141.04	12	199.72	16	265.44	-	-
17.00	.6693	2	8	146.76	12	213.40	16	290.42	-	-
18.00	.7087	2	8	146.76	12	207.26	16	342.26	21	400.62
19.00	.7480	2	8	155.56	12	303.30	16	351.18	-	-
20.00	.7874	2	8	168.70	12	220.84	16	304.26	21	416.36
21.00	.8268	2	8	185.48	12	254.92	16	391.62	-	-
22.00	.8661	2	8	185.48	12	267.50	16	331.46	21	452.24
23.00	.9055	2	8	219.52	12	513.62	16	547.72	-	-
24.00	.9499	3	-	-	11	323.96	15	394.32	20	468.20
25.00	.9843	3	-	-	11	285.60	15	362.68	20	474.20
26.00	1.0236	3	-	-	11	356.72	15	415.24	20	598.38
27.00	1.0630	3	-	-	11	390.16	15	574.74	-	-
28.00	1.1024	3	-	-	11	370.58	15	440.32	20	653.40
30.00	1.1811	3	-	-	11	370.82	15	464.42	20	578.98
32.00	1.2598	4	-	-	11	537.92	14	498.70	19	664.50
35.00	1.3780	4	-	-	-	-	14	553.46	19	819.82
38.00	1.4961	4	-	-	-	-	14	741.16	19	883.86
40.00	1.5748	4	-	-	-	-	14	645.92	19	958.02
42.00	1.6535	4	-	-	-	-	14	997.58	19	1199.98
45.00	1.7717	4	-	-	-	-	14	883.54	19	1030.14
48.00	1.8898	4	-	-	-	-	14	1158.78	19	1343.46
50.00	1.9685	4	-	-	-	-	14	952.52	19	1114.70

HIGH SPEED STEEL EXTRA LENGTH (LONG BOY) DRILLS

ICS

USA

GENERAL PURPOSE

118° POINT



High Speed Steel Straight Shank Extra Length Long Boy Drills with a 118° point are designed for drilling very deep holes in ferrous or non-ferrous metals or drilling in difficult to reach locations. Straight shank extra length drills are preferred for drilling small to medium diameter deep holes as they do not require as much rotational power for drilling that a large deep hole would require. They are also known as Contractor's Long Boy Drills or simply as Long Boy Drills.

Fractional Sizes (Straight Shank) 1/16" to 1-1/4" Dia.

		HIGH SPEED STEEL						
SIZE	DEC. EQUIV.	6" OVERALL LENGTH 4" FLUTE LENGTH	8" OVERALL LENGTH 5" FLUTE LENGTH	9" OVERALL LENGTH 6" FLUTE LENGTH	10" OVERALL LENGTH 7" FLUTE LENGTH	12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH	24" OVERALL LENGTH 18" FLUTE LENGTH
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT
		LBD06L	LBD08L	LBD09L	LBD10L	LBD12L	LBD18L	LBD24L
1/16	.0625	10.48	-	-	-	-	-	-
5/64	.0781	9.24	-	-	-	-	-	-
3/32	.0938	8.22	15.60	-	-	-	-	-
7/64	.1094	7.48	15.60	-	-	-	-	-
1/8	.1250	7.00	15.60	-	16.98	17.80	-	-
9/64	.1406	7.00	13.96	-	18.66	19.52	-	-
5/32	.1562	7.00	13.96	-	18.30	19.30	-	-
11/64	.1719	8.58	14.48	-	19.12	20.22	-	-
3/16	.1875	8.14	14.48	-	20.48	20.22	42.50	-
13/64	.2031	-	15.54	-	20.48	21.62	42.50	-
7/32	.2188	-	15.88	-	20.48	21.62	42.50	-
15/64	.2344	-	15.88	-	21.06	22.40	42.50	-
1/4	.2500	-	15.88	-	21.06	22.40	44.04	82.22
17/64	.2656	-	16.44	-	22.18	23.30	47.04	-
9/32	.2812	-	16.44	-	22.18	23.30	47.04	-
19/64	.2969	-	16.82	-	22.70	23.94	47.04	-
5/16	.3125	-	16.82	-	22.70	23.94	47.04	84.58
21/64	.3281	-	17.94	-	24.36	25.62	49.90	-
11/32	.3438	-	17.94	-	24.36	25.62	49.90	-
23/64	.3594	-	18.58	-	24.96	26.12	49.90	-
3/8	.3750	-	18.58	-	24.96	26.12	55.88	108.20
25/64	.3906	-	20.30	-	27.06	28.92	54.18	-
13/32	.4062	-	20.30	-	27.06	28.92	54.18	-
27/64	.4219	-	-	25.64	28.72	32.94	58.36	-
7/16	.4375	-	24.24	25.64	31.06	32.94	58.36	126.42
29/64	.4531	-	26.98	27.06	30.88	34.34	66.78	-
15/32	.4688	-	26.98	-	30.88	34.34	66.78	-
31/64	.4844	-	26.98	28.94	31.58	38.36	69.98	-
1/2	.5000	-	26.98	28.94	31.58	34.10	69.98	117.02
17/32	.5321	-	-	-	-	45.72	79.06	-
9/16	.5625	-	-	-	-	45.72	80.40	156.42
19/32	.5938	-	-	-	-	49.34	83.18	-
5/8	.6250	-	-	-	-	51.60	87.30	170.30
21/32	.6562	-	-	-	-	59.28	96.50	-
11/16	.6875	-	-	-	-	59.28	103.36	198.74
23/32	.7188	-	-	-	-	64.34	112.96	-
3/4	.7500	-	-	-	-	66.80	119.74	229.32
25/32	.7812	-	-	-	-	81.12	133.60	239.90
13/16	.8125	-	-	-	-	86.44	138.70	245.78
7/8	.8750	-	-	-	-	103.74	143.06	264.60
15/16	.9375	-	-	-	-	121.14	150.50	276.36
1	1.0000	-	-	-	-	124.66	159.54	294.00
1-1/8	1.1250	-	-	-	-	-	194.04	315.18
1-3/16	1.1875	-	-	-	-	-	234.68	351.62
1-1/4	1.2500	-	-	-	-	-	281.90	422.78

EXTRA LENGTH (LONG BOY) DRILLS

ICS

USA

GENERAL PURPOSE**118° POINT**

High Speed Steel Straight Shank Extra Length Long Boy Drills with a 118° point are designed for drilling very deep holes in ferrous or non-ferrous metals or drilling in difficult to reach locations. Straight shank extra length drills are preferred for drilling small to medium diameter deep holes as they do not require as much rotational power for drilling that a large deep hole would require. They are also known as Contractor's Long Boy Drills or simply as Long Boy Drills.

Wire Gauge Sizes (Straight Shank) #1 to #40 Dia.

SIZE	DEC EQUIV.	HSS		HSS	
		8" OVERALL LENGTH	PRICE	12" OVERALL LENGTH	PRICE
		5" FLUTE LENGTH		9" FLUTE LENGTH	
1	.2280	LBD08L#01	18.04	LBD12L#01	21.54
2	.2210	LBD08L#02	18.04	LBD12L#02	21.54
3	.2130	LBD08L#03	17.76	LBD12L#03	21.54
4	.2090	LBD08L#04	17.76	LBD12L#04	21.54
5	.2055	LBD08L#05	17.76	LBD12L#05	21.54
6	.2040	LBD08L#06	17.76	LBD12L#06	21.54
7	.2010	LBD08L#07	17.76	LBD12L#07	21.54
8	.1990	LBD08L#08	17.76	LBD12L#08	21.54
9	.1960	LBD08L#09	17.76	LBD12L#09	21.54
10	.1935	LBD08L#10	17.76	LBD12L#10	21.54
11	.1910	LBD08L#11	17.76	LBD12L#11	21.54
12	.1890	LBD08L#12	17.76	LBD12L#12	21.54
13	.1850	LBD08L#13	17.76	LBD12L#13	21.54
14	.1820	LBD08L#14	17.76	LBD12L#14	21.54
15	.1800	LBD08L#15	17.76	LBD12L#15	21.54
16	.1770	LBD08L#16	17.76	LBD12L#16	21.54
17	.1730	LBD08L#17	17.76	LBD12L#17	21.54
18	.1695	LBD08L#18	17.76	LBD12L#18	21.54
19	.1660	LBD08L#19	17.76	LBD12L#19	21.54
20	.1610	LBD08L#20	17.76	LBD12L#20	21.54

SIZE	DEC EQUIV.	HSS		HSS	
		8" OVERALL LENGTH	PRICE	12" OVERALL LENGTH	PRICE
		5" FLUTE LENGTH		9" FLUTE LENGTH	
21	.1590	LBD08L#21	17.76	LBD12L#21	21.54
22	.1570	LBD08L#22	17.76	LBD12L#22	21.54
23	.1540	LBD08L#23	16.24	LBD12L#23	21.54
24	.1520	LBD08L#24	16.24	LBD12L#24	21.54
25	.1495	LBD08L#25	16.24	LBD12L#25	21.54
26	.1470	LBD08L#26	16.24	LBD12L#26	21.54
27	.1440	LBD08L#27	16.24	LBD12L#27	21.54
28	.1405	LBD08L#28	16.24	LBD12L#28	21.54
29	.1360	LBD08L#29	16.24	LBD12L#29	21.54
30	.1285	LBD08L#30	16.24	LBD12L#30	21.54
31	.1200	LBD08L#31	15.96	LBD12L#31	21.54
32	.1160	LBD08L#32	15.96		
33	.1130	LBD08L#33	15.96		
34	.1110	LBD08L#34	15.96		
35	.1100	LBD08L#35	15.96		
36	.1065	LBD08L#36	15.96		
37	.1040	LBD08L#37	15.96		
38	.1015	LBD08L#38	15.96		
39	.0995	LBD08L#39	15.96		
40	.0980	LBD08L#40	15.96		

Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	EQUIV.	HSS	
		12" OVERALL LENGTH	PRICE
		9" FLUTE LENGTH	
A	.2340	LBD12L"A"	21.54
B	.2380	LBD12L"B"	21.54
C	.2420	LBD12L"C"	21.54
D	.2460	LBD12L"D"	21.54
E	.2500	LBD12L"E"	22.40
F	.2570	LBD12L"F"	24.64
G	.2610	LBD12L"G"	24.64
H	.2660	LBD12L"H"	24.64
I	.2720	LBD12L"I"	24.64
J	.2770	LBD12L"J"	24.64
K	.2810	LBD12L"K"	24.64
L	.2900	LBD12L"L"	24.64
M	.2950	LBD12L"M"	24.64

SIZE	EQUIV.	HSS	
		12" OVERALL LENGTH	PRICE
		9" FLUTE LENGTH	
N	.3020	LBD12L"N"	25.20
O	.3160	LBD12L"O"	28.40
P	.3230	LBD12L"P"	28.40
Q	.3320	LBD12L"Q"	28.40
R	.3390	LBD12L"R"	28.40
S	.3480	LBD12L"S"	29.54
T	.3580	LBD12L"T"	29.54
U	.3680	LBD12L"U"	29.54
V	.3770	LBD12L"V"	31.94
W	.3860	LBD12L"W"	31.94
X	.3970	LBD12L"X"	31.94
Y	.4040	LBD12L"Y"	31.94
Z	.4130	LBD12L"Z"	32.86

1/2" SHANK EXTRA LENGTH (LONG BOY) DRILLS

ICS

WIS

GENERAL PURPOSE

118° POINT

**Fractional Sizes (Reduced Shank) 17/32" to 1" Dia.**

		HIGH SPEED STEEL		
SIZE	DEC. EQUIV.	12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH	24" OVERALL LENGTH 18" FLUTE LENGTH
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT
		LBDRS12L	LBDRS18L	LBDRS24L
17/32	.5321	51.60	87.30	-
9/16	.5625	51.60	88.62	168.18
19/32	.5938	55.22	91.42	-
5/8	.6250	57.48	94.58	182.06
21/32	.6562	61.90	104.74	-
11/16	.6875	65.16	111.60	210.50
23/32	.7188	70.22	121.20	-

		HIGH SPEED STEEL		
SIZE	DEC. EQUIV.	12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH	24" OVERALL LENGTH 18" FLUTE LENGTH
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT
		LBDRS12L	LBDRS18L	LBDRS24L
3/4	.7500	72.68	136.52	241.08
25/32	.7812	87.00	141.84	251.66
13/16	.8125	92.32	146.94	257.54
7/8	.8750	109.62	151.28	276.36
15/16	.9375	127.02	158.72	288.12
1	1.0000	130.54	167.78	305.76

METRIC EXTRA LENGTH (LONG BOY) DRILLS

ICS

WIS

GENERAL PURPOSE

118° POINT



High Speed Steel Straight Shank Metric Extra Length Long Boy Drills with a 118° point are designed for drilling very deep metric size holes in ferrous or non-ferrous metals or drilling in difficult to reach locations. Straight shank extra length drills are preferred for drilling small to medium diameter deep metric size holes as they do not require as much rotational power for drilling that a large deep hole would require. They are also known as Metric Contractor's Long Boy Drills or simply as Metric Long Boy Drills.

Metric Sizes (Straight Shank) 1.40mm to 14.00mm Dia.

		HIGH SPEED STEEL				
SIZE	DEC. EQUIV.	160mm OVERALL LENGTH (6") 100mm FLUTE LENGTH (4")	200mm OVERALL LENGTH (8") 150mm FLUTE LENGTH (6")	250mm OVERALL LENGTH (10") 200mm FLUTE LENGTH (8")	315mm OVERALL LENGTH (12") 250mm FLUTE LENGTH (10")	400mm OVERALL LENGTH (15") 300mm FLUTE LENGTH (12")
		OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT	OXIDE FINISH 118° POINT
		LBDM06L	LBDM08L	LBDM10L	LBDM12L	LBDM15L
1.40	.0551	40.50	-	-	-	-
1.50	.0591	20.26	-	-	-	-
1.80	.0709	31.02	-	-	-	-
2.00	.0787	18.74	-	-	-	-
2.20	.0866	25.48	-	-	-	-
2.50	.0984	15.96	-	-	-	-
3.00	.1181	15.38	28.86	36.22	-	-
3.30	.1299	15.20	-	-	-	-
3.50	.1378	14.66	18.42	34.40	-	-
4.00	.1575	15.28	19.06	23.96	45.16	-
4.50	.1772	16.30	20.26	38.08	47.88	-
5.00	.1969	17.20	21.48	26.72	50.66	64.18
5.50	.2165	-	22.72	42.38	53.42	-
6.00	.2362	-	25.80	32.54	40.84	77.66
6.50	.2559	-	27.32	51.26	64.46	-
7.00	.2756	-	28.88	35.94	68.16	-
7.50	.2953	-	32.84	40.84	77.36	-
8.00	.3150	-	-	43.28	54.62	69.08
8.50	.3346	-	-	48.80	92.40	-
9.00	.3543	-	-	51.58	64.76	124.22
9.50	.3740	-	-	57.72	109.26	-
10.00	.3937	-	-	60.80	76.74	146.10
10.50	.4134	-	-	68.16	128.90	164.20
11.00	.4331	-	-	70.60	133.52	170.32
12.00	.4724	-	-	81.64	102.82	196.44
13.00	.5118	-	-	-	124.92	237.86
14.00	.5512	-	-	-	142.42	271.62

EXTRA LENGTH (LONG BOY) DRILLS

ICS

USA

HEAVY DUTY

135° SPLIT POINT



High Speed Steel Extra Length (Long Boy) Drills with a heavy duty 135° split point are designed for deep hole drilling in tougher materials or drilling in difficult to reach locations. 135° split point improves penetration rates, reduces location error, and helps maintain accuracy. They are also known as Contractor's Long Boy Drills or simply as Long Boy Drills.

Fractional Sizes (Straight Shank) 1/8" to 1" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
		LBDHB12L	LBDHB18L
1/8	.1250	20.14	-
5/32	.1562	21.66	-
3/16	.1875	22.58	44.86
7/32	.2188	23.96	44.86
1/4	.2500	24.74	46.40
9/32	.2812	25.64	49.40
5/16	.3125	26.30	49.40
11/32	.3438	27.98	52.26
3/8	.3750	28.48	52.26
13/32	.4062	31.28	56.54
7/16	.4375	35.28	60.72
15/32	.4688	41.88	70.32
1/2	.5000	37.64	73.50

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
		LBDHB12L	LBDHB18L
17/32	.5321	51.26	84.62
9/16	.5625	51.26	85.94
19/32	.5938	54.88	88.72
5/8	.6250	57.14	92.84
21/32	.6562	61.58	102.04
11/16	.6875	64.84	108.92
23/32	.7188	69.90	118.50
3/4	.7500	72.38	125.32
25/32	.7812	91.50	143.98
13/16	.8125	96.82	149.08
7/8	.8750	114.12	153.44
15/16	.9375	131.50	160.78
1	1.0000	135.04	169.92

HIGH SPEED STEEL

1/2" SHANK EXTRA LENGTH (LONG BOY) DRILLS

ICS

USA

HEAVY DUTY

135° SPLIT POINT



High Speed Steel 1/2" Shank Extra Length (Long Boy) Drills with a heavy duty 135° split point are designed for deep hole drilling in tougher materials or drilling in difficult to reach locations using any 1/2" or larger 3-jaw chuck drill. They are also used by roofing and framing contractors for drilling beams. 135° split point improves penetration rates, reduces location error, and helps maintain accuracy. They are also known as Contractor's Long Boy Drills or simply as Long Boy Drills.

Fractional Sizes (Straight Shank) 1/8" to 1" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
		LBDHRS12L	LBDHRS18L
17/32	.5321	-	-
9/16	.5625	-	-
19/32	.5938	CALL	CALL
5/8	.6250	FOR	FOR
21/32	.6562	PRICE	PRICE
11/16	.6875	-	-
23/32	.7188	-	-

SIZE	DEC. EQUIV.	HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
		LBDHRS12L	LBDHRS18L
3/4	.7500	-	-
25/32	.7812	-	-
13/16	.8125	CALL	CALL
7/8	.8750	FOR	FOR
15/16	.9375	PRICE	PRICE
1	1.0000	-	-

3/8" SHANK EXTRA LENGTH (LONG BOY) DRILLS

ICS

USA

HEAVY DUTY

135° SPLIT POINT



High Speed Steel 3/8" Shank Extra Length (Long Boy) Drills with a heavy duty 135° split point are designed for deep hole drilling in tougher materials or drilling in difficult to reach locations using any 3/8" or larger 3-jaw chuck drill. They are also used by roofing and framing contractors for drilling beams. 135° split point improves penetration rates, reduces location error, and helps maintain accuracy. They are also known as Contractor's Long Boy Drills or simply as Long Boy Drills.

Fractional Sizes (Reduced Shank) 13/32" to 1" Dia.

		HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
SIZE	DEC. EQUIV.	LBDHBTS12L	LBDHBTS18L
13/32	.4062	-	-
7/16	.4375	-	-
15/32	.4688	-	-
1/2	.5000	CALL FOR PRICE	CALL FOR PRICE
17/32	.5321	-	-
9/16	.5625	-	-
19/32	.5938	-	-
5/8	.6250	-	-
21/32	.6562	-	-

		HIGH SPEED STEEL	
		12" OVERALL LENGTH 9" FLUTE LENGTH	18" OVERALL LENGTH 14" FLUTE LENGTH
		OXIDE FINISH 135° SPLIT POINT	OXIDE FINISH 135° SPLIT POINT
SIZE	DEC. EQUIV.	LBDHBTS12L	LBDHBTS18L
11/16	.6875	-	-
23/32	.7188	-	-
3/4	.7500	-	-
25/32	.7812	CALL FOR PRICE	CALL FOR PRICE
13/16	.8125	-	-
7/8	.8750	-	-
15/16	.9375	-	-
1	1.0000	-	-

HIGH SPEED STEEL

EXTRA LENGTH (LONG BOY) DRILL SETS**METAL/WOOD STANDS**

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	6 PC DRILL SET 3/8" Shank 3/8, 7/16, 1/2, 9/16, 5/8, 3/4 Wood Stand	3/8" Shank Heavy Duty 135° S/Pt 12" Long Boy Drills	DSW-LBH12TS-6	338.56
	8 PC DRILL SET 3/8" Shank 3/8, 13/32, 7/16, 15/32, 1/2 9/16, 5/8, 3/4 Wood Stand	3/8" Shank Heavy Duty 135° S/Pt 12" Long Boy Drills	DSW-LBH12TS-8	423.44
	8 PC DRILL SET 1/2" Shank 9/16 to 1" by 16ths Wood Stand	1/2" Shank 12" Long Boy Drills	DSW-LB12RS-8	729.86
		1/2" Shank 18" Long Boy Drills	DSW-LB18RS-8	1071.88
		1/2" Shank Heavy Duty 135° S/Pt 12" Long Boy Drills	DSW-LBH12RS-8	793.56
		1/2" Shank Heavy Duty 135° S/Pt 18" Long Boy Drills	DSW-LBH18RS-8	1135.58
	11 PC DRILL SET Straight Shank 3/16 to 1/2 by 32nds Metal Stand	Straight Shank 18" Long Boy Drills	DSM-LB18-11	583.94
		Straight Shank Heavy Duty 135° S/Pt 18" Long Boy Drills	DSM-LBH18-11	612.16
	13 PC DRILL SET Straight Shank 1/8 to 1/2 by 32nds Metal Stand	Straight Shank 12" Long Boy Drills	DSM-LB12-13	342.18
		Straight Shank Heavy Duty 135° S/Pt 12" Long Boy Drills	DSM-LBH12-13	379.14
	25 PC DRILL SET Straight Shank 1/8 to 1/2 by 64ths Wood Stand	Straight Shank Bright Finish 12" Long Boy Drills	DSW-LB12-25	502.52

HIGH SPEED STEEL EXTRA LENGTH (VENT) DRILLS

MET-103

ICS USA

SPECIAL PURPOSE

118° POINT



Extra Length Vent Drills are designed for drilling vent holes in rubber tire molds and for drilling very small diameter deep holes in metal. They are sometimes referred to as Small Diameter Long Boy Drills.

Fractional/Wire Gauge Sizes (Straight Shank) 1/16" to #74 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/64	.0469	2	3	VD003X200X300	4.20
1/16	.0625	2-1/2	3-1/2	VD004X232X332	4.50
1/16	.0625	3	4	VD004X300X400	4.86
1/16	.0625	3	5	VD004X300X500	5.22
1/16	.0625	4	6	VD004X400X600	6.70
50	.0700	3	4	VD#50X300X400	4.86
50	.0700	3	5	VD#50X300X500	5.22
50	.0700	4	6	VD#50X400X600	6.70
52	.0635	4	5	VD#52X400X500	5.24
54	.0550	4	6	VD#54X400X600	6.70
55	.0520	2-1/4	3	VD#55X216X300	4.20
55	.0520	2-1/2	4-1/2	VD#55X232X432	5.14
55	.0520	3	4	VD#55X300X400	4.86

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
55	.0520	3-1/2	6-1/4	VD#55X332X616	7.00
57	.0430	2	3	VD#57X200X300	4.20
57	.0430	2	5	VD#57X200X500	4.50
57	.0430	3	4	VD#57X300X400	4.86
57	.0430	4	6	VD#57X400X600	6.70
58	.0420	3	4	VD#58X300X400	6.82
60	.0400	3	4	VD#60X300X400	4.86
60	.0400	4	6	VD#60X400X600	6.70
68	.0320	2	6	VD#68X200X600	7.74
69	.0292	2	3	VD#69X200X300	5.06
73	.0240	5/8	1-1/2	VD#73X040X132	4.62
74	.0225	1	2	VD#74X100X200	4.36
74	.0225	1	3	VD#74X100X300	4.70

NOTE: Prices are based on a minimum order of 120 pcs of a size. Lesser quantities quoted upon request.

HIGH SPEED STEEL BELLHANGER'S EXTENSION DRILLS

ICS USA

SPECIAL PURPOSE

135° SPLIT POINT

FLEXIBLE SHANK



Flexible Shaft Bellhanger Drills are actually a combination fish tape and drill and make wire installation fast and easy. They also can be used to drill holes in places where the shaft cannot reach in a straight line.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 24"	OVERALL LENGTH 36"	OVERALL LENGTH 54"	OVERALL LENGTH 72"
1/4	3/16	BHFS 016 x (Lgth)	-	-	47.78	49.28
3/8	3/16	BHFS 024 x (Lgth)	52.56	54.46	56.66	58.98
1/2	1/4	BHFS 032 x (Lgth)	CALL	CALL	CALL	CALL

TO ORDER: Specify Item No. Prefix and Length of Drill needed, e.g., BHFS016 x 18 would be a 1/4 x 18 Bellhanger Flex Shank Drill.

BELLHANGER'S EXTENSION DRILLS**ICS USA****SPECIAL PURPOSE****FLEXIBLE
SHANK****CARBIDE
TIPPED**

Carbide Tipped Flexible Shaft Bellhanger Drills are actually a combination fish tape and drill and make wire installation fast and easy. They also can be used to drill holes in places where shaft cannot reach in a straight line.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 18"	OVERALL LENGTH 36"	OVERALL LENGTH 54"	OVERALL LENGTH 72"
1/4	3/16	CTBHFS 016 x (Lgth)	-	59.52	61.42	63.40
3/8	3/16	CTBHFS 024 x (Lgth)	58.18	61.14	63.58	65.38
1/2	1/4	CTBHFS 032 x (Lgth)	-	-	65.72	67.90
3/4	1/4	CTBHFS 048 x (Lgth)	-	-	-	80.40

TOOL STEEL

AUGER TIPPED BELLHANGER'S EXTENSION DRILLS**ICS USA****SPECIAL PURPOSE****FLEXIBLE
SHANK****AUGER
TIPPED**

Auger Tipped Flexible Shaft Bellhanger Drills are actually a combination fish tape and drill and make wire installation fast and easy. They also can be used to drill holes in places where shaft cannot reach in a straight line.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 24"	OVERALL LENGTH 36"	OVERALL LENGTH 54"	OVERALL LENGTH 72"
3/8	3/16	BHFSAT 024 x (Lgth)	57.78	61.30	63.60	65.40
1/2	3/16	BHFSAT 032 x (Lgth)	60.56	61.16	66.26	69.32
9/16	1/4	BHFSAT 036 x (Lgth)	-	50.88	58.42	60.88
3/4	1/4	BHFSAT 048 x (Lgth)	-	-	59.80	73.44

HIGH SPEED STEEL

THREADED FLUTE BELLHANGER'S EXTENSION DRILLS**ICS USA****SPECIAL PURPOSE****FLEXIBLE
SHANK****THREADED
FLUTE**

Threaded Flute Flexible Shaft Bellhanger Drills are actually a combination fish tape and drill and make wire installation fast and easy. They also can be used to drill holes in places where shaft cannot reach in a straight line.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 18"	OVERALL LENGTH 24"	OVERALL LENGTH 36"	OVERALL LENGTH 54"	OVERALL LENGTH 72"
1/4	3/16	BHFSTF 016 x (Lgth)	50.38	50.92	51.82	52.84	53.84
3/8	3/16	BHFSTF 024 x (Lgth)	56.54	58.02	58.76	58.96	59.20
1/2	3/16	BHFSTF 032 x (Lgth)	61.52	58.34	63.02	63.64	64.14
9/16	1/4	BHFSTF 036 x (Lgth)	-	-	-	70.28	72.36

TO ORDER: Specify Item No. Prefix and Length of Drill needed, e.g., BHFS016 x 18 would be a 1/4 x 18 Bellhanger Flex Shank Drill.

SHIP AUGER BELLHANGER'S EXTENSION DRILLS

ICS USA

SPECIAL PURPOSE

FLEXIBLE
SHANKSHIP
AUGER

Flexible Shank Ship Auger Bellhanger Drills are designed with a self-feeding screw point to penetrate wood quickly. They are a combination fish tape and drill designed to make wire installation fast and easy. They also can be used to drill holes in places where shaft cannot reach in a straight line. The flexible shank has memory retention and will return to original straightness after being curved to reach drill location.

SIZE	SHANK	36" LENGTH		54" LENGTH		72" LENGTH	
		ITEM NO.	PRICE	ITEM NO.	PRICE	ITEM NO.	PRICE
3/8	3/16	BHFSSA024X36	-	BHFSSA024X54	58.98	BHFSSA024X72	59.22
1/2	1/4	BHFSSA032X36	63.14	BHFSSA032X54	63.14	BHFSSA032X72	64.14
5/8	1/4	BHFSSA040X36	65.80	BHFSSA040X54	66.86	BHFSSA040X72	67.58
3/4	1/4	BHFSSA048X36	68.98	BHFSSA048X54	-	BHFSSA048X72	71.32
1	1/4	BHFSSA100X36	-	BHFSSA100X54	75.96	BHFSSA100X72	78.36

PREMIUM SPRING STEEL

FLEXIBLE SHANK EXTENSIONS

ICS USA

SPECIAL PURPOSE

FLEXIBLE
SHANK

Flexible Shaft Extensions are designed to add length to flexible shank drill bits that must drill holes through inaccessible places that cannot be reached in a straight line. They can be connected to one another for extra long reach. Two set screws hold extensions to each other.

SIZE	SHANK	36" LENGTH		54" LENGTH	
		ITEM NO.	PRICE	ITEM NO.	PRICE
3/8	3/16	BHFSX024X36	43.02	BHFSX024X54	44.38
1/2	1/4	BHFSX032X36	45.74	BHFSX032X54	45.74

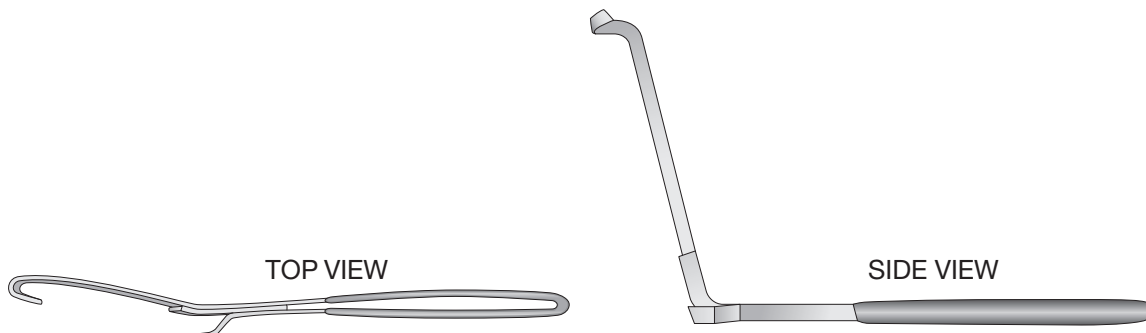
FLEXIBLE SHANK BENDING TOOL

ICS USA

SPECIAL PURPOSE

INSULATED HANDLE

Flexible Shank Bending Tool has an insulated handle and is designed to help operator start and steer a Flexible Shank Bellhanger's Drill while it is concealed inside the wall cavity.



WEIGHT LBS.	ITEM NO.	PRICE
0.45	FSBT	8.80

HIGH SPEED STEEL BELLHANGER'S EXTENSION DRILLS

ICS

USA

SPECIAL PURPOSE

118° POINT



High Speed Steel Bellhanger's Extension Drills are designed for drilling holes through walls, studs, flooring, door widths and frames so wiring can be threaded through these holes for cable TV, telephone lines, alarm systems, computer networks, and other electrical installations. Drills have a hole in the flute, sometimes called a fish eye, for connecting wire to the drill which is then used to pull or "fish" wire, cable, or pipe through the wall. High speed steel drill point easily drills through nails, sheet metal, etc... They are also used in boat building for drilling long bolt holes in the stem, keel and deadwood as well as drilling holes for drifts in rudder and center boards. These drills are also known as Bellhanger Drill Bits, Installer Bits, Feeler Bits, Fishing Bits, Skylight Drills, Spotlight Drills, Installer's Feeler Bits or Wire Installing Drill Bits.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 12"	OVERALL LENGTH 18"	OVERALL LENGTH 24"	OVERALL LENGTH 30"	OVERALL LENGTH 42"	OVERALL LENGTH 48"	OVERALL LENGTH 60"	OVERALL LENGTH 72"
3/16	3/16	BH 012 x (Lgth)	6.96	10.16	12.84	16.04	22.48	25.66	32.10	38.50
1/4	1/4	BH 016 x (Lgth)	8.08	11.30	14.50	17.64	24.12	27.32	33.76	40.16
5/16	1/4	BH 020 x (Lgth)	11.44	14.66	17.88	21.06	27.50	30.70	37.12	43.52
3/8	3/8	BH 024 x (Lgth)	13.38	16.60	19.78	23.00	29.40	32.62	39.04	45.44
7/16	3/8	BH 028 x (Lgth)	18.20	21.40	24.60	27.80	34.24	37.42	43.86	50.26
1/2	1/2	BH 032 x (Lgth)	20.26	23.48	26.70	29.88	36.32	40.70	45.94	52.34
9/16	1/2	BH 036 x (Lgth)	23.90	26.44	30.32	33.52	-	-	-	-
5/8	1/2	BH 040 x (Lgth)	24.70	27.98	31.16	34.38	-	-	-	-
11/16	1/2	BH 044 x (Lgth)	26.32	29.54	32.72	35.94	-	-	-	-
3/4	1/2	BH 048 x (Lgth)	28.22	31.44	34.66	37.86	-	-	-	-
1	1/2	BH 100 x (Lgth)	38.22	41.44	44.66	47.86	-	-	-	-

TO ORDER: Specify Item No. Prefix and Length of Drill needed, e.g., BH016 x 18 would be a 1/4" x 18" Bellhanger Drill.

CARBIDE TIPPED BELLHANGER'S EXTENSION DRILLS

ICS

USA

SPECIAL PURPOSE

PERCUSSION DRILL POINT



Carbide Tipped Bellhanger's Extension Drills are designed for drilling holes through masonry, concrete block, etc... so wiring can be threaded through these holes for cable TV, telephone lines, alarm systems, computer networks, and other electrical installations. Drills have a hole in the flute, sometimes called a fish eye, for connecting wire to the drill which is then used to pull or "fish" wire, cable, or pipe through the wall. These drills are also known as Bellhanger Drill Bits, Installer Bits, Feeler Bits, Fishing Bits, Skylight Drills, Spotlight Drills, Installer's Feeler Bits or Wire Installing Drill Bits.

SIZE	SHANK	ITEM NO.	OVERALL LENGTH 13"	OVERALL LENGTH 18"	OVERALL LENGTH 24"	OVERALL LENGTH 30"	OVERALL LENGTH 42"	OVERALL LENGTH 48"	OVERALL LENGTH 72"
1/4	1/4	CTBH 016 x (Lgth)	7.74	13.62	15.06	17.24	23.88	27.40	41.52
5/16	1/4	CTBH 020 x (Lgth)	7.50	14.02	16.06	18.36	26.94	30.48	44.58
3/8	1/4	CTBH 024 x (Lgth)	10.46	15.26	16.72	19.96	28.48	32.00	46.12
1/2	3/8	CTBH 032 x (Lgth)	11.54	18.20	19.96	22.34	34.06	37.60	51.70
5/8	1/2	CTBH 040 x (Lgth)	15.06	21.02	23.30	-	-	-	-
3/4	1/2	CTBH 048 x (Lgth)	22.24	27.54	30.34	-	-	-	-

TO ORDER: Specify Item No. Prefix and Length of Drill needed, e.g., BH016 x 18 would be a 1/4" x 18" Bellhanger Drill.

NOTE: Special size Bellhanger's Extension Drills can be made to your requirements.

HIGH SPEED STEEL METRIC EXTENSION DRILLS

MET-107

ICS USA

GENERAL PURPOSE

118° POINT



Extension Drills are designed for drilling of holes in inaccessible places which cannot be reached with standard length drills. Various combinations of diameter and overall lengths are available. Extension Drills are sometimes referred to as Spotlight Drills.

Metric Sizes (Straight Shank) 2.50mm to 14.00mm Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
2.50	.0984	1-3/8	12	XDM02.5X12	5.04
3.00	.1181	1-5/8	12	XDM03.0X12	5.42
3.50	.1378	2	12	XDM03.5X12	5.60
4.00	.1575	2	12	XDM04.0X12	6.46
4.50	.1772	2-5/16	12	XDM04.5X12	7.40
5.00	.1969	2-1/2	12	XDM05.0X12	7.54
5.50	.2165	2-1/2	12	XDM05.5X12	8.24
6.00	.2362	2-3/4	12	XDM06.0X12	9.34
6.50	.2560	2-15/16	12	XDM06.5X12	9.98
7.00	.2756	2-15/16	12	XDM07.0X12	10.24
7.50	.2953	3-3/16	12	XDM07.5X12	11.70
8.00	.3150	3-3/16	12	XDM08.0X12	13.42

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
8.50	.3346	3-7/16	12	XDM08.5X12	13.88
9.00	.3543	3-5/8	12	XDM09.0X12	15.30
9.50	.3740	3-5/8	12	XDM09.5X12	16.46
10.00	.3937	3-7/8	12	XDM10.0X12	19.38
10.50	.4134	4-1/16	12	XDM10.5X12	19.76
11.00	.4331	4-1/16	12	XDM11.0X12	20.56
11.50	.4528	4-5/16	12	XDM11.5X12	21.34
12.00	.4724	4-5/16	12	XDM12.0X12	22.68
12.50	.4921	4-1/2	12	XDM12.5X12	22.68
13.00	.5118	4-13/16	12	XDM13.0X12	33.26
13.50	.5315	4-13/16	12	XDM13.5X12	35.06
14.00	.5512	4-13/16	12	XDM14.0X12	36.10

Special size extension drills can be made to your requirements.

CARBIDE TIPPED EXTENSION DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



Carbide Tipped Extension Drills are designed for drilling holes in inaccessible places which cannot be reached with standard length carbide tipped drills. They will drill through cast iron, non-ferrous metals, and non-metals. They are not recommended for drilling steel and other ferrous materials.

Fractional Sizes (Straight Shank) 1/8" to 1/2" Dia.

SIZE	DECIMAL EQUIVALENT	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	1-5/8	12	CTXD12L008	21.90
3/16	.1875	2-5/16	12	CTXD12L012	25.36
1/4	.2500	2-3/4	12	CTXD12L016	29.96
5/16	.3125	3-3/16	12	CTXD12L020	38.32
3/8	.3750	3-5/8	12	CTXD12L024	43.58
7/16	.4375	4-1/16	12	CTXD12L028	51.34
1/2	.5000	4-1/2	12	CTXD12L032	62.84

Special size Carbide Tip Extension Drills can be made to your requirements.

HIGH SPEED STEEL AIRCRAFT EXTENSION DRILLS

ICS

USA/WIS

HEAVY DUTY

SPLIT POINT

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA	NAS* SPECS
AC-06B AC-12B AC-18B	 OXIDE FINISH	For portable or machine drilling in hard steels, stainless steels and other hard materials. Mfr. to NAS 907-B specs.	M2, M7	135° Split Pt. (P-3) Std. Spiral Hvy. Duty Web	B
AC-12A	 OXIDE FINISH	For portable or machine drilling in mild steels, aluminum, and magnesium alloys. Mfr. to NAS 907-A specs.	M2, M7	118° Split Pt. (P-5) Std. Spiral Hvy. Duty Web	A
AC-12L (Left Hand)	 GOLD FINISH	For portable or machine drilling where left hand rotation is required. Often used to drill out broken studs and screws.	M2, M7	135° Split Pt. (P-3) Std. Spiral Hvy. Duty Web	B
AC-12S (Stub)	 BRIGHT POLISHED FINISH	For portable drilling where increased rigidity is required. Designed for drilling in hard steels. Screw machine flute length.	M2, M7	135° Split Pt. (P-3) Spec. Fast Spiral Hvy. Duty Web	C
AC-06C AC-12C	 GOLD COBALT FINISH	For portable or machine drilling in stainless steel, titanium, and other work hardening metals. Mfr. to NAS 907-J specs.	M42	135° Split Pt. (P-3) Std. Spiral Hvy. Duty Web	J
AC-06T AC-12T	 GOLD TITANIUM COATED	The combination of titanium nitride coating with the heavy duty design enhances chip flow, finished hole quality and up to 700% more drill life.	M2, M7	135° Split Pt. (P-3) Std. Spiral Hvy. Duty Web	B

*(NAS) National Aerospace Standard

Fractional Sizes (Straight Shank) 3/64" to 3/4" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL						COBALT		TIN COATED	
		6" LENGTH	12" LENGTH	18" LENGTH	12" LENGTH	12" LENGTH	12" LENGTH	6" LENGTH	12" LENGTH	6" LENGTH	12" LENGTH
		Jobber Flute Length	Jobber Flute Length	Jobber Flute Length	Jobber Flute Length	Left Hand Jobber Flute Length	Screw Machine Flute Length	Jobber Flute Length	Jobber Flute Length	Jobber Flute Length	Jobber Flute Length
		135° Split Point	135° Split Point	135° Split Point	118° Split Point	135° Split Point	135° Split Point	135° Split Point	135° Split Point	135° Split Point	135° Split Point
3/64	.0469	7.38	14.84	-	-	-	-	-	-	-	-
1/16	.0625	3.70	5.88	9.78	6.20	7.82	6.48	5.52	7.74	5.86	7.56
5/64	.0781	3.60	5.96	9.86	6.30	7.82	6.56	5.48	7.84	5.76	7.62
3/32	.0938	3.50	5.38	9.26	5.66	7.38	5.82	4.68	8.00	5.66	7.04
7/64	.1094	3.36	5.42	9.30	5.72	7.38	5.82	4.68	8.24	5.52	7.10
1/8	.1250	3.22	5.06	8.96	5.36	7.74	5.30	4.68	6.80	5.38	6.74
9/64	.1406	3.60	5.54	9.42	5.84	-	5.82	5.84	7.40	5.76	7.20
5/32	.1562	3.88	6.20	10.08	6.54	8.06	6.48	5.54	8.50	6.06	7.88
11/64	.1719	4.18	6.66	10.54	7.02	8.74	6.96	6.08	9.06	6.34	8.34
3/16	.1875	4.58	7.18	11.08	7.56	9.42	7.48	6.08	10.08	6.74	8.86
13/64	.2031	4.88	7.42	11.30	7.82	9.92	7.74	7.52	10.68	9.16	10.72
7/32	.2188	5.06	8.00	11.90	8.42	10.96	8.38	7.52	12.78	9.34	11.30
15/64	.2344	5.40	8.56	12.44	9.00	11.54	8.76	8.16	12.78	9.68	11.84
1/4	.2500	5.62	9.14	13.02	9.64	12.04	9.16	12.48	13.28	9.90	12.44
17/64	.2656	6.54	10.68	14.56	11.24	13.76	10.68	13.76	16.02	-	17.54
9/32	.2812	7.60	11.36	15.26	12.00	14.76	11.18	17.32	-	18.24	-
19/64	.2969	8.56	12.12	16.00	12.78	15.94	11.92	17.88	-	18.98	-
5/16	.3125	9.42	13.26	17.14	13.94	17.12	13.08	18.14	19.16	17.06	20.12
21/64	.3281	11.00	14.24	18.12	15.00	18.14	14.06	18.80	20.82	-	21.10
11/32	.3438	11.14	14.96	18.82	15.76	20.08	14.78	20.48	22.24	-	21.82
23/64	.3594	11.68	15.88	19.76	16.74	22.00	15.44	22.20	23.86	-	24.22
3/8	.3750	12.42	16.66	20.54	17.56	23.24	16.30	23.72	25.04	21.90	25.00
25/64	.3906	12.86	17.64	21.52	18.58	24.88	17.14	-	26.70	-	28.74
13/32	.4062	13.26	18.78	22.66	19.76	25.96	18.12	-	28.72	-	29.86
27/64	.4219	13.94	19.66	23.52	20.68	27.56	18.96	-	30.48	-	30.72
7/16	.4375	15.72	21.18	25.06	22.30	29.24	20.42	-	32.86	-	32.26
7/16TS	.4375	-	23.52	-	-	-	-	-	-	-	-
29/64	.4531	15.72	22.20	26.06	23.38	32.26	21.26	-	34.78	-	33.26
15/32	.4688	15.72	23.30	27.18	24.54	33.68	22.18	-	36.80	-	34.38
31/64	.4844	15.72	24.30	28.18	25.60	34.76	22.94	-	38.90	-	35.40
1/2	.5000	12.00	24.96	28.82	26.26	34.76	23.60	36.46	40.52	23.06	36.02
1/2TS	.5000	-	27.30	-	-	-	-	-	-	-	-
*9/16	.5629	-	41.02	-	-	-	-	-	87.28	-	55.58
*5/8	.6250	-	44.00	-	-	-	-	-	94.80	-	58.56
*3/4	.7500	-	55.64	-	-	-	-	-	110.46	-	-

Minimum order 12 each (3/64" - 17/64"); 6 each (9/32" - 1/2"). Add 15% for orders accepted in less than standard packaging.

(* 1/2" Shank). 7/16TS and 1/2TS have 3/8" Shank.

HIGH SPEED STEEL AIRCRAFT EXTENSION DRILLS

MET-109

ICS

WIS

HEAVY DUTY

SPLIT POINT



Wire Gauge Sizes (Straight Shank) #1 to #52 Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL				COBALT		TIN COATED	
		6" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 118° Split Point	12" LENGTH Screw Machine Flute Length 135° Split Point	6" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point	6" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point
		AC-06B	AC-12B	AC-12A	AC-12S	AC-06C	AC-12C	AC-06T	AC-12T
1	.2280	5.98	8.48	8.48	8.36	8.54	12.84	10.28	11.76
2	.2210	5.98	8.48	8.48	8.36	8.54	12.84	10.28	11.76
3	.2130	5.36	7.96	7.96	7.88	7.52	11.72	9.64	11.26
4	.2090	5.36	7.96	7.96	7.88	7.52	12.08	9.64	11.26
5	.2055	5.36	7.96	7.96	7.88	7.52	12.08	9.64	11.26
6	.2040	5.36	7.96	7.96	7.88	7.52	12.08	9.64	11.26
7	.2010	5.36	7.50	7.50	7.34	7.72	10.12	9.64	10.78
8	.1990	5.26	7.50	7.50	7.34	7.72	10.18	9.32	10.78
9	.1960	5.18	7.50	7.50	7.34	7.42	10.94	9.46	10.78
10	.1935	4.84	7.24	7.24	7.20	6.94	10.18	9.12	10.54
11	.1910	4.48	7.24	7.24	7.20	6.48	10.54	8.76	10.54
12	.1890	4.48	7.24	7.24	7.20	6.48	10.54	8.76	10.54
13	.1850	4.48	7.24	7.24	7.14	6.48	9.96	8.76	10.54
14	.1820	4.48	7.06	7.06	7.06	6.48	11.54	6.64	8.74
15	.1800	4.48	7.06	7.06	7.06	6.48	10.12	6.64	8.74
16	.1770	4.48	7.06	7.06	7.06	6.48	9.72	6.64	8.74
17	.1730	4.48	7.02	7.02	7.02	6.48	9.66	6.64	8.70
18	.1695	4.48	7.02	6.66	6.64	6.48	8.82	6.64	8.34
19	.1660	4.48	7.02	6.66	6.64	6.48	8.78	6.64	8.34
20	.1610	4.06	6.56	6.56	6.58	5.84	8.68	6.22	8.22
21	.1590	4.06	6.56	6.56	6.58	5.84	8.42	6.22	8.22
22	.1570	4.06	6.48	6.48	6.58	5.84	8.96	6.22	8.16
23	.1549	4.06	6.20	6.20	6.16	5.84	9.60	6.22	7.88
24	.1520	4.06	6.20	6.20	6.16	5.84	8.24	6.22	7.88
25	.1490	4.06	5.88	5.88	5.96	5.84	7.90	6.22	7.56
26	.1470	4.06	5.88	5.88	5.96	5.84	7.74	6.22	7.56
27	.1440	4.06	5.88	5.88	5.96	5.84	7.90	6.22	7.56
28	.1405	4.06	5.84	5.84	5.84	5.84	7.54	6.22	7.52
29	.1360	4.06	5.54	5.54	5.52	5.84	7.24	6.22	7.20
30	.1285	3.36	5.48	5.48	5.46	4.76	7.02	5.52	7.16
31	.1200	3.36	5.02	5.02	5.08	4.76	6.82	5.52	6.70
32	.1160	3.36	5.02	5.02	5.08	4.76	6.72	5.52	6.70
33	.1130	3.36	5.02	5.02	5.02	4.76	6.66	5.52	6.70
34	.1110	3.36	5.02	5.02	5.02	4.76	6.66	5.52	6.70
35	.1100	3.36	5.02	5.02	5.02	4.76	6.66	5.52	6.70
36	.1055	3.42	5.38	5.38	5.52	4.94	7.02	5.60	6.70
37	.1040	3.42	5.38	5.38	5.52	4.94	7.14	5.60	6.70
38	.1010	3.42	5.38	5.38	5.52	4.94	6.92	5.60	6.70
39	.0995	3.54	5.38	5.38	5.60	4.94	6.92	5.72	6.70
40	.0980	3.04	5.38	5.38	5.60	4.40	6.92	5.22	6.70
41	.0960	3.04	5.42	5.42	5.72	4.40	6.92	5.22	6.74
42	.0935	3.04	5.42	5.42	5.66	4.68	6.82	5.22	6.74
43	.0890	3.86	5.42	5.42	5.66	5.48	7.54	6.04	6.74
44	.0860	3.86	5.42	5.42	5.66	5.48	6.82	6.04	6.74
45	.0820	3.86	5.42	5.42	5.66	5.48	6.82	6.04	6.74
46	.0810	3.86	5.42	5.42	5.66	5.48	6.82	6.04	6.74
47	.0785	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52
48	.0760	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52
49	.0730	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52
50	.0700	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52
51	.0670	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52
52	.0635	3.86	5.84	5.84	6.08	5.48	7.24	6.04	7.52

Minimum order 12 each. Add 15% for orders accepted in less than standard packaging.

HIGH SPEED STEEL AIRCRAFT EXTENSION DRILLS

ICS

WIS

HEAVY DUTY

SPLIT POINT



Letter Sizes (Straight Shank) "A" to "Z" Dia.

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		COBALT
		6" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point
		AC-06B	AC-12B	AC-12C
A	.234	8.34	9.84	16.80
B	.238	8.34	10.00	18.38
C	.242	8.34	10.00	18.38
D	.246	8.34	10.08	19.90
E	.250	6.02	10.14	13.28
F	.257	9.18	11.92	18.72
G	.261	10.72	11.92	18.72
H	.266	10.90	12.10	20.54
I	.272	11.08	12.28	19.68
J	.277	11.18	12.44	20.54
K	.281	11.26	12.50	20.54
L	.290	11.76	13.08	22.76
M	.295	12.14	13.48	23.68

SIZE	DEC. EQUIV.	HIGH SPEED STEEL		COBALT
		6" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point
		AC-06B	AC-12B	AC-12C
N	.302	13.12	14.60	24.60
O	.316	13.84	15.38	26.70
P	.323	14.36	15.96	27.88
Q	.332	14.90	16.56	28.90
R	.339	15.26	16.96	28.90
S	.348	15.80	17.54	33.76
T	.358	16.20	17.98	33.76
U	.368	17.14	19.06	34.04
V	.377	17.68	20.26	36.94
W	.386	18.24	20.26	36.94
X	.397	18.98	21.10	37.28
Y	.404	19.50	21.66	38.90
Z	.413	20.00	22.22	41.72

Metric Sizes (Straight Shank) 2.00mm to 12.50mm Dia.

SIZE mm	DEC. EQUIV.	HSS	COBALT
		12" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point
		AC-12M	AC-12CM
2.00	.0781	6.78	8.32
2.50	.0984	6.48	6.92
3.00	.1181	6.04	6.38
3.50	.1378	6.40	6.72
4.00	.1575	7.30	8.02
4.50	.1772	7.92	8.92
5.00	.1969	8.16	9.24
5.10	.2008	8.16	9.90
5.50	.2165	8.92	10.24
6.00	.2362	10.08	11.74
6.50	.2560	10.96	12.60
7.00	.2756	11.52	13.50

SIZE mm	DEC. EQUIV.	HSS	COBALT
		12" LENGTH Jobber Flute Length 135° Split Point	12" LENGTH Jobber Flute Length 135° Split Point
		AC-12M	AC-12CM
7.50	.2953	12.54	15.58
8.00	.3150	15.04	16.88
8.50	.3346	16.14	18.30
9.00	.3543	17.36	21.86
9.50	.3740	17.94	22.20
9.70	.3819	19.36	23.70
10.00	.3937	20.00	26.88
10.50	.4134	21.42	27.20
11.00	.4331	22.48	27.82
11.50	.4528	24.16	29.32
12.00	.4724	25.88	31.76
12.50	.4921	26.20	31.76

AIRCRAFT DRILL MERCHANDISER

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	12 PC DRILL DISPLAY 12" AIRCRAFT EXTENSION DRILLS 3 Ea. 1/8, 3/16, 1/4 1 Ea. 5/16, 3/8, 1/2 Display Size: 12" x 18"	Black Finish Aircraft Drills 135° S/Pt	DM-AC-12B-12	130.14

COBALT AIRCRAFT TYPE "D" DRILLS

ICS WIS

HEAVY DUTY

135° SPLIT POINT



NAS 907 TYPE D SPECIFICATIONS

Cobalt Aircraft Type "D" Jobber Length Drills with screw machine length flute are designed to handle high thrust loads when drilling through high tensile and heat resistant alloy steels. Its heavy web design provides a more rigid tool for accurate holes eliminating vibration and flexing. Ideal for portable drilling.

DEC.	FLUTE	OVERALL	ITEM	PRICE	
SIZE	EQUIV.	LENGTH	NO.		
#1	.2280	1-5/16	3-7/8	JDCD#01	4.54
#2	.2210	1-5/16	3-7/8	JDCD#02	4.54
#3	.2130	1-1/4	3-3/4	JDCD#03	4.30
#4	.2090	1-1/4	3-3/4	JDCD#04	4.30
#5	.2055	1-1/4	3-3/4	JDCD#05	4.30
#6	.2040	1-1/4	3-3/4	JDCD#06	4.30
#7	.2010	1-3/16	3-5/8	JDCD#07	3.84
#8	.1990	1-3/16	3-5/8	JDCD#08	3.84
#9	.1960	1-3/16	3-5/8	JDCD#09	3.84
#10	.1935	1-3/16	3-5/8	JDCD#10	3.36
#11	.1910	1-3/16	3-1/2	JDCD#11	3.36
#12	.1890	1-3/16	3-1/2	JDCD#12	3.36
#13	.1850	1-1/8	3-1/2	JDCD#13	3.36
#14	.1820	1-1/8	3-3/8	JDCD#14	3.36
#15	.1800	1-1/8	3-3/8	JDCD#15	3.36
#16	.1770	1-1/8	3-3/8	JDCD#16	3.36
#17	.1730	1-1/8	3-3/8	JDCD#17	3.36
#18	.1695	1-1/16	3-1/4	JDCD#18	2.86
#19	.1660	1-1/16	3-1/4	JDCD#19	2.86
#20	.1610	1-1/16	3-1/4	JDCD#20	2.86

DEC.	FLUTE	OVERALL	ITEM	PRICE	
SIZE	EQUIV.	LENGTH	NO.		
#21	.1590	1-1/16	3-1/4	JDCD#21	2.86
#22	.1570	1-1/16	3-1/8	JDCD#22	2.86
#23	.1540	1	3-1/8	JDCD#23	2.62
#24	.1520	1	3-1/8	JDCD#24	2.62
#25	.1495	1	3	JDCD#25	2.62
#26	.1470	1	3	JDCD#26	2.16
#27	.1440	1	3	JDCD#27	2.16
#28	.1405	15/16	2-7/8	JDCD#28	2.16
#29	.1360	15/16	2-7/8	JDCD#29	2.16
#30	.1285	15/16	2-3/4	JDCD#30	1.92
#31	.1200	7/8	2-3/4	JDCD#31	1.92
#32	.1160	7/8	2-3/4	JDCD#32	1.92
#33	.1130	7/8	2-5/8	JDCD#33	1.92
#34	.1110	7/8	2-5/8	JDCD#34	1.92
#35	.1100	7/8	2-5/8	JDCD#35	1.92
#36	.1065	13/16	2-1/2	JDCD#36	1.92
#37	.1040	13/16	2-1/2	JDCD#37	1.86
#38	.1015	13/16	2-1/2	JDCD#38	1.86
#39	.0995	13/16	2-3/8	JDCD#39	1.68
#40	.0980	13/16	2-3/8	JDCD#40	1.68

Other sizes available. Inquire for pricing.

NC SPOTTING DRILLS

ICS

WIS

SPECIAL PURPOSE

90°/ 120° POINT

RIGHT HAND
CUT

NC Spotting Drills are designed for spotting on NC and CNC machines. They reduce location error and improve size accuracy. A 90° spotting drill one size larger than the following drill allows spotting and chamfering simultaneously. The 120° spotting drill is used to “spot” the same angle as a twist drill to be used for a perfect seat. They are available in long lengths for difficult to reach work.

High Speed Steel

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
90° POINT				
1/4	.2500	3/4	2-1/2	SDR090-016X232 4.58
			4	SDR090-016X400 5.66
			6	SDR090-016X600 7.06
3/8	.3750	1-1/8	3-1/8	SDR090-024X308 10.70
			5	SDR090-024X500 13.50
			7	SDR090-024X700 16.16
1/2	.5000	1-3/8	3-3/4	SDR090-032X348 14.68
			6	SDR090-032X600 50.56
			8	SDR090-032X800 25.36
5/8	.6250	1-5/8	4-3/8	SDR090-040X424 23.12
			7	SDR090-040X700 32.40
			9	SDR090-040X900 41.48
3/4	.7500	1-7/8	5	SDR090-048X500 CALL
			8	SDR090-048X800 CALL
			10	SDR090-048X10. CALL
1	1.000	2-1/4	6	SDR090-100X600 70.22
			8	SDR090-100X800 74.10
			10	SDR090-100X10. CALL
120° POINT				
1/4	.2500	3/4	2-1/2	SDR120-016X232 4.58
			4	SDR120-016X400 5.66
			6	SDR120-016X600 7.06
3/8	.3750	1-1/8	3-1/8	SDR120-024X308 10.70
			5	SDR120-024X500 13.50
			7	SDR120-024X700 16.16
1/2	.5000	1-3/8	3-3/4	SDR120-032X348 14.68
			6	SDR120-032X600 20.48
			8	SDR120-032X800 25.36
5/8	.6250	1-5/8	4-3/8	SDR120-040X424 23.12
			7	SDR120-040X700 32.40
			9	SDR120-040X900 41.48
3/4	.7500	1-7/8	5	SDR120-048X500 34.94
			8	SDR120-048X800 49.40
			10	SDR120-048X10. CALL
1	1.000	2-1/4	6	SDR120-100X600 CALL
			8	SDR120-100X800 CALL
			10	SDR120-100X10. CALL

TiN Coated

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
90° POINT				
1/4	.2500	3/4	2-1/2	SDT090-016X232 7.88
			4	SDT090-016X400 8.96
			6	SDT090-016X600 11.34
3/8	.3750	1-1/8	3-1/8	SDT090-024X308 16.62
			5	SDT090-024X500 24.60
			7	SDT090-024X700 28.38
1/2	.5000	1-3/8	3-3/4	SDT090-032X348 25.36
			6	SDT090-032X600 31.54
			8	SDT090-032X800 40.64
5/8	.6250	1-5/8	4-3/8	SDT090-040X424 36.78
			7	SDT090-040X700 46.96
			9	SDT090-040X900 66.18
3/4	.7500	1-7/8	5	SDT090-048X500 51.42
			8	SDT090-048X800 69.98
			10	SDT090-048X10. CALL
1	1.000	2-1/4	6	SDT090-100X600 CALL
			8	SDT090-100X800 CALL
			10	SDT090-100X10. CALL
120° POINT				
1/4	.2500	3/4	2-1/2	SDT120-016X232 7.88
			4	SDT120-016X400 8.96
			6	SDT120-016X600 11.34
3/8	.3750	1-1/8	3-1/8	SDT120-024X308 16.62
			5	SDT120-024X500 24.60
			7	SDT120-024X700 28.38
1/2	.5000	1-3/8	3-3/4	SDT120-032X348 25.36
			6	SDT120-032X600 31.54
			8	SDT120-032X800 40.64
5/8	.6250	1-5/8	4-3/8	SDT120-040X424 36.78
			7	SDT120-040X700 46.96
			9	SDT120-040X900 66.18
3/4	.7500	1-7/8	5	SDT120-048X500 51.42
			8	SDT120-048X800 69.98
			10	SDT120-048X10. CALL
1	1.000	2-1/4	6	SDT120-100X600 CALL
			8	SDT120-100X800 CALL
			10	SDT120-100X10. CALL

HIGH SPEED STEEL COMBINED DRILLS & COUNTERSINKS

ICS WIS

GENERAL PURPOSE

118° POINT

PLAIN
TYPE60°, 82° & 90°
INCLUDED ANGLES

Plain Type Combined Drills & Countersinks are designed to produce accurate center holes in components which require machining between centers. Sizes #0 to #000 are often referred to as Missile & Aircraft Series.

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.		PRICE EACH	PKG. QTY.
					60°			
000	1/8	.020	.020	1-1/4	CDC#000		4.68	10
00	1/8	0.25	.025	1-1/4	CDC#00		4.68	10
0	1/8	1/32	1/32	1-1/4	CDC#0		4.68	10
1	1/8	3/64	3/64	1-1/4	CDC#01		1.76	10
2	3/16	5/64	5/64	1-7/8	CDC#02		1.98	10
3	1/4	7/64	7/64	2	CDC#03		1.98	10
4	5/16	1/8	1/8	2-1/8	CDC#04		2.12	10
4-1/2	3/8	9/64	9/64	2-1/2	CDC#04.5		3.68	10
5	7/16	3/16	3/16	2-3/4	CDC#05		4.82	10
6	1/2	7/32	7/32	3	CDC#06		8.40	5
7	5/8	1/4	1/4	3-1/4	CDC#07		14.90	1
8	3/4	5/16	5/16	3-1/2	CDC#08		20.44	1
9	7/8	11/32	11/32	3-5/8	CDC#09		46.20	1
10	1	3/8	3/8	3-3/4	CDC#10		63.00	1
					82°	90°		
1	1/8	3/64	3/64	1-1/4	CDC082-#01	CDC090-#01	4.12	10
2	3/16	5/64	5/64	1-7/8	CDC082-#02	CDC090-#02	5.00	10
3	1/4	7/64	7/64	2	CDC082-#03	CDC090-#03	5.46	10
4	5/16	1/8	1/8	2-1/8	CDC082-#04	CDC090-#04	6.60	10
5	7/16	3/16	3/16	2-3/4	CDC082-#05	CDC090-#05	11.60	10
6	1/2	7/32	7/32	3	CDC082-#06	CDC090-#06	15.38	5
7	5/8	1/4	1/4	3-1/4	CDC082-#07	CDC090-#07	25.96	1
8	3/4	5/16	5/16	3-1/2	CDC082-#08	CDC090-#08	39.82	1

Available with Titanium Nitride (TiN) Coating. Inquire for pricing.

COBALT COMBINED DRILL & COUNTERSINKS

ICS WIS

HEAVY DUTY

118° POINT

PLAIN
TYPE60° INCLUDED
ANGLE

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
1	1/8	3/64	3/64	1-1/4	CDCC#01	8.56	10
2	3/16	5/64	5/64	1-7/8	CDCC#02	8.56	10
3	1/4	7/64	7/64	2	CDCC#03	8.56	10
4	5/16	1/8	1/8	2-1/8	CDCC#04	10.32	10
5	7/16	3/16	3/16	2-3/4	CDCC#05	20.58	10
6	1/2	7/32	7/32	3	CDCC#06	35.54	5
7	5/8	1/4	1/4	3-1/4	CDCC#07	66.18	1
8	3/4	5/16	5/16	3-1/2	CDCC#08	80.62	1

SOLID CARBIDE COMBINED DRILL & COUNTERSINKS

ICS WIS

HEAVY DUTY

118° POINT

PLAIN
ANGLE60° INCLUDED
ANGLE

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
00	1/8	.025	.025	1-1/4	SCDCC#00	25.76	1
0	1/8	1/32	1/32	1-1/4	SCDCC#0	25.76	1
1	1/8	3/64	3/64	1-1/4	SCDCC#01	23.30	1
2	3/16	5/64	5/64	1-7/8	SCDCC#02	26.96	1
3	1/4	7/64	7/64	2	SCDCC#03	38.98	1
4	5/16	1/8	1/8	2-1/8	SCDCC#04	55.64	1
5	7/16	3/16	3/16	2-3/4	SCDCC#05	92.86	1
6	1/2	7/32	7/32	3	SCDCC#06	108.56	1

HIGH SPEED STEEL COMBINED DRILLS & COUNTERSINKS

ICS WIS

GENERAL PURPOSE

118° POINT

BELL
TYPE60° & 82°
INCLUDED ANGLES

Bell Type Combined Drills & Countersinks are designed with an additional small 120° chamfer to protect the edges of the 60° hole.

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
11	1/8	3/64	1-1/4	CDC#11	3.62	10
12	3/16	1/16	1-7/8	CDC#12	3.62	10
13	1/4	3/32	2	CDC#13	3.62	10
14	5/16	7/64	2-1/8	CDC#14	3.62	10

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
15	7/16	5/32	2-3/4	CDC#15	7.06	10
16	1/2	3/16	3	CDC#16	10.54	5
17	5/8	7/32	3-1/4	CDC#17	14.06	5
18	3/4	1/4	3-1/2	CDC#18	18.86	5

HIGH SPEED STEEL LONG LENGTH COMBINED DRILL & COUNTERSINKS

ICS WIS

GENERAL PURPOSE

118° POINT

PLAIN
TYPE60° INCLUDED
ANGLE

Long Length Combined Drills & Countersinks are designed to provide access to areas where standard lengths will not reach.

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH
1	1/8	3/64	3	CDCL#103	13.24
1	1/8	3/64	4	CDCL#104	14.04
1	1/8	3/64	5	CDCL#105	19.38
1	1/8	3/64	6	CDCL#106	25.34
2	3/16	5/64	4	CDCL#204	15.36
2	3/16	5/64	5	CDCL#205	19.38
2	3/16	5/64	6	CDCL#206	25.52
3	1/4	7/64	4	CDCL#304	16.12
3	1/4	7/64	5	CDCL#305	21.14
3	1/4	7/64	6	CDCL#306	25.52
4	5/16	1/8	4	CDCL#404	17.60
4	5/16	1/8	5	CDCL#405	22.72

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH
4	5/16	1/8	6	CDCL#406	25.98
4-1/2	3/8	9/64	4	CDCL#454	19.38
4-1/2	3/8	9/64	5	CDCL#455	23.10
4-1/2	3/8	9/64	6	CDCL#456	27.68
5	7/16	3/16	4	CDCL#504	21.74
5	7/16	3/16	5	CDCL#505	25.98
5	7/16	3/16	6	CDCL#506	29.36
6	1/2	7/32	5	CDCL#605	27.38
6	1/2	7/32	6	CDCL#606	33.00
7	5/8	1/4	5	CDCL#705	54.16
7	5/8	1/4	6	CDCL#706	61.46
8	3/4	5/16	6	CDCL#806	66.20

COMBINED DRILL & COUNTERSINK SETS

VINYL POUCH

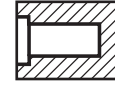
ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	5 PC SET Sizes #1 to #5	HSS - Plain - 60° Titanium Nitride Coated - Plain - 60° Cobalt - Plain - 60°	DS-CDC-5 DS-CDCT-5 DS-CDCC-5	21.18 48.80 60.04
	5 PC SET Sizes #11 to #15 (Not Illustrated)	HSS - Bell - 60°	DS-CDC-5B	25.00

HIGH SPEED STEEL 90° ANGLE STEP DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



High Speed Steel 90° Angle Step Drills are designed for drilling and counterboring 90° cap screw clearance holes in one operation, saving machine time and reducing set up time. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.

For Drilling 90° Holes and Counterboring Cap Screw Clearance Holes

SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4	.136	7/32	3/8	7/32	2-1/2	3-3/4	SDJL90-#04	12.22
#5	.141	#1	3/8	#1	2-5/8	3-7/8	SDJL90-#05	13.06
#6	.150	1/4	1/2	1/4	2-3/4	4	SDJL90-#06	13.88
#8	.178	"L"	1/2	"L"	2-15/16	4-1/4	SDJL90-#08	15.94
#10	.204	"Q"	5/8	"Q"	3-7/16	4-3/4	SDJL90-#10	17.30
1/4	9/32	13/32	11/16	13/32	3-7/8	5-1/4	SDJL90-016	20.06
5/16	11/32	1/2	3/4	1/2	4-1/2	6	SDJL90-020	48.80
3/8	13/32	19/32	7/8	19/32	5-3/16	7-1/8	SDJL90-024	38.18
7/16	15/32	11/16	1	11/16	5-5/8	7-5/8	SDJL90-028	46.18
*1/2	17/32	25/32	1	25/32	3-1/4	5-1/8	SDJL90-032	53.20
*5/8	21/32	31/32	1	31/32	3-7/8	5-7/8	SDJL90-040	66.68

*Shorter than jobber length.

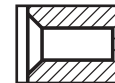
Reduced 1/2" shank available on screw sizes 3/8 to 5/8. (Add \$3.00)

HIGH SPEED STEEL 45° ANGLE STEP DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



High Speed Steel 45° Angle Step Drills are designed for drilling 45° chamfered holes to be tapped in one operation. The chamfered hole ensures alignment of tap threads and should always be used with thread forming taps as they displace metal above the mouth of the hole. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.

For Drilling 45° Chamfered Holes to be Tapped (to produce approx. 70° thread)

SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4-40	.089	.1285	3/8	.1285	1-5/8	2-3/4	SDJL45-#04-40	12.08
#5-40	.101	9/64	1/2	9/64	1-3/4	2-7/8	SDJL45-#05-40	12.92
#6-32	.109	5/32	1/2	5/32	2	3-1/8	SDJL45-#06-32	12.94
#8-32	.136	3/16	1/2	3/16	2-5/16	3-1/2	SDJL45-#08-32	13.26
#8-36	.136	3/16	1/2	3/16	2-5/16	3-1/2	SDJL45-#08-36	13.44
#10-24	.152	1/4	5/8	1/4	2-3/4	4	SDJL45-#10-24	14.28
#10-32	.161	1/4	5/8	1/4	2-3/4	4	SDJL45-#10-24	14.28
#12-24	.179	9/32	11/16	9/32	2-15/16	4-1/4	SDJL45-#12-24	16.36
1/4-20	.204	21/64	13/16	21/64	3-5/16	4-5/8	SDJL45-016-20	17.56
1/4-28	.218	21/64	13/16	21/64	3-5/16	4-5/8	SDJL45-016-28	17.56
5/16-18	.261	13/32	15/16	13/32	3-7/8	5-1/4	SDJL45-020-18	20.06
5/16-24	.272	13/32	15/16	13/32	3-7/8	5-1/4	SDJL45-020-24	20.06
3/8-16	.316	31/64	1	31/64	4-3/8	5-7/8	SDJL45-024-16	26.52
3/8-24	.339	31/64	1	31/64	4-3/8	5-7/8	SDJL45-024-24	26.52
7/16-14	.375	17/32	1-1/16	17/32	4-13/16	6-5/8	SDJL45-028-14	36.52
7/16-20	.390	17/32	1-1/16	17/32	4-13/16	6-5/8	SDJL45-028-20	36.52
1/2-13	.437	5/8	1-1/16	5/8	5-3/16	7-1/8	SDJL45-032-13	43.24
1/2-20	.452	5/8	1-1/16	5/8	5-3/16	7-1/8	SDJL45-032-20	43.24
5/8-11	.531	3/4	1-1/16	3/4	5-5/8	7-5/8	SDJL45-040-11	46.58

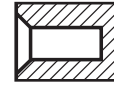
Reduced 1/2" shank available on screw sizes 7/16-14 to 5/8-11. (Add \$3.00)

HIGH SPEED STEEL 82° ANGLE STEP DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



High Speed Steel 82° Angle Step Drills are designed for drilling and countersinking 82° flat head machine screw clearance holes in one operation, saving machine time and reducing set up time. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.

For Drilling and Countersinking 82° Flat Head Machine Screw Clearance Holes

SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4	.116	15/64	3/8	15/64	2-5/8	3-7/8	SDJL82-#04	13.76
#5	.128	"F"	3/8	"F"	2-7/8	4-1/8	SDJL82-#05	13.80
#6	.142	9/32	1/2	9/32	2-15/16	4-1/4	SDJL82-#06	14.04
#8	.169	"Q"	1/2	"Q"	3-7/16	4-3/4	SDJL82-#08	17.48
#10	.196	"W"	5/8	"W"	3-3/4	5-1/8	SDJL82-#10	19.42
1/4	.257	1/2	11/16	1/2	4-1/2	6	SDJL82-016	23.66
5/16	.320	5/8	3/4	5/8	5-3/16	7-1/8	SDJL82-020	35.32
* 3/8	.383	3/4	7/8	3/4	3-1/8	5	SDJL82-024	48.02
*7/16	.446	13/16	1	13/16	3-3/8	5-1/4	SDJL82-028	54.58
*1/2	.510	7/8	1	7/8	3-1/2	5-1/2	SDJL82-032	64.56

*Shorter than jobber length.

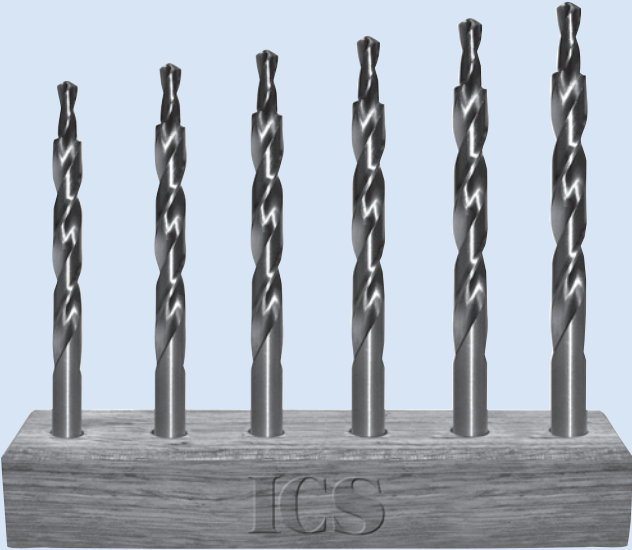
Reduced 1/2" shank available on screw sizes 5/16 to 1/2. (Add \$3.00)

Reduced 3/8" shank also available on screw sizes 5/16 to 1/2. (Add \$5.00)

STEP DRILL SETS

WOOD STAND

High Speed Steel 6 Piece Step Drill Sets contain #6 to 3/8 screw sizes and are available in 45°, 82°, and 90° step angles in jobber length and taper length drill styles.

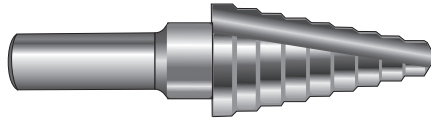
ILLUSTRATION	TYPE OF STEP DRILL	ITEM NO.	PRICE
6 PC STEP DRILL SET #6 to 3/8 	Jobber Length 45°	SDJLS45-6	102.58
	Jobber Length 82°	SDJLS82-6	152.30
	Jobber Length 90°	SDJLS90-6	127.66

HIGH SPEED STEEL STEPPED CONE DRILLS

ICS USA

SPECIAL PURPOSE

SELF-STARTING POINT

TWO
FLUTE

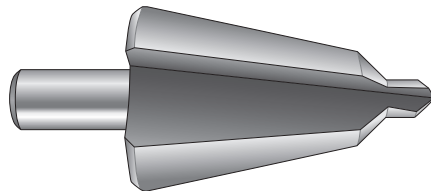
High Speed Steel 2 Flute Stepped Cone Drills are designed for drilling and enlarging perfectly round holes from 1/8" to 1-1/2" diameter in thin materials up to 1/8" thick. No pilot hole is required. Self-starting split point prevents walking. Each hole is automatically deburred by the cutting edge of the next larger size. Ideal for drilling sheet metal, non-ferrous metals, plastics, PVC, laminates, or wood. They are also known as Step Drill Bits or Step Drills.

LARGE							
DIAMETER	SHANK	SIZE RANGE	APPLICATION	HOLES	ITEM NO.	PRICE	
HIGH SPEED STEEL							
1/2A	1/4	1/8 - 1/2 by 32nds	Common Size Holes	13	SCD032A	17.20	
1/2B	1/4	3/16 - 1/2 by 16ths	Common Size Holes	6	SCD032B	18.26	
3/4	3/8	1/4 - 3/4 by 16ths	Medium Size Holes	9	SCD048	25.20	
7/8	3/8	3/16 - 7/8 by 16ths	1/2 Conduit	12	SCD056	33.04	
1	3/8 - 1/2	9/16 - 1 by 16ths	Common Size Holes	8	SCD100	38.08	
1-1/8	3/8	7/16 - 1-1/8 by 16ths	1/2 & 3/4 Conduit	11	SCD108	46.10	
1-3/8	1/2	3/4 - 1-3/8 by 16ths	1" Conduit/Tubing	11	SCD124	58.30	
1-1/2	1/2	1/4 - 1-1/2 by 8ths	Large Holes	11	SCD132	105.00	
HIGH SPEED STEEL							
1/2A	1/4	1/8 - 1/2 by 32nds	Common Size Holes	13	SCDT032A	25.66	
1/2B	1/4	3/16 - 1/2 by 16ths	Common Size Holes	6	SCDT032B	28.00	
3/4	3/8	1/4 - 3/4 by 16ths	Medium Size Holes	9	SCDT048	37.34	
7/8	3/8	3/16 - 7/8 by 16ths	1/2 Conduit	12	SCDT056	46.66	
1	3/8 - 1/2	9/16 - 1 by 16ths	Common Size Holes	8	SCDT100	48.30	
1-1/8	3/8	7/16 - 1-1/8 by 16ths	1/2 & 3/4 Conduit	11	SCDT108	58.34	
1-3/8	1/2	3/4 - 1-3/8 by 16ths	1" Conduit/Tubing	11	SCDT124	65.34	
1-1/2	1/2	1/4 - 1-1/2 by 8ths	Large Holes	11	SCDT132	136.50	

HIGH SPEED STEEL TAPERED CONE DRILLS

ICS WIS

SELF-STARTING POINT

TWO
FLUTE

High Speed Steel 2 Flute Tapered Cone Drills are designed to drill burr free holes from 1/8" to 1-1/8" diameter in metal, plastic, PVC, laminates, or wood. A washer can be placed on the cone to act as a simple stop gauge. Ideal for sheet metal and hole enlarging work. Also used for holes for knockout punches and holes for push buttons and indicator lights. They are also known as Sheet and Tube Drills, Conical Drills, Concut Drills, and Sheet Drills.

LARGE		SIZE		ITEM	
DIAMETER	SHANK	RANGE	APPLICATION	NO.	PRICE
HIGH SPEED STEEL					
7/8	3/8	3/8 - 7/8	Auto Body Work, Conduit Holes	TCD056	26.68
1-1/8	3/8	5/8 - 1-1/8	Holes for Knockout Punches	TCD108	41.04
TIN COATED					
7/8	3/8	3/8 - 7/8	Auto Body Work, Conduit Holes	TCDT056	52.58
1-1/8	3/8	5/8 - 1-1/8	Holes for Knockout Punches	TCDT108	78.90

HIGH SPEED STEEL PLASTIC & LAMINATE DRILLS

ICS

WIS

SPECIAL PURPOSE

SPECIAL POINT



High Speed Steel Plastic and Laminate Drills are designed with a self-centering flat point for drilling into acrylic plastic sheet and other similar materials. They will drill perfectly round, clean holes without grabbing or cracking the material being drilled.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.1250	1-5/8	2-3/4	PLD008	3.36
5/32	.1562	2	3-1/8	PLD010	3.78
3/16	.1875	2-5/16	3-1/2	PLD012	4.08
1/4	.2500	2-3/4	4	PLD016	4.66
5/16	.3125	3-3/16	4-1/2	PLD020	6.14
3/8	.3750	3-5/8	5	PLD024	7.60
7/16	.4375	4-1/16	5-1/2	PLD028	9.48
1/2	.5000	4-1/2	6	PLD032	11.56
1/4" SHANK					
5/16	.3125	3-3/16	4-1/2	PLDQS020	7.90
3/8	.3750	3-5/8	5	PLDQS024	9.72
7/16	.4375	4-1/16	5-1/2	PLDQS028	11.82
1/2	.5000	4-1/2	6	PLDQS032	13.90
3/8" SHANK					
7/16	.4375	4-1/16	5-1/2	PLDTS028	11.82
1/2	.5000	4-1/2	6	PLDTS032	13.90

Sizes not listed are available upon request.

HIGH SPEED STEEL PLASTIC & LAMINATE DRILL SETS

METAL INDEX

ILLUSTRATION	TYPE OF DRILLS	ITEM NO.	PRICE
7 PC DRILL SET 1/8 to 1/2 by 16ths  (Wt. 1.40 lbs.)	Bright Finish Plastic Laminate Drills	DS-PLD-7	64.66
	Bright Finish 1/4" Shank Plastic Laminate Drills	DS-PLDQS-7	73.02
	Bright Finish 3/8" Shank Plastic Laminate Drills	DS-PLDTS-7	69.36

HIGH SPEED STEEL PLASTIC & LAMINATE DRILL BITS

MET-119

ICS USA

SPECIAL PURPOSE

60° POINT



High Speed Steel Bright Finish Plastic and Laminate Drills Bits are designed with a precision ground sharp 60° angle point for gradual penetration to eliminate edge chipping, chip wrapping, and cracking. Bits are dubbed on cutting edge with a 0° rake angle to self-center and eliminate grabbing. They are used for drilling hard and soft plastics.

Fractional Sizes 1/8" to 9/16" Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO. BRIGHT FINISH	PRICE
1/8	.1250	1-5/8	2-3/4	PLB008	4.16
9/64	.1406	1-3/4	2-7/8	PLB009	6.66
5/32	.1562	2	3-1/8	PLB010	4.76
11/64	.1719	2-1/8	3-1/4	PLB011	7.30
3/16	.1875	2-5/16	3-1/2	PLB012	6.24
13/64	.2031	2-7/16	3-5/8	PLB013	8.06
7/32	.2188	2-1/2	3-3/4	PLB014	8.34
15/64	.2344	2-5/8	3-7/8	PLB015	8.34
1/4	.2500	2-3/4	4	PLB016	6.98
17/64	.2656	2-7/8	4-1/8	PLB017	9.56
9/32	.2812	2-15/16	4-1/4	PLB018	10.84
19/64	.2969	3-1/16	4-3/8	PLB019	11.84
5/16	.3125	3-3/16	4-1/2	PLB020	10.24
21/64	.3281	3-5/16	4-5/8	PLB021	13.44
11/32	.3438	3-7/16	4-3/4	PLB022	14.38

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO. BRIGHT FINISH	PRICE
23/64	.3594	3-1/2	4-7/8	PLB023	15.42
3/8	.3750	3-5/8	5	PLB024	13.54
25/64	.3906	3-3/4	5-1/8	PLB025	17.22
13/32	.4062	3-7/8	5-1/4	PLB026	18.44
27/64	.4219	3-15/16	5-3/8	PLB027	19.94
7/16	.4375	4-1/16	5-1/2	PLB028	15.16
29/64	.4531	4-3/16	5-5/8	PLB029	21.14
15/32	.4688	4-5/16	5-3/4	PLB030	22.22
31/64	.4844	4-3/8	5-7/8	PLB031	23.56
1/2	.5000	4-1/2	6	PLB032	18.08
33/64	.5156	4-13/16	6-5/8	PLB033	47.66
17/32	.5312	4-13/16	6-5/8	PLB034	47.66
35/64	.5469	4-13/16	6-5/8	PLB035	49.10
9/16	.5625	4-13/16	6-5/8	PLB036	50.36

Wire Gauge Sizes #1 to #31 Dia.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO. BRIGHT FINISH	PRICE
1	.2280	2-5/8	3-7/8	PLB#01	7.80
2	.2210	2-5/8	3-7/8	PLB#02	7.80
3	.2130	2-1/2	3-3/4	PLB#03	7.80
4	.2090	2-1/2	3-3/4	PLB#04	7.52
5	.2055	2-1/2	3-3/4	PLB#05	7.52
6	.2040	2-1/2	3-3/4	PLB#06	7.52
7	.2010	2-7/16	3-5/8	PLB#07	7.52
8	.1990	2-7/16	3-5/8	PLB#08	7.52
9	.1960	2-7/16	3-5/8	PLB#09	7.30
10	.1935	2-7/16	3-5/8	PLB#10	7.30
11	.1910	2-5/16	3-1/2	PLB#11	7.30
12	.1890	2-5/16	3-1/2	PLB#12	7.30
13	.1850	2-5/16	3-1/2	PLB#13	6.92
14	.1820	2-3/16	3-3/8	PLB#14	6.92
15	.1800	2-3/16	3-3/8	PLB#15	6.82
16	.1770	2-3/16	3-3/8	PLB#16	6.82

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO. BRIGHT FINISH	PRICE
17	.1730	2-3/16	3-3/8	PLB#17	6.82
18	.1695	2-1/8	3-1/4	PLB#18	6.30
19	.1660	2-1/8	3-1/4	PLB#19	6.30
20	.1610	2-1/8	3-1/4	PLB#20	6.30
21	.1590	2-1/8	3-1/4	PLB#21	6.30
22	.1570	2	3-1/8	PLB#22	6.30
23	.1540	2	3-1/8	PLB#23	6.22
24	.1520	2	3-1/8	PLB#24	6.22
25	.1495	1-7/8	3	PLB#25	6.22
26	.1470	1-7/8	3	PLB#26	6.22
27	.1440	1-7/8	3	PLB#27	6.22
28	.1405	1-3/4	2-7/8	PLB#28	6.22
29	.1360	1-3/4	2-7/8	PLB#29	6.08
30	.1285	1-5/8	2-3/4	PLB#30	6.08
31	.1200	1-5/8	2-3/4	PLB#31	5.70

HIGH SPEED STEEL PLASTIC & LAMINATE DRILL BITS

ICS USA

SPECIAL PURPOSE

60° POINT



High Speed Steel Bright Finish Plastic and Laminate Drills Bits are designed with a precision ground sharp 60° angle point for gradual penetration to eliminate edge chipping, chip wrapping, and cracking. Bits are dubbed on cutting edge with a 0° rake angle to self-center and eliminate grabbing. They are used for drilling hard and soft plastics.

Letter Sizes "A" to "Z" Dia.

DEC.	FLUTE	OVERALL	ITEM NO.	BRIGHT FINISH	PRICE
SIZE	EQUIV.	LENGTH	LENGTH		
A	.234	2-5/8	3-7/8	PLB"A"	7.80
B	.238	2-3/4	4	PLB"B"	8.18
C	.242	2-3/4	4	PLB"C"	8.18
D	.246	2-3/4	4	PLB"D"	8.18
E	.250	2-3/4	4	PLB"E"	8.18
F	.257	2-7/8	4-1/8	PLB"F"	8.56
G	.261	2-7/8	4-1/8	PLB"G"	8.78
H	.266	2-7/8	4-1/8	PLB"H"	9.06
I	.272	2-7/8	4-1/8	PLB"I"	9.48
J	.277	2-7/8	4-1/8	PLB"J"	9.62
K	.281	2-15/16	4-1/4	PLB"K"	9.86
L	.290	2-15/16	4-1/4	PLB"L"	5.24
M	.295	3-1/16	4-3/8	PLB"M"	10.80

DEC.	FLUTE	OVERALL	ITEM NO.	BRIGHT FINISH	PRICE
SIZE	EQUIV.	LENGTH	LENGTH		
N	.302	3-1/16	4-3/8	PLB"N"	11.54
O	.316	3-3/16	4-1/2	PLB"O"	11.96
P	.323	3-5/16	4-5/8	PLB"P"	12.22
Q	.332	3-7/16	4-3/4	PLB"Q"	12.56
R	.339	3-7/16	4-3/4	PLB"R"	13.22
S	.348	3-1/2	4-7/8	PLB"S"	13.74
T	.358	3-1/2	4-7/8	PLB"T"	14.10
U	.368	3-5/8	5	PLB"U"	14.70
V	.377	3-5/8	5	PLB"V"	15.64
W	.386	3-3/4	5-1/8	PLB"W"	15.84
X	.397	3-3/4	5-1/8	PLB"X"	16.38
Y	.404	3-7/8	5-1/4	PLB"Y"	16.84
Z	.413	3-7/8	5-1/4	PLB"Z"	18.22

Metric Sizes 3mm to 17.5mm Dia.

DEC.	FLUTE	OVERALL	ITEM NO.	BRIGHT FINISH	PRICE
SIZE	EQUIV.	LENGTH	LENGTH		
3.00	0.1181	33	61	PLBM03.0	6.02
3.50	0.1378	39	70	PLBM03.5	5.76
4.00	0.1575	43	75	PLBM04.0	6.54
4.50	0.1772	47	80	PLBM04.5	6.88
5.00	0.1969	52	86	PLBM05.0	7.80
5.50	0.2165	57	93	PLBM05.5	8.44
6.00	0.2362	63	93	PLBM06.0	10.40
6.50	0.2559	63	101	PLBM06.5	10.38
7.00	0.2756	69	109	PLBM07.0	11.84
7.50	0.2953	69	109	PLBM07.5	13.32
8.00	0.3150	75	117	PLBM08.0	14.24
8.50	0.3346	75	117	PLBM08.5	14.74
9.00	0.3543	81	125	PLBM09.0	19.94
9.50	0.3740	81	125	PLBM09.5	18.64
10.00	0.3937	87	133	PLBM10.0	25.94

DEC.	FLUTE	OVERALL	ITEM NO.	BRIGHT FINISH	PRICE
SIZE	EQUIV.	LENGTH	LENGTH		
10.50	0.4134	87	133	PLBM10.5	24.24
11.00	0.4331	94	142	PLBM11.0	25.72
11.50	0.4528	94	142	PLBM11.5	28.56
12.00	0.4724	101	151	PLBM12.0	30.82
12.50	0.4921	101	151	PLBM12.5	30.82
13.00	0.5118	101	151	PLBM13.0	40.28
13.50	0.5315	108	160	PLBM13.5	41.74
14.00	0.5512	108	160	PLBM14.5	53.86
14.50	0.5709	114	169	PLBM14.5	54.76
15.00	0.5906	114	169	PLBM15.0	54.76
15.50	0.6102	120	178	PLBM15.5	60.06
16.00	0.6299	120	178	PLBM16.0	63.80
16.50	0.6496	125	184	PLBM16.5	107.52
17.00	0.6693	125	184	PLBM17.0	66.32
17.50	0.6890	130	191	PLBM17.5	107.10

HIGH SPEED STEEL PLASTIC & LAMINATE DRILL BIT SET

METAL INDEX

DETAILS	TYPE OF DRILLS	ITEM NO.	PRICE
7 PC DRILL SET 1/8 to 1/2 by 16ths	Bright Finish Plastic Laminate 60° Point Drill Bits	DS-PLB-7	67.96

HIGH SPEED STEEL DIAMOND COATED JOBBER DRILL

ICS

WIS

SPECIAL POINT

118° POINT



Diamond Coated High Speed Steel Jobber Drills are designed for drilling graphite, FRP, glass, ceramic and other non-metallic materials such as carbon fiber, kevlar, fiber laminates, and glass fiber laminates.

SIZE	DECIMAL EQUIV.	ITEM NO.	PRICE
1/8	.1250	DCJD008	10.50
3/16	.1875	DCJD012	13.12
1/4	.2500	DCJD016	15.76
3/8	.3750	DCJD024	23.74

CARBIDE TIPPED BOWLING BALL DRILLS

ICS

WIS

SPECIAL PURPOSE

118° POINT



All sizes 6-1/4" overall length with 3-7/8" flute length.

Carbide Tipped Bowling Ball Drills were originally designed to drill out finger holes in bowling balls. They can also be used in many drilling applications using bakelite composites and other similar non-metallic materials. Not intended for hard steel drilling or precision type work.

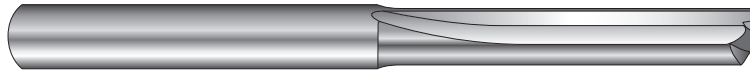
SIZE	DECIMAL EQUIV.	ITEM NO.	PRICE
7/16	.4375	CTSND028	20.58
1/2	.5000	CTSND032	20.58
9/16	.5625	CTSND036	23.36
5/8	.6250	CTSND040	26.46
21/32	.6562	CTSND042	27.06
11/16	.6875	CTSND044	28.22
23/32	.7188	CTSND046	29.40
3/4	.7500	CTSND048	30.00
25/32	.7812	CTSND050	30.58
13/16	.8125	CTSND052	31.16
27/32	.8438	CTSND054	32.94
7/8	.8750	CTSND056	35.02
29/32	.9062	CTSND058	37.04
15/16	.9375	CTSND060	38.82
61/64	.9531	CTSND061	39.98
31/32	.9688	CTSND062	41.16
63/64	.9844	CTSND063	42.92
1	1.0000	CTSND100	44.42
1-1/64	1.0156	CTSND101	46.46
1-1/32	1.0312	CTSND102	48.22
1-1/16	1.0625	CTSND104	49.40
1-3/32	1.0938	CTSND106	51.74
1-1/8	1.1250	CTSND108	53.86
1-1/4	1.2500	CTSND116	56.46

PREMIUM (10% COBALT) MICROGRAIN SOLID CARBIDE DIE DRILLS

ICS USA

SPECIAL PURPOSE

135° FOUR FACET POINT

TWO STRAIGHT
FLUTES

Solid Carbide Straight Flute Die Drills are designed for drilling shallow holes in 48-60 RC hardened steels, stainless steels, and high temperature alloys. Drills produce such accurate holes that extra reaming operations can usually be eliminated. Use rigid setups.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/64	.0469	1/2	1-1/2	SCDD003	15.48
1/16	.0625	1/2	1-1/2	SCDD004	15.94
5/64	.0781	1/2	1-1/2	SCDD005	16.72
3/32	.0937	1/2	2	SCDD006	17.00
7/64	.1094	5/8	2	SCDD007	19.96
1/8	.1250	5/8	2	SCDD008	15.40
9/64	.1406	3/4	2	SCDD009	18.40
5/32	.1562	3/4	2-1/2	SCDD010	19.28
11/64	.1719	3/4	2-1/2	SCDD011	24.94
3/16	.1875	3/4	2-1/2	SCDD012	22.84
13/64	.2031	3/4	2-1/2	SCDD013	29.18
7/32	.2188	1	2-1/2	SCDD014	29.12
15/64	.2344	1	2-1/2	SCDD015	31.40
1/4	.2500	1	2-1/2	SCDD016	32.82
17/64	.2655	1	2-1/2	SCDD017	46.44

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9/32	.2812	1	2-1/2	SCDD018	49.56
19/64	.2969	1-1/4	3	SCDD019	52.08
5/16	.3125	1-1/4	3	SCDD020	52.08
21/64	.3281	1-1/4	3	SCDD021	56.32
11/32	.3438	1-1/4	3	SCDD022	62.90
23/64	.3594	1-1/4	3	SCDD023	68.38
3/8	.3750	1-1/4	3	SCDD024	74.52
25/64	.3906	1-1/4	3	SCDD025	84.22
13/32	.4062	1-1/4	3	SCDD026	94.08
27/64	.4219	1-1/4	3	SCDD027	103.66
7/16	.4375	1-1/4	3	SCDD028	105.56
29/64	.4531	1-1/4	3	SCDD029	109.80
15/32	.4687	1-1/4	3	SCDD030	109.80
31/64	.4844	1-1/4	3	SCDD031	109.80
1/2	.5000	1-1/4	3	SCDD032	113.14

TOLERANCES

Drill Dia.: +.0000 -.0005"

Shank Dia.: +.0000 -.001"

PREMIUM (10% COBALT) MICROGRAIN SOLID CARBIDE SPADE DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT



Solid Carbide Spade Drills are designed for drilling shallow holes in steels harder than RC 50 and for thin sheet metal applications. Drill diameter tolerances are +.000 -.0005.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/16	.0625	5/16	1-1/2	SCSD004	13.22
3/32	.0937	7/16	1-1/2	SCSD006	11.84
1/8	.1250	1/2	1-1/2	SCSD008	11.84
5/32	.1562	9/16	2	SCSD010	15.74
3/16	.1875	11/16	2	SCSD012	14.84
7/32	.2188	11/16	2	SCSD014	21.32
1/4	.2500	13/16	2	SCSD016	18.90
9/32	.2812	7/8	2-1/2	SCSD018	27.04

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	7/8	2-1/2	SCSD020	26.36
11/32	.3438	15/16	2-1/2	SCSD022	37.24
3/8	.3750	1-1/8	2-1/2	SCSD024	34.16
13/32	.4062	1-1/8	2-1/2	SCSD026	61.10
7/16	.4375	1-3/16	2-1/2	SCSD028	59.18
15/32	.4687	1-3/16	2-1/2	SCSD030	67.92
1/2	.5000	1-5/16	2-1/2	SCSD032	66.02

CARBIDE TIPPED HARD STEEL DRILLS

MET-123

ICS USA

HEAVY DUTY

130° POINT



Carbide Tipped Hard Steel Drills with Right Hand Cut are designed for all hardened steel drilling applications, such as dies, bearing races, and safes. Specially tempered high speed steel body with long carbide tip to prevent chipping. Ideal for locksmiths, mechanics, etc. Left Hand Cut, CTHSDL, are often used to remove broken bolts. Bolt is backed out of the hole by its counter-clockwise spin. Drill diameter tolerances are +.000 -0.0197.

Right Hand Cut

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.0625	1/8	2-3/4	CTHSD008X02	11.28
5/32	.0937	5/32	3	CTHSD010X03	13.38
11/64	.1250	11/64	3	CTHSD011X03	13.82
3/16	.1562	3/16	3	CTHSD012X03	11.68
7/32	.1875	7/32	4	CTHSD014X04	15.60
1/4	.2188	1/4	4	CTHSD016X04	14.28
1/4	.2500	1/4	6	CTHSD016X06	15.02
9/32	.2812	9/32	4	CTHSD018X04	15.96
5/16	.3125	1/4	4	CTHSD020X04	15.60

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	5/16	6	CTHSD020X06	16.36
3/8	.3438	1/4	4	CTHSD024X04	16.24
3/8	.3750	3/8	6	CTHSD024X06	17.26
13/32	.4062	3/8	6	CTHSD026X06	23.12
7/16	.4375	3/8	6	CTHSD028X06	21.48
1/2	.4687	1/2	6	CTHSD032X06	24.66
9/16	.5000	1/2	6	CTHSD036X06	36.40
5/8	.6250	1/2	6	CTHSD040X06	37.10



Left Hand Cut Extractor

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.0625	1/8	2-3/4	CTHSDL008X02	11.96
3/16	.1562	3/16	3	CTHSDL012X03	13.64
1/4	.2188	1/4	4	CTHSDL016X04	15.14
1/4	.2500	1/4	6	CTHSDL016X06	15.78
5/16	.3125	1/4	4	CTHSDL020X04	16.40

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	5/16	6	CTHSDL020X06	17.00
3/8	.3438	1/4	4	CTHSDL024X04	17.28
3/8	.3750	3/8	6	CTHSDL024X06	19.48
7/16	.4375	3/8	6	CTHSDL028X06	23.00
1/2	.4687	1/2	6	CTHSDL032X06	24.96

NOTE: Carbide Tipped Universal Drills (CTUD) for drilling hardened steel & cast iron are also available.

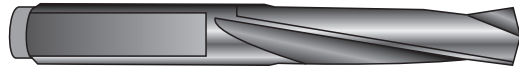
HIGH SPEED STEEL-COBALT RAILROAD BONDING BITS

ICS USA

HEAVY DUTY

SPLIT POINT

High Speed Steel and Cobalt Railroad Bonding Bits are designed for drilling holes for bonding wires in track circuit signal work. Cobalt Bonding Bits are made with a slow helix and a very heavy web for drilling in the head or web of heavy duty rails.



SUPER COBALT - 145° NOTCHED PT.

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
3/8	ROUND	1-3/4	3	RBBC024 14.46
3/8	FLATTED	1-3/4	3	RBBC1F024 16.38



HSS RAIL WEB TYPE - 135° SPLIT PT.

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
3/8	ROUND	1-1/2	3	RBBW024 7.06
3/8	FLATTED	1-1/2	3	RBBW1F024 8.60



HSS RAIL HEAD STYLE - 118° PT.

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
3/8	ROUND	1	3	RBBH 024 6.58
3/8	FLATTED	1	3	RBBH1F024 8.14



HSS UNIVERSAL TYPE - 118° PT.

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	ITEM NO.	PRICE
3/8	ROUND	1-3/4	3	RBBU024 7.06
3/8	FLATTED	1-3/4	3	RBBU1F024 8.60

HIGH SPEED STEEL-NITRIDE RAILROAD TRACK BITS

ICS USA

SPECIAL PURPOSE

135° SPECIAL POINT

High Speed Steel and Nitride Coated Railroad Track Bits were designed for heavy duty portable track repair work in the field and will fit the various machines in common use. They are available in a single end or a cost saving double end style. Both styles are also available with a super hard nitride coating for increased tool life of 50% to 300% depending upon conditions.

SINGLE END



SIZE	OVERALL LENGTH	HSS ITEM NO.	NITRIDE COAT ITEM NO.	PRICE
5/8	6-1/4	RTB-SE040	RTB-SEN040	-
11/16	6-1/4	RTB-SE044	RTB-SEN044	-
3/4	6-1/4	RTB-SE048	RTB-SEN048	-
13/16	6-1/4	RTB-SE052	RTB-SEN052	-
15/16	6-1/4	RTB-SE060	RTB-SEN060	-
1	6-1/4	RTB-SE100	RTB-SEN100	CALL FOR PRICE
1-1/16	6-1/4	RTB-SE104	RTB-SEN104	
1-1/8	6-1/4	RTB-SE108	RTB-SEN108	
1-3/16	6-1/4	RTB-SE112	RTB-SEN112	-
1-1/4	6-1/4	RTB-SE116	RTB-SEN116	-
1-5/16	6-1/4	RTB-SE120	RTB-SEN120	-
1-3/8	6-1/4	RTB-SE124	RTB-SEN124	-
1-7/16	6-1/4	RTB-SE128	RTB-SEN128	-
1-1/2	6-1/4	RTB-SE132	RTB-SEN132	-

DOUBLE END



SIZE	OVERALL LENGTH	HSS ITEM NO.	NITRIDE COAT ITEM NO.	PRICE
5/8	6-1/4	RTB-DE040	RTB-DEN040	-
11/16	6-1/4	RTB-DE044	RTB-DEN044	-
3/4	6-1/4	RTB-DE048	RTB-DEN048	-
13/16	6-1/4	RTB-DE052	RTB-DEN052	-
15/16	6-1/4	RTB-DE060	RTB-DEN060	-
1	6-1/4	RTB-DE100	RTB-DEN100	CALL FOR PRICE
1-1/16	6-1/4	RTB-DE104	RTB-DEN104	
1-1/8	6-1/4	RTB-DE108	RTB-DEN108	
1-3/16	6-1/4	RTB-DE112	RTB-DEN112	-
1-1/4	6-1/4	RTB-DE116	RTB-DEN116	-
1-5/16	6-1/4	RTB-DE120	RTB-DEN120	-
1-3/8	6-1/4	RTB-DE124	RTB-DEN124	-
1-7/16	6-1/4	RTB-DE128	RTB-DEN128	-
1-1/2	6-1/4	RTB-DE132	RTB-DEN132	-

DOUBLE END TRACK BIT TIP PROTECTOR

ITEM NO.	ILLUSTRATION	DESCRIPTION	PRICE
RTB-TP		Tip protector is inserted into the drill chuck to protect the drill tip from possible damage when drilling with double end style track bit.	23.52

HIGH SPEED STEEL **RAILROAD TIE BORING BITS**

ICS **USA**

SPECIAL PURPOSE

70° or 90° POINT

1/2" ROUND OR
FLATTED SHANK



SINGLE
FLUTE

High Speed Steel Single Flute Railroad Tie Boring Bits are specifically designed for drilling spike holes in railway cross ties. The single flute acts in a screw-like movement, feeding itself into the material for maximum chip removal. The open flute design prevents chip packing and reduces wood burning. Single flute drills are also known as Bobbin Bits.

SIZE	FLUTE LENGTH	OVERALL LENGTH	POINT ANGLE	1/2" ROUND SHANK		1/2" FLATTED SHANK	
				ITEM NO.	PRICE	ITEM NO.	PRICE
9/16	6-3/8	9-3/8	70°	RTB1R036X09-70	-	RTB1F036X09-70	-
9/16	9-5/8	12-1/8	70°	RTB1R036X12-70	-	RTB1F036X12-70	-
5/8	6-3/8	9-3/8	70°	RTB1R040X09-70	CALL	RTB1F040X09-70	CALL
5/8	9-5/8	12-1/8	70°	RTB1R040X12-70	FOR	RTB1F040X12-70	FOR
11/16	6-3/8	9-3/8	70°	RTB1R044X09-70	PRICE	RTB1F044X09-70	PRICE
11/16	9-5/8	12-1/8	70°	RTB1R044X12-70	-	RTB1F044X12-70	-
3/4	6-3/8	9-3/8	70°	RTB1R048X09-70	-	RTB1F048X09-70	-
3/4	9-5/8	12-1/8	70°	RTB1R048X12-70	-	RTB1F048X12-70	-
9/16	6-3/8	9-3/8	90°	RTB1R036X09-90	-	RTB1F036X09-90	-
9/16	9-5/8	12-1/8	90°	RTB1R036X12-90	-	RTB1F036X12-90	-
5/8	6-3/8	9-3/8	90°	RTB1R040X09-90	CALL	RTB1F040X09-90	CALL
5/8	9-5/8	12-1/8	90°	RTB1R040X12-90	FOR	RTB1F040X12-90	FOR
11/16	6-3/8	9-3/8	90°	RTB1R044X09-90	PRICE	RTB1F044X09-90	PRICE
11/16	9-5/8	12-1/8	90°	RTB1R044X12-90	-	RTB1F044X12-90	-
3/4	6-3/8	9-3/8	90°	RTB1R048X09-90	-	RTB1F048X09-90	-
3/4	9-5/8	12-1/8	90°	RTB1R048X12-90	-	RTB1F048X12-90	-

HIGH SPEED STEEL **RAILROAD TIE BORING BITS**

ICS **USA**

SPECIAL PURPOSE

70° or 90° POINT

1/2" ROUND OR
FLATTED SHANK



TWO
FLUTE

High Speed Steel Two Flute Railroad Tie Boring Bits are specifically designed for drilling holes in railway cross ties. The double flute design combines ease of penetration with rapid chip removal in deep hole, hardwood drilling.

SIZE	FLUTE LENGTH	OVERALL LENGTH	POINT ANGLE	1/2" ROUND SHANK		1/2" FLATTED SHANK	
				ITEM NO.	PRICE	ITEM NO.	PRICE
9/16	6-3/8	9-3/8	70°	RTB2R036X09-70	-	RTB2F036X09-70	-
9/16	9-5/8	12-1/8	70°	RTB2R036X12-70	-	RTB2F036X12-70	-
5/8	6-3/8	9-3/8	70°	RTB2R040X09-70	CALL	RTB2F040X09-70	CALL
5/8	9-5/8	12-1/8	70°	RTB2R040X12-70	FOR	RTB2F040X12-70	FOR
11/16	6-3/8	9-3/8	70°	RTB2R044X09-70	PRICE	RTB2F044X09-70	PRICE
11/16	9-5/8	12-1/8	70°	RTB2R044X12-70	-	RTB2F044X12-70	-
3/4	6-3/8	9-3/8	70°	RTB2R048X09-70	-	RTB2F048X09-70	-
3/4	9-5/8	12-1/8	70°	RTB2R048X12-70	-	RTB2F048X12-70	-
9/16	6-3/8	9-3/8	90°	RTB2R036X09-90	-	RTB2F036X09-90	-
9/16	9-5/8	12-1/8	90°	RTB2R036X12-90	-	RTB2F036X12-90	-
5/8	6-3/8	9-3/8	90°	RTB2R040X09-90	CALL	RTB2F040X09-90	CALL
5/8	9-5/8	12-1/8	90°	RTB2R040X12-90	FOR	RTB2F040X12-90	FOR
11/16	6-3/8	9-3/8	90°	RTB2R044X09-90	PRICE	RTB2F044X09-90	PRICE
11/16	9-5/8	12-1/8	90°	RTB2R044X12-90	-	RTB2F044X12-90	-
3/4	6-3/8	9-3/8	90°	RTB2R048X09-90	-	RTB2F048X09-90	-
3/4	9-5/8	12-1/8	90°	RTB2R048X12-90	-	RTB2F048X12-90	-

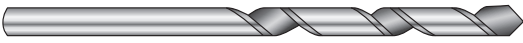
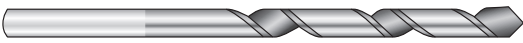
HIGH SPEED STEEL DRYWALL CUTOUT BITS

ICS USA

SPECIAL PURPOSE

60° POINT

Drywall Cutout Bits are used whenever a cutout is required in drywall. Ideal for electrical boxes, door and window openings. Fast cutting down spiral bits will not tear drywall paper. Fits most popular drywall cutout tools.

ITEM NO.	ILLUSTRATION	CUTTING APPLICATION	STEEL SPECS	TECHNICAL DATA
DCB1F	 SINGLE FLUTE STYLE	Heavy Duty open flute design cuts faster than multiple flute design.	M2	60° Point Down Spiral
DCB1FT	 TIN COATED - SINGLE FLUTE STYLE	TiN Coating extends life of drill up to 500%.	M2	60° Point Down Spiral
DCB1FDE	 DOUBLE END - SINGLE FLUTE STYLE	Double End Bits drill twice as many holes as a single end bit.	M2	60° Point Down Spiral
DCB2F	 2 FLUTE STYLE	General use two flute design cuts quickly and smoothly.	M2	60° Point Down Spiral

NOMINAL SIZE	FLUTES	FITS THE FOLLOWING DRYWALL CUTOUT TOOLS	ITEM NO.	PRICE EACH	UNIT PKG.
1/8 x 2-3/8	1	Bosch®, Porter Cable®, Roto Zip®, and most other brands.	DCB1F008	1.02	10/100
1/8 x 2-3/8	1		DCB1FT008	1.60	10/100
1/8 x 3-1/8	1		DCB1FDE008	1.60	10/100
1/8 x 2-3/8	2		DCB2F008	0.94	10/100

CORDLESS SPIRAL SAW KIT

The 18 Volt DC Cordless Spiral Saw was designed for making cutouts in drywall and other building materials for outlet boxes, door and window openings. It is now also used by crafters for wood carving, engraving, etc... This tool is also known as a Cutout Tool or a Drywall Cutout Tool.



Contents of Kit

- 1 Cordless Spiral Saw
- 2 Collets - 1/8" and 1/4"
- 1 Removable Handle
- 1 Wrench
- 1 Battery Charger
- 2 Cutout Bits - 1/8" and 1/4"
- 1 Heavy Duty Carrying Case with storage compartments

RATING	RPM	WEIGHT
18 Volt DC	30,000	6.5 lbs. (with case)

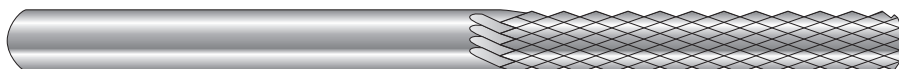
ITEM NO.	PRICE
PT-CSSK-8	82.96

SOLID CARBIDE TILE CUTOUT BITS

ICS USA

SPECIAL PURPOSE

CNC GROUND



Solid Carbide Tile Cutout Bits are used whenever a cutout is required in ceramic wall tile, cement board, plaster, stucco, fiberglass and non-metallic materials. Fits most popular drywall cutout tools. Note: This bit will not cut floor tile.

NOMINAL SIZE	FLUTES	FITS THE FOLLOWING DRYWALL CUTOUT TOOLS	ITEM NO.	PRICE EACH	UNIT PKG.
1/8 x 2	Multiple	Bosch®, Porter Cable®, Roto Zip® and most other brands.	SCTCB008	6.38	10
1/4 x 2	Multiple		SCTCB016	12.28	10

COBALT SPOT WELD DRILLS

ICS

USA

SPECIAL PURPOSE

SPECIAL SPUR POINT



SINGLE END



DOUBLE END

Cobalt Spot Weld Drills are designed to cut auto body panel spot welds without damage to the second panel. Cobalt steel maintains its hardness at higher temperatures than high speed steel and is more abrasion resistant thus providing a tough, long wearing cutting edge. The double end design cuts twice as many spotwelds and can be used for difficult to reach spot welds.

SINGLE END

DIAMETER	APPROX. SPOT WELD SIZE IN INCHES	OVERALL LENGTH	FLAT LENGTH IN INCHES	ITEM NO.	PRICE
6.50mm	1/4	1-3/4	NONE	SWDCM06.50	8.40
8.00mm	5/16	1-3/4	NONE	SWDCM08.00	11.02
10.00mm	3/8	1-3/4	NONE	SWDCM10.00	14.70

DOUBLE END

DIAMETER	APPROX. SPOT WELD SIZE IN INCHES	OVERALL LENGTH	FLAT LENGTH IN INCHES	ITEM NO.	PRICE
6.50mm	1/4	3-5/8	NONE	DESWDCM06.50	16.28
8.00mm	5/16	3-5/8	NONE	DESWDCM08.00	19.42
10.00mm	3/8	3-5/8	NONE	DESWDCM10.00	22.06

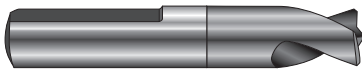
PREMIUM (10% COBALT) MICROGRAIN SOLID CARBIDE SPOT WELD DRILLS

ICS

USA

SPECIAL PURPOSE

SPECIAL SPUR POINT



TWO FLUTE



THREE FLUTE

Aluminum Titanium Nitride (AlTiN) Coated Solid Carbide Spot Weld Drills are designed to cut spot welds on European auto body panels made of Boron Steels, Advanced High Strength Steels (AHSS), and Ultra High Strength Steels (UHSS). The AlTiN Coating reduces chip welding, does not need lubrication, and can be operated at 30% faster feeds and speeds. The 2 flute design penetrates spot welds more quickly than the 3 flute. The 3 flute design removes more material per revolution and tracks straighter into the spot weld.

DIAMETER	FLUTE DESIGN	APPROX. SPOT WELD SIZE IN INCHES	OVERALL LENGTH	FLAT LENGTH IN INCHES	ITEM NO.	PRICE
8.00mm	2 FLUTE	5/16	1-3/4	3/4	SCSWDM2F08.0	CALL
8.00mm	3 FLUTE	5/16	1-3/4	3/4	SCSWDM3F08.0	CALL

HIGH SPEED STEEL SPOT WELD CUTTER

ICS WIS

SPECIAL PURPOSE

DOUBLE ENDED CUTTER

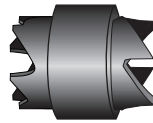
1/4" ARBOR



High Speed Steel Spot Weld Cutters are designed for removing spot welds without pre-drilling or punching. They separate body panels better than a panel cutter. Blades are reversible (twice as many holes may be cut) and are interchangeable with other spot weld cutters.

SIZE	ARBOR	STYLE	ITEM NO.	PRICE EACH
3/8	1/4	Double End	SWCTS024	8.60

HIGH SPEED STEEL SPOT WELD REPLACEMENT CUTTERS



High Speed Steel Spot Weld Replacement Cutter Blades are reversible (twice as many holes may be cut) and are interchangeable with other spot weld cutters. The long lasting high speed steel cutter outlasts tool steel style cutters.

SIZE	ARBOR	STYLE	ITEM NO.	PRICE EACH
3/8	1/4	Double End	SWRC024	6.14

HIGH SPEED STEEL 9 PC SPOT WELD CUTTER SETS

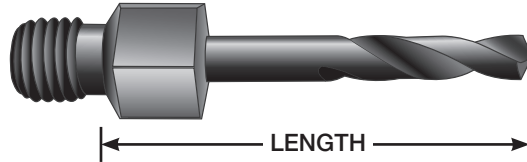
METAL CASE

The High Speed Steel 9 Piece Spot Weld Cutter Sets are designed for the auto body repair trade for removing spot welds on thin sheet metal, aluminum, and other metals.

ILLUSTRATION	TYPE OF STEP DRILL	ITEM NO.	PRICE
9 PC SPOT WELD CUTTER SETS 	Each fractional set contains:	SWCS-HS-9	47.26
	1 hex shank 3/8" dia. spot weld cutter 5 extra replacement cutters 2 extra center pins 1 5/16" dia. cobalt spot weld drill	SWCS-HS-9M	47.26
	Each metric set contains:		
	1 hex shank 10mm dia. spot weld cutter 5 extra replacement cutters 2 extra center pins 1 8mm dia. cobalt spot weld drill		

THREADED SHANK ADAPTER DRILLS**ICS USA****HEAVY DUTY****135° SPLIT POINT**

NAS 965, TYPE B SPECIFICATIONS

1/4 - 28
THREAD

Type "B" HSS Threaded Shank Adapter Drills are used for medium duty drilling in low tensile strength materials in confined areas. They are manufactured with true concentricity for more accurate holes. They are often referred to as Snake Drills.

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
STUB LENGTH 1/2" - 5/8"			
#3	.2130	TSADSM#03	5.26
#5	.2055	TSADSM#05	5.14
#10	.1935	TSADSM#10	4.28
#11	.1910	TSADSM#11	4.30
#12	.1890	TSADSM#12	5.04
#13	.1850	TSADSM#13	4.28
#16	.1770	TSADSM#16	4.22
#19	.1660	TSADSM#19	4.20
#20	.1610	TSADSM#20	4.24
#21	.1590	TSADSM#21	4.24
#27	.1440	TSADSM#27	4.24
#30	.1285	TSADSM#30	4.16
#40	.0980	TSADSM#40	4.00
1/8	.1250	TSADSM008	4.10
5/32	.1562	TSADSM010	4.20
3/16	.1875	TSADSM012	4.94
7/32	.2188	TSADSM014	5.26
1/4	.2500	TSADSM016	4.62
"D"	.2460	TSADSM"D"	4.72
"F"	.2570	TSADSM"F"	4.72
SHORT LENGTH 1-1/4"			
#5	.2055	TSADS#05	5.56
#8	.1990	TSADS#08	5.46
#10	.1935	TSADS#10	4.00
#11	.1910	TSADS#11	4.02
#12	.1890	TSADS#12	5.36
#13	.1850	TSADS#13	3.92
#16	.1770	TSADS#16	3.88
#19	.1660	TSADS#19	4.30
#20	.1610	TSADS#20	3.82
#21	.1590	TSADS#21	3.82
#27	.1440	TSADS#27	3.72
#30	.1285	TSADS#30	3.72
#40	.0980	TSADS#40	3.62
3/32	.0938	TSADS006	5.14
7/64	.1094	TSADS007	4.10
1/8	.1250	TSADS008	3.68
9/64	.1406	TSADS009	4.20
5/32	.1562	TSADS010	4.10
11/64	.1719	TSADS011	4.72
3/16	.1875	TSADS012	4.20
7/32	.2188	TSADS014	5.68
1/4	.2500	TSADS016	4.30
5/16	.3125	TSADS020	10.50
"D"	.2460	TSADS"D"	4.72
"F"	.2570	TSADS"F"	4.72

SIZE	DEC. EQUIV.	ITEM NO.	PRICE
LONG LENGTH 2-1/8"			
#3	.2130	TSADL#03	6.10
#5	.2055	TSADL#05	6.10
#8	.1990	TSADL#08	5.98
#10	.1935	TSADL#10	4.58
#11	.1910	TSADL#11	4.56
#12	.1890	TSADL#12	5.46
#13	.1850	TSADL#13	4.50
#16	.1770	TSADL#16	4.54
#19	.1660	TSADL#19	4.84
#20	.1610	TSADL#20	4.36
#21	.1590	TSADL#21	4.36
#27	.1440	TSADL#27	4.26
#30	.1285	TSADL#30	4.30
#40	.0980	TSADL#40	4.20
3/32	.0938	TSADL006	5.46
7/64	.1094	TSADL007	4.20
1/8	.1250	TSADL008	4.22
9/64	.1406	TSADL009	4.52
5/32	.1562	TSADL010	4.42
11/64	.1719	TSADL011	4.94
3/16	.1875	TSADL012	4.20
7/32	.2188	TSADL014	6.20
1/4	.2500	TSADL016	4.84
5/16	.3125	TSADL020	10.50
"D"	.2460	TSADL"D"	5.04
"F"	.2570	TSADL"F"	5.04
EXTRA LONG LENGTH 3"			
#13	.1850	TSADXL#13	8.46
#20	.1610	TSADXL#20	7.10
#30	.1285	TSADXL#30	6.52
3/32	.0938	TSADXL006	7.38
5/32	.1562	TSADXL010	7.76
3/16	.1875	TSADXL012	8.20
5/16	.3125	TSADXL020	16.92
"F"	.2570	TSADXL"F"	9.46

NOTE: Different sizes, lengths and thread sizes are available. Inquire for pricing.

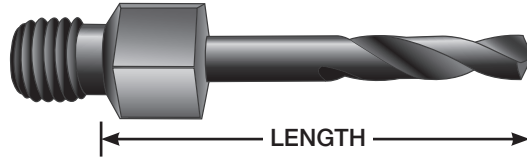
THREADED SHANK ADAPTER DRILLS

ICS USA

HEAVY DUTY

135° SPLIT POINT

NAS 965, TYPE D SPECIFICATIONS

1/4 - 28
THREAD

Type "D" Cobalt Threaded Shank Adapter Drills are used for heavy duty drilling in hard, tough tensile strength materials in confined areas. They are manufactured with true concentricity for more accurate holes. They are often referred to as Snake Drills.

DEC.	ITEM			DEC.	ITEM			DEC.	ITEM		
SIZE	EQUIV.	NO.	PRICE	SIZE	EQUIV.	NO.	PRICE	SIZE	EQUIV.	NO.	PRICE
VERY STUB LENGTH 1/2"				STUB LENGTH 1/2" - 5/8"				LONG LENGTH 2-1/8"			
#2	.2210	TSADCVS#02	6.40	3/32	.0938	TSADCSM006	4.10	#2	.2210	TSADCL#02	5.26
#5	.2055	TSADCVS#05	6.20	1/8	.1250	TSADCSM008	4.30	#3	.2130	TSADCL#03	7.24
#7	.2010	TSADCVS#07	6.20	5/32	.1562	TSADCSM010	4.52	#5	.2055	TSADCL#05	6.10
#8	.1990	TSADCVS#08	6.20	3/16	.1875	TSADCSM012	4.94	#7	.2010	TSADCL#07	5.14
#10	.1935	TSADCVS#10	5.98	7/32	.2188	TSADCSM014	5.26	#8	.1990	TSADCL#08	5.98
#11	.1910	TSADCVS#11	5.98	1/4	.2500	TSADCSM016	5.04	#10	.1935	TSADCL#10	5.04
#13	.1850	TSADCVS#13	5.98	"D"	.2460	TSADCSM"D"	5.04	#11	.1910	TSADCL#11	5.04
#16	.1770	TSADCVS#16	5.88	"F"	.2570	TSADCSM"F"	5.26	#12	.1890	TSADCL#12	6.82
#19	.1660	TSADCVS#19	5.88	SHORT LENGTH 1-1/4"				#13	.1850	TSADCL#13	4.94
#20	.1610	TSADCVS#20	5.88	#2	.2210	TSADCS#02	4.80	#16	.1770	TSADCL#16	4.84
#21	.1590	TSADCVS#21	5.88	#5	.2055	TSADCS#05	5.56	#19	.1660	TSADCL#19	4.58
#27	.1440	TSADCVS#27	5.72	#7	.2010	TSADCS#07	4.70	#20	.1610	TSADCL#20	4.58
#30	.1285	TSADCVS#30	5.64	#8	.1990	TSADCS#08	5.46	#21	.1590	TSADCL#21	4.58
#40	.0980	TSADCVS#40	5.36	#10	.1935	TSADCS#10	4.58	#27	.1440	TSADCL#27	4.52
3/32	.0938	TSADCVS006	5.34	#11	.1910	TSADCS#11	4.58	#30	.1285	TSADCL#30	4.42
1/8	.1250	TSADCVS008	5.62	#12	.1890	TSADCS#12	6.30	#40	.0980	TSADCL#40	4.30
5/32	.1562	TSADCVS010	5.78	#13	.1850	TSADCS#13	4.58	3/32	.0938	TSADCL006	4.28
3/16	.1875	TSADCVS012	5.98	#16	.1770	TSADCS#16	4.44	1/8	.1250	TSADCL008	4.52
1/4	.2500	TSADCVS016	6.52	#19	.1660	TSADCS#19	4.44	9/64	.1406	TSADCL009	4.52
"D"	.2460	TSADCVS"D"	6.52	#20	.1610	TSADCS#20	4.44	5/32	.1562	TSADCL010	4.58
"F"	.2570	TSADCVS"F"	6.82	#21	.1590	TSADCS#21	4.44	11/64	.1719	TSADCL011	4.94
STUB LENGTH 1/2" - 5/8"				#27	.1440	TSADCS#27	4.10	3/16	.1875	TSADCL012	4.94
#2	.2210	TSADCSM#02	4.94	#30	.1285	TSADCS#30	3.78	7/32	.2188	TSADCL014	6.20
#3	.2130	TSADCSM#03	6.10	#40	.0980	TSADCS#40	3.78	1/4	.2500	TSADCL016	5.36
#5	.2055	TSADCSM#05	5.14	3/32	.0938	TSADCS006	3.78	"D"	.2460	TSADCL"D"	5.36
#7	.2010	TSADCSM#07	4.84	1/8	.1250	TSADCS008	3.88	"F"	.2570	TSADCL"F"	5.56
#8	.1990	TSADCSM#08	4.84	9/64	.1406	TSADCS009	4.20	EXTRA LENGTH 3"			
#10	.1935	TSADCSM#10	4.62	5/32	.1562	TSADCS010	4.20	#13	.1850	TSADCXL#13	8.46
#11	.1910	TSADCSM#11	5.88	11/64	.1719	TSADCS011	4.72	#20	.1610	TSADCXL#20	7.10
#12	.1890	TSADCSM#12	5.88	3/16	.1875	TSADCS012	4.62	#30	.1285	TSADCXL#30	6.52
#13	.1850	TSADCSM#13	4.62	7/32	.2188	TSADCS014	5.68	5/32	.1562	TSADCXL010	7.76
#16	.1770	TSADCSM#16	4.52	1/4	.2500	TSADCS016	5.00	3/16	.1875	TSADCXL012	8.20
#19	.1660	TSADCSM#19	4.52	"D"	.2460	TSADCS"D"	4.94	"F"	.2570	TSADCXL"F"	9.46
#20	.1610	TSADCSM#20	4.52	"F"	.2570	TSADCS"F"	5.22				
#21	.1590	TSADCSM#21	4.52								
#27	.1440	TSADCSM#27	4.42								
#30	.1285	TSADCSM#30	4.42								
#40	.0980	TSADCSM#40	4.10								

NOTE: Different sizes, lengths and thread sizes are available. Inquire for pricing.

HIGH SPEED STEEL ANNULAR CUTTERS

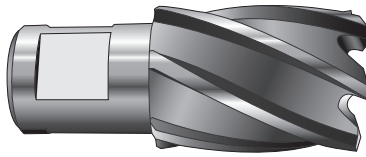
MET-131

ICS WIS

SPECIAL PURPOSE

GROUND END TEETH

**TWO FLATS
ON SHANK**



**RIGHT HAND
CUT**

Annular Cutters are designed to be used with magnetic base drills, drill presses, milling machines, etc. to drill large diameter holes quickly and efficiently. They have up to 12 cutting edges to cut around the hole, leaving only a center slug which pops out. Quality burr-free holes can be cut in a single pass, 3-5 times faster than conventional twist drills. They can also cut multiple (overlap) hole configurations as well as curved surfaces and interrupted cuts.

DEPTH OF CUT	SHANK	STEEL SPECS	CUTTING APPLICATION
1", 2", 3", 4"	3/4	M2	For general purpose cutting of steel plate, structural steel, steel pipe, etc.

Fractional Sizes (3/4" Weldon Shank) 7/16" to 4" Dia.

SIZE	DEC. EQUIV.	DEPTH OF CUT			
		1"	2"	3"	4"
		AC1D	AC2D	AC3D	AC4D
7/16	.4375	30.48	62.12	-	-
1/2	.5000	31.70	37.20	-	-
9/16	.5625	32.10	40.06	-	-
5/8	.6250	33.26	43.60	-	-
11/16	.6875	37.14	46.10	-	-
3/4	.7500	40.88	49.08	-	-
13/16	.8125	42.32	52.88	-	-
7/8	.8750	44.76	57.28	-	-
15/16	.9375	47.00	60.24	-	-
1	1.0000	49.78	63.80	-	-
1-1/16	1.0625	54.46	70.94	-	-
1-1/8	1.1250	56.98	75.80	CALL	CALL
1-3/16	1.1875	57.38	78.66	FOR	FOR
1-1/4	1.2500	59.90	81.64	PRICE	PRICE
1-5/16	1.3125	63.74	86.02	-	-
1-3/8	1.3750	82.38	90.54	-	-
1-7/16	1.4375	91.32	108.34	-	-
1-1/2	1.5000	97.40	108.34	-	-
1-9/16	1.5625	108.46	121.76	-	-
1-5/8	1.6250	116.02	127.72	-	-
1-11/16	1.6875	132.56	146.12	-	-
1-3/4	1.7500	132.56	141.96	-	-
1-13/16	1.8125	155.40	163.34	-	-
1-7/8	1.8750	155.02	175.00	-	-
1-15/16	1.9375	163.66	183.76	-	-
2	2.0000	175.66	171.66	-	-
2-1/16	2.0625	205.80	229.26	-	-
2-1/8	2.1250	236.04	257.44	-	-
2-3/16	2.1875	237.82	263.24	-	-

SIZE	DEC. EQUIV.	DEPTH OF CUT			
		1"	2"	3"	4"
		AC1D	AC2D	AC3D	AC4D
2-1/4	2.2500	245.02	270.94	-	-
2-5/16	2.3125	253.26	277.60	-	-
2-3/8	2.3750	258.80	285.38	-	-
2-7/16	2.4375	264.32	293.08	-	-
2-1/2	2.5000	270.94	301.92	-	-
2-9/16	2.5625	276.52	309.70	-	-
2-5/8	2.6250	284.22	315.20	-	-
2-11/16	2.6875	289.78	322.96	-	-
2-3/4	2.7500	CALL	330.68	-	-
2-13/16	2.8125	303.06	337.30	-	-
2-7/8	2.8750	309.70	343.94	-	-
2-15/16	2.9375	316.32	351.72	CALL	CALL
3	3.0000	-	-	FOR	FOR
3-1/16	3.0625	-	-	PRICE	PRICE
3-1/8	3.1250	-	-	-	-
3-3/16	3.1875	-	-	-	-
3-1/4	3.2500	-	-	-	-
3-5/16	3.3125	-	-	-	-
3-3/8	3.3750	CALL	CALL	-	-
3-7/16	3.4375	FOR	FOR	-	-
3-1/2	3.5000	PRICE	PRICE	-	-
3-9/16	3.5625	-	-	-	-
3-5/8	3.6250	-	-	-	-
3-11/16	3.6875	-	-	-	-
3-3/4	3.7500	-	-	-	-
3-13/16	3.8125	-	-	-	-
3-7/8	3.8750	-	-	-	-
3-15/16	3.9375	-	-	-	-
4	4.0000	-	-	-	-

Also available as TiN Coated and TiCN Coated. Inquire for pricing. Pilot pins available on page 132.

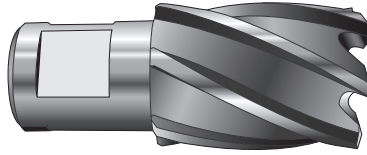
HIGH SPEED STEEL ANNULAR CUTTERS

ICS

WIS

SPECIAL PURPOSE

GROUND END TEETH

TWO FLATS
ON SHANKRIGHT HAND
CUT

Metric Sizes (3/4" Weldon Shank) 12.00mm to 65.00mm Dia.

SIZE	DEC. EQUIV.	DEPTH OF CUT			
		1"	2"	3"	4"
		ACM1D	ACM2D	ACM3D	ACM4D
12.00	.4724	32.02	44.10	-	-
13.00	.5118	32.02	47.62	-	-
14.00	.5512	35.08	49.36	-	-
15.00	.5906	36.44	52.60	-	-
16.00	.6299	39.28	52.60	-	-
17.00	.6693	40.68	62.00	-	-
18.00	.7087	43.36	64.36	-	-
19.00	.7480	44.82	68.78	-	-
20.00	.7874	45.88	68.78	-	-
21.00	.8268	47.30	76.46	-	-
22.00	.8661	48.70	77.90	-	-
23.00	.9055	53.76	79.34	CALL	CALL
24.00	.9449	53.76	79.80	FOR	FOR
25.00	.9843	56.50	83.68	PRICE	PRICE
26.00	1.0237	57.22	86.10	-	-
27.00	1.0630	58.28	89.26	-	-
28.00	1.1024	58.80	89.36	-	-
29.00	1.1417	62.06	98.12	-	-
30.00	1.1811	67.72	102.28	-	-
31.00	1.2205	69.26	109.66	-	-
32.00	1.2598	73.50	110.38	-	-
33.00	1.2992	85.10	124.10	-	-
34.00	1.3386	95.24	129.84	-	-
35.00	1.3779	102.44	139.92	-	-
36.00	1.4173	113.96	142.80	-	-
37.00	1.4567	115.42	147.16	-	-
38.00	1.4961	121.16	150.02	-	-

SIZE	DEC. EQUIV.	DEPTH OF CUT			
		1"	2"	3"	4"
		ACM1D	ACM2D	ACM3D	ACM4D
39.00	1.5354	124.10	154.36	-	-
40.00	1.5748	126.98	160.16	-	-
41.00	1.6142	130.20	164.44	-	-
42.00	1.6540	141.42	173.10	-	-
43.00	1.6929	150.38	177.46	-	-
44.00	1.7323	150.38	183.20	-	-
45.00	1.7717	156.00	189.00	-	-
46.00	1.8110	156.00	193.28	-	-
47.00	1.8504	163.86	203.44	-	-
48.00	1.8898	163.86	210.66	-	-
49.00	1.9291	175.08	214.94	-	-
50.00	1.9685	179.00	219.28	CALL	CALL
51.00	2.0078	193.28	223.62	FOR	FOR
52.00	2.0472	207.74	246.76	PRICE	PRICE
53.00	2.0866	232.28	253.92	-	-
54.00	2.1259	238.04	262.54	-	-
55.00	2.1653	249.90	269.78	-	-
56.00	2.2047	255.34	276.98	-	-
57.00	2.2440	268.34	290.00	-	-
58.00	2.2834	275.56	300.08	-	-
59.00	2.3228	285.64	311.62	-	-
60.00	2.3622	291.40	320.26	-	-
61.00	2.4015	302.96	327.48	-	-
62.00	2.4409	307.30	333.28	-	-
63.00	2.4803	318.84	341.88	-	-
64.00	2.5196	324.60	350.56	-	-
65.00	2.5590	328.92	357.78	-	-

Also available as TiN Coated and TiCN Coated. Inquire for pricing. Pilot pins available on page 133.

ANNULAR (STRUCTURAL) CUTTER SETS

MET-133

PLASTIC CASE

ILLUSTRATION	DEPTH OF CUT	STEEL SPECS	ITEM NO.	PRICE
6 PC ANNULAR CUTTER SET 	6 PC CONTENTS			
	9/16, 11/16, 13/16, 15/16, 1-1/16 and 1 Pilot Pin			
	1"	HIGH SPEED STEEL	AC1DS-6	223.66
	2"	HIGH SPEED STEEL	AC2DS-6	515.56
10 PC ANNULAR CUTTER SET (NOT PICTURED)	10 PC CONTENTS			
	1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 1 and 2 Pilot Pins			
	1"	HIGH SPEED STEEL	AC1DS-10	378.00
12 PC ANNULAR CUTTER SET 	12 PC CONTENTS			
	1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16 and 2 Pilot Pins			
	2"	HIGH SPEED STEEL	AC2DS-12	611.12

Also available as TiN Coated and TiCN coated.

METAL INDEX

ILLUSTRATION	DEPTH OF CUT	STEEL SPECS	ITEM NO.	PRICE
7 PC ANNULAR CUTTER SET 	7 PC CONTENTS			
	7/16, 9/16, 11/16, 13/16, 15/16, 1-1/16 and 1 Pilot Pin			
	1"	HIGH SPEED STEEL	AC1DS-7	235.84

Also available as TiN Coated and TiCN coated.

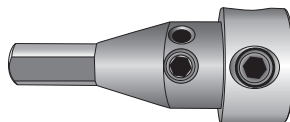
ANNULAR CUTTER PILOT PINS



ICS manufactures a complete range of pilot pins for precise drill location and plug ejection. They are interchangeable with most manufacturers.

DEPTH OF CUT			
1"	2"	3"	4"
ACPP1A	ACPP2A	ACPP3A	ACPP4A
13.36	13.96	15.22	17.32

ANNULAR CUTTER ADAPTERS



ICS Annular Cutter Adapters allow Annular Cutters to be used in various style machines.

ADAPTS 3/4" SHANK TO:	APPLICATION	ITEM NO.	PRICE
1/2" Shank	Adapts Magnetic Drill to use 1/2" Silver and Deming Drills	AARS032	136.96
#2 Morse Taper Shank	Morse Taper Adapters allow Annular Cutters to be used on Milling Machines, Lathes, CNC Machining Center, Drills etc.	AAMT#2	183.76
#3 Morse Taper Shank		AAMT#3	183.76
#4 Morse Taper Shank		AAMT#4	294.00
7/16" Shank Hole Saw	Adapts Magnetic Drills to use Hole Saws	AAH5	157.50

DRILL CHUCK ARBORS**ICS USA****ADAPTERS****GROUND FINISH****MORSE TAPER TO JACOBS TAPER**

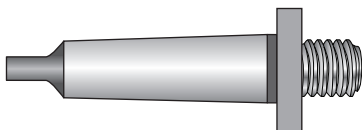
Morse Taper to Jacobs Taper Drill Chuck Arbors are designed to adapt Morse taper tools to Jacobs taper mount chucks.

MORSE TAPER	JACOBS TAPER	ITEM NO.	PRICE
1	1	DCA-MT1JT01	-
1	2	DCA-MT1JT02	-
1	3	DCA-MT1JT03	-
1	6	DCA-MT1JT06	-
1	33	DCA-MT1JT33	-
2	1	DCA-MT2JT01	-
2	2	DCA-MT2JT02	-
2	3	DCA-MT2JT03	-
2	6	DCA-MT2JT06	-
2	33	DCA-MT2JT33	-
3	2	DCA-MT3JT02	-
3	3	DCA-MT3JT03	CALL FOR PRICE
3	4	DCA-MT3JT04	
3	5	DCA-MT3JT05	
3	6	DCA-MT3JT06	
3	33	DCA-MT3JT33	
4	3	DCA-MT4JT03	-
4	4	DCA-MT4JT04	-
4	5	DCA-MT4JT05	-
4	6	DCA-MT4JT06	-
4	33	DCA-MT4JT33	-
5	3	DCA-MT5JT03	-
5	4	DCA-MT5JT04	-
5	5	DCA-MT5JT05	-
5	6	DCA-MT5JT06	-
5	33	DCA-MT5JT33	-

STRAIGHT SHANK TO JACOBS TAPER

Straight Shank to Jacobs Taper Drill Chuck Arbors are designed to adapt straight shank chuck holders to Jacobs taper mount chucks.

MORSE TAPER	JACOBS TAPER	ITEM NO.	PRICE
1	1	DCA-MT1JT01	-
1	2	DCA-MT1JT02	-
1	3	DCA-MT1JT03	-
1	6	DCA-MT1JT06	-
1	33	DCA-MT1JT33	-
2	1	DCA-MT2JT01	-
2	2	DCA-MT2JT02	-
2	3	DCA-MT2JT03	-
2	6	DCA-MT2JT06	-
2	33	DCA-MT2JT33	-
3	2	DCA-MT3JT02	-
3	3	DCA-MT3JT03	CALL FOR PRICE
3	4	DCA-MT3JT04	
3	5	DCA-MT3JT05	
3	6	DCA-MT3JT06	
3	33	DCA-MT3JT33	
4	3	DCA-MT4JT03	-
4	4	DCA-MT4JT04	-
4	5	DCA-MT4JT05	-
4	6	DCA-MT4JT06	-
4	33	DCA-MT4JT33	-
5	3	DCA-MT5JT03	-
5	4	DCA-MT5JT04	-
5	5	DCA-MT5JT05	-
5	6	DCA-MT5JT06	-
5	33	DCA-MT5JT33	-

MORSE TAPER TO THREADED SHANK

Morse Taper to Threaded Shank Drill Chuck Arbors are designed to adapt Morse taper tools to threaded mount chucks.

MORSE TAPER	JACOBS TAPER	ITEM NO.	PRICE
2	3/8-24	DCA.MT2T024-24	CALL FOR PRICE
2	1/2-20	DCA.MT2T032-20	
2	5/8-16	DCA.MT2T040-16	

R-8 SHANK TO JACOBS TAPER

R-8 Shank to Jacobs Taper Drill Chuck Arbors are designed to adapt R-8 shank holders to Jacobs taper mount chucks.

MORSE TAPER	JACOBS TAPER	ITEM NO.	PRICE
8	1	DCA-R8JT01	-
8	2	DCA-R8JT02	CALL FOR PRICE
8	3	DCA-R8JT03	
8	6	DCA-R8JT06	
8	33	DCA-R8JT33	-

CHUCK KEYS

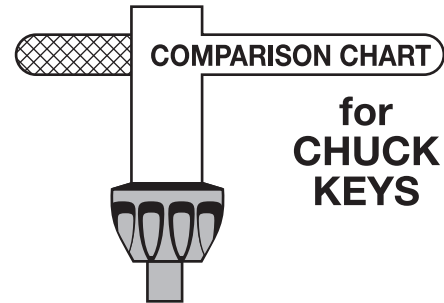
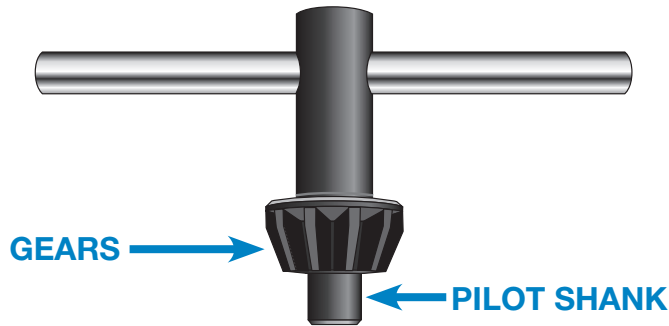
ICS USA

SPECIAL PURPOSE

COLD ROLLED STEEL

ICS Chuck Keys fit virtually all power drills on the market. How-to-choose chart on each package aids in selection of correct key. Packaging is designed to let customer check size for correct fit. All Chuck Keys are engineered to fit Jacobs and Supreme Key operated chucks. Cold rolled steel chuck keys are heat treated for durability and plated to resist corrosion.

CHUCK KEYS (T-HANDLE)



CHUCK SIZE	GEARS	PILOT SHANK	ITEM NO.	PRICE EACH
5/32	11	1/8	CK-TK0	3.54
1/4	11	5/32	CK-TK1	2.42
1/4-3/8	11	1/4	CK-TKG	2.52
3/8	11	1/4	CK-TK2	3.54
3/8	11	7/32	CK-TK7	4.12
1/2	10	1/4	CK-TK32	5.78
1/2	10	11/32	CK-TKR	11.56
1/2-5/8	11	5/16	CK-TK3	7.44
3/8	10	15/64	CK-TK30	4.02
3/8-1/2	10	9/32	CK-TKK	3.54
1/4	11	13/64	CK-TK13	2.52
3/4	12	3/8	CK-TK4	15.74
3/8-1/2	10	9/32	CK-TKKB	2.74

ICS KEY	JACOBS KEY	SUPREME KEY	B & D KEY	MILLER FALLS KEY
CK-TK0	K0	0		
CK-TK1	K1	D1	U-1507	MK1
CK-TKG	KG	DB1	U-1529	MK2
CK-TK2	K2	2		2MK3
CK-TK7	K7	D4		MK3
CK-TK32	K32	D5	U-1508	3MK1
CK-TKR	KR	DB5		3MK1A
CK-TK3	K3	D6		3MK2
CK-TK30	K30	D13	U-1524	2MK1
CK-TKK	KK	DB13	U-1533	2MK2
CK-TK13			70-110	
CK-TK4	K4	9		MK4
CK-TKKB	KK	DB13	U-1533	2MK2

NOTE: If your drill chuck key is not listed it is because WE DO NOT have a cross reference for every chuck manufactured. The best thing to do is measure the diameter of the pilot hole/shank and match that diameter with the drill chuck size you have. For example, if your pilot is 11/32" and your drill chuck is 1/2", you would need a CK-TKR.

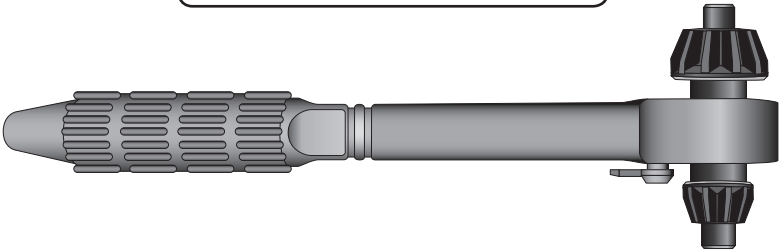
RATCHET CHUCK KEYS

ICS WIS

SPECIAL PURPOSE

FORGED STEEL

HANG-UP
HANDLE



DUAL SIZE

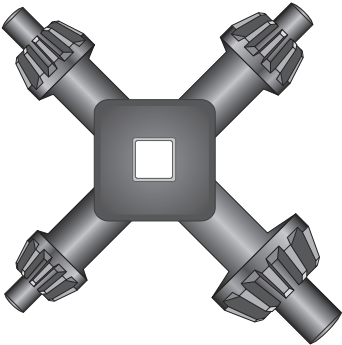
Ratchet Chuck Keys speed and simplify bit changeovers. They fit most popular drill chucks on the market. They ratchet in both directions.

CHUCK SIZE	PILOT SHANKS	ITEM NO.	PRICE
3/8 - 1/2	15/64 - 15/64	CK-R#1	8.36
3/8 - 5/8	15/64 - 5/16	CK-R#2	8.36
1/2 - 5/8	15/64 - 5/16	CK-R#3	8.36

MASTER CHUCK KEYS - ACETYLENE CYLINDER KEY

SPECIAL PURPOSE

ACETYLENE
CYLINDER KEY



4 SIZES

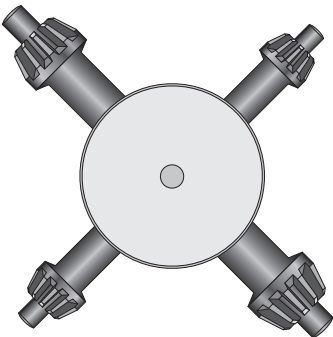
Master Chuck Keys each fit four different size Jacobs key operated chucks. Very useful tool for every shop. Center square is used as an acetylene cylinder key.

FITS JACOBS KEY	ITEM NO.	PRICE
K7, K30, KK, K6	CK-MK#1	23.10
K2, K3, K32, K4	CK-MK#2	26.26

MASTER CHUCK KEYS - MAGNETIC HOLD

SPECIAL PURPOSE

MAGNETIC
HOLD



4 SIZES

Master Chuck Keys each fit four different size Jacobs key operated chucks. Very useful tool for every shop. Manufactured with a magnetic hold to attach to a drill press, tool box, etc.

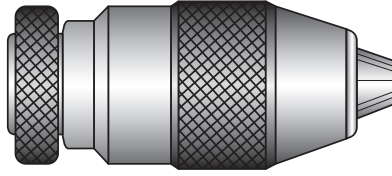
FITS JACOBS KEY	ITEM NO.	PRICE
K7, K30, KK, K6	CK-MKM#1	28.36
K2, K3, K32, K4	CK-MKM#2	31.50

KEYLESS DRILL CHUCKS

ICS WIS

HEAVY DUTY

PRECISION CRAFTED

1/4"
HEX SHANK

Keyless Drill Chucks are high precision, super ball bearing chucks designed for high accuracy use on CNC machining centers in drilling, boring, milling, and counterboring operations. They have a self-tightening feature and can be tightened and released by hand, no key required.

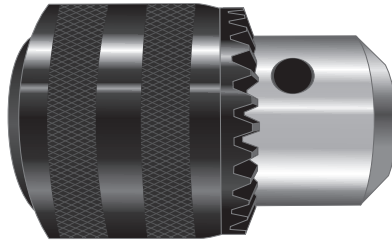
CHUCK MODEL	CAPACITY		TAPERED MOUNT	LENGTH (in.)		DIAMETER (in.)	WEIGHT (lbs.)	ITEM NO.	PRICE
	INCHES	MM		OPEN	CLOSED				
6/J1	0-1/4	0-6	1JT	2.40	2.67	1.34	.85	DC-06/J1	79.98
10/J2	1/64-3/8	.5-10	2JT	3.15	3.27	1.57	1.10	DC-10/J2	83.10
10/J33	1/64-3/8	.5-10	33JT	3.15	3.27	1.57	1.10	DC-10/J33	83.10
13/J2	1/32-1/2	1-13	2JT	3.54	3.70	1.81	1.63	DC-13/J2	98.78
13/J33	1/32-1/2	1-13	33JT	3.54	3.70	1.81	1.63	DC-13/J33	98.78
13/J6	1/32-1/2	1-13	6JT	3.54	3.70	1.81	1.63	DC-13/J6	98.78
16/J3	1/8-5/8	3-16	3JT	4.06	4.25	2.20	3.09	DC-16/J3	120.74
16/J6	1/8-5/8	3-16	6JT	4.33	4.53	2.20	3.31	DC-16/J6	120.74

KEY TYPE DRILL CHUCKS

ICS WIS

MEDIUM DUTY

PRECISION CRAFTED

PLAIN BEARING
CHUCK

Key Type (Medium Duty) Drill Chucks are industrial quality chucks designed for high accuracy use on power tools, bench drilling machines, and wood working machinery. All parts are hardened for maximum tool life. Chucks are provided with key.

SIZE	CAPACITY		MOUNT	USES KEY	WEIGHT (lbs.)	ITEM NO.	PRICE
	INCHES	MM					
3/8	0-3/8	0-10	3/8-24	K30	.48	DC-KM10-024	17.24
3/8	0-3/8	0-10	1/2-20	K30	.48	DC-KM10-032	17.24
3/8	0-3/8	0-10	6JT	K3	.48	DC-KM10-06JT	23.52
1/2	1/64-1/2	.5-13	1/2-20	K32	.80	DC-KM13-032	23.52
1/2	1/64-1/2	.5-13	6JT	K3	.80	DC-KM13-06JT	23.52
5/8	1/64-5/8	.5-16	5/8-16	K32	1.30	DC-KM16-040	32.20
3/4	3/16-3/4	4.8-19	3JT	K4	1.50	DC-KM19-048	35.70

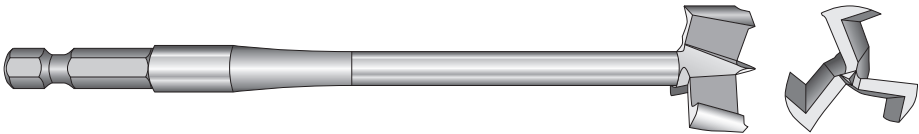
TOOL STEEL
MULTI-ANGLE DRILLS

ICS WIS

SPECIAL PURPOSE

DIAMOND STYLE POINT

1/4"
HEX SHANK



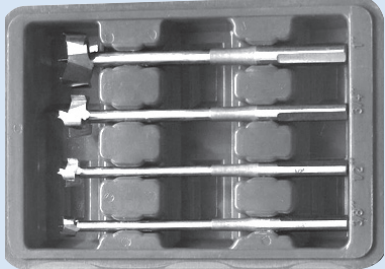
TITANIUM (TiN)
NITRIDE COATED

Multi-Angle Drills are designed with 6 cutting edges to drill forward, backward, sideways, straight, or in a curve up to 90°. Used to drill wood, composites, plaster board, plastics, etc... They drill 3X faster than spade bits and holes as smooth as forstner bits.

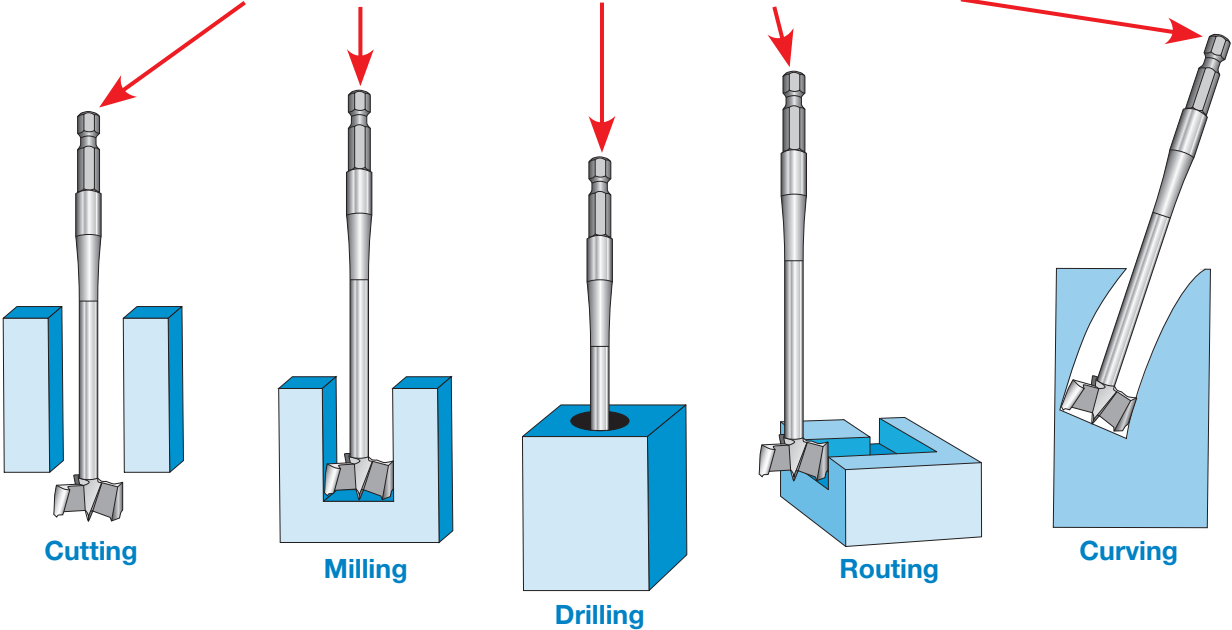
SIZE	OVERALL LENGTH	ITEM NO.	PRICE
1/4	5	MAD016	4.84
3/8	5	MAD024	5.56
1/2	5	MAD032	5.98
5/8	5	MAD040	6.30
3/4	5	MAD048	6.94

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
13/16	5	MAD052	7.14
7/8	5	MAD056	7.78
1	5	MAD100	8.72
1-1/4	5	MAD116	11.86

TOOL STEEL
MULTI-ANGLE DRILL SETS
PLASTIC INDEX

ILLUSTRATION	TYPE OF DRILL INDEX	ITEM NO.	PRICE
	4 pc Set (3/8, 1/2, 3/4, 1")	DS-MAD-4	31.50
	7 pc Set (3/8, 1/2, 5/8, 3/4, 7/8, 1", 1-1/4)	DS-MAD-7	58.80
	9 pc Set (1/4, 3/8, 1/2, 5/8, 3/4, 13/16, 7/8, 1", 1-1/4)	DS-MAD-9	88.20

5 USES IN 1 TOOL



MASONRY DRILLING TOOLS

Drills

Core Drills

Percussion Hammer Core Drills..... 8

Pilot Drill 8

Shanks..... 8

Thin Wall Core Drills 7

Pilot Drill 7

Shanks..... 7

Wet Drilling Diamond Core Drills 6

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Glass Drills..... 11

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Masonry Drills

Fast Spiral 9

Wide Spiral 10

Metric 11

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3/4" Hex Shank 24

19mm Hex Shank 25

21mm Hex Shank 25

2 Slot Shank 16

4 Slot Shank 16

SDS-MAX 17

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Spline Shank 19

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SDS Shank Quick Release Adapters 15

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Core Bits

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For Thin Wall Core Drills 7

Masonry Hammer Bits

"A" Taper Shank 21

"B" Taper Shank 21

Masonry (Rotary) Core Drill Bits 5

Pilot Drill 5

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Adapters 3

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Masonry Drill (SDS Shank) 14

Universal Drill 1

CARBIDE TIPPED UNIVERSAL DRILLS

MAS-1

ICS WIS

HEAVY DUTY

PERCUSSION DRILL POINT



Carbide Tipped Universal Drills are designed with a diamond ground special drill point for multi-purpose drilling. It is highly effective for drilling hard metals and alloys, reinforced concrete, stone, tile, ceramics, marble, granite, glass, hard and soft woods, plastics and many other difficult materials. Often used to drill out broken taps and hardened bolts. They are also known as Carbide Tipped Multi-Purpose Drills or Carbide Tipped Utility Drills.

SIZE	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
1/8	1/8	3	CTUD008	8.00
1/8	1/8	12	CTUD008X12	12.70
5/32	5/32	3-1/8	CTUD010	8.96
3/16	3/16	3-1/2	CTUD012	8.54
3/16	3/16	12	CTUD012X12	13.30
7/32	7/32	3-3/4	CTUD014	8.96
1/4	1/4	4	CTUD016X04	9.06
1/4	1/4	6	CTUD016X06	9.42
1/4	1/4	12	CTUD016X12	15.14
9/32	1/4	4-1/4	CTUD018	10.08
5/16	1/4	4-1/2	CTUD020	10.70
5/16	1/4	6	CTUD020X06	10.84
11/32	1/4	5	CTUD022	11.96
3/8	3/8	5	CTUD024	12.78
3/8	3/8	12	CTUD024X12	22.84

SIZE	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
13/32	3/8	6	CTUD026	14.46
13/32	3/8	12	CTUD026X12	27.06
7/16	3/8	6	CTUD028	17.04
7/16	3/8	12	CTUD028X12	29.64
15/32	3/8	6	CTUD030	21.36
15/32	3/8	12	CTUD030X12	33.96
1/2	3/8	6	CTUD032	26.50
1/2	3/8	12	CTUD032X12	39.52
9/16	3/8	6	CTUD036	30.08
9/16	3/8	16	CTUD036X16	64.76
5/8	3/8	6	CTUD040	38.08
3/4	3/8	6	CTUD048	52.32
3/4	1/2	16	CTUD048X16	91.44
7/8	1/2	6	CTUD056	64.06
1	1/2	6	CTUD100	67.00

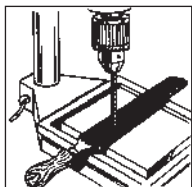
METRIC SIZES

SIZE	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
M4.0	M4.0	3	CTUDM04.0X03	8.38
M5.0	M5.0	3-3/8	CTUDM05.0X03	8.38
M6.0	M6.0	3-13/16	CTUDM06.0X03	9.92
M7.0	M7.0	4-3/16	CTUDM07.0X04	11.14

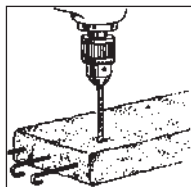
SIZE	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
M8.0	M8.0	4-9/16	CTUDM08.0X04	11.60
M10.0	M10.0	5-3/8	CTUDM10.0X05	16.72
M12.0	M12.0	6-3/16	CTUDM12.0X06	25.70

UNIVERSAL DRILL APPLICATIONS

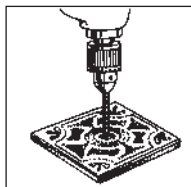
HARDENED STEEL & CAST IRON



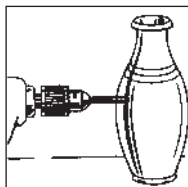
CONCRETE & GRANITE



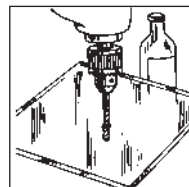
CERAMIC TILE & MARBLE



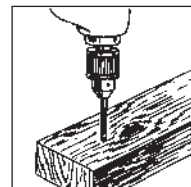
PORCELAIN & BAKED CERAMIC



GLASS, CRYSTAL & MIRROR



WOODS & PLASTICS



CARBIDE TIPPED UNIVERSAL DRILL SET

METAL INDEX

ILLUSTRATION	TYPE OF STEP DRILL	ITEM NO.	PRICE
7 PC DRILL SET 	7 pc Carbide Tipped Universal Drill Set contains 1 each: 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2	DS-CTUD-7	105.76

CARBIDE TIPPED HARD STEEL DRILLS

ICS USA

HEAVY DUTY

130° POINT



Carbide Tipped Hard Steel Drills with Right Hand Cut are designed for all hardened steel drilling applications, such as dies, bearing races, and safes. Specially tempered high speed steel body with long carbide tip to prevent chipping. Ideal for locksmiths, mechanics, etc. Left Hand Cut, CTHSDL, are often used to remove broken bolts. Bolt is backed out of the hole by its counter-clockwise spin. Drill diameter tolerances are +.000 -0.0197.

Right Hand Cut

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.0625	1/8	2-3/4	CTHSD008X02	11.28
5/32	.0937	5/32	3	CTHSD010X03	13.38
11/64	.1250	11/64	3	CTHSD011X03	13.82
3/16	.1562	3/16	3	CTHSD012X03	11.68
7/32	.1875	7/32	4	CTHSD014X04	15.60
1/4	.2188	1/4	4	CTHSD016X04	14.28
1/4	.2500	1/4	6	CTHSD016X06	15.02
9/32	.2812	9/32	4	CTHSD018X04	15.96
5/16	.3125	1/4	4	CTHSD020X04	15.60

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	5/16	6	CTHSD020X06	16.36
3/8	.3438	1/4	4	CTHSD024X04	16.24
3/8	.3750	3/8	6	CTHSD024X06	17.26
13/32	.4062	3/8	6	CTHSD026X06	23.12
7/16	.4375	3/8	6	CTHSD028X06	21.48
1/2	.4687	1/2	6	CTHSD032X06	24.66
9/16	.5000	1/2	6	CTHSD036X06	36.40
5/8	.6250	1/2	6	CTHSD040X06	37.10



Left Hand Cut Extractor

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
1/8	.0625	1/8	2-3/4	CTHSDL008X02	11.96
3/16	.1562	3/16	3	CTHSDL012X03	13.64
1/4	.2188	1/4	4	CTHSDL016X04	15.14
1/4	.2500	1/4	6	CTHSDL016X06	15.78
5/16	.3125	1/4	4	CTHSDL020X04	16.40

SIZE	DEC. EQUIV.	SHANK DIA	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	5/16	6	CTHSDL020X06	17.00
3/8	.3438	1/4	4	CTHSDL024X04	17.28
3/8	.3750	3/8	6	CTHSDL024X06	19.48
7/16	.4375	3/8	6	CTHSDL028X06	23.00
1/2	.4687	1/2	6	CTHSDL032X06	24.96

NOTE: Carbide Tipped Universal Drills (CTUD) for drilling hardened steel & cast iron are also available.

CARBIDE TIPPED
PLATE CUTTERS

ICS USA

HEAVY DUTY

MULTI-TOOTH



WET OR DRY USE

Carbide Tipped Plate Cutters are designed with a multi-tooth center head for drilling through a combination of concrete and steel plates well as embedded rebar and wire mesh. They can be run wet using a small amount of water or run dry. Carbide tipped plate cutters are a viable alternative to fragile diamond core drills as they will withstand rough usage. They can be used with either vacuum or magnetic based diamond drilling machines.

OVERALL		HUB THREAD	ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1/2	12	5/8-11	CTPC032X12	43.52
5/8	12	5/8-11	CTPC040X12	55.28
3/4	12	5/8-11	CTPC048X12	63.50
7/8	12	5/8-11	CTPC056X12	66.82

OVERALL		HUB THREAD	ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1	12	5/8-11	CTPC100X12	69.64
1-1/8	12	5/8-11	CTPC108X12	88.92
1-1/4	12	5/8-11	CTPC116X12	94.68
1-1/2	12	5/8-11	CTPC132X12	105.02

Sizes up to 12" diameter available upon request.

PLATE CUTTER ADAPTER



Adapts plate cutters for use in any 1/2" rotary style drill with a Jacobs (three-jaw) style chuck.

DESCRIPTION	ITEM NO.	PRICE
1/2" Round Shank to 5/8 - 11	CTPCA040-11	26.26
1/2" Round Shank to 1-1/4 - 7	CTPCA116-07	58.80



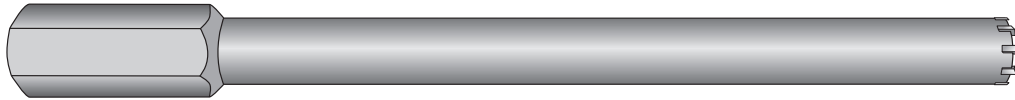
SUGGESTED DRILL SPEEDS FOR PLATE CUTTERS		
SIZES	HUB THREAD SIZE	RPM
1/2 - 1-3/8	5/8 - 11	500 - 1200 RPM
1-1/2	5/8 - 11	350 - 750 RPM
1-3/4 - 12	1-1/4 - 7	150 - 300 RPM

CARBIDE TIPPED REBAR CUTTERS

ICS USA

HEAVY DUTY

MULTI-TOOTH



Carbide Tipped Rebar Cutters are designed with a multi-tooth cutter head for drilling through concrete and embedded rebar or wire mesh. Use either water or cutting oil for lubrication and cooling. They can be used in any 1/2" rotary drill with a 3-jawed chuck or directly into SDS, Spline Drive, or SDS-Max Hammer Drills using an ICS rebar cutter adapter.

OVERALL HUB THREAD			ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1/2	12	5/8-11	CTRC032X12	44.24
5/8	12	5/8-11	CTRC040X12	56.00
3/4	12	5/8-11	CTRC048X12	64.96
7/8	12	5/8-11	CTRC056X12	67.76

OVERALL HUB THREAD			ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1	12	5/8-11	CTRC100X12	71.68
1-1/8	12	5/8-11	CTRC108X12	90.72
1-1/4	12	5/8-11	CTRC116X12	96.88
1-1/2	12	5/8-11	CTRC132X12	107.52

Sizes up to 3" diameter available upon request.

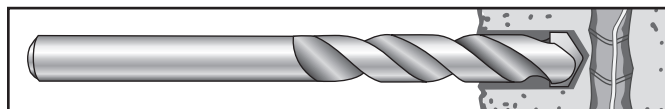
REBAR CUTTER ADAPTERS

Adapts rebar and plate cutters for use in various style masonry drills.

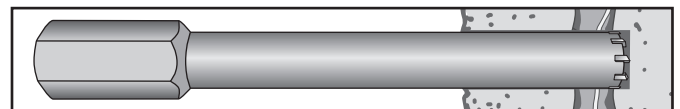
ILLUSTRATION	FITS	ITEM NO.	PRICE
	1/2" Rotary Style Drills	RCA-RS	30.00
	SDS Hammer Drills	RCA-SDS	52.64
	Spline Drive Hammer Drills	RCA-S	63.28
	SDS-Max Hammer Drills	RCA-MAX	72.24

HOW TO DRILL REBAR

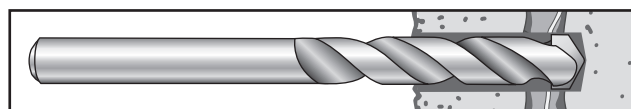
1. Stop drilling as soon as carbide tip comes in contact with rebar. (If you do not - drill will be damaged.)



2. Replace carbide tipped drill with rebar cutter. Insert into hole and drill through embedded rebar. (Maintain even and constant pressure.)

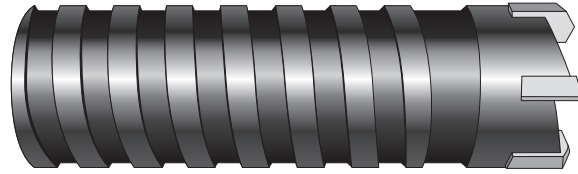


3. Replace rebar cutter with carbide tipped drill and finish drilling the hole.



NOTICE

Rebar cutters can also be used in most hammer drills equipped with a three-jaw style chuck, provided the selector is kept in the rotary-only position. Percussion (hammering action) will damage the tool. The ICS Rebar Cutter is designed for rotary drilling only.

CARBIDE TIPPED**MASONRY (ROTARY) CORE DRILL BITS****ICS USA****GENERAL PURPOSE****MULTI-TOOTH**

Carbide Tipped Rotary Core Drill Bits are designed for drilling large diameter holes in thin or brittle material that would be damaged if done with a hammer core drill. Carbide tipped teeth cut only the rim of the hole leaving the core intact which should be broken up and removed every 4" for maximum drilling depth.

OVERALL		SHANK	ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1/2	6	3/8	MD-RC032X06	27.54
5/8	8	3/8	MD-RC040X08	33.66
3/4	10	1/2	MD-RC048X10	40.94
7/8	10	1/2	MD-RC056X10	57.88
1	10	1/2	MD-RC100X10	63.50
1-1/8	12	1/2	MD-RC108X12	69.38

OVERALL		SHANK	ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
1-1/4	12	1/2	MD-RC116X12	78.34
1-3/8	12	1/2	MD-RC124X12	84.08
1-1/2	12	1/2	MD-RC132X12	94.56
1-7/8	12	1/2	MD-RC156X12	115.84
2	12	3/4	MD-RC200X12	124.26

ROTARY CORE PILOT DRILL

Use a pilot drill for a more accurate starting position and to keep the drill from walking. The pilot drill is used only to start the initial starting groove and is then removed before drilling is continued.

FITS DRILL SIZE	ITEM NO.	PRICE
5/8 to 1	MD-RCPD #1	6.92
1-1/8 to 2-1/4	MD-RCPD #2	6.92

ROTARY CORE SHANKS**EXTRA LONG**

OVERALL		SHANK	ITEM	
SIZE	LENGTH	SIZE	NO.	PRICE
3/8	12	3/8-16	MD-RCS024X12	5.06
3/8	18	3/8-16	MD-RCS024X18	7.48
1/2	12	1/2-13	MD-RCS032X12	5.66
1/2	18	1/2-13	MD-RCS032X18	7.72
3/4	12	3/4-10	MD-RCS048X12	11.22
3/4	18	3/4-10	MD-RCS048X18	54.68

MASONRY (WET DRILLING) DIAMOND CORE DRILLS

ICS

USA

SPECIAL PURPOSE

DIAMOND SEGMENTS

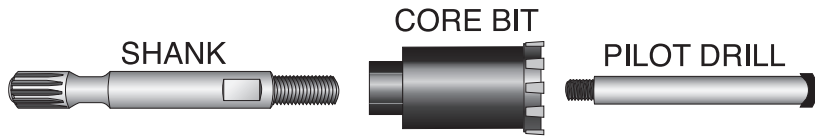
PREMIUM
GRADE13" DRILLING
DEPTH

Wet Drilling Diamond Core Drills are used for cutting miscellaneous types of concrete, masonry, and stone. They are made to cool from the center and should be used in either vacuum or magnetic based diamond drilling machines. Use either water or cutting oil for lubrication and cooling. Do not use dry or use in a hammer drill.

SIZE	SEGMENT SIZES	ITEM NO.	PRICE
1	.118 x .275	MD-DCWP0100	57.76
1-1/8	.118 x .275	MD-DCWP0108	57.76
1-1/4	.118 x .275	MD-DCWP0116	61.60
1-3/8	.118 x .275	MD-DCWP0124	63.52
1-1/2	.157 x .275	MD-DCWP0132	65.46
1-5/8	.157 x .275	MD-DCWP0140	77.02
1-3/4	.157 x .275	MD-DCWP0148	84.70
1-7/8	.157 x .275	MD-DCWP0156	88.56
2	.157 x .275	MD-DCWP0200	96.24
2-1/4	.157 x .275	MD-DCWP0216	100.12
2-1/2	.177 x .275	MD-DCWP0232	115.50
2-3/4	.177 x .275	MD-DCWP0248	127.06
3	.177 x .275	MD-DCWP0300	134.76
3-1/4	.177 x .275	MD-DCWP0316	146.32
3-1/2	.177 x .275	MD-DCWP0332	165.54
4	.197 x .275	MD-DCWP0400	180.96
4-1/4	.197 x .275	MD-DCWP0416	188.64
4-1/2	.197 x .275	MD-DCWP0432	204.06
5	.217 x .275	MD-DCWP0500	219.46
5-1/4	.217 x .275	MD-DCWP0516	234.54
5-1/2	.217 x .275	MD-DCWP0532	242.56
5-3/4	.217 x .275	MD-DCWP0548	246.40
6	.217 x .275	MD-DCWP0600	250.26
6-1/4	.217 x .275	MD-DCWP0616	300.30
6-1/2	.217 x .275	MD-DCWP0632	365.76
7	.217 x .275	MD-DCWP0700	385.00
8	.217 x .275	MD-DCWP0800	415.80
9	.217 x .275	MD-DCWP0900	485.10
10	.217 x .275	MD-DCWP1000	535.14
11	.217 x .275	MD-DCWP1100	750.76
12	.236 x .275	MD-DCWP1200	762.30
13	.236 x .275	MD-DCWP1300	954.82
14	.236 x .275	MD-DCWP1400	954.82
16	.236 x .275	MD-DCWP1600	CALL

1" to 1-3/4" Diamond Core Drills have a 5/8 - 11 thread.
2" to 18" Diamond Core Drills have a 1-1/4 - 7 thread.

Dry Drilling Diamond Core Drills and Diamond Core Drill
Machines are available upon request.

MASONRY (THIN WALL) CORE DRILLS**ICS USA****HEAVY DUTY****MULTI-TOOTH**SCREW TOGETHER
STYLE3 PC
ASSEMBLY

Special Carbide Tipped Thin Wall Percussion Core Bits are designed to drill large diameter holes with most rotary hammer drills. Carbide tips can withstand continuous hammering action and give maximum drilling life.

CORE BITS FOR THIN WALL CORE DRILLS

ILLUSTRATION	SIZE	BODY LENGTH	NO. OF TEETH	ITEM NO.	PRICE
 THIN WALL CORE BODY	1-1/2	4	6	MD-TWC132	112.08
	1-3/4	4	6	MD-TWC148	130.54
	2	4	6	MD-TWC200	139.02
	2-1/2	4	9	MD-TWC232	171.28
	3	4	9	MD-TWC300	206.74
	3-1/2	4	9	MD-TWC332	257.12
	4	4	9	MD-TWC400	294.84

SHANKS FOR THIN WALL CORE DRILLS

ILLUSTRATION	LENGTH	FITS HAMMER MODEL	ITEM NO.	PRICE
	12"	Fits all Popular Splined Drive Power Tools. See pages 162- 163 for complete listing.	MD-TWCS 12SP	74.68
	18"		MD-TWCS 18SP	89.76
	12"	Bosch 11216, SDS-MAX Hilti TE 64, TE-Y Hilti TE 72, 90	MD-TWCS 12MAX	79.16
	18"		MD-TWCS 18MAX	99.38
 Only fits 1-1/2" diameter core drills	8"	Fits all popular 4 slot power tools. See pages 162- 163 for complete listing.	MD-TWCS 08SDS	61.74
	16"		MD-TWCS 16SDS	85.86
 Fits 1-3/4" to 4" diameter core drills	8"	Fits all popular 4 slot power tools. See pages 162- 163 for complete listing.	MD-TWCS 08SDSL	65.86
	12"		MD-TWCS 12SDSL	75.26

PILOT DRILL FOR THIN WALL CORE DRILLS

ILLUSTRATION	CUTTING APPLICATION	ITEM NO.	PRICE
	Use a pilot drill for a more accurate starting position and to keep the hammer core drill from walking. The pilot drill is used only to start the initial starting groove and is then removed before drilling is continued.	MD-TWCSPD	20.58

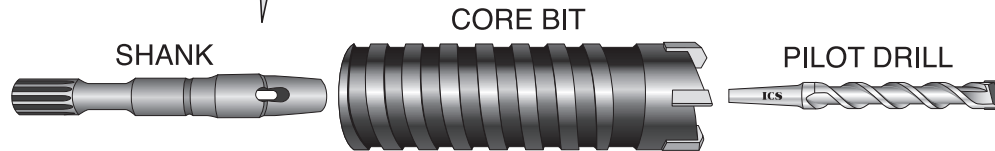
MASONRY (PERCUSSION HAMMER) CORE DRILLS

ICS

WIS

HEAVY DUTY**MULTI-TOOTH**

EJECTOR KEY

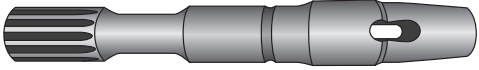
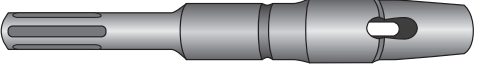
TAPER FIT
STYLE3 PC
ASSEMBLY

Special Carbide Tipped Percussion Core Bits are designed to drill large diameter holes with most rotary hammer drills. Carbide Tips can withstand continuous hammering action and give maximum drilling life.

CORE BITS FOR PERCUSSION HAMMER CORE DRILLS

ILLUSTRATION	SIZE	BODY LENGTH	NO. OF TEETH	ITEM NO.	PRICE
 TAPERED CORE BODY	1-1/2	4	6	MD-PC132	125.58
	2	4	6	MD-PC200	137.56
	2-1/2	4	9	MD-PC232	154.56
	3	4	9	MD-PC300	195.30
	3-1/2	4	9	MD-PC332	221.02
	4	4	9	MD-PC400	288.98
	5	4	12	MD-PC500	405.72

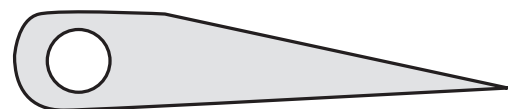
SHANKS FOR PERCUSSION HAMMER CORE DRILLS

ILLUSTRATION	LENGTH	FITS HAMMER MODEL	ITEM NO.	PRICE
	8"	Fits all Popular Splined Drive See pages 162- 163 for complete listing.	MD-PCS08SP	77.28
	22"		MD-PCS22SP	95.14
	8"	Bosch 11216, SDS-MAX Hilti TE 64, TE-Y, Hilti TE 72, 90	MD-PCS08MAX	76.28
	18"		MD-PCS18MAX	93.14

PERCUSSION CORE PILOT DRILL

Use a pilot drill for a more accurate starting position and to keep the hammer core drill from walking. The pilot drill is used only to start the initial starting groove and is then removed before drilling is continued.

SIZE AND DESCRIPTION	ITEM NO.	PRICE
3/8 x 5 A-Taper Shank	MD-PCPD	11.72

MASONRY DRILL EJECTOR KEY

Use Ejector Key to push Pilot Drill out of Tapered Core Body.

ITEM NO.	PRICE
MD-EK	6.96

CARBIDE TIPPED MASONRY DRILLS FAST SPIRAL

MAS-9

ICS USA

GENERAL PURPOSE

ROTARY DRILL POINT



BLACK FINISH



ZINC PLATED

Carbide Tipped Fast Spiral Masonry Drill Bits are designed for rotary drilling into brick, cinder block, tile, plaster, and other brittle materials. Brittle materials will require slower speeds and light to moderate pressure as material is being ground, not broken. The fast spiral flute design creates less heat buildup when drilling. A special carbide tip with a 130° point and positive angle provides fast penetration. They can be used in any 3-jaw chuck rotary style drill.

NOMINAL		SHANK	BLACK FINISH		ZINC PLATED	
SIZE	LENGTH	SIZE	ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	3	1/8	MDF008X03	1.90	MDFZ008X03	1.90
3/16	4	3/16	MDF012X04	2.02	MDFZ012X04	2.02
3/16	6	3/16	MDF012X06	2.60	MDFZ012X06	2.60
1/4	4	1/4	MDF016X04	2.26	MDFZ016X04	2.26
1/4	6	1/4	MDF016X06	2.84	MDFZ016X06	2.84
1/4	13	1/4	MDF016X13	7.06	MDFZ016X13	7.06
5/16	4	1/4	MDF020X04	2.60	MDFZ020X04	2.60
5/16	6	1/4	MDF020X06	3.20	MDFZ020X06	3.20
5/16	13	1/4	MDF020X13	7.78	MDFZ020X13	7.78
3/8	4	1/4	MDF024X04	3.30	MDFZ024X04	3.30
3/8	6	1/4	MDF024X06	3.78	MDFZ024X06	3.78
3/8	13	1/4	MDF024X13	8.72	MDFZ024X13	8.72

NOMINAL		SHANK	BLACK FINISH		ZINC PLATED	
SIZE	LENGTH	SIZE	ITEM NO.	PRICE	ITEM NO.	PRICE
7/16	6	1/4	MDF028X06	4.38	MDFZ028X06	4.38
1/2	4	1/4	MDF032X04	4.12	MDFZ032X04	4.12
1/2	6	1/4	MDF032X06	4.96	MDFZ032X06	4.96
1/2	13	3/8	MDF032X13	11.76	MDFZ032X13	11.76
9/16	6	3/8	MDF036X06	6.82	MDFZ036X06	6.82
9/16	13	3/8	MDF036X13	12.94	MDFZ036X13	12.94
5/8	6	3/8	MDF040X06	7.32	MDFZ040X06	7.32
5/8	13	3/8	MDF040X13	14.84	MDFZ040X13	14.84
3/4	6	1/2	MDF048X06	11.66	MDFZ048X06	11.66
3/4	13	1/2	MDF048X13	18.82	MDFZ048X13	18.82
7/8	6	1/2	MDF056X06	15.88	MDFZ056X06	15.88
1	6	1/2	MDF100X06	18.24	MDFZ100X06	18.24

PACKAGING: 1 drill/vinyl pouch or plastic tube

MASONRY DRILL SETS AND DISPLAYS

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	4 PC DRILL SET 1/4, 5/16, 3/8, 1/2 4" Long Masonry Drills Vinyl Pouch Package	Fast Spiral Masonry Drills Wide Spiral Masonry Drills	MDS-MDF-04 MDS-MDW-04	CALL CALL
	30 PC DRILL DISPLAY 5 ea. 1/8, 3/16, 1/4, 5/16, 3/8, 1/2 4" Length Masonry Drills Display Size: 12" x 10-1/2"	Fast Spiral Masonry Drills Wide Spiral Masonry Drills	MDD-MDF-304 MDD-MDW-304	86.44 86.44
	18 PC DRILL DISPLAY 3 ea. 1/4, 5/16, 3/8, 1/2, 5/8, 3/4 6" Length Masonry Drills Display Size: 12" x 12"	Fast Spiral Masonry Drills Wide Spiral Masonry Drills	MDD-MDF-186 MDD-MDW-186	106.78 106.78
	30 PC DRILL DISPLAY 3 ea. 1/8, 3/16, 1/4, 5/16, 3/8 3 ea. 7/16, 1/2, 9/16, 5/8, 3/4 6" Length Masonry Drills Display Size: 18" x 12"	Fast Spiral Masonry Drills Wide Spiral Masonry Drills	MDD-MDF-306 MDD-MDW-306	155.00 155.00
	6 PC DRILL DISPLAY 1 ea. 1/4, 5/16, 3/8, 1/2, 5/8, 3/4 13" Length Masonry Drills Display Size: 12" x 18"	Fast Spiral Masonry Drills Wide Spiral Masonry Drills	MDD-MDF-613 MDD-MDW-613	77.62 77.62
	6 PC DRILL DISPLAY 1 ea. 1/4, 5/16, 3/8, 1/2, 5/8, 3/4 18" Length Masonry Drills Display Size: 12" x 23"	Wide Spiral Masonry Drills	MDD-MDW-618	110.54

* 1/8" Masonry Drill in MDD-306 Display is 3" long, not 6".

CARBIDE TIPPED MASONRY DRILLS WIDE SPIRAL

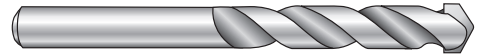
ICS USA

GENERAL PURPOSE

ROTARY DRILL POINT



BLACK FINISH



ZINC PLATED

Carbide Tipped Wide Spiral Masonry Drill Bits are designed for rotary drilling into concrete, masonry, marble, stone and rock. The harder the material, the more pressure applied and the slower the speed as material is being ground up, not broken as a hammer drill would do. The wide spiral flute design is very strong and removes debris rapidly. A special carbide tip with a 130° point and positive angle provides fast penetration. They can be used in any 3-Jaw chuck rotary style drill. They are also known as Carbide Tipped Slow Spiral Masonry Drill Bits.

NOMINAL		SHANK	BLACK FINISH		ZINC PLATED	
SIZE	LENGTH	SIZE	ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	3	1/8	MDW008X03	1.90	MDWZ008X03	1.90
5/32	3	9/64	MDW010X03	1.90	MDWZ010X03	1.90
11/64	3	9/64	MDW011X03	1.90	MDWZ011X03	1.90
3/16	4	3/16	MDW012X04	2.02	MDWZ012X04	2.02
3/16	6	3/16	MDW012X06	2.60	MDWZ012X06	2.60
7/32	4	3/16	MDW014X04	2.12	MDWZ014X04	2.12
15/64	4	3/16	MDW015X04	2.26	MDWZ015X04	2.26
1/4	4	1/4	MDW016X04	2.26	MDWZ016X04	2.26
1/4	6	1/4	MDW016X06	2.84	MDWZ016X06	2.84
1/4	13	1/4	MDW016X13	7.06	MDWZ016X13	7.06
1/4	18	1/4	MDW016X18	12.36	MDWZ016X18	12.36
1/4	24	1/4	MDW016X24	13.52	MDWZ016X24	13.52
1/4	30	1/4	MDW016X30	15.30	MDWZ016X30	15.30
9/32	4	1/4	MDW018X04	2.60	MDWZ018X04	2.60
5/16	4	1/4	MDW020X04	2.60	MDWZ020X04	2.60
5/16	6	1/4	MDW020X06	3.20	MDWZ020X06	3.20
5/16	13	1/4	MDW020X13	7.78	MDWZ020X13	7.78
5/16	18	1/4	MDW020X18	13.52	MDWZ020X18	13.52
5/16	24	1/4	MDW020X24	20.16	MDWZ020X24	20.16
5/16	30	1/4	MDW020X30	23.08	MDWZ020X30	23.08
3/8	4	1/4	MDW024X04	3.30	MDWZ024X04	3.30
3/8	6	1/4	MDW024X06	3.78	MDWZ024X06	3.78
3/8	6	3/8	MDW024X06A	3.78	MDWZ024X06A	3.78
3/8	13	1/4	MDW024X13	14.12	MDWZ024X13	14.12
3/8	18	3/8	MDW024X18	14.12	MDWZ024X18	14.12
3/8	24	3/8	MDW024X24	15.88	MDWZ024X24	15.88
3/8	30	3/8	MDW024X30	18.00	MDWZ024X30	18.00
7/16	4	1/4	MDW028X04	3.78	MDWZ028X04	3.78
7/16	6	1/4	MDW028X06	4.38	MDWZ028X06	4.38
7/16	6	3/8	MDW028X06A	4.38	MDWZ028X06A	4.38
7/16	13	3/8	MDW028X13	10.58	MDWZ028X13	10.58
7/16	18	3/8	MDW028X18	14.70	MDWZ028X18	14.70

NOMINAL		SHANK	BLACK FINISH		ZINC PLATED	
SIZE	LENGTH	SIZE	ITEM NO.	PRICE	ITEM NO.	PRICE
1/2	4	1/4	MDW032X04	4.12	MDWZ032X04	4.12
1/2	6	1/4	MDW032X06	4.96	MDWZ032X06	4.96
1/2	6	3/8	MDW032X06A	4.96	MDWZ032X06A	4.96
1/2	13	3/8	MDW032X13	11.76	MDWZ032X13	11.76
1/2	18	3/8	MDW032X18	17.06	MDWZ032X18	17.06
1/2	24	3/8	MDW032X24	19.40	MDWZ032X24	19.40
1/2	30	3/8	MDW032X30	22.34	MDWZ032X30	22.34
9/16	6	3/8	MDW036X06	6.82	MDWZ036X06	6.82
9/16	13	1/2	MDW036X13	12.94	MDWZ036X13	12.94
9/16	18	1/2	MDW036X18	18.24	MDWZ036X18	18.24
5/8	6	3/8	MDW040X06	7.32	MDWZ040X06	7.32
5/8	13	1/2	MDW040X13	14.84	MDWZ040X13	14.84
5/8	18	1/2	MDW040X18	20.58	MDWZ040X18	20.58
11/16	6	1/2	MDW044X06	10.58	MDWZ044X06	10.58
3/4	6	3/8	MDW048X06	11.66	MDWZ048X06	11.66
3/4	6	1/2	MDW048X06A	11.66	MDWZ048X06A	11.66
3/4	13	1/2	MDW048X13	18.82	MDWZ048X13	18.82
3/4	18	1/2	MDW048X18	23.08	MDWZ048X18	23.08
7/8	6	1/2	MDW056X06	15.88	MDWZ056X06	15.88
7/8	13	1/2	MDW056X13	24.70	MDWZ056X13	24.70
7/8	18	1/2	MDW056X18	34.82	MDWZ056X18	34.82
1	6	1/2	MDW100X06	18.24	MDWZ100X06	18.24
1	13	1/2	MDW100X13	30.00	MDWZ100X13	30.00
1	18	1/2	MDW100X18	42.92	MDWZ100X18	42.92
1-1/8	6	1/2	MDW108X06	23.30	MDWZ108X06	23.30
1-1/8	10	1/2	MDW108X10	49.88	MDWZ108X10	49.88
1-1/4	10	1/2	MDW116X10	56.78	MDWZ116X10	56.78
1-1/4	18	1/2	MDW116X18	64.68	MDWZ116X18	64.68
1-3/8	10	1/2	MDW124X10	30.94	MDWZ124X10	30.94
1-3/8	18	1/2	MDW124X18	69.30	MDWZ124X18	69.30
1-1/2	10	1/2	MDW132X10	57.96	MDWZ132X10	57.96
1-1/2	18	1/2	MDW132X18	87.02	MDWZ132X18	87.02

PACKAGING

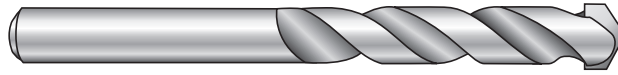
1/8 x 3" to 3/4 x 18" Length - 1 Drill/Vinyl Pouch

7/8 x 6" up to 1-1/2 x 18" Length - 1 Drill/Tube

1/4 x 24" up to 1/2 x 30" Length - 1 Drill/Tube

MASONRY DRILLS - METRIC

ICS USA

GENERAL PURPOSE**PERCUSSION DRILL POINT**ROTARY
STYLEWIDE
SPIRAL

Carbide Tipped Wide Spiral Metric Masonry Drill Bits are designed for rotary drilling into concrete, masonry, marble, stone and rock. The harder the material, the more pressure applied and the slower the speed as material is being ground up, not broken as a hammer drill would do. The wide spiral flute design is very strong and removes debris rapidly. A special carbide tip with a 130° point and positive angle provides fast penetration. They can be used in any 3-Jaw chuck rotary style drill. ICS Carbide Tipped Metric Drills are true metric sizes (not fractional equivalents) for drilling pilot holes for European Anchors. They are also known as Carbide Tipped Slow Spiral Metric Masonry Drill Bits.

Note: Metric Diameter Drills must be used for drilling metric size anchor holes to ensure proper fit for metric size anchors.

SIZE mm	OVERALL LENGTH	SHANK SIZE	ITEM NO.	PRICE
3	75	2.5	MD-M03.0X075	1.90
3.5	75	3.0	MD-M03.5X075	1.90
4	85	4.0	MD-M04.0X085	1.90
4.5	85	4.0	MD-M04.5X085	1.90
5	85	4.0	MD-M05.0X085	2.02
5.5	100	4.5	MD-M05.5X100	2.12
6	100	4.8	MD-M06.0X100	2.26
6.5	100	5.5	MD-M06.5X100	2.26
7	100	5.5	MD-M07.0X100	2.60
8	120	6.0	MD-M08.0X120	2.60
9	120	7.0	MD-M09.0X120	3.30

SIZE mm	OVERALL LENGTH	SHANK SIZE	ITEM NO.	PRICE
11	150	9.0	MD-M11.0X150	4.38
12	150	9.0	MD-M12.0X150	4.38
13	150	9.5	MD-M13.0X150	4.96
14	150	9.5	MD-M14.0X150	6.82
16	150	12.7	MD-M16.0X150	7.32
18	160	12.7	MD-M18.0X160	12.48
19	150	12.7	MD-M19.0X150	12.48
20	150	12.7	MD-M20.0X150	12.48
22	150	12.7	MD-M22.0X150	15.88
25	160	12.7	MD-M25.0X160	CALL

CARBIDE TIPPED

“YANKEE” (PUSH) DRILLS**SPECIAL PURPOSE**

Carbide Tipped Yankee Push Drills are designed to fit Yankee Push Drill systems where 3/16" and 1/4" anchor holes are required. They are ideal for drywall and concrete block.

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
3/16	2-1/8	CTYPD012	4.28

CARBIDE TIPPED

GLASS DRILLS

ICS USA

SPECIAL PURPOSE**SPEAR POINT**

Carbide Tipped Glass Drills are designed for drilling glass, mirror glass, tile, ceramics, and porcelain. Special spear point allows a precise hole to start without walking and can also be used to drill a hole smaller than drill diameter. For best results, apply firm pressure at low speed, using water or turpentine as a lubricant.

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
1/8	2-1/2	CTGD008	6.82
5/32	2-1/2	CTGD010	7.64
3/16	2-1/2	CTGD012	7.06
1/4	2-1/2	CTGD016	7.96
5/16	2-1/2	CTGD020	9.46
3/8	3	CTGD024	12.84

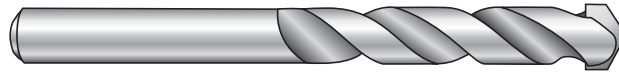
SIZE	OVERALL LENGTH	ITEM NO.	PRICE
1/2	3	CTGD032	18.36
9/16	4	CTGD036	19.32
5/8	4	CTGD040	21.42
3/4	4	CTGD048	25.62
7/8	4	CTGD056	31.50
1	4	CTGD100	31.50

CARBIDE TIPPED MASONRY HAMMER DRILLS

ICS USA

HEAVY DUTY

PERCUSSION DRILL POINT

DUAL
PURPOSEWIDE
SPIRAL

Carbide Tipped Wide Spiral Flute Masonry Hammer Drill Bits are designed for rotary or percussion drilling into concrete, masonry, marble, stone and rock. The impact action and rotation created by the percussion drill breaks up the concrete for faster use and harder materials. A special carbide tip with a 130° point and negative angle provides fast penetration in percussion mode, but drill 10% slower when in rotary mode.

SIZE mm	OVERALL LENGTH	SHANK SIZE	ITEM NO.	PRICE
1/8	3	1/8	MDH008X03	2.12
5/32	3	9/64	MDH010X03	2.12
11/64	3	9/64	MDH011X03	2.12
3/16	4	3/16	MDH012X04	2.26
3/16	6	3/16	MDH012X06	2.94
7/32	4	3/16	MDH014X04	2.48
1/4	4	1/4	MDH016X04	2.60
1/4	6	1/4	MDH016X06	3.20
1/4	13	1/4	MDH016X13	7.64
1/4	18	1/4	MDH016X18	12.94
1/4	24	1/4	MDH016X24	14.12
1/4	30	1/4	MDH016X30	15.88
9/32	4	1/4	MDH018X04	2.94
5/16	4	1/4	MDH020X04	2.94
5/16	6	1/4	MDH020X06	3.54
5/16	13	1/4	MDH020X13	8.36
5/16	18	1/4	MDH020X18	14.12
5/16	24	1/4	MDH020X24	15.88
5/16	30	1/4	MDH020X30	17.90
3/8	4	1/4	MDH024X04	3.66
3/8	6	1/4	MDH024X06	4.12
3/8	6	3/8	MDH024X06A	4.12
3/8	13	1/4	MDH024X13	14.70
3/8	18	3/8	MDH024X18	14.70
3/8	24	3/8	MDH024X24	16.46
3/8	30	3/8	MDH024X30	18.58
7/16	4	1/4	MDH028X04	4.38
7/16	6	1/4	MDH028X06	4.96
7/16	6	3/8	MDH028X06A	4.96
7/16	13	3/8	MDH028X13	CALL

SIZE mm	OVERALL LENGTH	SHANK SIZE	ITEM NO.	PRICE
7/16	18	3/8	MDH028X18	15.88
1/2	4	1/4	MDH032X04	5.30
1/2	6	1/4	MDH032X06	6.14
1/2	6	3/8	MDH032X06A	6.14
1/2	13	3/8	MDH032X13	12.94
1/2	18	3/8	MDH032X18	18.24
1/2	24	3/8	MDH032X24	20.58
1/2	30	3/8	MDH032X30	23.52
9/16	6	3/8	MDH036X06	8.00
9/16	13	1/2	MDH036X13	20.00
9/16	18	1/2	MDH036X18	24.26
5/8	6	3/8	MDH040X06	8.48
5/8	6	1/2	MDH040X06A	8.48
5/8	13	1/2	MDH040X13	16.00
5/8	18	1/2	MDH040X18	21.76
11/16	6	1/2	MDH044X06	11.76
3/4	6	3/8	MDH048X06	12.84
3/4	6	1/2	MDH048X06A	12.84
3/4	13	1/2	MDH048X13	20.00
3/4	18	1/2	MDH048X18	24.26
7/8	6	1/2	MDH056X06	15.88
7/8	13	1/2	MDH056X13	23.52
7/8	18	1/2	MDH056X18	32.94
1	6	1/2	MDH100X06	19.40
1	13	1/2	MDH100X13	30.00
1	18	1/2	MDH100X18	42.46
1-1/8	6	1/2	MDH108X06	26.12
1-1/4	18	1/2	MDH116X18	65.86
1-3/8	18	1/2	MDH124X18	70.56
1-1/2	18	1/2	MDH132X18	88.20

PACKAGING

1/8 x 3" to 3/4 x 18" Length - 1 Drill/Vinyl Pouch

7/8 x 6" up to 1-1/2 x 18" Length - 1 Drill/Tube

1/4 x 24" up to 1/2 x 30" Length - 1 Drill/Tube

Extra Long Carbide Tipped Bellhanger Masonry Drills on page 108 are designed to do very deep hole drilling. Lengths up to 72" are available.

TAPCON® BITS - TANG STYLE - STRAIGHT SHANK**ICS USA****SPECIAL PURPOSE****ROTARY DRILL POINT**STRAIGHT TANG
SHANKWIDE
SPIRAL

Carbide Tipped Straight Shank Tapcon Bits are designed for use in Tapcon®, Condrive®, and Black and Decker® drilling systems for setting masonry anchor screws with self-cutting threads. Straight shank Tapcon bits can be used in any drill with a 3-jawed drill chuck. All ICS straight shank Tapcon bits meet or exceed all tolerances recommended by manufacturers of screw-type masonry anchors. They are also known as Screw-Type Anchor Bits or Concrete Screw Drill Bits.

SIZE x LENGTH	FOR THESE SIZE ANCHORS	ITEM NO.	PRICE
5/32 x 3-1/2	3/16 x 1-1/4 3/16 x 1-3/4	MD-TC010X03	2.60
5/32 x 4-1/2	3/16 x 1-3/4 3/16 x 2-1/4 3/16 x 2-3/4	MD-TC010X04	2.94
5/32 x 5-1/2	3/16 x 3-1/4 3/16 x 3-3/4 3/16 x 4	MD-TC010X05	3.20

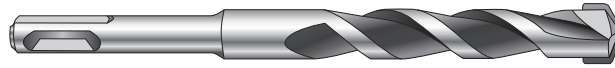
SIZE x LENGTH	FOR THESE SIZE ANCHORS	ITEM NO.	PRICE
3/16 x 3-1/2	1/4 x 1-1/4 1/4 x 1-3/4	MD-TC012X03	2.72
3/16 x 4-1/2	1/4 x 2-1/4 1/4 x 2-3/4	MD-TC012X04	3.08
3/16 x 5-1/2	1/4 x 3-1/4 1/4 x 3-3/4 1/4 x 4	MD-TC012X05	3.42
3/16 x 6-3/4	1/4 x 5	MD-TC012X06	4.38
3/16 x 7-5/8	1/4 x 6	MD-TC012X07	5.06

TAPCON® HEX ROTARY HAMMER BITS - SDS-PLUS**ICS WIS****SPECIAL PURPOSE****HAMMER DRILL POINT**4 SLOT (SDS)
HEX DRIVE SHANKWIDE
SPIRAL

Carbide Tipped SDS-Plus Tapcon Hex Drive Rotary Hammer Bits are designed for use in Tapcon®, Condrive®, and Black and Decker® drilling systems for setting masonry anchor screws with self-cutting threads. SDS-Plus Tapcon hex drive bits have a 5/16" hex directly below the shank which fits into driver sleeve for installation. All ICS SDS-Plus Tapcon hex drive rotary hammer bits meet or exceed all tolerances recommended by manufacturers of screw-type masonry anchors. They are also known as Carbide Tipped Screw-Type Anchor Bits or Carbide Tipped Concrete Screw Drill Bits.

SIZE x LENGTH	FOR THESE SIZE ANCHORS	ITEM NO.	PRICE
5/32 x 5	3/16 x 3-1/4 3/16 x 3-3/4 3/16 x 4	MD-SDSH010X05	12.92
5/32 x 7	3/16 (extra reach)	MD-SDSH010X07	18.82

SIZE x LENGTH	FOR THESE SIZE ANCHORS	ITEM NO.	PRICE
3/16 x 5	1/4 x 3-1/4 1/4 x 3-3/4 1/4 x 4	MD-SDSH012X05	13.30
3/16 x 7	1/4 x 5 1/4 x 6	MD-SDSH012X07	18.82

MASONRY HAMMER DRILLS - SDS SHANK**ICS USA****HEAVY DUTY****HAMMER DRILL POINT**4 SLOT
SDS SHANKPARABOLIC
FLUTE

Carbide Tipped Slot Drive System SDS Masonry Hammer Drills are designed for use with all rotary hammers that specify SDS-Plus shank hammer drills. SDS plus shank hammer bits have 4 U-shaped slots cut into the .393 diameter shank, 2 positive rotary drive slots and 2 ball retainer slots to ensure a positive fit between the bit and the bit holder on a SDS-Plus rotary hammer drill which makes possible the most power transmission to the cutting edge for high speed drilling of holes up to 1" in diameter in concrete, masonry and stone. They are also known as SDS Plus Drill Bits.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
5/32	4-1/2	2	MD-SDS010X04	9.20
3/16	4-1/2	2	MD-SDS012X04	8.24
3/16	6-1/2	4	MD-SDS012X06	9.42
3/16	8	6	MD-SDS012X08	10.58
3/16	10	8	MD-SDS012X10	18.82
3/16	14	12	MD-SDS012X14	27.06
7/32	6	4	MD-SDS014X06	9.42
7/32	8	6	MD-SDS014X08	14.78
7/32	14	12	MD-SDS014X14	25.88
1/4	4	2	MD-SDS016X04	8.82
1/4	6	4	MD-SDS016X06	9.42
1/4	9	6	MD-SDS016X09	10.58
1/4	12	9	MD-SDS016X12	16.46
1/4	16	14	MD-SDS016X16	32.34
1/4	20	18	MD-SDS016X20	41.16
5/16	4-1/2	2	MD-SDS020X04	11.32
5/16	6	4	MD-SDS020X06	12.36
5/16	12	10	MD-SDS020X12	22.34
3/8	6	4	MD-SDS024X06	12.02
3/8	9	6	MD-SDS024X09	17.06
3/8	14	11	MD-SDS024X14	23.42
3/8	18	14	MD-SDS024X18	28.46
3/8	20	18	MD-SDS024X20	33.78
3/8	24	22	MD-SDS024X24	44.70
3/8	36	34	MD-SDS024X36	70.56
7/16	6	4	MD-SDS028X06	17.06
7/16	12	10	MD-SDS028X12	24.18
7/16	18	16	MD-SDS028X18	33.52
1/2	6	4	MD-SDS032X06	14.96

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1/2	9	6	MD-SDS032X09	20.94
1/2	14	10	MD-SDS032X14	24.12
1/2	18	14	MD-SDS032X18	30.94
1/2	22	18	MD-SDS032X22	34.70
1/2	38	35	MD-SDS032X38	73.50
9/16	6	4	MD-SDS036X06	21.42
9/16	12	10	MD-SDS036X12	22.34
9/16	18	16	MD-SDS036X18	40.92
5/8	6	4	MD-SDS040X06	22.22
5/8	9	6	MD-SDS040X09	22.94
5/8	14	10	MD-SDS040X14	33.52
5/8	18	14	MD-SDS040X18	48.12
5/8	22	18	MD-SDS040X22	59.98
5/8	36	34	MD-SDS040X36	127.02
11/16	9	6	MD-SDS044X09	40.26
3/4	6	4	MD-SDS048X06	35.78
3/4	9	6	MD-SDS048X09	32.58
3/4	14	10	MD-SDS048X14	44.10
3/4	18	14	MD-SDS048X18	58.76
3/4	22	18	MD-SDS048X22	73.60
27/32	9	6	MD-SDS054X09	52.72
7/8	6	4	MD-SDS056X06	47.04
7/8	9	6	MD-SDS056X09	52.72
7/8	14	10	MD-SDS056X14	60.72
7/8	18	14	MD-SDS056X18	65.82
1	9	6	MD-SDS100X09	58.54
1	14	10	MD-SDS100X14	65.24
1	18	14	MD-SDS100X18	88.72
1	30	28	MD-SDS100X30	144.66

MASONRY DRILL SETS - SDS SHANK**METAL CASE**

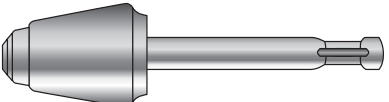
ILLUSTRATION	TYPE OF DRILL	ITEM NO.	PRICE
7 PC DRILL SETS Sizes 3/16 to 1/2 (Wt. 1.40 lbs.)	Masonry (SDS Shank) Hammer Drills	MDS-SDS-7	97.74
	Masonry (Ramset Shank) Hammer Drills	MDS-RAM-7	106.56
	SIZES OF MASONRY DRILLS IN SETS		
	1 each: 3/16 x 4, 1/4 x 4		
	2 each: 1/4 x 6		
	1 each: 5/16 x 6, 3/8 x 6, 1/2 x 6		

SDS SHANK QUICK RELEASE ADAPTERS

ADAPTERS FOR HILTI TE-12, 17, 22, SDS, AND RAMSET

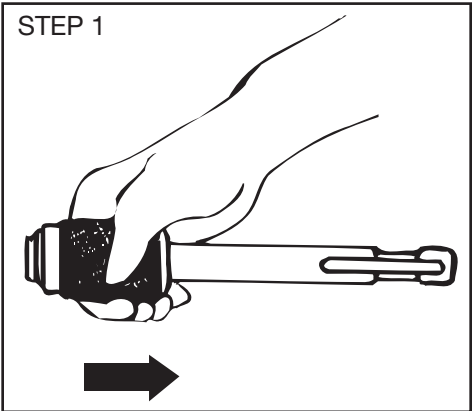
ICS WIS

SDS Shank adapters allow you to use 2 slot and 4 slot shank masonry drills with different models of electric hammer drills. Each shank configuration will fit the hammer drill model numbers listed.

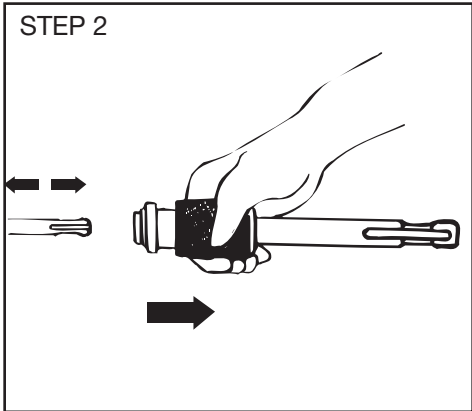
ILLUSTRATION	FITS	ITEM NO.	PRICE
	Fits all popular spline drive power tools. See pages 162-163 for complete listing.	SDS-SPLINE	98.78
	Hilti TE 52, 60 Hilti TE 70, 92	SDS-TE60	103.50
	Bosch 11216, SDS-MAX Hilti TE 64, TE-Y Hilti TE 52, 60 Hilti TE 72, 92	SDS-MAX	112.90

Important: Adapters are designed for intermittent use. A power loss of 10-15% and increased bit wear of 15-20% will result when using adapters.

HOW TO USE SDS QUICK RELEASE SHANK ADAPTERS



Pull back locking sleeve.



Use this position to insert or remove drill bit.

MASONRY HAMMER DRILLS - 2 SLOT SHANK

ICS

USA

HEAVY DUTY

HAMMER DRILL POINT

2 SLOT
3/4" DIA. SHANKPARABOLIC
FLUTE

FOR USE WITH HILTI TE 52, 60, 72, 92 HAMMER DRILL

2 Slot Shank Carbide Tipped Masonry Hammers Drills have a special impact carbide tip with negative tip angle and 130° point. Made to withstand the shock and impact of the hardest hitting rotary hammer drills. Will quickly penetrate the toughest aggregate.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/8	12	6	MD-TE60-024X12	59.24
1/2	12	6	MD-TE60-032X12	61.52
1/2	22	16	MD-TE60-032X22	74.54
1/2	36	28	MD-TE60-032X36	124.66
5/8	12	6	MD-TE60-040X12	62.64
5/8	22	16	MD-TE60-040X22	82.40
5/8	36	28	MD-TE60-040X36	143.00
3/4	12	6	MD-TE60-048X12	56.76
3/4	22	16	MD-TE60-048X22	73.86
3/4	36	28	MD-TE60-048X36	149.94
7/8	12	6	MD-TE60-056X12	68.10
7/8	22	16	MD-TE60-056X22	85.00
7/8	36	28	MD-TE60-056X36	157.52

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1	12	6	MD-TE60-100X12	77.04
1	22	16	MD-TE60-100X22	109.04
1	36	28	MD-TE60-100X36	188.12
1-1/8	22	16	MD-TE60-108X22	109.04
1-1/8	36	28	MD-TE60-108X36	188.12
1-1/4	16	10	MD-TE60-116X16	108.74
1-1/4	22	16	MD-TE60-116X22	129.88
1-1/4	36	28	MD-TE60-116X36	206.10
1-3/8	22	16	MD-TE60-124X22	162.54
1-3/8	36	28	MD-TE60-124X36	241.24
1-1/2	16	10	MD-TE60-132X16	128.18
1-1/2	22	16	MD-TE60-132X22	164.48
1-1/2	36	28	MD-TE60-132X36	276.42

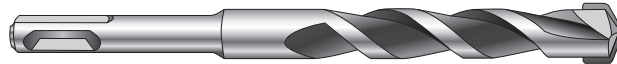
MASONRY HAMMER DRILLS - 4 SLOT SHANK

ICS

USA

HEAVY DUTY

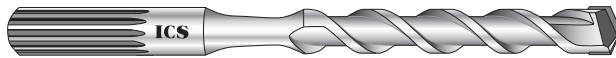
HAMMER DRILL POINT

4 SLOT
MAGIC SHANKPARABOLIC
FLUTE

4 Slot Shank Carbide Tipped Masonry Hammers Drills are for use in Ramset Dinadrill #330 or any SDS style power drill. They fit all two and four slot drive systems. Special impact carbide tip with negative angle and 130° point.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/16	4-1/2	2	MD-RAM012X04	9.38
3/16	6	4	MD-RAM012X06	11.44
1/4	4-1/2	2	MD-RAM016X04	11.44
1/4	6-1/2	4	MD-RAM016X06	12.62
1/4	8	6	MD-RAM016X08	16.24
5/16	6	4	MD-RAM020X06	15.86
5/16	9	6	MD-RAM020X09	16.76
5/16	12	10	MD-RAM020X12	25.54
3/8	6-1/2	4	MD-RAM024X06	14.12
3/8	9	6	MD-RAM024X09	19.30
3/8	12	10	MD-RAM024X12	25.88
7/16	6	4	MD-RAM028X06	20.32
7/16	12	10	MD-RAM028X12	26.60
7/16	18	16	MD-RAM028X18	36.82
1/2	6-1/2	4	MD-RAM032X06	18.24
1/2	9	6	MD-RAM032X09	25.64
1/2	14	10	MD-RAM032X14	31.16
1/2	18	16	MD-RAM032X18	38.74

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
9/16	6	4	MD-RAM036X06	24.96
9/16	12	10	MD-RAM036X12	34.04
9/16	18	16	MD-RAM036X18	44.44
5/8	6	4	MD-RAM040X06	26.88
5/8	9	6	MD-RAM040X09	30.12
5/8	12	8	MD-RAM040X12	40.58
5/8	18	16	MD-RAM040X18	53.80
11/16	6	4	MD-RAM044X06	43.88
3/4	6	4	MD-RAM048X06	39.30
3/4	9	6	MD-RAM048X09	43.28
3/4	12	10	MD-RAM048X12	50.28
3/4	18	16	MD-RAM048X18	61.52
27/32	6	4	MD-RAM054X06	56.46
7/8	6	4	MD-RAM056X06	50.50
7/8	9	6	MD-RAM056X09	55.22
7/8	18	16	MD-RAM056X18	76.70
1	10	6	MD-RAM100X10	63.06
1	18	16	MD-RAM100X18	84.44

MASONRY HAMMER DRILLS - SDS-MAX**ICS****USA****HEAVY DUTY****HAMMER DRILL POINT**5 SLOT
SDS-MAX SHANKPARABOLIC
FLUTE

SINGLE CUTTER DESIGN

Carbide Tipped SDS-MAX Heavy Duty Slot Drive Masonry Hammer Drills with single cutting edge are designed for use with large SDS-MAX drive rotary hammers. SDS-MAX drive hammer bits have 5 U-shaped slots cut into the .708 diameter shank, 3 positive rotary drive slots, and 2 ball retainer slots to hold bit in rotary hammer. They are used for drilling large diameter holes in concrete, masonry and stone.

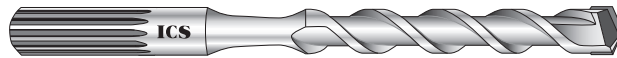
NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/8	13-1/2	7	MD-MAX024X13	59.24
1/2	13-1/2	7	MD-MAX032X13	61.52
1/2	21	16	MD-MAX032X21	74.54
1/2	30	25	MD-MAX032X30	CALL
1/2	36	31	MD-MAX032X36	124.66
9/16	13	7	MD-MAX036X13	61.40
9/16	21	16	MD-MAX036X21	85.26
5/8	13	7	MD-MAX040X13	62.64
5/8	21	16	MD-MAX040X21	82.40
5/8	30	25	MD-MAX040X30	82.40
5/8	36	31	MD-MAX040X36	142.62
3/4	13	7	MD-MAX048X13	56.76
3/4	21	16	MD-MAX048X21	73.86
3/4	30	25	MD-MAX048X30	CALL
3/4	36	31	MD-MAX048X36	149.94
7/8	13	8	MD-MAX056X13	68.10
7/8	21	16	MD-MAX056X21	85.00
1	13	8	MD-MAX100X13	77.04
1	21	16	MD-MAX100X21	100.32
1	36	31	MD-MAX100X36	188.16
1-1/8	13	8	MD-MAX108X13	85.74
1-1/8	21	16	MD-MAX108X21	109.04
1-1/4	15	10	MD-MAX116X15	108.74
1-1/4	21	16	MD-MAX116X21	129.88
1-3/8	21	16	MD-MAX124X21	162.64
1-1/2	21	16	MD-MAX132X21	164.48

5 SLOT SHANK (SDS-MAX®) BITS FIT THE FOLLOWING HAMMERS
(Complete Global Reference on Pages 29-30)

BOSCH®	HILTI®	HILTI®
11216	TE-54	TE 52, 60
SDS-MAX	TE-Y (New)	TE 72, 92

Quick Reference for 5 Slot Shank (SDS-MAX) Tools

SDS ADAPTERS	A & B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
PAGE NO. OF ITEMS AVAILABLE			
15	22	7-8	27-28

MASONRY HAMMER DRILLS - SDS-MAX**ICS****USA****HEAVY DUTY****HAMMER DRILL POINT**5 SLOT
SDS-MAX SHANKPARABOLIC
FLUTE

MULTI CUTTER DESIGN

Carbide Tipped SDS-MAX Heavy Duty Slot Drive Masonry Hammer Drills with 4 cross cutting edges are designed for use with large SDS-MAX drive rotary hammers. The 4 cross cutting edges pulverize the material to be drilled better and quicker than single edge hammer bits. SDS-MAX drive hammer bits have 5 U-shaped slots cut into the .708" diameter shank, 3 positive rotary drive slots, and 2 ball retainer slots to hold bit in rotary hammer. It is the toughest drill of its kind and is often used instead of a carbide tipped core drill for drilling large diameter holes in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/8	13	7	MD-MAXX024X13	59.24
1/2	13	7	MD-MAXX032X13	61.52
1/2	21	15	MD-MAXX032X21	74.54
1/2	30	24	MD-MAXX032X30	108.34
1/2	36	30	MD-MAXX032X36	124.10
9/16	13	7	MD-MAXX036X13	61.40
9/16	21	15	MD-MAXX036X21	85.26
5/8	13	7	MD-MAXX040X13	82.40
5/8	21	15	MD-MAXX040X21	82.40
5/8	30	24	MD-MAXX040X30	113.88
3/4	13	7	MD-MAXX048X13	56.76
3/4	21	15	MD-MAXX048X21	73.86
3/4	30	24	MD-MAXX048X30	117.50
7/8	13	7	MD-MAXX056X13	68.10
7/8	21	15	MD-MAXX056X21	85.00
1	13	7	MD-MAXX100X13	77.04
1	21	15	MD-MAXX100X21	85.00
1	36	30	MD-MAXX100X36	188.16
1-1/8	13	7	MD-MAXX108X13	85.74
1-1/8	21	15	MD-MAXX108X21	109.04
1-1/4	15	9	MD-MAXX116X15	109.04
1-1/4	21	15	MD-MAXX116X21	129.88
1-3/8	21	15	MD-MAXX124X21	162.64
1-1/2	15	9	MD-MAXX132X15	128.18
1-1/2	21	15	MD-MAXX132X21	164.50

5 SLOT SHANK (SDS-MAXX®) BITS FIT THE FOLLOWING HAMMERS
(Complete Global Reference on Pages 29-30)

BOSCH ®	HILTI ®	HILTI ®
11216	TE-54	TE 52, 60
SDS-MAX	TE-Y (New)	TE 72, 92

Quick Reference for 5 Slot Shank (SDS-MAX) Tools

SDS ADAPTERS	A & B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
PAGE NO. OF ITEMS AVAILABLE			
15	22	7-8	27-28

MASONRY HAMMER DRILLS - SPLINE SHANK**SINGLE CUTTER DESIGN****ICS** **USA/EUR****HEAVY DUTY****HAMMER DRILL POINT****SPLINE
SHANK****PARABOLIC
FLUTE**

Carbide Tipped Spline Shank Drive Masonry Hammer Drills with a single cutting edge are designed for use with spline-drive rotary hammers. Spline drive hammer bits have 12 splines cut into the 3/4" diameter shank to ensure a positive fit between the bit and the bit holder on a spline drive rotary hammer which makes possible the most power transmission to the cutting edge for high speed drilling of large diameter holes in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/8	12	6	MD-S024X12	47.72
3/8	18	12	MD-S024X18	59.98
1/2	12	6	MD-S032X12	47.72
1/2	16	10	MD-S032X16	52.92
1/2	22	16	MD-S032X22	71.12
1/2	36	28	MD-S032X36	112.90
9/16	12	6	MD-S036X12	50.58
5/8	12	6	MD-S040X12	50.58
5/8	16	10	MD-S040X16	52.92
5/8	22	16	MD-S040X22	71.82
5/8	36	28	MD-S040X36	143.00
11/16	12	6	MD-S044X12	68.22
3/4	12	6	MD-S048X12	54.10
3/4	16	10	MD-S048X16	56.46
3/4	22	16	MD-S048X22	74.00
3/4	36	28	MD-S048X36	149.46
7/8	12	6	MD-S056X12	62.68
7/8	16	10	MD-S056X16	69.28
7/8	22	16	MD-S056X22	79.72

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
7/8	36	22	MD-S056X36	151.70
1	12	6	MD-S100X12	65.86
1	16	10	MD-S100X16	75.26
1	22	16	MD-S100X22	88.80
1	36	28	MD-S100X36	188.16
1-1/8	16	10	MD-S108X16	85.86
1-1/8	22	16	MD-S108X22	99.96
1-1/8	36	28	MD-S108X36	209.18
1-1/4	16	10	MD-S116X16	89.38
1-1/4	22	16	MD-S116X22	110.54
1-1/4	36	28	MD-S116X36	229.18
1-3/8	16	10	MD-S124X16	99.96
1-3/8	22	16	MD-S124X22	128.18
1-3/8	36	28	MD-S124X36	268.26
1-1/2	16	10	MD-S132X16	117.60
1-1/2	22	16	MD-S132X22	147.00
1-1/2	36	28	MD-S132X36	307.38
2	16	10	MD-S200X16	205.80
2	22	16	MD-S200X22	232.86

SPLINE DRIVE BITS (MD-S) FIT THE FOLLOWING HAMMERS

(Complete Global Reference on Pages 29-30)

AEG ®	B&D ®	BOSCH ®	HITACHI ®	METABO ®	MILWAUKEE ®
PH-350	5041	11202	DH 38 YA	RH 66	47
PH-350 D	5042	11203	DS 50 SB	RH 99	48
PH-350 HD	5043	11204	DS 50 SB	RH 99X	5343
PH-2400	5044	11205	DH 384 A	1129	5344
PH-38	2022	11206		1128	5347
PHD-38	2032	11208		1130	5348
PHD-26	2038	11209		1131	
PH-240 D		11214			

KANGO ®	MAKITA ®	ITT PHILIPS ®	PORTER CABLE ®	RAMSET ®	RYOBI ®
637 S	HR 3851	747-2	639	442	ED 382 P
950 S		RED HEAD®		445	
		747-2			

Quick Reference for Spline Shank (MD-S) Tools

SDS ADAPTERS	A & B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
PAGE NO. OF ITEMS AVAILABLE			
15	22	7-8	27-28

CARBIDE TIPPED MASONRY HAMMER DRILLS - SPLINE SHANK MULTI CUTTER DESIGN

ICS USA

HEAVY DUTY

CROSS HEAD POINT

SPLINE
SHANKPARABOLIC
FLUTE

Carbide Tipped Spline Shank Drive Masonry Hammer Drills with 4 cross cutting edges are designed for use with spline drive rotary hammers. The 4 cross cutting edges pulverize the material to be drilled better and quicker than single edge hammer bits. Spline drive hammer bits have 12 splines cut into the 3/4" diameter shank to ensure a positive fit between the bit and the bit holder on a spline drive rotary hammer which makes possible the most power transmission to the cutting edge for high speed drilling of large diameter holes in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/4	12	6	MD-SX048X12	63.22
3/4	18	12	MD-SX048X18	70.72
3/4	23	17	MD-SX048X23	78.80
7/8	12	6	MD-SX056X12	67.60
7/8	18	12	MD-SX056X18	75.50
7/8	23	17	MD-SX056X23	83.92
1	12	6	MD-SX100X12	70.94
1	18	12	MD-SX100X18	84.66
1	23	17	MD-SX100X23	97.44
1-1/8	18	12	MD-SX108X18	96.14

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1-1/8	23	17	MD-SX108X23	112.16
1-1/4	18	12	MD-SX116X18	110.24
1-1/4	23	17	MD-SX116X23	125.58
1-3/8	23	17	MD-SX124X23	152.14
1-1/2	18	12	MD-SX132X18	142.18
1-1/2	23	17	MD-SX132X23	170.70
1-5/8	23	17	MD-SX140X23	294.00
1-3/4	23	17	MD-SX148X23	308.70
2	23	17	MD-SX200X23	315.42

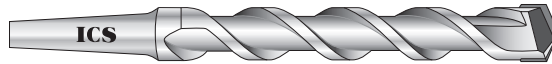
SPLINE DRIVE BITS (MD-SX) FIT THE FOLLOWING HAMMERS
(Complete Global Reference on Pages 29-30)

AEG ®	B&D ®	BOSCH ®	HITACHI ®	METABO ®	MILWAUKEE ®
PH-350	5041	11202	DH 38 YA	RH 66	47
PH-350 D	5042	11203	DS 50 SB	RH 99	48
PH-350 HD	5043	11204	DS 50 SB	RH 99X	5343
PH-2400	5044	11205	DH 384 A	1129	5344
PH-38	2022	11206		1128	5347
PHD-38	2032	11208		1130	5348
PHD-26	2038	11209		1131	
PH-240 D		11214			

KANGO ®	MAKITA ®	ITT PHILIPS ®	PORTER CABLE ®	RAMSET ®	RYOBI ®
637 S	HR 3851	747-2	639	442	ED 382 P
950 S		RED HEAD®		445	
		747-2			

Quick Reference for Spline Shank (MD-SX) Tools

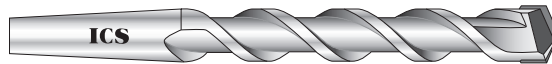
SDS ADAPTERS	A & B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
PAGE NO. OF ITEMS AVAILABLE			
15	22	7-8	27-28

MASONRY HAMMER BITS - "A" TAPER SHANK**ICS USA****HEAVY DUTY****HAMMER DRILL POINT****"A" TAPER
SHANK****PARABOLIC
FLUTE**

Carbide Tipped "A" Taper Shank Masonry Hammer Bits are designed to fit into "A" taper chuck adapters which allow "A" taper shank masonry hammer bits to be used with almost any current or discontinued model hammer drill. They are manufactured with a taper of 1:20 and are intended for drilling holes from 3/16" to 7/8" in concrete, masonry and stone. They are also known as Taper Shank Rotary Hammer Drill Bits.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/16	6	3-1/2	MD-A012X06	9.60
1/4	6	3-1/2	MD-A016X06	9.14
1/4	12	10	MD-A016X12	21.06
5/16	6	3-1/2	MD-A020X06	10.90
3/8	6	3-1/2	MD-A024X06	11.72
3/8	9	6	MD-A024X09	14.36
3/8	12	9	MD-A024X12	20.72
3/8	20	18	MD-A024X20	31.84
7/16	6	3-1/2	MD-A028X06	16.46
1/2	6	3-1/2	MD-A032X06	14.60
1/2	9	6	MD-A032X09	19.90
1/2	12	9	MD-A032X12	25.24
1/2	20	17	MD-A032X20	33.48

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
9/16	5 - 6	3-1/2	MD-A036X06	17.38
9/16	9	6	MD-A036X09	20.24
5/8	5 - 6	3	MD-A040X06	19.20
5/8	9	6	MD-A040X09	24.70
5/8	12	9	MD-A040X12	33.70
5/8	18	16	MD-A040X18	43.16
11/16	5 - 6	3	MD-A044X06	23.42
11/16	9	5	MD-A044X09	26.32
3/4	5-1/2 - 6	3	MD-A048X06	24.46
3/4	9	6	MD-A048X09	33.06
3/4	12	9	MD-A048X12	38.82
3/4	18	16	MD-A048X18	49.00
7/8	6	4	MD-A056X06	37.64

MASONRY HAMMER BITS - "B" TAPER SHANK**ICS USA****HEAVY DUTY****HAMMER DRILL POINT****"B" TAPER
SHANK****PARABOLIC
FLUTE**

Carbide Tipped "B" Taper Shank Masonry Hammer Bits are designed to fit into "B" taper chuck adapter which allow "B" taper shank masonry hammer bits to be used with almost any current or discontinued model hammer drill. They are manufactured with a taper of 1:10 and are intended for drilling holes from 1/2" to 1-1/4" in concrete, masonry and stone. They are also known as Taper Shank Rotary Hammer Drill Bits.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1/2	9	6	MD-B032X09	20.44
1/2	12	9	MD-B032X12	25.02
1/2	14	11	MD-B032X14	27.06
1/2	20	16	MD-B032X20	33.38
9/16	9	6	MD-B036X09	23.02
9/16	18	14	MD-B036X18	33.52
5/8	9	6	MD-B040X09	24.96
5/8	14	10	MD-B040X14	28.06
5/8	18-20	16	MD-B040X20	40.82
5/8	30	28	MD-B040X30	94.08
11/16	9	6	MD-B044X09	30.00
11/16	18	16	MD-B044X18	40.74

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/4	9	6	MD-B048X09	37.76
3/4	12-14	10	MD-B048X14	38.78
3/4	18-20	16	MD-B048X20	55.28
27/32	9	7	MD-B054X09	38.22
7/8	9	6	MD-B056X09	45.46
7/8	18	16	MD-B056X18	65.16
1	9	6	MD-B100X09	51.84
1	18	16	MD-B100X18	70.64
1-1/8	9	6	MD-B108X09	52.92
1-1/8	18	16	MD-B108X18	83.00
1-1/4	9	6	MD-B116X09	74.68
1-1/4	18	16	MD-B116X18	92.32

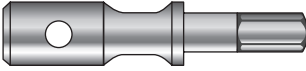
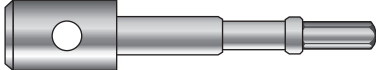
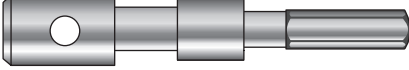
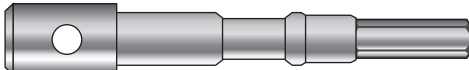
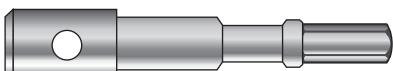
TAPER CHUCK ADAPTERS

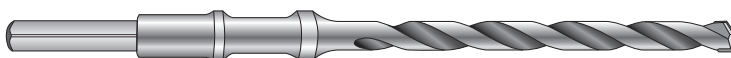
ADAPTERS FOR "A" AND "B" TAPER MASONRY DRILLS

ICS

USA

Taper chuck adapters allow you to use "A" or "B" taper shank masonry bits with almost any make of electric hammer drill. Each shank configuration will fit the hammer drill model numbers listed. A drift pin is included with each adapter.

ILLUSTRATION	FITS HAMMER MODEL	ITEM NO.		PRICE
		A TAPER	B TAPER	
	Skil 706, 707, 708 Skil 1706 B & D 5040, 5049 Rockwell 600, 601 Ramset 620	AT-706	—	45.86
	Skil 717	AT-717S		45.86
	B & D 717, 718, 719 B & D 5045, 5050 B & D 5046	AT-717BD	BT-717BD	45.86
	Skil 726 Milw 5300, 5310 Milw 5305, 5315	AT-726	BT-726	45.86
	Skil 728, 731, 732, 628 Rockwell 602, 605, 606 Rockwell 1602 B & D 5048 Milw 5325, 5326 Miller Falls SP499K	AT-728	BT-728	45.86
	Skil 736	—	BT-736	57.62
	Phillips 747, 700 Bosch 11201 Metabo RH 90, 65	AT-747	BT-747	49.40
	Ramset 330	AT-RAM	BT-RAM	38.82
	Fits all popular 4 slot power tools. See pages 162 - 163 for complete listing.	AT-SDS	BT-SDS	33.52
	Fits all popular spline drive power tools. See pages 162 - 163 for complete listing.	AT-Spline	BT-Spline	33.52
	Hilti TE 52, 60, 70, 92	AT-TE60	BT-TE60	42.34
	Wacker	AT-Wacker	BT-Wacker	57.62
	Bosch 11216, SDS-MAX Hilti TE 64, TE-Y Hilti TE 52, 60 Hilti TE 72, 92	AT-MAX	—	42.34

MASONRY (9/16" HEX SHANK) HAMMER DRILLS**ICS USA****HEAVY DUTY****HAMMER DRILL POINT**SKIL 728
HEX SHANKWIDE
SPIRAL

Carbide Tipped Heavy Duty 9/16" Hex Shank Masonry Hammer Drills, commonly classified as the Skil 728 Hex Shank, are designed to fit the following 9/16" hex drive rotary hammers:

Skil 628, 728, 731, 731, 732, 1760
Milwaukee 5325, 5326

Black and Decker 5048
Miller Falls SP 499K

Rockwell 602, 1602, 606, 616

(Complete Global Reference on Pages 162-163)

9/16" Hex shank rotary hammer drills have 6 flats on the shank to ensure a positive drive action and a flat bottom on the end of the shank for tough hammering of aggregate. They are used for drilling holes from 3/8" to 1-1/2" in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
7/16	10	4-1/2	MD-728-028X10	46.58
1/2	10	4-1/2	MD-728-032X10	52.80
9/16	13	7	MD-728-036X13	56.38
5/8	10	4-1/2	MD-728-040X10	58.78
5/8	16	10-1/2	MD-728-040X16	73.42
5/8	22	16-1/2	MD-728-040X22	88.34
11/16	13	7	MD-728-044X13	66.24
7/8	10	4-1/2	MD-728-056X10	69.04
7/8	17	11-1/2	MD-728-056X17	86.94
7/8	22	16-1/2	MD-728-056X22	97.90
1	12	7	MD-728-100X12	79.58

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1	17	11-1/2	MD-728-100X17	92.96
1	22	17	MD-728-100X22	105.98
1-1/8	17	11-1/2	MD-728-108X17	103.58
1-1/8	22	17	MD-728-108X22	120.48
1-1/4	17	11-1/2	MD-728-116X17	126.34
1-1/4	22	17	MD-728-116X22	143.24
1-3/8	17	11-1/2	MD-728-124X17	143.24
1-3/8	22	17	MD-728-124X22	167.62
1-1/2	17	11-1/2	MD-728-132X17	158.70
1-1/2	22	17	MD-728-132X22	187.40

MASONRY (3/8" HEX SHANK) HAMMER DRILLS**ICS USA****HEAVY DUTY****HAMMER DRILL POINT**SKIL 706
HEX SHANKWIDE
SPIRAL

Carbide Tipped Heavy Duty 3/8" Hex Shank Masonry Hammer Drills, commonly referred to as the Skil 706 hex shank, are designed for the following 3/8" hex drive rotary hammers:

Black and Decker 5040, 5048
Milwaukee M06

Rockwell 600, 601
Skil 706, 707, 708, 1706, 511

Ramset 620

3/8" hex shank rotary hammer drills have 6 flats on the shank to ensure a positive drive action and a flat bottom on the end of the shank for tough hammering of aggregate. They are used for drilling holes from 3/8" to 7/8" in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/8	9	5	MD-706-024X09	52.46
3/8	14	10	MD-706-024X14	74.16
7/16	9	5	MD-706-028X09	58.66
1/2	10	6	MD-706-032X10	60.00
1/2	14	10	MD-706-032X14	71.28
1/2	21	17	MD-706-032X21	82.50
5/8	10	6	MD-706-040X10	71.98
5/8	12	8	MD-706-040X12	76.18

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
5/8	16	12	MD-706-040X16	92.40
5/8	21	17	MD-706-040X21	94.84
11/16	10	6	MD-706-044X10	74.16
1	10	6	MD-706-048X10	74.16
3/4	16	12	MD-706-048X16	93.28
27/32	10	6	MD-706-054X10	74.16
7/8	10	6	MD-706-056X10	79.56
7/8	16	12	MD-706-056X16	105.72

DISCONTINUED

MASONRY (3/4" HEX SHANK) HAMMER DRILLS

ICS

USA

HEAVY DUTY

HAMMER DRILL POINT

SKIL 736
HEX SHANK



WIDE
SPIRAL

Carbide Tipped Heavy Duty 3/4" Hex Shank Masonry Hammer Drills, commonly classified as the Skil 736 Hex Shank, are designed to fit the following 3/4" hex drive rotary hammers.

Skil 736, 1770	Stanley HD20, 45

3/4" Hex shank rotary hammer drills have 6 flats on the shank to ensure a positive drive action and a flat bottom on the end of the shank for tough hammering of aggregate. They are used for drilling holes from 3/4" to 2" in concrete, masonry and stone.

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
3/4	24	18	MD-736-048X24	138.44
3/4	36	30	MD-736-048X36	388.08
7/8	24	18	MD-736-056X24	153.14
1	18	12	MD-736-100X18	124.20
1	24	18	MD-736-100X24	164.30
1-1/8	24	18	MD-736-108X24	181.62

NOMINAL		DRILLING DEPTH	ITEM NO.	PRICE
SIZE	LENGTH			
1-1/8	36	30	MD-736-108X36	365.76
1-1/8	48	42	MD-736-108X48	679.00
1-1/4	24	18	MD-736-116X24	224.56
1-1/4	36	30	MD-736-116X36	402.20
1-1/2	24	18	MD-736-132X24	250.92
2	24	18	MD-736-200X24	349.82

MASONRY (21.0MM HEX SHANK) HAMMER DRILLS**ICS USA****HEAVY DUTY****HAMMER DRILL POINT**KANGO 950
HEX SHANKPARABOLIC
FLUTE

Carbide Tipped Heavy Duty 21.0mm Hex Shank Masonry Drills, commonly classified as the Kango 950 Hex Shank, are designed to fit the following 21.0mm hex drive rotary hammers:

Kango 950, 900, 1400, 450x, 950x
Makita HR5000R/K, HM1200K

Hitachi DH505A, H555A
Ryobi CH 485PK

21.0mm hex shank rotary hammer drills have 6 flats on the shank to ensure a positive drive action and a flat bottom on the end of the shank for tough hammering of aggregate. They are used for drilling holes from 5/8" to 1-3/4" in concrete, masonry and stone.

NOMINAL		DRILLING	ITEM	PRICE
SIZE	LENGTH	DEPTH	NO.	
5/8	14	7	MD-950-040X14	63.36
5/8	19	12	MD-950-040X19	74.84
5/8	25	18	MD-950-040X25	108.98
3/4	25	18	MD-950-048X25	127.12
7/8	14	7	MD-950-056X14	98.28
7/8	25	18	MD-950-056X25	137.64
1	14	7	MD-950-100X14	98.28
1	25	18	MD-950-100X25	138.18

NOMINAL		DRILLING	ITEM	PRICE
SIZE	LENGTH	DEPTH	NO.	
1-1/8	14	7	MD-950-108X14	113.62
1-1/8	25	18	MD-950-108X25	156.42
1-1/4	14	7	MD-950-116X14	138.84
1-1/4	25	18	MD-950-116X25	204.98
1-1/2	14	7	MD-950-132X14	166.50
1-1/2	25	18	MD-950-132X25	238.28
1-3/4	25	18	MD-950-148X25	404.22

MASONRY (19.0MM HEX SHANK) HAMMER DRILLS**ICS USA****HEAVY DUTY****HAMMER DRILL POINT**KANGO 637
HEX SHANKPARABOLIC
FLUTE

Carbide Tipped Heavy Duty 19.0mm Hex Shank Masonry Drills, commonly classified as the Kango 637 Hex Shank, are designed to fit the following 19.0mm hex drive rotary hammers:

Kango 500,501, 625, 627, 637, 750, 750x

Rockwell 605, 607, 637, 750, 750x, 60

19.0mm hex shank rotary hammer drills have 6 flats on the shank to ensure a positive drive action and a flat bottom on the end of the shank for tough hammering of aggregate. They are used for drilling holes from 5/8" to 1-3/4" in concrete, masonry and stone.

NOMINAL		DRILLING	ITEM	PRICE
SIZE	LENGTH	DEPTH	NO.	
1/2	23	13	MD-637-032X23	78.40
5/8	13	7	MD-637-040X13	59.78
5/8	19	13	MD-637-040X19	71.70
5/8	23	17	MD-637-040X23	78.90
3/4	23	17	MD-637-048X23	88.50

NOMINAL		DRILLING	ITEM	PRICE
SIZE	LENGTH	DEPTH	NO.	
7/8	13	7	MD-637-056X13	84.36
7/8	23	17	MD-637-056X23	104.76
1	23	17	MD-637-100X23	121.42
1-1/4	19	13	MD-637-116X19	166.00

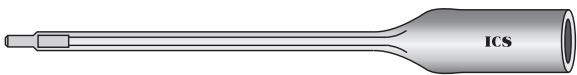
ELECTRIC HAMMER CHISELS

ICS USA

HEAVY DUTY

FORGED STEEL

ICS Electric Hammer Chisels are available in a variety of shank styles. The descriptions below will assist the hammer drill user in making a selection for their specific application.

ILLUSTRATION	SHANK STYLE	FITS/APPLICATION
	SPLINE (5/8" ROUND HEX)	Fits all makes of Spline Drive Hammers. Round hex shank works effectively in Spline Drive machines made with and without rotation / hammer only switches.
	SDS-PLUS	Fits all popular 4 slot power tools. Operator simply moves selector switch to percussion only mode to use.
	BOSCH SDS-MAX	Fits directly into new Bosch SDS-MAX Hammers and Hilti Hammers with large 2 slot bit locking systems.
	HEX-DEMOLITION (3/4" HEX)	Fits Bosch Models 11302 and 11305
	HEX-BREAKER (1-1/8" HEX)	Fits Bosch Model 11304 Hex Shank Chisels come with internal locks for Demolition Hammers and External Collars for Pneumatic Hammers.

DESCRIPTION	SIZE	NOMINAL LENGTH	SHANK STYLE	ITEM NO.	PRICE
BULL (MOIL) POINT  Electric Hammer Bull Point Chisels are designed for light demolition work and starting holes in concrete slabs, brick, mortar, slate etc... They are also known as Electric Hammer Moil Point Chisels.	(PT.)	12	SPLINE	EHC-BP-12S	25.28
	(PT.)	18	SPLINE	EHC-BP-18S	32.62
	(PT.)	10	SDS-PLUS	EHC-BP-10SDS	32.72
	(PT.)	12	SDS-MAX	EHC-BP-12MAX	26.64
	(PT.)	16	SDS-MAX	EHC-BP-16MAX	32.82
	(PT.)	12	HEX (3/4)	EHC-BP-12HD	25.28
	(PT.)	18	HEX (3/4)	EHC-BP-18HD	32.62
	(PT.)	12	HEX (1-1/8)	EHC-BP-12HB	47.54
FLAT (COLD) CHISEL  Electric Hammer Flat Chisels are designed for edging, chipping, scaling or channeling concrete, masonry or brick. They are also known as Electric Hammer Cold Chisels.	1	12	SPLINE	EHC-FC-12S	25.28
	1	18	SPLINE	EHC-FC-18S	32.62
	1	10	SDS-PLUS	EHC-FC-10SDS	32.72
	1	12	SDS-MAX	EHC-FC-12MAX	26.64
	1	16	SDS-MAX	EHC-FC-16MAX	32.82
	1	12	HEX (3/4)	EHC-FC-12HD	23.68
	1	18	HEX (3/4)	EHC-FC-18HD	32.40
	1	12	HEX (1-1/8)	EHC-FC-12HB	47.54
SCALING CHISEL  Electric Hammer Scaling Chisels are designed for removing scale, rust, concrete and weld spatter. They are also known as Electric Hammer Wide Chisels.	1-1/2	12	SPLINE	EHC-SC-12S-A	34.42
	1-1/2	18	SPLINE	EHC-SC-18S-A	41.02
	2	12	SPLINE	EHC-SC-12S-B	44.00
	2	18	SPLINE	EHC-SC-18S-B	45.98
	1-1/2	10	SDS-PLUS	EHC-SC-10SDS-A	34.34
	2	12	SDS-MAX	EHC-SC-12MAX	38.18
	2	16	SDS-MAX	EHC-SC-16MAX	66.50
	1-1/2	12	HEX (3/4)	EHC-SC-12HD-A	37.86
	1-1/2	18	HEX (3/4)	EHC-SC-18HD-A	37.86
	2	12	HEX (3/4)	EHC-SC-12HD-B	31.48
	2	18	HEX (3/4)	EHC-SC-18HD-B	41.02

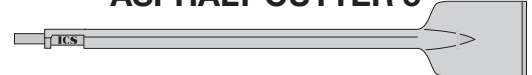
ELECTRIC HAMMER CHISELS

MAS-27

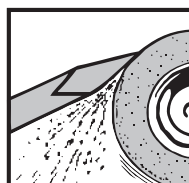
ICS USA

HEAVY DUTY

FORGED STEEL

DESCRIPTION	SIZE	NOMINAL LENGTH	SHANK STYLE	ITEM NO.	PRICE
SLOTING TOOL  Electric Hammer Slotting Chisels are designed for slotting and cutting web between drilled holes in concrete to make larger openings. Alternately known as an Electric Hammer Slotting Tool.	1/8	12	SPLINE	EHC-ST-12S	34.42
	1-1/4	12	SDS-MAX	EHC-ST-12MAX	42.40
	1-1/8	12	HEX (3/4)	EHC-ST-12HD	34.42
MORTAR (SEAM) CHISEL  Electric Hammer Mortar Chisels are for removing old mortar between bricks before tuck pointing or caulking. They can also be used to cut narrow channels or to remove bricks in wall for installing insulation. They are also known as Electric Hammer Seam Chisels or Brick Removing Chisels.	1-1/8	15	SPLINE	EHC-MC-15S	30.10
	1-1/8	12	SDS-MAX	EHC-MC-12MAX	44.48
	1-1/8	15	HEX (3/4)	EHC-MC-15HD	27.60
CLAY SPADE 5-1/2"  Electric Hammer Clay Spade Chisels are designed for digging out clay, hard packed gravel, dirt, shale etc... They are primarily used for landscaping and are not for use in concrete.	4-1/2	18	SPLINE	EHC-CS-18S	132.74
	4-1/2	16	SDS-MAX	EHC-CS-16MAX	128.74
	4-1/2	18	HEX (3/4)	EHC-CS-18HD	104.32
	5-1/2	16	HEX (1-1/8)	EHC-CS-16HB	195.32
ASPHALT CUTTER 5"  Electric Hammer Asphalt Cutter Chisels are designed for cutting or breaking up asphalt or hard ground. They are primarily used for road maintenance and are not for use in concrete. They are also known as Tarmac Chisels.	5	16	HEX (1-1/8)	EHC-AC-16HB	148.24
	5	16	HEX (3/4)	EHC-AC-16HD	127.46
	5	16	SDS-MAX	EHC-AC-16MAX	157.08
GROUND ROD DRIVER  Electric Hammer Ground Rod Drivers are designed for driving 5/8" or 3/4" electrical grounding rods into earth near the edge of structure foundation or for installing parking bumpers.	5/8 - 3/4	11	SPLINE	EHC-GRD-11S	128.12
	5/8 - 3/4	11	SDS-MAX	EHC-GRD-11MAX	128.12
	5/8 - 3/4	11	HEX (3/4)	EHC-GRD-11HD	123.16
BUSHING TOOL (1 PC TOOL)  The 1 Piece Electric Hammer Bushing Tool is a solid forged hammer chisel designed for roughing up concrete and asphalt prior to resurfacing. May be used to produce a rough exterior finish.	1-1/2 x 1-1/2	8	SPLINE	EHC-BT-S	112.62
	1-1/2 x 1-1/2	10	MAX	EHC-BT-MAX	122.06
	1-1/2 x 1-1/2	8	HEX (3/4)	EHC-BT-HD	112.62
	1-1/4 x 1-1/4	11-1/2	SDS-PLUS	EHC-BT-SDS	122.06
BUSHING TOOL (2 PC TOOL KIT)  The 2 Piece Electric Hammer Bushing Tool has a replaceable tool head and tool shank. It is designed for roughing up concrete and asphalt prior to resurfacing. It may also be used to produce a rough exterior finish.	1-1/2 x 1-1/2	8	SPLINE	EHC-BTK-S	61.74
	1-1/2 x 1-1/2	10	SDS-MAX	EHC-BTK-MAX	100.34
	1-1/2 x 1-1/2	8	HEX (3/4)	EHC-BTK-HD	79.86
BUSHING TOOL HEADS  Electric Hammer Bushing Tool Heads are designed to fit any style bushing tool shank or stem. They are also known as Bushing Hammer Tools.	1-1/2 x 1-1/2	-	FITS ALL SHANKS	EHC-BTH	119.02
BUSHING TOOL SHANK (STEMS)  Electric Hammer Bushing Tools Shanks are designed to fit all Spline, SDS-MAX, or 3/4" Hex Drive Hammer Drills. They are also known as Electric Hammer Bushing Tool Stems or Bushing Drivers.		8	SPLINE	EHC-BTS-8S	22.66
		10	SDS-MAX	EHC-BTS-10MAX	53.74
		8	HEX (3/4)	EHC-BTS-8HD	22.34

NOTE: Other styles and sizes available on request.



All ICS Electric Hammer Chisels are heat treated for Heavy Duty use and can be easily maintained using simple hand grinding.

ROTARY HAMMER DRILL INDEX

GLOBAL REFERENCE

ROTARY HAMMER DRILL MODEL	SHANK STYLE	DRILL BITS	SDS ADAPTERS	A&B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
		PAGE NO. OF ITEMS AVAILABLE				
AEG: PH350,350D,240D,38,350HD,2400,PHD26,38 AEG: PH210,PHE 16RL,19RL,26,200,20,2000 AEG: BH 25,20	SPLINE SDS HEX	19-20 13-14 -	15 - -	22 22 -	7-8 7 -	27-28 27-28 -
BAIER: BBH 320/322 BAIER: BBH 300 BAIER: BBH 290 BAIER: COMBI 90	SDS HEX-M14 HEX-M14 HEX	13-14 - - -	- - - -	22 - - -	7 - - -	27-28 - - -
BLACK & DECKER: 5041,42,43,44,59,MACH 0 HD 2022,32,38,P8022,32,38 BLACK & DECKER: 5041,5016-9,5054,HD2016,2022 BLACK & DECKER: 5093,5099K BLACK & DECKER: 5055 BLACK & DECKER: 5048 BLACK & DECKER: 717,718,719,5045,46,50 BLACK & DECKER: 5040-09	SPLINE SDS SDS-MAX SPLINE HEX-9/16 HEX-7/16 HEX-3/8	19-20 13-14 18-19 19-20 23 24 24	15 - 15 15 15 - -	22 22 22 22 22 22 22	7-8 7 7-8 7-8 - - -	27-28 27-28 27-28 27-28 - - -
BOSCH: 11202,03,04,05,06,08,09,14,UBH 4/26 20S UBH 6.35,UBH 6.35D,UBH 10.50, 12.50 GBH 7.45DE,GBH 7.75DE,USH 6 BOSCH: 11207 VS,11210 VSR,11211 VS 11212 VSR,11213 RK,1215,11221,11222 11224,11228,1215 DVSR, UBH 2/20 SE 3/16 S,3/16 SE,3/20 SE,3/24 SE 4/26-2DS,4/26 SE,2/14 SE,PBH 14E BOSCH: 11214,16,23,27,30,31 BOSCH: 11201 BOSCH: USH 10,HS10 BOSCH: USH 27,USH 28	SPLINE SDS SDS-MAX HEX-9/16 HEX-M19 HEX-M29	19-20 13-14 18-19 158 159 -	15 - - - - -	22 22 22 22 22 22	7-8 7 7 - - -	27-28 27-28 27-28 - - -
BOSSONG:	HEX-9/16	-	-	22	7	27-28
CHICAGO PNEUMATIC: CP-9K	HEX	-	-	-	-	-
DEWALT: 514,23,57K	SDS	13-14	-	22	7	27-28
DUSS: P032,P36,P80,PK100,P60,P90 DUSS: P28,PN28,P28S,PN285 DUSS: PK40,PK45	HEX-3/4 HEX-M13 HEX-M16	- - -	- - -	22 - -	- - -	- - -
ELU: EHD 323	SDS	13-14	-	22	7	27-28
FEIN: 637/2,642	SDS	13-14	-	22	7	27-28
FISCHER:	SPLINE	19-20	15	22	7-8	27-28
FORET A GLACE:	SDS	13-14	-	22	7	27-28
HILTI: TE10,10A,12,12S,17,22,24,GP22 HILTI: TE 52,60,72,92 HILTI: TE 42,52,54,60,72,74,92,94 HILTI: TORNA 765	SDS 2-SLOT(RD) SDS-MAX HEX	13-14 150 18-19 -	- 15 15 -	22 22 22 -	7 7-8 7-8 -	27-28 27-28 27-28 -
HITACHI: DH38YA,DH50SB,DH384A HITACHI: VA16,DH22/DH28Y,DH50,VRT22A,VRV16 HITACHI: DH40MB HITACHI: DH50SA,H55SA HITACHI: PR25A, PRP38,PR50,DH28Y,DH38Y DH38YB,VRV38 HITACHI: PH65A HITACHI: PRT60	SPLINE SDS SDS-MAX HEX-9/16 HEX-1/2 HEX-M30 SPLINE	19-20 13-14 18-19 - - - 19-20	15 - 15 - - - 15	22 22 22 22 - - 22	7-8 7 7 - - - 7-8	27-28 27-28 27-28 - - - 27-28
IMPEX-ITW: SD 3500	SPLINE	19-20	15	22	7-8	27-28
INGERSOL-RAND: 8067,HS625U,HS650U INGERSOL-RAND: 8087	HEX-9/16 HEX	23 -	15 -	22 -	- -	- -
KANGO: 4305,5015,6375,9505 KANGO: 285,327,422,426,430D KANGO: 950,950X,450X,70 KANGO: 500,501,625,627,637,638,750,750X	SPLINE SDS HEX-M21 HEX-1/2	19-20 13-14 159 159	15 - - -	22 22 - -	7-8 7 - -	27-28 27-28 - -
KRESS: HM10,HM10E,HM10/2	SDS	13-14	-	22	7	27-28
MAKITA: HR3851,HR5000,HR3520B,HR3850B MAKITA: HR1821,2210,2511,1810 MAKITA: HR400C MAKITA: 8022B,8700N,8038N,8035NB,HR3801 HR3850,HR3520 MAKITA: HR5000 R/K, HM1200K MAKITA: 8900S,HM1200 MAKITA: 8900N,HM1300,HM1400 MAKITA: 8050	SPLINE SDS SDS-MAX HEX-1/2 HEX-M21 HEX-M20.5 HEX-M30 SPLINE	19-20 13-14 18-19 - 26 - - 19-20	15 - 15 - - - - 15	22 22 22 - - - - 22	7-8 7 7 - - - - 7-8	27-28 27-28 27-28 - - - - 27-28
MARTO: RW 12 MARTO: RW 50	SDS HEX	13-14 -	- -	22 -	7 -	27-28 -
MATSUSHITA: EZ6811, 6802	SDS	13-14	-	22	-	27-28

ROTARY HAMMER DRILL INDEX

MAS-29

GLOBAL REFERENCE

ROTARY HAMMER DRILL MODEL	SHANK STYLE	DRILL BITS	SDS ADAPTERS	A&B TAPER ADAPTERS	HAMMER CORE BITS	HAMMER CHISELS
		PAGE NO. OF ITEMS AVAILABLE				
METABO: RH 65,66,99,99X,1128S,29S,30S,31S	SPLINE	19-20	15	22	7-8	27-28
METABO: 6010,6018,6020,6026,1115S	SDS	13-14	-	22	7	27-28
METABO: RH 65,90,90X,1126S,1130A	HEX-9/16	25	-	22	-	-
METABO: RH 45, 1116	ROPE THREAD	-	-	-	-	-
MILLER FALLS: SP499K	HEX-9/16	23	15	22	-	-
MILWAUKEE: 5341,42,43,44,47,48,52,53	SPLINE	19-20	15	22	7-8	27-28
MILWAUKEE: 5362,65,66,68,69	SDS	13-14	-	22	7	27-28
MILWAUKEE: 5313,15	SDS-MAX	17-18	15	22	7	27-28
MILWAUKEE: 5300,05,10,14,15	HEX-7/16	23	15	22	-	-
MILWAUKEE: 5325,26	HEX-9/16	23	15	22	-	-
MITSUBISHI: HD-25C-1,HD-38C-1	HEX-1/2	-	-	-	-	-
OUTIFIX: OX 260,OX 360	SPLINE	19-20	15	22	7-8	27-28
OUTIFIX: OX 1000	HEX-3/4	-	-	-	-	27-28
PEUGEOT: PM26,PM38	SPLINE	19-20	15	22	7-8	27-28
PHILLIPS: 747-2,RH 747	SPLINE	19-20	15	22	7-8	27-28
PHILLIPS: 555,715,510	SDS	13-14	-	22	7	27-28
PHILLIPS: 700,747-39	HEX-9/16	158	-	22	-	-
PORTER CABLE: 639	SDS	13-14	-	22	7	27-28
PORTER CABLE: 1602	HEX-9/16	23	15	22	-	-
RAMSET: 442,445,475	SPLINE	19-20	15	22	7-8	27-28
RAMSET: 325,425,612,718	SDS	13-14	-	22	7	27-28
RAMSET: 330	SDS-UNIV	16	-	22	7	27-28
RAMSET: 340,342,345,360,375,640	TRI-FLAT	-	-	-	-	-
RAMSET: 620	HEX-3/8	24	-	22	-	-
RAMSET: 650	HEX-9/16	25	-	22	-	-
REDHEAD: 747-2	SPLINE	19-20	15	22	7-8	27-28
REDHEAD: 555,715,510	SDS	13-14	-	22	7	27-28
REDHEAD: 700,747-39	HEX-9/16	25	-	22	-	-
ROCKWELL: 602,606,616,1602	HEX-9/16	23	15	22	-	-
ROCKWELL: 605,607,637,750,750X,60	HEX-1/2	-	15	22	-	-
ROCKWELL: 600,601,1600	HEX-3/8	24	-	22	-	-
RYOBI: ED382P,ER382,ED350K	SPLINE	19-20	15	22	7-8	27-28
RYOBI: ED211,ED220A,ED160	SDS	13-14	-	22	7	27-28
RYOBI: CH 485 PK	HEX-M21	26	-	-	-	-
RYOBI: ED250A,380,381,CH 450PK,460PK	HEX-1/2	-	-	-	-	-
SHRAM AIR HAMMER:	HEX-7/8	-	-	-	-	-
SIMBI: 9R2	HEX	-	-	-	-	-
SKIL: 1740,718H,6855	SDS	13-14	-	22	7	27-28
SKIL: 736,1770	HEX-3/4	158	-	22	-	-
SKIL: 628,728,731,732,1760	HEX-9/16	23	15	22	-	-
SKIL: 726	HEX-7/16	23	15	22	-	-
SKIL: 706,707,708,1706,511	HEX-3/8	24	-	22	-	-
SKIL: 717, 1750,719,718	HEX-7/16	24	-	22	-	-
SPIT: 324VE,321,325,332	SDS-UNIV	16	-	22	7	27-28
SPIT: 355,385,455	SDS-MAX	17-18	15	22	7-8	27-28
SPIT: 342	TRI-FLAT	-	-	-	-	-
SPIT: 345,375,400 S	TRI-FLAT	-	-	-	-	-
SPIT: 400	HEX-M19	-	-	-	-	-
STANLEY: HD20,HD45	HEX-3/4	25	-	22	-	-
STAR: P80-32/38	SPLINE	19-20	15	22	7-8	27-28
TECNEDIL: TH95	HEX	-	-	-	-	-
TOKU: THD-7	SPLINE	19-20	15	22	7-8	27-28
TOKU: TH-7	HEX	-	-	-	-	-
TOSHIBA: RH-38E	HEX-1/2	-	-	-	-	-
TOSHIBA: RHV-20RI, RHV-26A	SDS	13-14	-	22	-	27-28
TOUTES: MARTEAUX 2 á 4 KG	SDS	13-14	-	22	7	27-28
UNIFIX: UT24	HEX	-	-	-	-	-
UPAT: T1534,1562,1562DS,1538S	SPLINE	19-20	15	22	7-8	27-28
UPAT: T1716E	SDS	13-14	-	22	5	27-28
WACKER: 11/110	SPLINE	19-20	15	22	7-8	27-28
WACKER: EBH-75M	SDS-MAX	17-18	15	22	7	27-28
WACKER: EHB 10/100,10/220,EH8/220 BHB14 EHL 8Y/42, EHUB-10Y	HEX-3/4	-	-	22	-	-
WURTH: H16	SDS	13-14	-	22	7	27-28

WOOD BORING TOOLS

Auger Bits

Dual Auger (Stud).....	19
Hand Drive Screw Eye	28
Impact Wrench	
Quick Change Hex Shank	26
Square Socket (Female)	28
Pipe.....	23
SDS Shank	28
Ship Auger	
6" Length.....	24
8" Length.....	24
18" Length.....	24
Extended Length.....	25
Solid Center	19
Spade.....	3
Timber Auger	
30" Length.....	22
40" Length.....	22
Tri Point.....	30
Wood Auger - Double Fluted	27

Bits

Curved Hole Wiring	3
Drill Saw	2
Fiberglass Hollow Core	32
Forstner	7
Hinge Boring	4
Lockhead Adjustable	2
Mortise - Bi-Directional	30
Multi-Spur Pipe - 4" Length	8
Power Pole Bits - 24" Length	25
Railroad Tie Boring Bits	29-30
Vix.....	31
Wood (Spade)	1

Countersinks

Adjustable Drill Countersinks For Wood Screws.....	20
Drill Countersinks For Wood Screws	20

Drills

Brad Point	
1/2" Shank	14
3/8" Shank	10
Straight Shank.....	10
Center Drills.....	17
Machine Drills - 1/2" Shank	12
Multi-Angle Drills.....	6
Silver & Deming Drills - 1/2" Shank - Brad Point.....	11
Drill Point Center Drills	18
Perfect Point Drills.....	15
Perfect Point Drills - 1/2" Shank	16
Screw Point Pilot Drills	8
Screw Point Pilot Auger Drills.....	27
Taper Point Drills For Wood Screws.....	20
Taper Point Drill & Countersink Combination.....	21
Threaded Shank Brad Point Dowel Drills (7/16-14).....	13
Wood (Brad Point).....	9

Cutters

Hole Cutters	
Circle	5
Double Bladed	5
Wood Plug Cutters - Claw Type.....	21

Sets

Brad Point Silver & Deming Drill - 1/2" Shank	11
Forstner Bit.....	7
Multi-Spur Pipe Bit	8
Perfect Point Wood Drill.....	15
Perfect Point Silver & Deming - 1/2" Shank.....	16
Taper Point Drill	21
Wood (Brad Point) Drill.....	9
Wood (Spade) Bit	1

Other

Boring Chucks	31
Gimlets.....	19
Power Bit Extensions.....	23
Wood Bit Extensions	3

WOOD (SPADE) BITS - 6" LENGTH**ICS WIS****GENERAL PURPOSE****GROOVED POINT**QUICK CHANGE
HEX SHANKHOLLOW
GROUND POINT

Wood Spade Bits are designed for boring holes quickly through all types of hard and soft woods, including plywood. They perform best at high RPM speeds and are easy to sharpen. Fully polished and heat treated with six ground flats on 1/4" shank. They are also known as Paddle Bits.

SIZE	ITEM NO.	PRICE
1/4	WBS06L016	2.26
5/16	WBS06L020	2.26
3/8	WBS06L024	2.26
7/16	WBS06L028	2.42
1/2	WBS06L032	2.42

SIZE	ITEM NO.	PRICE
9/16	WBS06L036	2.44
5/8	WBS06L040	2.54
11/16	WBS06L044	2.60
3/4	WBS06L048	2.70
13/16	WBS06L052	2.78

SIZE	ITEM NO.	PRICE
7/8	WBS06L056	2.84
15/16	WBS06L060	2.90
1	WBS06L100	3.18
1-1/8	WBS06L108	3.78
1-1/4	WBS06L116	3.78

SIZE	ITEM NO.	PRICE
1-3/8	WBS06L124	3.78
1-1/2	WBS06L132	3.78
1-3/4	WBS06L148	4.20
2	WBS06L200	4.20

WOOD (SPADE) BITS - 16" LENGTH**ICS WIS****GENERAL PURPOSE****GROOVED POINT**QUICK CHANGE
HEX SHANKHOLLOW
GROUND POINT

Extra Long Wood Spade Bits are used to eliminate the need for extensions when boring deep holes or boring through thick walls. Hole in tip is used for pulling wires through wall. Fully polished and heat treated with six ground flats on 1/4" shank. They are also known as Paddle Bits.

SIZE	ITEM NO.	PRICE
1/4	WBS16L016	9.12
5/16	WBS16L020	10.14
3/8	WBS16L024	9.12
7/16	WBS16L028	10.14
1/2	WBS16L032	9.12

SIZE	ITEM NO.	PRICE
9/16	WBS16L036	10.32
5/8	WBS16L040	9.50
11/16	WBS16L044	10.32
3/4	WBS16L048	9.50

SIZE	ITEM NO.	PRICE
13/16	WBS16L052	10.78
7/8	WBS16L056	11.14
15/16	WBS16L060	10.78
1	WBS16L100	11.14

SIZE	ITEM NO.	PRICE
1-1/8	WBS16L108	11.18
1-1/4	WBS16L116	11.18
1-3/8	WBS16L124	11.18
1-1/2	WBS16L132	11.18

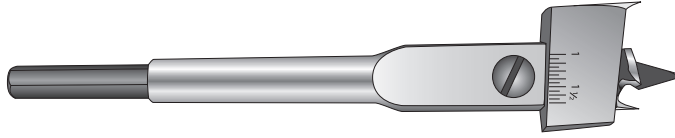
WOOD (SPADE) BIT SETS**VINYL POUCH**

ILLUSTRATION	CONTENTS	ITEM NO.	PRICE
6 PC WOOD BIT SET 	6" Wood Bits-Spade Type 3/8, 1/2, 5/8, 3/4, 7/8, 1"	WBS-WBS06L-6	14.36

LOCKHEAD ADJUSTABLE WOOD BITS - DRILL PRESS

ICS

WIS

SPECIAL PURPOSE**MEDIUM SCREW POINT**STRAIGHT
SHANKSELF-FEEDING
POINT

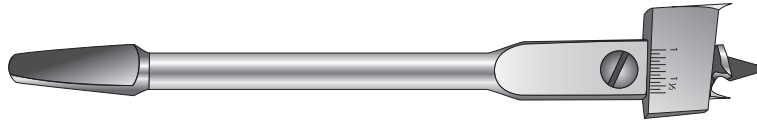
Straight Shank Lockhead Adjustable Wood Bits are designed for drilling in wood using a portable electric drill or drill press. Blade can be adjusted to desired diameter. Does the job of up to 35 different size drills. They are also referred to as Machine Drive Expansive Wood Bits.

SIZE RANGE	SIZES	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
5/8 - 1-1/2 by 8ths	19	9/32	5-1/2	LAWBDP132	13.86
7/8 - 3 by 8ths	35	11/32	6-1/2	LAWBDP300	16.42

LOCKHEAD ADJUSTABLE WOOD BITS - HAND BRACE

ICS

WIS

SPECIAL PURPOSE**MEDIUM SCREW POINT**STRAIGHT
SHANKSELF-FEEDING
POINT

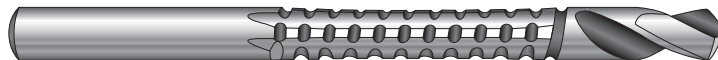
Taper Square Shank Lockhead Adjustable Wood Bits are designed for drilling in wood using a hand brace. Blade can be adjusted to desired diameter. Does the job of up to 35 different size drills. They are also referred to as Hand Drive Expansive Wood Bits.

SIZE RANGE	SIZES	SHANK DIA.	OVERALL LENGTH	ITEM NO.	PRICE
5/8 - 1-1/2 by 8ths	19	TAPER SQUARE	7-1/8	LAWBHB132	13.86
7/8 - 3 by 8ths	35	TAPER SQUARE	8-1/8	LAWBHB300	16.42

**HIGH SPEED STEEL
DRILL SAW BIT**

ICS

WIS

SPECIAL PURPOSE**118° POINT**

Titanium Nitride Coated High Speed Steel Drill Saw Bits are designed to drill a starting hole through wood, drywall, aluminum, plastics, brass, sheet metal etc... all in one operation. Cross milled cutting edges cut any shape in any direction the tool is moved. Drill Saw Bits are titanium nitride coated for long cutting life and for preventing resin and debris from adhering to the cutting edges.

DRILL SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/8	1-1/2	2-3/8	DSBT008	2.94
1/4	2-1/4	3-3/8	DSBT016	4.20

TOOL STEEL WOOD BIT EXTENSIONS

ICS USA

GENERAL PURPOSE

PRECISION GROUND



For boring jobs requiring longer reach. Extensions can be connected to one another for extra long reach. Hex wrench included.

SIZE	LENGTH	FITS SHANK SIZE	FOLLOWS DRILL SIZE OF	ITEM NO.	PRICE
1/4	6	1/4 Hex	1/2" or larger	WBX016X06	5.08
1/4	12	1/4 Hex	1/2" or larger	WBX016X12	6.56

PREMIUM TOOL STEEL CURVED HOLE WIRING BITS

ICS USA

SPECIAL PURPOSE

SPUR POINT

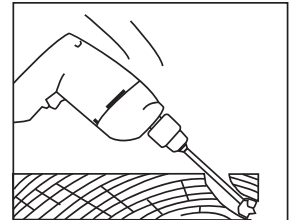
1/4"
HEX SHANKSELF-CENTERING
POINT

Curved Hole Wiring Bits are designed for boring curved (right angle) holes around corners in one continuous cut. It eliminates the need to drill two holes. Ideal for routing wiring and cable for electrical installation.

SIZE	HEX SHANK	OAL	ITEM NO.	PRICE
7/8	1/4	6-1/4	CHWB056	14.76
1-1/8	1/4	6-1/4	CHWB108	14.76

HOW TO USE

- 1.) Drill a straight entry hole at least 1/2" into wood.
- 2.) Then steer the bit while boring through the wood toward the desired exit hole.



WOODS	REVOLUTIONS PER MINUTE
Soft Wood	850 - 1000 RPM
Hard Wood	600 - 850 RPM

PREMIUM TOOL STEEL AUGER SPADE BITS

ICS USA

HEAVY DUTY

MEDIUM SCREW POINT

HEX SHANK

SELF-FEEDING
SCREW POINT

Auger Spade Bits are designed to cut three times faster than a spade bit and do the work of an auger bit at half the cost. Ideal for overhead work, rewiring, running pipe, conduit, and more.

SIZE	HEX SHANK	OAL	ITEM NO.	PRICE
1/2	1/4	6	ASB032	12.52
5/8	1/4	6	ASB040	13.08
3/4	5/16	6	ASB048	13.26
7/8	5/16	6	ASB056	13.58
1	5/16	6	ASB100	15.96

SIZE	HEX SHANK	OAL	ITEM NO.	PRICE
1-1/8	5/16	6	ASB108	18.24
1-1/4	5/16	6	ASB116	18.78
1-3/8	5/16	6	ASB124	19.26
1-1/2	5/16	6	ASB132	19.38

Quick
Link

Power Bit Extensions for
Auger Spade Bits are on
page 23.

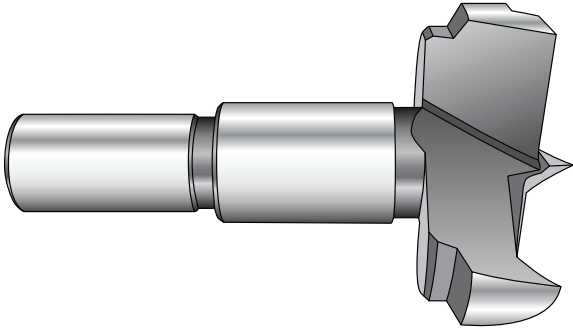
ALLOY STEEL
HINGE BORING BITS

ICS WIS

SPECIAL PURPOSE

DIAMOND STYLE POINT

3/8"
SHANK



ECONOMY
TYPE

Alloy Steel Hinge Boring Bits are designed to bore clean entry holes in all types of wood for mounting European style hinges. They can be used in portable drills or drill presses and are a good economical choice for professionals and hobbyists.

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
26mm	2"	HBBM26.0	3.58
30mm	2"	HBBM30.0	4.30
35mm	2"	HBBM35.0	4.72

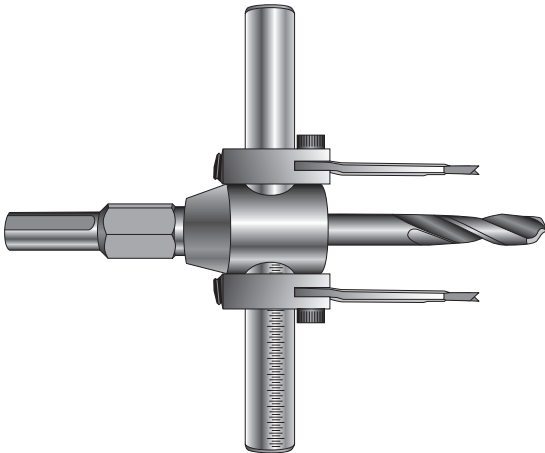
CARBIDE TIPPED
HOLE CUTTER - DOUBLE BLADED

ICS WIS

HEAVY DUTY

3 FLAT
1/2" SHANK

4 CARBIDE
TIPPED BLADES



The Carbide Tipped Double Bladed Hole Cutter is designed for cutting 1-3/16" to 5-1/2" holes in sheet metal, copper, brass, aluminum, plastic, wood and composition. Maximum 1-3/4" cutting depth. Supplied with hex wrench and pilot hole drill. Measurement scale is etched on cross beam to easily set hole size. Use in any drill press or drill stand. Do not use in hand held power tools.

FOR CUTTING	CUTTING DEPTH	SHANK	ITEM NO.	PRICE
1-3/16" to 5-1/2" Holes	1-3/4	1/2	CTAHC532	30.30

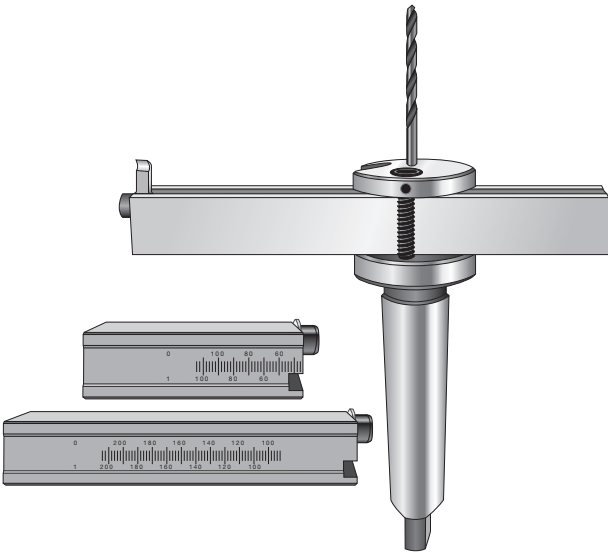
HIGH SPEED STEEL
HOLE CUTTER - CIRCLE

ICS WIS

TREPPANNING TOOL

#2 OR #3
MORSE TAPER SHANK

3 CAPACITY LENGTH
TRANSVERSAL BARS



The Circular Hole Cutter is designed for cutting 1-3/16" to 11-13/16" holes in steel and non-ferrous metals. Cuts holes using the "drag-cut" principle. Very stable during machining. Faster than drilling, milling and boring. Ideal for fixed setups on product runs. Spoon shape blade allows a positive cut and is regrindable.

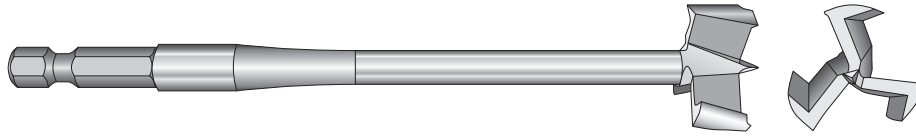
SIZE	CUTTING DEPTH	CUTTER SIZE	SHANK	ITEM NO.	PRICE
1-3/16 to 11-13/16 holes	1/2	5 mm	2 MT	CHC#2MT	136.50
1-3/16 to 11-13/16 holes	1/2	5 mm	3 MT	CHC#3MT	136.50

TOOL STEEL MULTI-ANGLE DRILLS

ICS WIS

SPECIAL PURPOSE

DIAMOND STYLE POINT

1/4"
HEX SHANKTITANIUM (TiN)
NITRIDE COATED

Multi-Angle Drills are designed with 6 cutting edges to drill forward, backward, sideways, straight, or in a curve up to 90°. Used to drill wood, composites, plaster board, plastics, etc... They drill 3X faster than spade bits and holes as smooth as forstner bits.

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
1/4	5	MAD016	4.84
3/8	5	MAD024	5.56
1/2	5	MAD032	5.98
5/8	5	MAD040	6.30
3/4	5	MAD048	6.94

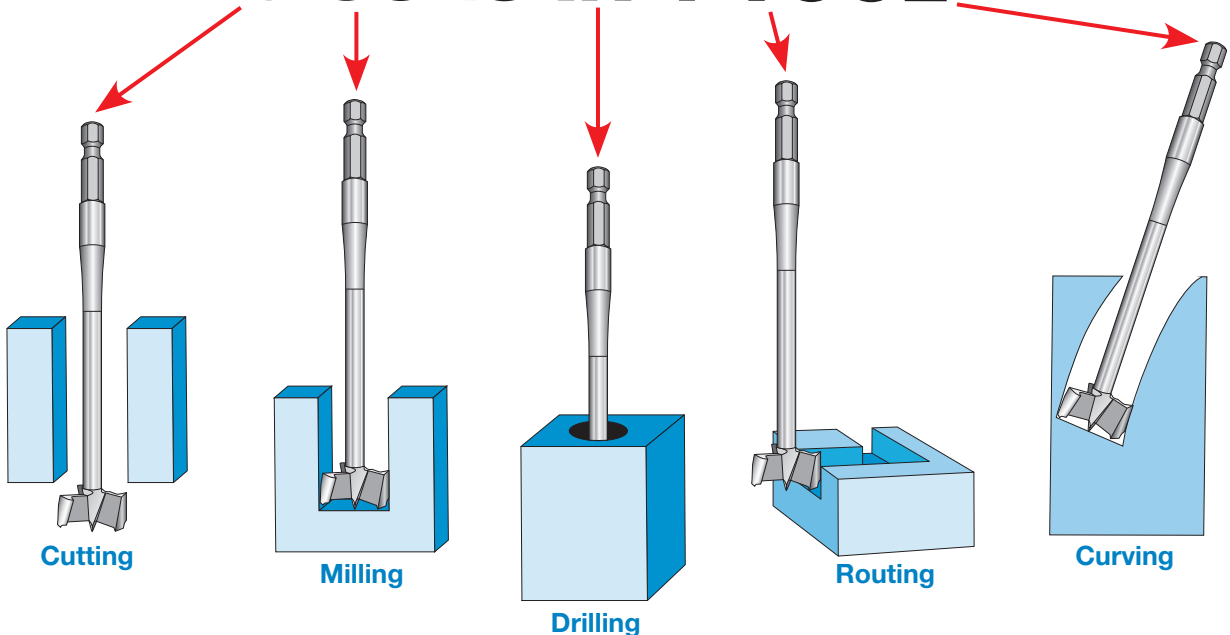
SIZE	OVERALL LENGTH	ITEM NO.	PRICE
13/16	5	MAD052	7.14
7/8	5	MAD056	7.78
1	5	MAD100	8.72
1-1/4	5	MAD116	11.86

TOOL STEEL MULTI-ANGLE DRILL SETS

PLASTIC INDEX

ILLUSTRATION	TYPE OF DRILL INDEX	ITEM NO.	PRICE
	4 pc Set (3/8, 1/2, 3/4, 1")	DS-MAD-4	31.50
	7 pc Set (3/8, 1/2, 5/8, 3/4, 7/8, 1", 1-1/4)	DS-MAD-7	58.80
	9 pc Set (1/4, 3/8, 1/2, 5/8, 3/4, 13/16, 7/8, 1", 1-1/4)	DS-MAD-9	88.20

5 USES IN 1 TOOL



TOOL STEEL FORSTNER BITS

ICS WIS

SPECIAL PURPOSE

DIAMOND STYLE POINT

FRACTIONAL
SIZESMETRIC EUROPEAN
HINGE SIZES

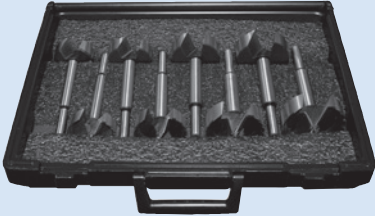
Forstner bits are designed for intricate woodworking. They are used to drill flat bottom or through holes. Can bore any arc of a circle. Bit is guided by circular rim instead of center. Will cut satin smooth without deflection by grain or knots. Forstner bits are available machine ground to size from High Carbon Steel stock. Sizes 2-1/4" and over have multi-spur cutting edges. Forstner Bits are also known as Forstner Flange Bits or Webfoot Augers.

SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
1/4	4	3/8	FB016	5.66
5/16	4	3/8	FB020	6.14
3/8	4	3/8	FB024	6.60
7/16	4	3/8	FB028	7.06
1/2	4	3/8	FB032	7.54
9/16	4	3/8	FB036	7.78
5/8	4	3/8	FB040	8.00
11/16	4	3/8	FB044	8.96
3/4	4	3/8	FB048	9.42
13/16	4	3/8	FB052	10.12
7/8	4	3/8	FB056	10.36
15/16	4	3/8	FB060	11.08
1	4	3/8	FB100	11.30
1-1/8	4	3/8	FB108	13.20
1-1/4	4	3/8	FB116	14.90
1-5/16	4	3/8	FB120	16.96
1-3/8	4	3/8	FB124	16.96
1-1/2	4	3/8	FB132	18.82
1-9/16	4	3/8	FB136	19.76
1-5/8	4	3/8	FB140	20.72
1-3/4	3-1/2	3/8	FB148	22.60
1-7/8	3-1/2	3/8	FB156	24.46

SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
1-15/16	3-1/2	3/8	FB160	25.42
2	3-1/2	3/8	FB200	26.36
2-1/8	4	3/8	FB208	28.22
2-1/4	6	1/2	FB216	32.94
2-3/8	6	1/2	FB224	35.28
2-1/2	6	1/2	FB232	37.64
2-5/8	6	1/2	FB240	39.98
2-3/4	6	1/2	FB248	42.34
2-7/8	6	1/2	FB256	44.70
3	6	1/2	FB300	47.04
3-1/8	6	1/2	FB308	51.74
3-1/4	6	1/2	FB316	55.82
3-1/2	6	1/2	FB332	61.16
3-9/16	6	1/2	FB336	64.68
3-5/8	6	1/2	FB340	67.04
3-11/16	6	1/2	FB344	72.28
3-3/4	6	1/2	FB348	79.74
3-7/8	6	1/2	FB356	95.52
METRIC EUROPEAN HINGE SIZES				
26mm	4	3/8	FBM26.0	12.54
35mm	4	3/8	FBM35.0	17.42

TOOL STEEL FORSTNER BIT SETS

PLASTIC CASE

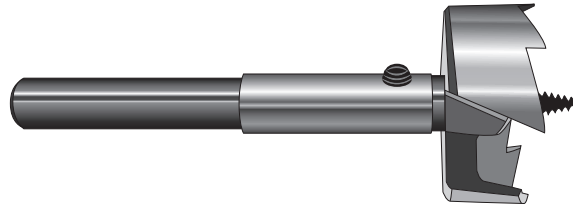
DESCRIPTION	CONTENTS	ITEM NO.	PRICE
8 PC FORSTNER BIT SET 	2-1/4 to 3-1/8 by 8ths	WBS-FB-8	280.88
5 PC FORSTNER BIT SET (NOT ILLUSTRATED)	3/4, 7/8, 1, 1-1/4, 1-5/8	WBS-FB-5	50.40
7 PC FORSTNER BIT SET (NOT ILLUSTRATED)	1/4 to 1" by 8ths	WBS-FB-7	47.26
16 PC FORSTNER BIT SET (NOT ILLUSTRATED)	1/4 to 2-1/8 by 8ths	WBS-FB-16	115.50
24 PC FORSTNER BIT SET (NOT ILLUSTRATED)	1/4 to 3-1/8 by 8ths	WBS-FB-24	252.28

TOOL STEEL MULTI-SPUR PIPE BITS - 4" LENGTH

ICS WIS

SPECIAL PURPOSE

MEDIUM SCREW POINT

7/16" SHANK
THREE FLATSSELF-FEEDING
SCREW POINT

Multi-Spur Pipe Bits are made of special tool steel. Beveled saw teeth allow smooth boring of holes. Inside cutter pushes chips to rear of bit, allowing deep holes to be bored without clogging. Ideal for plumbing and electrical work. They are sometimes referred to as Self-Feed Bits or Saw Tooth Bits. Replacement pilot drills listed below.

SIZE	APPLICATIONS	ITEM NO.	PRICE
1	-	MSPB100	26.00
1-1/8	3/4" Pipe Entrance	MSPB108	26.00
1-1/4	-	MSPB116	26.00
1-3/8	1" Pipe Entrance	MSPB124	27.64
1-1/2	1-3/8" Tubing	MSPB132	27.64
1-3/4	1-1/4" Pipe Entrance	MSPB148	29.96
2	1-1/2" Pipe Entrance	MSPB200	30.46
2-1/8	Door Locks	MSPB208	33.92
2-1/4	2" Tubing	MSPB216	34.66
2-9/16	2" Pipe Entrance	MSPB236	40.22
3	2-1/2" Pipe Entrance	MSPB300	72.46
3-5/8	3" Pipe Entrance	MSPB340	94.50
4-5/8	4" Pipe Entrance	MSPB440	124.42

TOOL STEEL MULTI-SPUR PIPE BIT SETS

PLASTIC CASE

DESCRIPTION	CONTENTS	ITEM NO.	PRICE
4 PC MULTI-SPUR PIPE BIT SET 	1 each: 1-3/8, 1-1/2, 2-1/8, 2-9/16 Multi-Spur Pipe Bits	WBS-MSPB-4	119.70
8 PC MULTI-SPUR PIPE BIT SET (Not Illustrated)	1 each: 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/8 Multi-Spur Pipe Bits	WBS-MSPB-8	241.50

SCREW POINT PILOT DRILLS



Replacement Screw Point Pilot Drills for Multi-Spur Pipe Bits.

SIZE	FITS	STYLE	ITEM NO.	PRICE
3/16	1-3/8 - 1-1/2	Double End	SPPD132	5.30
1/4	1-3/4 - 2-9/16	Double End	SPPD236	5.30
3/8	3-5/8	Single End	SPPD340	5.30

CHROME VANADIUM WOOD (BRAD POINT) DRILLS

ICS WIS

SPECIAL PURPOSE

BRAD POINT



Brad Point Drills are designed to drill smooth, accurate holes in wood with minimum tear-out. Center spur point holds drill on target and prevents walking when two cutting spurs make contact with a surface, so even overlapping holes can be drilled. Drills are made of chrome vanadium steel and will stay sharp much longer than high carbon tool steels. Brad Point Drills Are also known as Dowelling Bits or Lip and Spur Drill Bits.

SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
1/8	2-3/4	1/8	WDBP008	2.06
5/32	3	5/32	WDBP010	2.26
3/16	3-3/8	3/16	WDBP012	2.28
1/4	4	1/4	WDBP016	2.48
5/16	4-1/8	5/16	WDBP020	3.12
3/8	4-3/8	3/8	WDBP024	3.54

SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
7/16	5-7/8	3/8	WDBP028	5.02
1/2	6-3/4	3/8	WDBP032	6.46
5/8	7	3/8	WDBP040	9.32
3/4	7-7/8	3/8	WDBP048	13.70
7/8	7-7/8	3/8	WDBP056	18.80
1	7-7/8	3/8	WDBP100	25.36

CHROME VANADIUM WOOD (BRAD POINT) DRILLS - 12" LENGTH

ICS WIS

SPECIAL PURPOSE

BRAD POINT



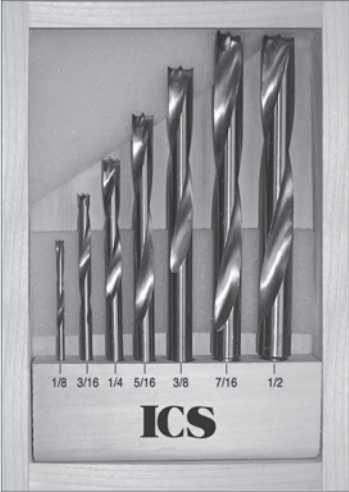
Extra Long Brad Point Drills are used to eliminate the need for extensions when drilling deep holes or where longer reach is needed.

SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/8	1-1/2	1/8	WDBP12L008	5.20
5/32	1-1/2	5/32	WDBP12L010	5.62
3/16	1-7/8	3/16	WDBP12L012	6.60
1/4	2-1/2	1/4	WDBP12L016	7.60

SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
5/16	2-1/2	5/16	WDBP12L020	10.00
3/8	2-3/4	3/8	WDBP12L024	11.72
7/16	3-1/2	3/8	WDBP12L028	17.06
1/2	3-3/4	3/8	WDBP12L032	21.16

WOOD (BRAD POINT) DRILLS SETS

SPECIAL PURPOSE

DESCRIPTION	TYPE OF DRILL/INDEX	ITEM NO.	PRICE
7 PC DRILL SET  Sizes - 1/8 to 1/2 by 16ths	Wood (Brad Point) Drills	DS-WDBP-7	35.16
	Carbide Tipped Wood (Brad Point) Drills	DS-CTWDBP-7	55.42

HIGH SPEED STEEL BRAD POINT DRILLS

ICS USA

HEAVY DUTY

BRAD POINT



High Speed Steel Brad Point Drills are designed to drill smooth, accurate holes in wood with minimum tear-out. Center spur point holds drill on target and prevents walking when two cutting spurs make contact with a surface, so even overlapping holes can be drilled. Drills are made of high speed steel and will stay sharp much longer than high carbon tool steels. Brad Point Drills Are also known as Dowelling Bits or Lip and Spur Drill Bits.

SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
1/8	2-3/4	1/8	BPD008	4.52
9/64	2-7/8	9/64	BPD009	4.72
5/32	3-1/8	5/32	BPD010	4.84
11/64	3-1/4	11/64	BPD011	4.94
3/16	3-1/2	3/16	BPD012	5.14
13/64	3-5/8	13/64	BPD013	5.14
7/32	3-3/4	7/32	BPD014	5.26
15/32	3-7/8	15/32	BPD015	5.46
1/4	4	1/4	BPD016	6.20
17/64	4-1/8	17/64	BPD017	7.36
9/32	4-1/4	9/32	BPD018	7.78
19/64	4-3/8	19/64	BPD019	8.20

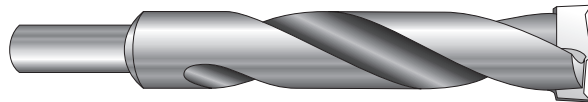
SIZE	OVERALL LENGTH	SHANK	ITEM NO.	PRICE
5/16	4-1/2	5/16	BPD020	8.62
11/32	4-3/4	11/32	BPD022	9.98
3/8	5	3/8	BPD024	11.56
13/32	5-1/4	3/8	BPD026	13.24
7/16	5-1/2	3/8	BPD028	14.92
15/32	6	3/8	BPD030	15.76
1/2	6	3/8	BPD032	18.90
9/16	6	1/2	BPD036	23.00
5/8	6	1/2	BPD040	25.72
3/4	6	1/2	BPD048	35.42
7/8	6	1/2	BPD056	39.94
1	6	1/2	BPD100	CALL

CARBIDE TIPPED BRAD POINT DRILLS - 3/8" SHANK

ICS WIS

SPECIAL PURPOSE

SPUR BRAD POINT

STRAIGHT
3/8" SHANKRIGHT HAND
CUT

3/8" Shank Carbide Tipped Brad Point Drills are designed for drilling any type of wood, hard fiber plates, plastic materials, laminated products, chip core, and in any wood product containing glue. They can also be used for drilling fine grain hardwoods such as maple and pecan. These are industrial grade drills that stay sharp 10 to 20 times longer than high speed steel drills. They can be resharpened with diamond needle files.

3/8" Shank • 4" Flute Length • 5-1/2" Overall Length

SIZE	SHANK DIMENSIONS	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/8	3/8 x 1-1/2	4	5-1/2	CTBPD05L024TS	34.08
7/16	3/8 x 1-1/2	4	5-1/2	CTBPD05L028TS	34.96
1/2	3/8 x 1-1/2	4	5-1/2	CTBPD05L032TS	39.94
9/16	3/8 x 1-1/2	4	5-1/2	CTBPD05L036TS	45.04
5/8	3/8 x 1-1/2	4	5-1/2	CTBPD05L040TS	54.96
3/4	3/8 x 1-1/2	4	5-1/2	CTBPD05L048TS	64.54

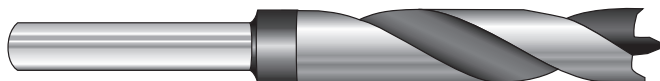
HIGH SPEED STEEL

BRAD POINT SILVER & DEMING DRILLS - 1/2" SHANK

ICS WIS

SPECIAL PURPOSE

BRAD POINT

1/2"
ROUND SHANK3" FLUTE LENGTH
6" OVERALL LENGTH

1/2" Shank High Speed Steel Brad Point Silver & Deming Drills with are designed to drill smooth, accurate holes in wood with minimum tear-out. Center spur point holds drill on target and prevents walking when two cutting spurs make contact with surface so even overlapping holes can be drilled. Drills are made of high speed steel and will stay sharp much longer than high carbon tool steels. Brad Point Drills are also known as Dowelling Bits or Spur Drill Bits.

Fractional Sizes (Reduced Shank) 17/32 to 1-1/2" Dia.

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
17/32	3	6	BPSND034	22.24
9/16	3	6	BPSND036	23.00
19/32	3	6	BPSND038	24.68
5/8	3	6	BPSND040	25.72
21/32	3	6	BPSND042	27.30
11/16	3	6	BPSND044	28.36
23/32	3	6	BPSND046	28.98
3/4	3	6	BPSND048	35.42
25/32	3	6	BPSND050	37.76
13/16	3	6	BPSND052	38.54
7/8	3	6	BPSND056	39.94

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
15/16	3	6	BPSND060	42.10
1	3	6	BPSND100	49.56
1-1/16	3	6	BPSND104	62.06
1-1/8	3	6	BPSND108	68.52
1-3/16	3	6	BPSND112	76.28
1-1/4	3	6	BPSND116	77.84
1-5/16	3	6	BPSND120	106.72
1-3/8	3	6	BPSND124	113.50
1-7/16	3	6	BPSND128	120.96
1-1/2	3	6	BPSND132	130.02

Metric Sizes (Reduced Shank) 13.00mm to 38.00mm Dia.

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
13.0	3	6	BPSNDM13.0	26.72
14.0	3	6	BPSNDM14.0	27.92
15.0	3	6	BPSNDM15.0	29.18
16.0	3	6	BPSNDM16.0	30.26
17.0	3	6	BPSNDM17.0	32.62
18.0	3	6	BPSNDM18.0	33.76
19.0	3	6	BPSNDM19.0	35.32
20.0	3	6	BPSNDM20.0	42.70
21.0	3	6	BPSNDM21.0	43.86
22.0	3	6	BPSNDM22.0	45.00
23.0	3	6	BPSNDM23.0	46.24

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
24.0	3	6	BPSNDM24.0	50.70
25.0	3	6	BPSNDM25.0	54.44
26.0	3	6	BPSNDM26.0	63.02
28.0	3	6	BPSNDM28.0	73.94
30.0	3	6	BPSNDM30.0	75.82
32.0	3	6	BPSNDM32.0	77.84
34.0	3	6	BPSNDM34.0	106.72
35.0	3	6	BPSNDM35.0	113.46
36.0	3	6	BPSNDM36.0	120.96
38.0	3	6	BPSNDM38.0	130.02

BRAD POINT SILVER & DEMING DRILL SET - 1/2" SHANK**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL SET Sizes 9/16" to 1" by 16ths (Not Illustrated)	Brad Point Silver & Deming - 1/2" Shank	DS-BPSND-8	314.12

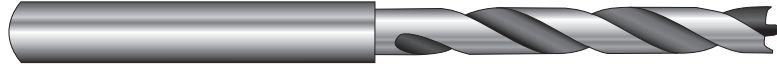
HIGH SPEED STEEL

BRAD POINT MACHINE DRILLS - 1/2" SHANK

ICS WIS

HEAVY DUTY

BRAD POINT

1/2"
ROUND SHANK6" and 8"
OVERALL LENGTHS

1/2" Shank High Speed Steel Brad Point Machine Drills are designed to drill smooth, accurate holes in wood with minimum tear-out. Center spur point holds drill on target and prevents walking when two cutting spurs make contact with surface, so even overlapping holes can be drilled. Drills are made of high speed steel and will stay sharp much longer than high carbon tool steels and are used in industrial applications.

DRILL DIAMETER	FLUTE LENGTH	OVERALL LENGTH	SHANK DIAMETER	ROTATION DIRECTION	ITEM NO.	PRICE
6" OVERALL LENGTH						
1/8	4	6	1/2	RIGHT	RSDBP06L008	18.90
3/16	4	6	1/2	RIGHT	RSDBP06L012	18.90
1/4	4	6	1/2	RIGHT	RSDBP06L016	18.90
5/16	4	6	1/2	RIGHT	RSDBP06L020	18.90
3/8	4	6	1/2	RIGHT	RSDBP06L024	18.90
7/16	4	6	1/2	RIGHT	RSDBP06L028	18.90
1/2	4	6	1/2	RIGHT	RSDBP06L032	18.90
9/16	4	6	1/2	RIGHT	RSDBP06L036	23.10
5/8	4	6	1/2	RIGHT	RSDBP06L040	25.20
11/16	4	6	1/2	RIGHT	RSDBP06L044	26.26
3/4	4	6	1/2	RIGHT	RSDBP06L048	31.50
7/8	4	6	1/2	RIGHT	RSDBP06L056	42.00
15/16	4	6	1/2	RIGHT	RSDBP06L060	48.30
1	4	6	1/2	RIGHT	RSDBP06L100	50.40
1-1/4	4	6	1/2	RIGHT	RSDBP06L116	73.66
8" OVERALL LENGTH						
7/16	6	8	1/2	RIGHT	RSDBP08L028	22.68
1/2	6	8	1/2	RIGHT	RSDBP08L032	22.68
9/16	6	8	1/2	RIGHT	RSDBP08L036	27.04
5/8	6	8	1/2	RIGHT	RSDBP08L040	31.50
11/16	6	8	1/2	RIGHT	RSDBP08L044	35.40
3/4	6	8	1/2	RIGHT	RSDBP08L048	37.60
13/16	6	8	1/2	RIGHT	RSDBP08L052	47.98
7/8	6	8	1/2	RIGHT	RSDBP08L056	49.74
15/16	6	8	1/2	RIGHT	RSDBP08L060	56.86
1	6	8	1/2	RIGHT	RSDBP08L100	58.28

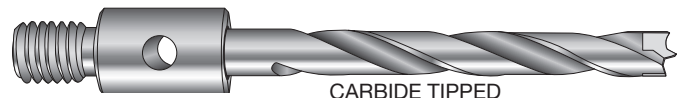
THREADED SHANK BRAD POINT DOWEL DRILLS (7/16"-14)

ICS

WIS

HEAVY DUTY**SPUR BRAD POINT**

HIGH SPEED STEEL



CARBIDE TIPPED

High Speed Steel and Carbide Tipped Brad Point Dowel Drills with 7/16"-14 Threaded Shank are designed to be used in machines with threaded spindles. They will drill smooth, accurate holes in wood with minimum tear-out. Center spur point holds drill on target and prevents walking when two cutting spurs make contact with the surface, so even overlapping holes can be drilled. Drills are made of high speed steel and will stay sharp much longer than carbon steel drills. Carbide tipped sizes stay sharp 10 to 20 times longer. Used in industrial applications.

Right Hand Sizes 1/8" to 1" Dia.

DRILL DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
1/8	3	4-1/2	RIGHT	TSDBP04L008	20.16
3/16	3	4-1/2	RIGHT	TSDBP04L012	20.16
1/4	3	4-1/2	RIGHT	TSDBP04L016	19.54
5/16	3	4-1/2	RIGHT	TSDBP04L020	19.54
3/8	3	4-1/2	RIGHT	TSDBP04L024	19.54
25/64	3	4-1/2	RIGHT	TSDBP04L025	19.54
13/32	3	4-1/2	RIGHT	TSDBP04L026	19.54
7/16	3	4-1/2	RIGHT	TSDBP04L028	19.54
1/2	3	4-1/2	RIGHT	TSDBP04L032	19.54
33/64	3	4-1/2	RIGHT	TSDBP04L033	35.02
9/16	3	4-1/2	RIGHT	TSDBP04L036	24.28
5/8	3	4-1/2	RIGHT	TSDBP04L040	27.30
3/4	3	4-1/2	RIGHT	TSDBP04L048	39.44
7/8	3	4-1/2	RIGHT	TSDBP04L056	51.04
1	3	4-1/2	RIGHT	TSDBP04L100	53.76

CARBIDE TIPPED SIZES

1/4	3	4-1/2	RIGHT	CTTSDBP04L016	34.50
5/16	3	4-1/2	RIGHT	CTTSDBP04L020	38.24
3/8	3	4-1/2	RIGHT	CTTSDBP04L024	40.80
7/16	3	4-1/2	RIGHT	CTTSDBP04L028	45.50
1/2	3	4-1/2	RIGHT	CTTSDBP04L032	48.50
5/8	3	4-1/2	RIGHT	CTTSDBP04L040	63.20
3/4	3	4-1/2	RIGHT	CTTSDBP04L048	65.50
7/8	3	4-1/2	RIGHT	CTTSDBP04L056	72.00
1	3	4-1/2	RIGHT	CTTSDBP04L100	82.50

Left Hand Sizes 3/16" to 1" Dia.

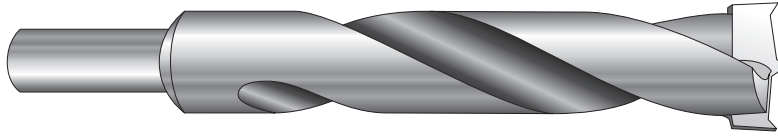
DRILL DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/16	3	4-1/2	LEFT	TSDBPL04L012	20.68
1/4	3	4-1/2	LEFT	TSDBPL04L016	20.06
5/16	3	4-1/2	LEFT	TSDBPL04L020	20.06
3/8	3	4-1/2	LEFT	TSDBPL04L024	20.06
7/16	3	4-1/2	LEFT	TSDBPL04L028	20.06
1/2	3	4-1/2	LEFT	TSDBPL04L032	20.06
9/16	3	4-1/2	LEFT	TSDBPL04L036	24.80
5/8	3	4-1/2	LEFT	TSDBPL04L040	27.82
3/4	3	4-1/2	LEFT	TSDBPL04L048	39.96
1	3	4-1/2	LEFT	TSDBPL04L100	54.60

BRAD POINT DRILLS - 1/2" SHANK

ICS WIS

SPECIAL PURPOSE

SPUR BRAD POINT

STRAIGHT
1/2" SHANKRIGHT HAND
CUT

1/2" Shank Carbide Tipped Brad Point Drills are designed for drilling any type of wood, hard fiber plates, plastic materials, laminated products, chip core, and in any wood product containing glue. They can also be used for drilling fine grain hardwoods such as maple and pecan. These are industrial grade drills that stay sharp 10 to 20 times longer than high speed steel drills. They can be resharpened with diamond needle files.

1/2" Shank • 3" Flute Length • 5" Overall Length

SIZE	SHANK DIMENSIONS	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/4	1/2 x 2	3	5	CTBPD05L016	33.60
5/16	1/2 x 2	3	5	CTBPD05L020	33.60
3/8	1/2 x 2	3	5	CTBPD05L024	33.60
7/16	1/2 x 2	3	5	CTBPD05L028	34.94
1/2	1/2 x 2	3	5	CTBPD05L032	36.32
9/16	1/2 x 2	3	5	CTBPD05L036	40.96
5/8	1/2 x 2	3	5	CTBPD05L040	49.96
3/4	1/2 x 2	3	5	CTBPD05L048	58.66
7/8	1/2 x 2	3	5	CTBPD05L056	64.34
15/16	1/2 x 2	3	5	CTBPD05L060	69.62
1	1/2 x 2	3	5	CTBPD05L100	73.36

1/2" Shank • 4" Flute Length • 6" Overall Length

SIZE	SHANK DIMENSIONS	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/4	1/2 x 2	4	6	CTBPD06L016	35.18
5/16	1/2 x 2	4	6	CTBPD06L020	35.18
3/8	1/2 x 2	4	6	CTBPD06L024	35.18
7/16	1/2 x 2	4	6	CTBPD06L028	36.14
1/2	1/2 x 2	4	6	CTBPD06L032	37.52
9/16	1/2 x 2	4	6	CTBPD06L036	42.00
5/8	1/2 x 2	4	6	CTBPD06L040	51.16
3/4	1/2 x 2	4	6	CTBPD06L048	60.30
7/8	1/2 x 2	4	6	CTBPD06L056	67.06
15/16	1/2 x 2	4	6	CTBPD06L060	70.50
1	1/2 x 2	4	6	CTBPD06L100	75.00
1-1/4	1/2 x 2	4	6	CTBPD06L116	90.46

1/2" Shank • 6" Flute Length • 8" Overall Length

SIZE	SHANK DIMENSIONS	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/4	1/2 x 2	6	8	CTBPD08L016	36.76
5/16	1/2 x 2	6	8	CTBPD08L020	36.76
3/8	1/2 x 2	6	8	CTBPD08L024	36.76
7/16	1/2 x 2	6	8	CTBPD08L028	38.42
1/2	1/2 x 2	6	8	CTBPD08L032	39.76
5/8	1/2 x 2	6	8	CTBPD08L040	53.40
3/4	1/2 x 2	6	8	CTBPD08L048	62.56
7/8	1/2 x 2	6	8	CTBPD08L056	69.30
1	1/2 x 2	6	8	CTBPD08L100	77.26

HIGH SPEED STEEL PERFECT POINT WOOD DRILLS

ICS WIS

SPECIAL PURPOSE

PERFECT POINT®



Perfect Point® Wood Drills are designed to drill perfectly round, clean, flat bottom holes or through holes without splintering or tearing wood grain surface. They are unique in that they do not tear wood grain when breaking through exit side of hole. They outperform and last three to five times longer than Brad Point Drills, Dowel Drills, and Forstner Bits.

Fractional Sizes (Straight/Reduced Shank) 1/8" to 1/2" Dia.

SIZE	SHANK	OVERALL LENGTH	ITEM NO.	PRICE
1/8	1/8	2-3/4	PPWD008	3.36
5/32	5/32	3-1/8	PPWD010	3.78
3/16	3/16	3-1/2	PPWD012	4.08
7/32	7/32	3-3/4	PPWD014	4.44
1/4	1/4	4	PPWD016	4.66
9/32	9/32	4-1/4	PPWD018	5.54
5/16	5/16	4-1/2	PPWD020	6.14
11/32	11/32	4-3/4	PPWD022	6.78
3/8	3/8	5	PPWD024	7.60

SIZE	SHANK	OVERALL LENGTH	ITEM NO.	PRICE
13/32	13/32	5-1/4	PPWD026	8.60
7/16	7/16	5-1/2	PPWD028	9.48
15/32	15/32	5-3/4	PPWD030	10.66
1/2	1/2	6	PPWD032	11.56
3/8" SHANK				
13/32	3/8	5-1/4	PPWDTS026	10.94
7/16	3/8	5-1/2	PPWDTS028	11.82
15/32	3/8	5-3/4	PPWDTS030	13.00
1/2	3/8	6	PPWDTS032	13.90

Metric Sizes (Straight/Reduced Shank) 3.0mm to 13.0mm Dia.

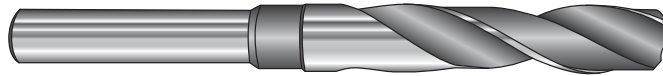
SIZE	SHANK	OVERALL LENGTH	ITEM NO.	PRICE
3.0	3.0	2-3/4	PPWDM03.0	3.36
4.0	4.0	3-1/8	PPWDM04.0	3.78
5.0	5.0	3-3/4	PPWDM05.0	4.08
6.0	6.0	4	PPWDM06.0	4.66
7.0	7.0	4-1/4	PPWDM07.0	5.54
8.0	8.0	4-1/2	PPWDM08.0	6.14
9.0	9.0	5	PPWDM09.0	7.60
10.0	10.0	5-1/4	PPWDM10.0	8.60

SIZE	SHANK	OVERALL LENGTH	ITEM NO.	PRICE
11.0	11.0	5-1/2	PPWDM11.0	9.48
12.0	12.0	5-3/4	PPWDM12.0	10.66
13.0	13.0	6-5/8	PPWDM13.0	11.56
3/8" SHANK				
10.0	9.50	5-1/4	PPWDMTS10.0	8.60
11.0	9.50	5-1/2	PPWDMTS11.0	9.48
12.0	9.50	5-3/4	PPWDMTS12.0	10.66
13.0	9.50	6-5/8	PPWDMTS13.0	11.56

PERFECT POINT WOOD DRILL SETS

METAL INDEX

DESCRIPTION	CONTENTS	ITEM NO.	PRICE
7 PC DRILL SET  Sizes 1/8 to 1/2 by 16ths (Wt. 1.40 lbs.)	Bright Finish Perfect Pt. Wood Drills	DS-PPWD-7	64.66
	Bright Finish Perfect Pt. Wood Drills - 3/8" Shank	DS-PPWDTS-7	69.36

PERFECT POINT WOOD DRILLS - 1/2" SHANK**ICS WIS****SPECIAL PURPOSE****PERFECT POINT®**1/2"
ROUND SHANK3" FLUTE LENGTH
6" OVERALL LENGTH

Perfect Point® Wood Drills with 1/2" Shank are designed to drill large, perfectly round, flat bottom holes or through holes without splintering or tearing wood grain surface. They are unique in that they do not tear wood grain when breaking through exit side of hole. They outperform and last three to five times longer than Brad Point Drills, Dowel Drills, and Forstner Bits.

Fractional Sizes (Reduced Shank) 17/32" to 1-1/2" Dia.

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
17/32	3	6	PPWDRS034	20.24
9/16	3	6	PPWDRS036	21.72
19/32	3	6	PPWDRS038	24.08
5/8	3	6	PPWDRS040	24.70
21/32	3	6	PPWDRS042	25.48
11/16	3	6	PPWDRS044	26.12
23/32	3	6	PPWDRS046	27.50
3/4	3	6	PPWDRS048	35.42
25/32	3	6	PPWDRS050	37.76
13/16	3	6	PPWDRS052	38.54
7/8	3	6	PPWDRS056	39.94

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
15/16	3	6	PPWDRS060	41.88
1	3	6	PPWDRS100	46.70
1-1/16	3	6	PPWDRS104	56.42
1-1/8	3	6	PPWDRS108	62.30
1-3/16	3	6	PPWDRS112	69.34
1-1/4	3	6	PPWDRS116	70.76
1-5/16	3	6	PPWDRS120	97.02
1-3/8	3	6	PPWDRS124	103.16
1-7/16	3	6	PPWDRS128	109.96
1-1/2	3	6	PPWDRS132	118.20

Metric Sizes (Reduced Shank) 13.00mm to 38.00mm Dia.

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
13.0	3	6	PPWDMRS13.0	24.28
14.0	3	6	PPWDMRS14.0	25.38
15.0	3	6	PPWDMRS15.0	26.52
16.0	3	6	PPWDMRS16.0	27.52
17.0	3	6	PPWDMRS17.0	29.66
18.0	3	6	PPWDMRS18.0	30.68
19.0	3	6	PPWDMRS19.0	32.12
20.0	3	6	PPWDMRS20.0	38.82
21.0	3	6	PPWDMRS21.0	39.86
22.0	3	6	PPWDMRS22.0	40.92
23.0	3	6	PPWDMRS23.0	42.04

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
24.0	3	6	PPWDMRS24.0	46.10
25.0	3	6	PPWDMRS25.0	49.48
26.0	3	6	PPWDMRS26.0	57.30
28.0	3	6	PPWDMRS28.0	67.22
30.0	3	6	PPWDMRS30.0	68.92
32.0	3	6	PPWDMRS32.0	70.76
34.0	3	6	PPWDMRS34.0	97.02
35.0	3	6	PPWDMRS35.0	103.16
36.0	3	6	PPWDMRS36.0	109.96
38.0	3	6	PPWDMRS38.0	118.20

PERFECT POINT SILVER & DEMING DRILL SET - 1/2" SHANK**METAL INDEX**

DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
8 PC DRILL SET Sizes 9/16" to 1" by 16ths (Not Illustrated)	Dual Finish Perfect Point® Wood Drills - 1/2" Shank	DS-PPWDRS-8	307.28

HIGH SPEED STEEL BRAD POINT CENTER DRILLS

ICS WIS

SPECIAL PURPOSE

BRAD POINT



High Speed Steel Brad Point Center Drills are designed for use with all types of adjustable counterbores and countersinks when a deeper pilot hole is required. Center spur point holds drill on center and prevents walking when two cutting spurs make contact.

4-1/2" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
1/8	2-1/2	4-1/2	RIGHT	BPCD04L008	7.04
5/32	2-1/2	4-1/2	RIGHT	BPCD04L010	7.04
3/16	2-1/2	4-1/2	RIGHT	BPCD04L012	7.28
7/32	2-1/2	4-1/2	RIGHT	BPCD04L014	7.28
1/4	2-1/2	4-1/2	RIGHT	BPCD04L016	7.88
5/16	2-1/2	4-1/2	RIGHT	BPCD04L020	12.02

6" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
1/8	2-1/2	6	RIGHT	BPCD06L008	7.04
5/32	2-1/2	6	RIGHT	BPCD06L010	7.04
3/16	2-1/2	6	RIGHT	BPCD06L012	7.28
7/32	2-1/2	6	RIGHT	BPCD06L014	7.28
1/4	2-1/2	6	RIGHT	BPCD06L016	7.88
9/32	2-1/2	6	RIGHT	BPCD06L018	11.60
19/64	2-1/2	6	RIGHT	BPCD06L019	12.02
5/16	2-1/2	6	RIGHT	BPCD06L020	12.02
3/8	2-1/2	6	RIGHT	BPCD06L024	12.02

7" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/16	3-1/2	7	RIGHT	BPCD07L012	7.78
7/32	3-1/2	7	RIGHT	BPCD07L014	8.40
1/4	3-1/2	7	RIGHT	BPCD07L016	9.56

8" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/16	3-1/2	8	RIGHT	BPCD08L012	8.40
7/32	3-1/2	8	RIGHT	BPCD08L014	9.04
1/4	3-1/2	8	RIGHT	BPCD08L016	10.08

6" Overall Length - LEFT HAND

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/16	2-1/2	6	LEFT	BPCDL06L012	7.28
7/32	2-1/2	6	LEFT	BPCDL06L014	7.88

HIGH SPEED STEEL DRILL POINT CENTER DRILLS

WBT-18

ICS WIS

SPECIAL PURPOSE

90° POINT



High Speed Steel 90° Drill Point Center Drills in sizes 3/32" to 3/8" are designed for use with all types of adjustable counterbores and countersinks when a deeper pilot hole is required or for straight boring jobs. 90° drills on center and reduces chipping and grabbing on break through.

4-1/2" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/32	2-1/2	4-1/2	RIGHT	DPCD04L006	7.04
1/8	2-1/2	4-1/2	RIGHT	DPCD04L008	7.04
5/32	2-1/2	4-1/2	RIGHT	DPCD04L010	7.04
3/16	2-1/2	4-1/2	RIGHT	DPCD04L012	7.04
7/32	2-1/2	4-1/2	RIGHT	DPCD04L014	7.28
1/4	2-1/2	4-1/2	RIGHT	DPCD04L016	7.88
9/32	2-1/2	4-1/2	RIGHT	DPCD04L018	12.60
19/64	2-1/2	4-1/2	RIGHT	DPCD04L019	12.60
5/16	2-1/2	4-1/2	RIGHT	DPCD04L020	12.60
3/8	2-1/2	4-1/2	RIGHT	DPCD04L024	12.60

6" Overall Length

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/32	2-1/2	6	RIGHT	DPCD06L006	7.04
1/8	2-1/2	6	RIGHT	DPCD06L008	7.04
5/32	2-1/2	6	RIGHT	DPCD06L010	7.04
3/16	2-1/2	6	RIGHT	DPCD06L012	7.04
7/32	2-1/2	6	RIGHT	DPCD06L014	7.28
1/4	2-1/2	6	RIGHT	DPCD06L016	7.88
9/32	2-1/2	6	RIGHT	DPCD06L018	12.60
19/64	2-1/2	6	RIGHT	DPCD06L019	12.60
5/16	2-1/2	6	RIGHT	DPCD06L020	12.60
3/8	2-1/2	6	RIGHT	DPCD06L024	12.60

6" Overall Length - LEFT HAND

SIZE	FLUTE LENGTH	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
3/16	2-1/2	6	LEFT	DPCDL06L012	8.10

TOOL STEEL GIMLETS

ICS **WIS**
GENERAL PURPOSE
FAST SCREW POINT

**SELF-FEEDING
POINT**

Quality hand tool for boring in soft or hard woods. Sharp screw tip bites into wood. (Limited supply available.)

SIZE	LENGTH	ITEM NO.	PRICE
5/64	4-1/8	GIM005	1.90
1/8	4-1/2	GIM008	2.18
5/32	4-3/4	GIM010	2.34
3/16	5	GIM012	2.62

SIZE	LENGTH	ITEM NO.	PRICE
1/4	5-3/8	GIM016	3.22
9/32	5-1/2	GIM018	3.50
5/16	5-3/4	GIM020	4.06

TOOL STEEL AUGER (SOLID CENTER) BITS

ICS **WIS**
GENERAL PURPOSE
MEDIUM SCREW POINT
**TAPER SQUARE
SHANK**

**SELF-FEEDING
POINT**

Solid Center Auger Bits are designed for use in a hand bit brace and may be used for all general purpose boring in soft or hard woods. Single flute design with double cutters, two outlining spurs, and a self-feeding medium fast pitch screw point.

SIZE	LENGTH	ITEM NO.	PRICE
1/4	8	AB016	5.26
5/16	8	AB020	5.26
3/8	8	AB024	5.64
7/16	8	AB028	5.64
1/2	8	AB032	5.64
9/16	8-1/2	AB036	5.64
5/8	8-1/2	AB040	6.52
11/16	8-1/2	AB044	6.52

SIZE	LENGTH	ITEM NO.	PRICE
3/4	9	AB048	8.40
13/16	9	AB052	8.40
7/8	9	AB056	9.20
15/16	9	AB060	9.70
1	9	AB100	9.70
1-1/8	10	AB108	15.92
1-1/4	10	AB116	15.92
1-1/2	10	AB132	17.14

PREMIUM TOOL STEEL DUAL AUGER (STUD) BITS

ICS **WIS**
HEAVY DUTY
FAST SCREW POINT
**HEX
SHANK**

**SELF-FEEDING
POINT**

Dual Auger Stud Bits are designed for use in a hand bit brace or a 3/8" or larger electric power drill and are used for fast and accurate boring in soft or hard woods. Single flute design with single cutter, an outlining spur, and a self-feeding fast pitch screw point.

SIZE	SHANK	ITEM NO.	PRICE
1/4	1/4	DAB016	7.98
5/16	5/16	DAB020	7.98
3/8	3/8	DAB024	7.98
7/16	3/8	DAB028	8.48
1/2	3/8	DAB032	8.48
9/16	3/8	DAB036	10.58
5/8	3/8	DAB040	10.58
11/16	3/8	DAB044	12.36
3/4	3/8	DAB048	12.36

SIZE	SHANK	ITEM NO.	PRICE
13/16	3/8	DAB052	14.20
7/8	3/8	DAB056	14.20
15/16	3/8	DAB060	17.60
1	3/8	DAB100	17.60
1-1/8	7/16	DAB108	19.72
1-1/4	7/16	DAB116	25.78
1-3/8	7/16	DAB124	29.60
1-1/2	7/16	DAB132	32.18

TAPER POINT DRILLS FOR WOOD SCREWS

ICS WIS

SPECIAL PURPOSE

TAPER POINT



Taper Point Drills are designed to drill tapered holes in wood and plastic to match a wood screw's thread and shank in one operation. They fit most counterbores and countersinks. Shank diameter is the same as the drill size.

DRILL DIAMETER	WOOD SCREW SIZE	REGULAR LENGTH		ITEM NO.	PRICE EACH
		FLUTE LENGTH	OVERALL LENGTH		
5/64	#2	1	2	TPDRL005#02	3.26
3/32	#3	1-1/4	2-1/4	TPDRL006#03	3.28
7/64	#4	1-1/2	2-5/8	TPDRL007#04	3.30
1/8	#5	1-5/8	2-3/4	TPDRL008#05	3.58
9/64	#6	1-3/4	2-7/8	TPDRL009#06	3.82
5/32	#7	2	3-1/8	TPDRL010#07	3.82
11/64	#8	2-1/8	3-1/4	TPDRL011#08	3.96
3/16	#9	2-5/16	3-1/2	TPDRL012#09	4.10
13/64	#10	2-7/16	3-5/8	TPDRL013#10	4.36
7/32	#12	2-1/2	3-3/4	TPDRL014#12	4.62
1/4	#14	2-3/4	4	TPDRL016#14	5.14

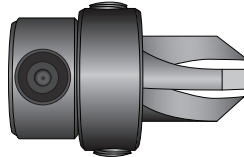
CARBON STEEL

DRILL COUNTERSINKS FOR WOOD SCREWS

ICS WIS

SPECIAL PURPOSE

82° ANGLE



Carbon Steel Drill Countersinks are designed to cut bevels in wood and plastic for wood screw heads #5 through #14. They attach to the drill with two set screws and can be adjusted up and down the drill for any length from a #5 to a #14 wood screw. They can also be reversed on the drill and used as a drill stop. Adjustable Drill Countersinks are also known as Shell Countersinks.

DRILL HOLE	WOOD SCREW SIZE	BODY DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/8	#5	3/8	7/8	WDCSK482-008	5.12
9/64	#6	3/8	7/8	WDCSK482-009	5.12
5/32	#7	3/8	7/8	WDCSK482-010	5.12
11/64	#8	3/8	7/8	WDCSK482-011	5.12
3/16	#9	3/8	7/8	WDCSK482-012	5.12
13/64	#10	7/16	7/8	WDCSK482-013	5.48
7/32	#12	3/8	7/8	WDCSK482-014	5.48
1/4	#14	1/2	7/8	WDCSK482-016	5.70

CARBIDE TIPPED

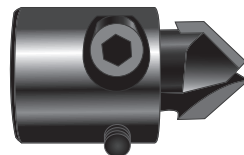
ADJUSTABLE DRILL COUNTERSINKS FOR WOOD SCREWS

ICS WIS

SPECIAL PURPOSE

82° ANGLE

USE WITH
3/32 to 3/16
DRILL SIZES



COUNTERSINKS
#4 to #10
WOOD SCREW

Carbide Tipped Adjustable Drill Countersinks are designed to cut bevels in wood and plastic for wood screw heads #4 to #10. They attach to the drill with two set screws and can be adjusted up and down the drill for any length from a #4 to a #10 wood screw. They can also be reversed on the drill and used as a drill stop. Adjustable Drill Countersinks are also known as Shell Countersinks.

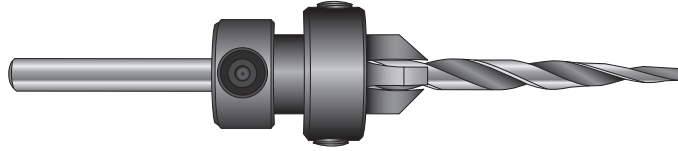
DRILL SIZES	SCREW SIZES	ITEM NO.	PRICE
3/32 to 3/16	#4 to #10	CTADCSK012	15.76

TAPER POINT DRILL & COUNTERSINK COMBINATION

ICS WIS

SPECIAL PURPOSE

3 PC SET

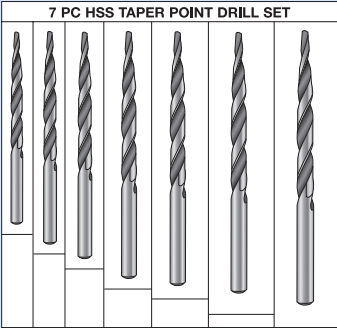


Taper Point Drill and Countersink Combination tools allow you to drill and countersink wood screw holes in one operation. A stop collar is included to control depth of hole.

DRILL DIAMETER	WOOD SCREW SIZE	REGULAR LENGTH		ITEM NO.	PRICE EACH
		FLUTE LENGTH	OVERALL LENGTH		
1/8	#5	1-5/8	2-3/4	TPDRL/CC008	9.14
9/64	#6	1-3/4	2-7/8	TPDRL/CC009	9.14
5/32	#7	2	3-1/8	TPDRL/CC010	9.14
11/64	#8	2-1/8	3-1/4	TPDRL/CC011	9.34
3/16	#9	2-5/16	3-1/2	TPDRL/CC012	9.78
13/64	#10	2-7/16	3-5/8	TPDRL/CC013	10.08
7/32	#12	2-1/2	3-3/4	TPDRL/CC014	10.30
1/4	#14	2-3/4	4	TPDRL/CC016	10.82

TAPER POINT DRILL SETS

VINYL POUCH

DESCRIPTION	CONTENTS	ITEM NO.	PRICE
7 PC Taper Point Drill Set 	1 each: 1/8, 9/64, 5/32, 11/64, 3/16, 7/32, 1/4 Taper Point Drills Regular Length	DS-TPDRL-7	19.42

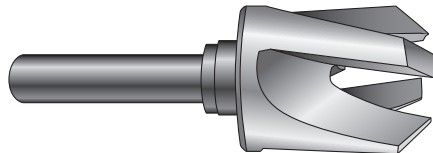
CARBON STEEL

WOOD PLUG CUTTERS - CLAW TYPE

ICS WIS

SPECIAL PURPOSE

FOUR CUTTING BLADES



Claw Type Wood Plug Cutters are designed for cutting your own wood plugs. They cut clean and fast to make smooth chamfered plugs for easy starting in the counterbored holes. They do not eject the plug which remains in the board and can be broken out with a blade screwdriver or the board can be sawed to free the plug. Wood plugs are used to conceal screw heads in counterbored holes.

SIZE	FITS	STYLE	ITEM NO.	PRICE
1/4	1/2	3/8	WPCCT016	6.64
3/8	1/2	3/8	WPCCT024	7.94
7/16	1/2	3/8	WPCCT028	8.76
1/2	1/2	3/8	WPCCT032	9.04
5/8	5/8	3/8	WPCCT040	11.10

TIMBER AUGER BITS - 30" LENGTH**ICS WIS****HEAVY DUTY****MEDIUM SCREW POINT**

7/16"
QUICK CHANGE
HEX SHANK

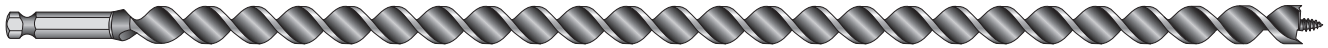
30" Overall Length x 26" Double Flute Length

SELF-FEEDING
POINT

Heavy Duty 30" Length Timber Auger Bits with 7/16" Quick Change Hex Shank are designed for use with pneumatic, electric and hydraulic drill motors and impact wrenches for drilling wooden railway cross ties, pressure treated lumber, creosoted poles, heavy timber, bulkheads, trees, etc... Double flute design with extended lip, double cutters, two outlining spurs, and a self-feeding screw point for boring clean holes. They are used by log home builders, arborists, railway maintenance departments, dock builders, utilities, etc...

SIZE	SHANK	ITEM NO.	PRICE
9/16	7/16 Quick Change	TAB30L036	-
5/8	7/16 Quick Change	TAB30L040	CALL
11/16	7/16 Quick Change	TAB30L044	FOR
3/4	7/16 Quick Change	TAB30L048	PRICE
13/16	7/16 Quick Change	TAB30L052	-
7/8	7/16 Quick Change	TAB30L056	-

SIZE	SHANK	ITEM NO.	PRICE
15/16	7/16 Quick Change	TAB30L060	-
1	7/16 Quick Change	TAB30L100	CALL
1-1/16	7/16 Quick Change	TAB30L104	FOR
1-1/8	7/16 Quick Change	TAB30L108	PRICE
1-1/2	7/16 Quick Change	TAB30L132	-

TIMBER AUGER BITS - 40" LENGTH**ICS WIS****HEAVY DUTY****MEDIUM SCREW POINT**

7/16"
QUICK CHANGE
HEX SHANK

40" Overall Length x 36" Double Flute Length

SELF-FEEDING
POINT

Heavy Duty 40" Length Timber Auger Bits with 7/16" Quick Change Hex Shank are designed for use with a standard rotary drill motor for drilling wooden railway cross ties, pressure treated lumber, creosoted poles, heavy timber, bulkheads, trees, etc... Double flute design with extended lip, double cutters, two outlining spurs, and a self-feeding screw point for boring clean holes. They are used by log home builders, arborists, railway maintenance departments, dock builders, utilities, etc...

SIZE	SHANK	ITEM NO.	PRICE
9/16	7/16 Quick Change	TAB40L036	-
5/8	7/16 Quick Change	TAB40L040	CALL
11/16	7/16 Quick Change	TAB40L044	FOR
3/4	7/16 Quick Change	TAB40L048	PRICE
13/16	7/16 Quick Change	TAB40L052	-

SIZE	SHANK	ITEM NO.	PRICE
7/8	7/16 Quick Change	TAB40L056	-
15/16	7/16 Quick Change	TAB40L060	CALL
1	7/16 Quick Change	TAB40L100	FOR
1-1/16	7/16 Quick Change	TAB40L104	PRICE
1-1/8	7/16 Quick Change	TAB40L108	-

TIMBER AUGER BITS - EXTENDED LENGTH**ICS****WIS****SPECIAL PURPOSE****MEDIUM SCREW POINT****QUICK RELEASE
HEX SHANK****SELF-FEEDING
POINT**

Heavy Duty 48", 60", & 72" Long Timber Auger Bits are used by contractors to build wooden retaining walls. They are manufactured 1/16" larger than the size of threaded rod being used to anchor wooden ties in place, e.g., a 3/4" threaded rod would use a 13/16" auger bit.

SIZE	SHANK	ITEM NO.	PRICE
48" EXTENDED LENGTH			
9/16	7/16 Quick Change	TAB48L036	-
11/16	7/16 Quick Change	TAB48L044	-
60" EXTENDED LENGTH			
9/16	7/16 Quick Change	TAB60L036	CALL FOR
11/16	7/16 Quick Change	TAB60L044	PRICE
72" EXTENDED LENGTH			
9/16	7/16 Quick Change	TAB72L036	-
11/16	7/16 Quick Change	TAB72L044	-

SIZE	SHANK	ITEM NO.	PRICE
48" EXTENDED LENGTH			
13/16	7/16 Quick Change	TAB48L052	-
15/16	7/16 Quick Change	TAB48L060	-
60" EXTENDED LENGTH			
13/16	7/16 Quick Change	TAB60L052	CALL FOR
15/16	7/16 Quick Change	TAB60L060	PRICE
72" EXTENDED LENGTH			
13/16	7/16 Quick Change	TAB72L052	-
15/16	7/16 Quick Change	TAB72L060	-

TOOL STEEL**POWER BIT EXTENSIONS****ICS****WIS****GENERAL PURPOSE****PRECISION GROUND**

Power Bit Extensions are for boring jobs requiring longer reach. Extensions can be connected to one another for extra long reach. Hex wrench included.

SIZE	LENGTH	FITS SHANK SIZE	FOLLOWS DRILL SIZE OF	ITEM NO.	PRICE
1/4	12	1/4 Hex / 5/16 Round	1/2" or larger	PBX016X12	11.08
1/4	18	1/4 Hex / 5/16 Round	1/2" or larger	PBX016X18	13.62
5/16	18	5/16 Hex / 3/8 Round	5/8" or larger	PBX020X18	15.30
5/16	24	5/16 Hex / 3/8 Round	5/8" or larger	PBX020X24	25.00
3/8	6	5/16 Hex / 3/8 Round	3/4" or larger	PBX024X06	16.80
3/8	12	5/16 Hex / 3/8 Round	3/4" or larger	PBX024X12	28.36
7/16	9-1/2	7/16 Hex / 1/2 Round	7/8" or larger	PBX028X09.5	13.70
7/16	12	7/16 Hex / 1/2 Round	7/8" or larger	PBX028X12	13.70
7/16	18	7/16 Hex / 1/2 Round	7/8" or larger	PBX028X18	17.00
7/16	24	7/16 Hex / 1/2 Round	7/8" or larger	PBX028X24	21.26

PREMIUM TOOL STEEL SHIP AUGER BITS - 6" LENGTH

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

6" O.A.L. x 4" FLUTE LENGTH

Heavy Duty 6" Long Ship Auger Bits are made of special tool steel. Machine ground hollows with deep open throat for fast chip removal. Ideal for heavy timbers and power poles. Single flute design with single cutter, side lip, and a self-feeding medium fast pitch screw point.

SIZE	HEX SHANK	ITEM NO.	PRICE
1/2	7/16	SAB06L032	18.14
9/16	7/16	SAB06L036	19.18
5/8	7/16	SAB06L040	19.18
11/16	7/16	SAB06L044	19.18
3/4	7/16	SAB06L048	19.18
13/16	7/16	SAB06L052	23.32
7/8	7/16	SAB06L056	23.32

SIZE	HEX SHANK	ITEM NO.	PRICE
15/16	7/16	SAB06L060	30.04
1	7/16	SAB06L100	30.04
1-1/8	7/16	SAB06L108	33.88
1-1/4	7/16	SAB06L116	38.38
1-3/8	7/16	SAB06L124	46.34
1-1/2	7/16	SAB06L132	50.32

PREMIUM TOOL STEEL SHIP AUGER BITS - 8" LENGTH

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

8" O.A.L. x 6" FLUTE LENGTH

Heavy Duty 8" Long Ship Auger Bits are made of premium tool steel. Machine ground hollows with deep open throat for fast chip removal. Ideal for heavy timbers and power poles. Single flute design with single cutter, side lip, and a self-feeding medium fast pitch screw point.

SIZE	HEX SHANK	ITEM NO.	PRICE
11/16	7/16	SAB08L044	26.12
3/4	7/16	SAB08L048	26.12
13/16	7/16	SAB08L052	31.48
7/8	7/16	SAB08L056	31.48
15/16	7/16	SAB08L060	39.94

SIZE	HEX SHANK	ITEM NO.	PRICE
1	7/16	SAB08L100	39.94
1-1/8	7/16	SAB08L108	45.44
1-1/4	7/16	SAB08L116	51.22
1-3/8	7/16	SAB08L124	61.40
1-1/2	7/16	SAB08L132	61.40

PREMIUM TOOL STEEL SHIP AUGER BITS - 18" LENGTH

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

18" O.A.L. x 15" FLUTE LENGTH

Heavy Duty 18" Long Ship Auger Bits are made of special tool steel. Machine ground hollows with deep open throat for fast chip removal. Ideal for heavy timbers and power poles. Single flute design with single cutter, side lip, and a self-feeding medium fast pitch screw point.

SIZE	HEX SHANK	ITEM NO.	PRICE
3/8	7/16	SAB18L024	22.64
7/16	7/16	SAB18L028	22.64
1/2	7/16	SAB18L032	23.84
9/16	7/16	SAB18L036	32.66
5/8	7/16	SAB18L040	32.66
11/16	7/16	SAB18L044	35.58
3/4	7/16	SAB18L048	35.58
13/16	7/16	SAB18L052	40.24

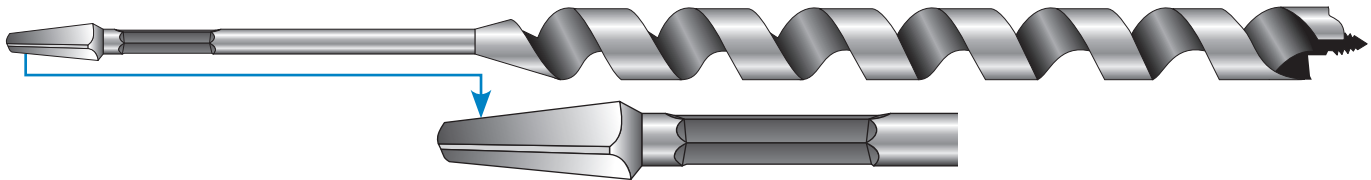
SIZE	HEX SHANK	ITEM NO.	PRICE
7/8	7/16	SAB18L056	40.24
15/16	7/16	SAB18L060	50.06
1	7/16	SAB18L100	50.06
1-1/16	7/16	SAB18L104	52.50
1-1/8	7/16	SAB18L108	58.64
1-1/4	7/16	SAB18L116	69.22
1-3/8	7/16	SAB18L124	75.44
1-1/2	7/16	SAB18L132	81.56

SHIP AUGER BITS - EXTENDED LENGTH**ICS WIS****SPECIAL PURPOSE****MEDIUM SCREW POINT**QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

Heavy Duty 48", 60", & 72" Long Ship Auger Bits are used by contractors to build wooden retaining walls. They are manufactured 1/16" larger than the size of threaded rod being used to anchor wooden ties in place, e.g., a 3/4" threaded rod would use a 13/16" auger bit.

SIZE	SHANK	ITEM NO.	PRICE
48" EXTENDED LENGTH			
9/16	7/16 Quick Change	SAB48L036	-
11/16	7/16 Quick Change	SAB48L044	-
60" EXTENDED LENGTH			
9/16	7/16 Quick Change	SAB60L036	CALL FOR PRICE
11/16	7/16 Quick Change	SAB60L044	PRICE
72" EXTENDED LENGTH			
9/16	7/16 Quick Change	SAB72L036	-
11/16	7/16 Quick Change	SAB72L044	-

SIZE	SHANK	ITEM NO.	PRICE
48" EXTENDED LENGTH			
13/16	7/16 Quick Change	SAB48L052	-
15/16	7/16 Quick Change	SAB48L060	-
60" EXTENDED LENGTH			
13/16	7/16 Quick Change	SAB60L052	CALL FOR PRICE
15/16	7/16 Quick Change	SAB60L060	PRICE
72" EXTENDED LENGTH			
13/16	7/16 Quick Change	SAB72L052	-
15/16	7/16 Quick Change	SAB72L060	-

HAND BRACE UTILITY POLE AUGER BITS**ICS WIS****GENERAL PURPOSE****MEDIUM SCREW POINT**

TAPER SQUARE SHANK

HEX SHANK SECTION

Cutting off the the taper shank will convert it to a hex shank.

Hand Brace Utility Pole Auger Bits are designed for boring holes in creosoted poles, construction timber, and railroad ties without clogging, binding, or a need to stop to clear chips. Use in a hand brace or cut off the taper square shank for use in an electric drill. Single flute design with single cutter, side lip, and self feeding medium fast pitch screw point. Bits can be resharpened with an auger file.

SIZE	SHANK DIA.	SHANK TYPE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/8	3/8	TAPER SQUARE	12"	18"	HBAB-UP024	27.60
1/2	3/8	TAPER SQUARE	12"	18"	HBAB-UP032	29.12
9/16	3/8	TAPER SQUARE	12"	18"	HBAB-UP036	29.28
5/8	3/8	TAPER SQUARE	12"	18"	HBAB-UP040	29.54
3/4	5/16	ADAPTER HEX	12"	18"	HBAB-UP048	31.70
7/8	5/16	ADAPTER HEX	12"	18"	HBAB-UP056	36.28
1	5/16	ADAPTER HEX	12"	18"	HBAB-UP100	40.08

POWER POLE BITS - 23" LENGTH**ICS WIS****SPECIAL PURPOSE****MEDIUM SCREW POINT**QUICK RELEASE
HEX SHANK

23" O.A.L. x 18" FLUTE LENGTH

SELF-FEEDING
POINT

Power Pole Bits are used to bore deep holes in creosoted poles, railroad ties, heavy timber, bulkheads, etc. Single flute design with single cutter, an outlining spur, side lip, and a self-feeding medium fast pitch screw point.

SIZE	HEX SHANK	ITEM NO.	PRICE
9/16	7/16	PPB23L036	45.96
5/8	7/16	PPB23L040	46.42
11/16	7/16	PPB23L044	50.12
3/4	7/16	PPB23L048	51.52

SIZE	HEX SHANK	ITEM NO.	PRICE
13/16	7/16	PPB23L052	54.56
7/8	7/16	PPB23L056	56.00
15/16	7/16	PPB23L060	60.06
1	7/16	PPB23L100	61.34

IMPACT WRENCH AUGER BITS - 18" LENGTH**ICS WIS****HEAVY DUTY****MEDIUM SCREW POINT**QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

18" O.A.L. x 15" FLUTE LENGTH

Impact Wrench Auger Bits are designed to bore holes in telephone or power line poles quickly using quick change chuck impact drills. Single flute design with single cutter, side lip, and a self-feeding medium fast pitch screw point.

SIZE	HEX SHANK	ITEM NO.	PRICE
9/16	7/16	IWAB18L036	40.36
11/16	7/16	IWAB18L044	42.84

SIZE	HEX SHANK	ITEM NO.	PRICE
13/16	7/16	IWAB18L052	46.58
15/16	7/16	IWAB18L060	49.14

CARBIDE TIPPED**IMPACT WRENCH AUGER BITS****ICS WIS****HEAVY DUTY****MEDIUM SCREW POINT**QUICK RELEASE
HEX SHANKSELF-FEEDING
POINT

Carbide Tipped Impact Wrench Auger Bits are designed to bore holes into the hardest wood and creosoted poles used by utilities. They will outlast and outperform tool steel auger bits. Two sizes of shanks fit all impact wrenches with standard 7/16" or 5/8" hex adapters. Hex shank can also be used in 1/2" electric drill. Single flute design with double cutters, two outlying spurs, side lip, and a self-feeding medium fast pitch screw point.

7/16" SHANK

SIZE	ITEM NO.	PRICE
12" OAL x 9" Flute (7/16" Hex Shank)		
7/16	CTIWAB12L028	71.40
1/2	CTIWAB12L032	59.86
9/16	CTIWAB12L036	65.10
5/8	CTIWAB12L040	66.16
11/16	CTIWAB12L044	68.26
3/4	CTIWAB12L048	71.40
13/16	CTIWAB12L052	69.30
7/8	CTIWAB12L056	75.60
15/16	CTIWAB12L060	84.00
1	CTIWAB12L100	87.16
1-1/16	CTIWAB12L104	113.40
1-1/8	CTIWAB12L108	115.50
18" OAL x 15" Flute (7/16" Hex Shank)		
7/16	CTIWAB18L028	78.76
1/2	CTIWAB18L032	63.00
9/16	CTIWAB18L036	71.40
5/8	CTIWAB18L040	71.40
11/16	CTIWAB18L044	71.40
3/4	CTIWAB18L048	74.76
13/16	CTIWAB18L052	74.76
7/8	CTIWAB18L056	84.00
15/16	CTIWAB18L060	87.16
1	CTIWAB18L100	89.26
1-1/16	CTIWAB18L104	126.00
1-1/8	CTIWAB18L108	172.20
1-3/16	CTIWAB18L112	245.70
1-1/4	CTIWAB18L116	252.00

7/16" SHANK

SIZE	ITEM NO.	PRICE
24" OAL x 21" Flute (7/16" Hex Shank)		
1/2	CTIWAB24L032	69.30
9/16	CTIWAB24L036	78.54
5/8	CTIWAB24L040	80.86
11/16	CTIWAB24L044	87.16
3/4	CTIWAB24L048	88.62
13/16	CTIWAB24L052	89.26
7/8	CTIWAB24L056	94.50
15/16	CTIWAB24L060	100.38
1	CTIWAB24L100	100.38
1-1/16	CTIWAB24L104	144.90
1-1/8	CTIWAB24L108	172.20
1-3/16	CTIWAB24L112	245.70
1-1/4	CTIWAB24L116	252.00
36" OAL x 33" Flute (7/16" Hex Shank)		
1/2	CTIWAB36L032	115.50
9/16	CTIWAB36L036	113.40
5/8	CTIWAB36L040	147.00
11/16	CTIWAB36L044	147.00
3/4	CTIWAB36L048	144.90
13/16	CTIWAB36L052	164.86
7/8	CTIWAB36L056	164.86
15/16	CTIWAB36L060	171.16
1	CTIWAB36L100	193.20
1-1/16	CTIWAB36L104	216.30
1-1/8	CTIWAB36L108	231.52
1-3/16	CTIWAB36L112	302.40
1-1/4	CTIWAB36L116	319.20
48" OAL x 45" Flute (7/16" Hex Shank)		
13/16	CTIWAB48L052	218.40
7/8	CTIWAB48L056	239.40
15/16	CTIWAB48L060	247.80
1	CTIWAB48L100	CALL
1-1/16	CTIWAB48L104	285.60
1-1/8	CTIWAB48L108	309.76
1-3/16	CTIWAB48L112	367.50
1-1/4	CTIWAB48L116	367.50

5/8" SHANK

SIZE	ITEM NO.	PRICE
12" OAL x 9" Flute (5/8" Hex Shank)		
1/2	CTIWAB12L032A	59.86
9/16	CTIWAB12L036A	65.10
5/8	CTIWAB12L040A	66.16
11/16	CTIWAB12L044A	68.26
3/4	CTIWAB12L048A	71.40
13/16	CTIWAB12L052A	69.30
7/8	CTIWAB12L056A	75.60
15/16	CTIWAB12L060A	84.00
1	CTIWAB12L100A	87.16
1-1/16	CTIWAB12L104A	113.40
18" OAL x 15" Flute (5/8" Hex Shank)		
1/2	CTIWAB18L032A	63.00
9/16	CTIWAB18L036A	71.40
5/8	CTIWAB18L040A	71.40
11/16	CTIWAB18L044A	71.40
3/4	CTIWAB18L048A	74.76
13/16	CTIWAB18L052A	74.76
7/8	CTIWAB18L056A	84.00
15/16	CTIWAB18L060A	87.16
1	CTIWAB18L100A	89.26
1-1/16	CTIWAB18L104A	126.00
24" OAL x 21" Flute (5/8" Hex Shank)		
1/2	CTIWAB24L032A	69.30
9/16	CTIWAB24L036A	78.54
5/8	CTIWAB24L040A	80.86
11/16	CTIWAB24L044A	87.16
3/4	CTIWAB24L048A	88.62
13/16	CTIWAB24L052A	89.26
7/8	CTIWAB24L056A	94.50
15/16	CTIWAB24L060A	100.38
1	CTIWAB24L100A	100.38
1-1/16	CTIWAB24L104A	144.90

CARBIDE TIPPED WOOD AUGER BITS - DOUBLE FLUTED

ICS WIS

SPECIAL PURPOSE

MEDIUM SCREW POINT

7/16" QUICK CHANGE
HEX SHANKREPLACEABLE
SCREW POINT

Double Fluted Carbide Tipped Wood Auger Bits are designed with a heavy duty milled flute and a replaceable screw point to allow it to drill faster than conventional auger bits. Flutes are surface treated for corrosion resistance and fully heat treated to accept high torque load and guard against bit bending when using impact drills. They will drill precise holes in the hardest wood, creosoted poles, chipboard, and plywood. Also known as Double Spur Drills.

SIZE	SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9/16	7/16" Quick Change Hex Shank	8-9/16	12	CTWAB036X12	38.32
9/16	7/16" Quick Change Hex Shank	14-3/8	18	CTWAB036X18	41.26
11/16	7/16" Quick Change Hex Shank	8-9/16	12	CTWAB044X12	38.96
11/16	7/16" Quick Change Hex Shank	14-3/8	18	CTWAB044X18	42.00
13/16	7/16" Quick Change Hex Shank	8-9/16	12	CTWAB052X12	48.30
13/16	7/16" Quick Change Hex Shank	14-3/8	18	CTWAB052X18	52.08

HIGH SPEED STEEL SCREW POINT PILOT AUGER DRILLS



High Speed Steel Replacement Screw Point Pilot Auger Drills are designed for use with Carbide Tipped Wood Auger Bits.

SIZE	FITS SIZES	STYLE	ITEM NO.	PRICE
3/8	3/8	SINGLE END	SPPAD024	5.26
1/2	1/2 - 9/16	SINGLE END	SPPAD032	5.26
5/8	5/8 - 13/16	SINGLE END	SPPAD040	5.26
7/8	7/8 - 1-1/8	SINGLE END	SPPAD056	5.26
1-1/4	1-1/4 - 1-1/2	SINGLE END	SPPAD116	5.26

CARBIDE TIPPED WOOD AUGER BITS - DOUBLE FLUTED

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

7/16" QUICK CHANGE
HEX SHANKSELF FEEDING
POINT

Double Fluted Wood Auger Bits are designed with extended lip double cutters, two outlining spurs, and self-feeding screw point for boring clean, precise holes. They are for use with pneumatic, electric and hydraulic drill motors and impact wrenches for drilling wooden railway cross ties, pressure treated lumber, creosoted poles, heavy timber, bulk heads, trees etc... They are used by log home builders, arborists, railway maintenance departments, deck builders, utilities etc...

SIZE	SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/2	7/16" Quick Change Hex Shank	15	18	WABDF032X18	20.62
9/16	7/16" Quick Change Hex Shank	15	18	WABDF036X18	24.60
11/16	7/16" Quick Change Hex Shank	15	18	WABDF044X18	31.30
13/16	7/16" Quick Change Hex Shank	15	18	WABDF052X18	49.02

IMPACT WRENCH AUGER BITS

1/2" FEMALE SQUARE SOCKET

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

SQUARE SOCKET
DRIVESELF-FEEDING
POINT

18" OAL X 15" FLUTE LENGTH

1/2" Female Square Socket Impact Wrench Auger Bits are designed for general construction work using a 1/2" male square socket impact wrench. Single flute design with single cutter, side lip and a self-feeding medium fast pitch screw point.

SOCKET		FLUTE	OVERALL	ITEM	
SIZE	SIZE	LENGTH	LENGTH	NO.	PRICE
9/16	1/2	15	18	SSIWAB18L036	31.90
5/8	1/2	15	18	SSIWAB18L040	33.92
11/16	1/2	15	18	SSIWAB18L044	34.34
3/4	1/2	15	18	SSIWAB18L048	34.46

SOCKET		FLUTE	OVERALL	ITEM	
SIZE	SIZE	LENGTH	LENGTH	NO.	PRICE
13/16	1/2	15	18	SSIWAB18L052	37.96
7/8	1/2	15	18	SSIWAB18L056	37.96
15/16	1/2	15	18	SSIWAB18L060	39.86

SDS SHANK AUGER BITS

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

4 SLOT
SDS SHANKSELF-FEEDING
POINT

8" OAL X 6" FLUTE LENGTH

SDS Shank Auger Bits are designed for general construction work using any 4 slot drive systems. Single flute design with single cutter, side lip and a self-feeding medium fast pitch screw point. For rotary drilling only.

SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/4	6	8	AB-SDS016X08	4.70
5/16	6	8	AB-SDS020X08	4.70
3/8	6	8	AB-SDS024X08	5.08
7/16	6	8	AB-SDS028X08	5.20
1/2	6	8	AB-SDS032X08	5.34

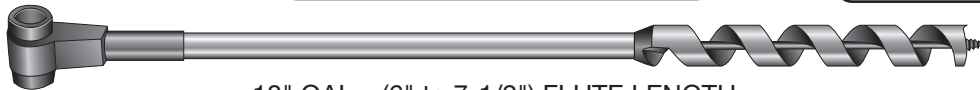
SIZE	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9/16	6	8	AB-SDS036X08	5.74
5/8	6	8	AB-SDS040X08	6.52
11/16	6	8	AB-SDS044X08	7.70
3/4	6	8	AB-SDS048X08	8.48

HAND DRIVE SCREW EYE AUGER BITS

ICS WIS

HEAVY DUTY

MEDIUM SCREW POINT

SCREW EYE
DRIVESELF-FEEDING
POINT

18" OAL x (6" to 7-1/2") FLUTE LENGTH

Hand Drive Screw Eye Auger Bits are designed for boring holes in hardwoods where power is not available. An auger handle is put through the eye and the auger bit is turned by hand. Single flute design with single cutter, side lip and a large self-feeding point.

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
5/16	18	AB-HD020X18	6.56
3/8	18	AB-HD024X18	7.06
7/16	18	AB-HD028X18	7.58
1/2	18	AB-HD032X18	7.58
9/16	18	AB-HD036X18	9.02

SIZE	OVERALL LENGTH	ITEM NO.	PRICE
5/8	18	AB-HD040X18	9.02
3/4	18	AB-HD048X18	10.08
7/8	18	AB-HD056X18	11.92
1	18	AB-HD100X18	13.72

HIGH SPEED STEEL RAILROAD TIE BORING BITS

ICS USA

SPECIAL PURPOSE

70° or 90° POINT

ROUND OR
FLATTED SHANKSINGLE
FLUTE

High Speed Steel Single Flute Railroad Tie Boring Bits are specifically designed for drilling spike holes in railway cross ties. The single flute acts in a screw-like movement, feeding itself into the material for maximum chip removal. The open flute design prevents chip packing and reduces wood burning. Single flute drills are also known as Bobbin Bits.

SIZE	FLUTE LENGTH	OVERALL LENGTH	POINT ANGLE	ROUND SHANK		FLATTED SHANK	
				ITEM NO.	PRICE	ITEM NO.	PRICE
9/16	6-3/8	9-3/8	70°	RTB1R036X09-70	-	RTB1F036-09-70	-
9/16	9-5/8	12-1/8	70°	RTB1R036X12-70	-	RTB1F036-12-70	-
5/8	6-3/8	9-3/8	70°	RTB1R040X09-70	CALL	RTB1F040-09-70	CALL
5/8	9-5/8	12-1/8	70°	RTB1R040X12-70	FOR	RTB1F040-12-70	FOR
11/16	6-3/8	9-3/8	70°	RTB1R044X09-70	PRICE	RTB1F044-09-70	PRICE
11/16	9-5/8	12-1/8	70°	RTB1R044X12-70	-	RTB1F044-12-70	-
3/4	6-3/8	9-3/8	70°	RTB1R048X09-70	-	RTB1F048-09-70	-
3/4	9-5/8	12-1/8	70°	RTB1R048X12-70	-	RTB1F048-12-70	-
9/16	6-3/8	9-3/8	90°	RTB1R036X09-90	-	RTB1F036-09-90	-
9/16	9-5/8	12-1/8	90°	RTB1R036X12-90	-	RTB1F036-12-90	-
5/8	6-3/8	9-3/8	90°	RTB1R040X09-90	CALL	RTB1F040-09-90	CALL
5/8	9-5/8	12-1/8	90°	RTB1R040X12-90	FOR	RTB1F040-12-90	FOR
11/16	6-3/8	9-3/8	90°	RTB1R044X09-90	PRICE	RTB1F044-09-90	PRICE
11/16	9-5/8	12-1/8	90°	RTB1R044X12-90	-	RTB1F044-12-90	-
3/4	6-3/8	9-3/8	90°	RTB1R048X09-90	-	RTB1F048-09-90	-
3/4	9-5/8	12-1/8	90°	RTB1R048X12-90	-	RTB1F048-12-90	-

HIGH SPEED STEEL RAILROAD TIE BORING BITS

ICS USA

SPECIAL PURPOSE

70° or 90° POINT

ROUND OR
FLATTED SHANKTWO
FLUTE

High Speed Steel Two Flute Railroad Tie Boring Bits are specifically designed for drilling holes in railway cross ties. The double flute design combines ease of penetration with rapid chip removal in deep hole, hardwood drilling.

SIZE	FLUTE LENGTH	OVERALL LENGTH	POINT ANGLE	ROUND SHANK		FLATTED SHANK	
				ITEM NO.	PRICE	ITEM NO.	PRICE
9/16	6-3/8	9-3/8	70°	RTB2R036X09-70	-	RTB2F036-09-70	-
9/16	9-5/8	12-1/8	70°	RTB2R036X12-70	-	RTB2F036-12-70	-
5/8	6-3/8	9-3/8	70°	RTB2R040X09-70	CALL	RTB2F040-09-70	CALL
5/8	9-5/8	12-1/8	70°	RTB2R040X12-70	FOR	RTB2F040-12-70	FOR
11/16	6-3/8	9-3/8	70°	RTB2R044X09-70	PRICE	RTB2F044-09-70	PRICE
11/16	9-5/8	12-1/8	70°	RTB2R044X12-70	-	RTB2F044-12-70	-
3/4	6-3/8	9-3/8	70°	RTB2R048X09-70	-	RTB2F048-09-70	-
3/4	9-5/8	12-1/8	70°	RTB2R048X12-70	-	RTB2F048-12-70	-
9/16	6-3/8	9-3/8	90°	RTB2R036X09-90	-	RTB2F036-09-90	-
9/16	9-5/8	12-1/8	90°	RTB2R036X12-90	-	RTB2F036-12-90	-
5/8	6-3/8	9-3/8	90°	RTB2R040X09-90	CALL	RTB2F040-09-90	CALL
5/8	9-5/8	12-1/8	90°	RTB2R040X12-90	FOR	RTB2F040-12-90	FOR
11/16	6-3/8	9-3/8	90°	RTB2R044X09-90	PRICE	RTB2F044-09-90	PRICE
11/16	9-5/8	12-1/8	90°	RTB2R044X12-90	-	RTB2F044-12-90	-
3/4	6-3/8	9-3/8	90°	RTB2R048X09-90	-	RTB2F048-09-90	-
3/4	9-5/8	12-1/8	90°	RTB2R048X12-90	-	RTB2F048-12-90	-

CARBIDE TIPPED TRI POINT AUGER BITS

ICS WIS

HEAVY DUTY

TRI POINT

1/2" ROUND
SHANK

Carbide Tipped Tri Point Auger Bits are designed for CNC machines to do pre plate drilling of railway cross ties.

SIZE	LENGTH	SHANK	ITEM NO.	PRICE
11/16	12	1/2	CTTPAB044X12	44.72
3/4	12	1/2	CTTPAB048X12	50.96

HIGH SPEED STEEL MORTISE BITS BI-DIRECTIONAL

ICS WIS

SPECIAL PURPOSE

STRAIGHT OR
1/2" SHANKRIGHT OR LEFT
HAND CUTTING

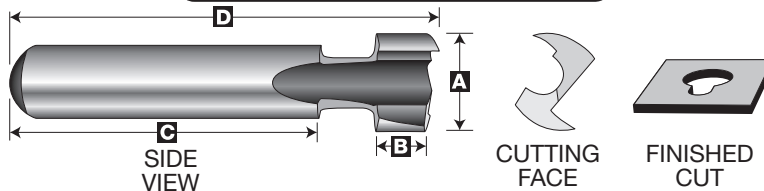
High Speed Steel Bi-Directional Mortise Bits are designed with two flutes for right and left hand cutting. They are used in Rye oscillating mortising machines to produce clean slots by oscillating cutting strokes. They are also known as Reciprocating Slotters, Oscillating Mortise Bits, Mortising Router Bits, Multi-Directional Mortise Cutters or Bird's Mouth Mortising Bits.

CUTTING DIAMETER	CUTTING LENGTH	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
1/4	2	1/4	4	MBBDSS016X200	12.60
5/16	2	5/16	4	MBBDSS020X200	12.60
3/8	2-1/2	3/8	4-1/2	MBBDSS024X232	13.54
7/16	2-1/2	7/16	4-1/2	MBBDSS028X232	16.92
1/2" SHANK					
1/4	1-1/4	1/2	3-1/4	MBBDRS016X116	12.60
1/4	2	1/2	4-1/2	MBBDRS016X200	12.60
5/16	2	1/2	4-1/2	MBBDRS020X200	12.60
3/8	2	1/2	4-1/2	MBBDRS024X200	12.60
1/2	2-1/2	1/2	4-1/2	MBBDRS032X232	12.60

HIGH SPEED STEEL KEYHOLE SLOT ROUTER BIT

ICS WIS

SPECIAL PURPOSE



High Speed Steel Keyhole Slot Router Bits are designed to rout a vertical or horizontal keyhole slot for hanging picture frames, shelves, mirrors, plaques, clocks, candle sconces, cabinets, support fixtures, and other wall hangings. They cut a 5/16" or 3/8" entry hole and recessed slot for positive hanging on a headed fastener.

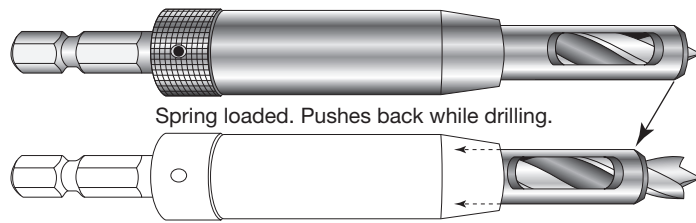
CUTTING DIAMETER "A"	CUTTING LENGTH "B"	SHANK LENGTH "C"	OVERALL LENGTH "D"	SHANK DIAMETER	ITEM NO.	PRICE
5/16	11/64	1	1-3/8	1/8	RB-KHC020	7.88
3/8	13/64	1	1-3/8	1/4	RB-KHC024	10.50

HIGH SPEED STEEL VIX BITS

ICS WIS

SPECIAL PURPOSE

118° POINT

1/4" HEX SHANK
QUICK CHANGERIGHT
HAND CUT

High Speed Steel Hex Shank Self Centering Vix Bits are designed for accurately centering and drilling screw holes for hinges, striker plates, door butts, window pulls, and all cabinet hardware using screws.

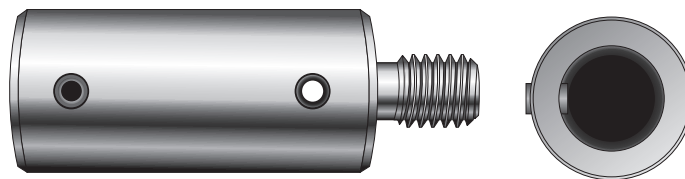
DRILL SIZE	FOR SCREW SIZES	DRILL POINT	ITEM NO.	PRICE
5/64	#3, #4	118° Point	VB005	13.58
7/64	#5, #6	118° Point	VB007	13.58
9/64	#8, #9, #10	118° Point	VB009	13.58
11/64	#12	118° Point	VB011	15.16
13/64	#14	118° Point	VB013	15.16
1/4	Shelf Pin	Brad Point	VB016	15.16
METRIC				
5.0mm	Shelf Pin	Brad Point	VBM05.0	15.16

TOOL STEEL BORING CHUCKS

ICS WIS

SPECIAL PURPOSE

PRECISION CRAFTED

7/16" - 14
THREADSRIGHT
HAND CUT

Boring Chucks are designed for use in machines requiring a 7/16"-14 threaded shank. They accept straight shank drills and are held in place with set screw(s). Each chuck has a 3/16" or 1/4" hole through the body to tighten the threaded shank into the drilling machine holder. They are also known as Adapter Chucks and are compatible with Morris Adapter Chucks (style 1) and Forrest City Boring Chucks (#5).

DRILL SIZE	OUTSIDE DIAMETER	OVERALL LENGTH	ROTATION DIRECTION	ITEM NO.	PRICE
1/8	5/8	1-1/2	RIGHT	BCRH008	16.80
5/32	5/8	1-1/2	RIGHT	BCRH010	16.80
3/16	5/8	1-1/2	RIGHT	BCRH012	16.80
7/32	5/8	1-1/2	RIGHT	BCRH014	16.80
1/4	5/8	1-1/2	RIGHT	BCRH016	16.80
9/32	5/8	1-1/2	RIGHT	BCRH018	16.80
5/16	7/8	1-3/4	RIGHT	BCRH020	19.96
3/8	7/8	1-3/4	RIGHT	BCRH024	19.96
7/16	7/8	1-3/4	RIGHT	BCRH028	19.96
1/2	7/8	1-3/4	RIGHT	BCRH032	19.96
METRIC					
M10.00	7/8	1-3/4	RIGHT	BCRHM10.0	19.96

FIBERGLASS HOLLOW CORE BITS**ICS WIS****SPECIAL PURPOSE****90° POINT**QUICK RELEASE
7/16" HEX SHANKGROUND
SHORT FLUTE

Carbide Tipped Fiberglass Hollow Core Bits are designed for drilling through hollow core utility poles made from fiberglass and/or composite materials. They are manufactured with a ground short flute and no clearance to create a rigid solid round body to support the drill on center through initial entry hole and opposite side wall without damaging the entry hole.

SIZE	FLUTE	OAL	ITEM NO.	PRICE
1/2	6	12	CTFGHCB032X12	46.76
1/2	6	18	CTFGHCB032X18	49.90
1/2	6	24	CTFGHCB032X24	53.76
9/16	6	12	CTFGHCB036X12	49.62
9/16	6	18	CTFGHCB036X18	55.02
9/16	6	24	CTFGHCB036X24	59.56
5/8	6	12	CTFGHCB040X12	52.46
5/8	6	18	CTFGHCB040X18	58.60
5/8	6	24	CTFGHCB040X24	61.34
11/16	6	12	CTFGHCB044X12	54.94
11/16	6	18	CTFGHCB044X18	60.90
11/16	6	24	CTFGHCB044X24	70.26
3/4	6	12	CTFGHCB048X12	58.84
3/4	6	18	CTFGHCB048X18	63.90
3/4	6	24	CTFGHCB048X24	74.22
13/16	6	12	CTFGHCB052X12	62.12
13/16	6	18	CTFGHCB052X18	69.10

SIZE	FLUTE	OAL	ITEM NO.	PRICE
13/16	6	24	CTFGHCB052X24	76.78
7/8	6	12	CTFGHCB056X12	71.66
7/8	6	18	CTFGHCB056X18	78.88
7/8	6	24	CTFGHCB056X24	94.40
15/16	6	12	CTFGHCB060X12	81.34
15/16	6	18	CTFGHCB060X18	86.84
15/16	6	24	CTFGHCB060X24	89.34
1	6	12	CTFGHCB100X12	84.40
1	6	18	CTFGHCB100X18	91.84
1	6	24	CTFGHCB100X24	102.40
1-1/16	6	12	CTFGHCB104X12	89.34
1-1/16	6	18	CTFGHCB104X18	95.94
1-1/16	6	24	CTFGHCB104X24	102.40
1-1/8	6	12	CTFGHCB108X12	94.72
1-1/8	6	18	CTFGHCB108X18	102.40
1-1/8	6	24	CTFGHCB108X24	108.74

HIGH SPEED STEEL**FIBERGLASS HOLLOW CORE BITS****ICS WIS****SPECIAL PURPOSE****70° POINT**QUICK RELEASE
7/16" HEX SHANKGROUND
SHORT FLUTE

High Speed Steel Fiberglass Hollow Core Bits were developed for major utility drilling through thick wall hollow core utility poles made from fiberglass/composite materials. They are manufactured with a ground short wide flute and narrow land and can be resharpened.

SIZE	FLUTE	OAL	ITEM NO.	PRICE
11/16	6	24	FGHCB044X24	78.22
13/16	6	24	FGHCB052X24	81.90
1	6	24	FGHCB100X24	107.10

OTHER
SIZES CAN
BE MADE
TO ORDER

REAMING TOOLS

Combined Drill & Countersinks

Cobalt (M42)	5
HSS	5
HSS - Long Length	6
HSS - Metric	7
Solid Carbide	7
Solid Carbide (Long Length)	7
Sets	6

Counterbores

Cap Screw Counterbores	
Metric	4
Set	4
Set - Metric	2
Counterbore Pilots - Interchangeable	3
Fillister Head Screw Counterbores	2
Sets	2
Interchangeable Counterbores	1
Interchangeable Pilot Counterbore Set	1

Countersinks

Zero Flute (Deburring)	10
Single Flute	10
Single Flute - Long Reach	16
Single Flute - Solid Carbide	13
Three Flute (Center Reamer)	11
Three Flute (Quick Change)	15
Three Flute - Solid Carbide	13
Four Flute (Machine)	11
Six Flute (Center Reamer)	12
Six Flute - Long Reach	16
Six Flute - Solid Carbide	13
Indexable Countersinks	14
Sets	14
Inserts - Carbide	14

Drills

Drill Mills - Solid Carbide 60° & 90°	
2 Flute - Single End	50
4 Flute - Single End	50
Step Drills	
45° Angle	8
82° Angle	9
90° Angle	8
Sets	9

Drill/Reamers

Taper Pin Drill/Reamers	47

Reamers

Automotive Steering And Suspension	40
Sets	40
Body Bound Bolt	42
Bridge	
Combination Hex/Round Shank	44
Hex Shank	45
Round Shank	46
Taper Shank	46
Bridge Reamer Adapter/Socket	44

Reamers

Car

1/2" Round Shank	41
1/2" Round Shank - Metric	42
Combination Hex/Round Shank	43
Hex Shank	43
Hex Shank - Metric	42
Taper Shank	41
Car Reamer Adapter/Socket	44

Chucking

Carbide Tipped	19
Cobalt (M42)	19
Dowel Pin Sizes	20
Expansion	29
Extra Length	25
Non-Standard Decimal Sizes .0100 to 2.0000 Dia	23
Over & Under Sizes	20
Solid Carbide	26
Metric Sizes 2.00mm to 25.00mm Dia	26
Letter Sizes "A" to "Z" Dia	26
Wire Gauge Sizes #1 to #70 Dia	27
Metric Sizes 1.0mm to 12.5mm Dia	27
Standard Intermediate Decimal Sizes .1230 to .2830 Dia	21
Standard Intermediate Decimal Sizes .2840 to .7580 Dia	22
Straight Shank	17
Fractional Sizes (Straight Shank) 3/64" to 2" Dia	17
Wire Gauge Sizes (Straight Shank) #1 to #60 Dia	18
Letter Sizes (Straight Shank) "A" to "Z" Dia	18
Taper Shank	28
Sets	25
Hand	37
Metric	36
Adjustable - Long Pilot	34
Sets - Adjustable - Long Pilot	34
Jobber Reamer Sets - Taper Shank - Letter Size	33
Hand Expansion	35
Machine	31
Taper Shank - Extra Long Flute	31
Taper Shank - Extra Long Flute - Metric	32
Taper Shank - Extra Long Flute - Letter	33
Pipe	38
Repairman's Taper	15
Shell	39
Arbors	39
Silver & Deming - 1/2" Shank - 6" Length	24
Sets - 1/2" Shank	24
Taper Pin	48
Metric	49
Tower Bolt	38
Set	38

Wrenches

Tap And Reamer Wrenches - Adjustable	35

INTERCHANGEABLE COUNTERBORES

ICS

USA

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT SHANK

SHORT
SERIES

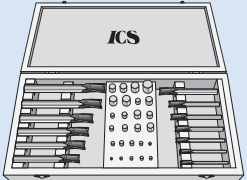
TAPER SHANK

High Speed Steel Interchangeable Counterbores are designed to create a recess for a cap screw, spring or bolt. They are used with interchangeable pilots ground to fit various hole sizes to be counterbored.

SIZE	PILOT HOLE DIA.	NO. OF FLUTES	OVERALL LENGTH	STRAIGHT SHANK			TAPER SHANK		
				SHANK SIZE/LENGTH	ITEM NO.	PRICE	MORSE TAPER	ITEM NO.	PRICE
3/16	3/32	3	3-1/2	15/64 x 2-3/8	ICSS012	37.64			
7/32	3/32	3	3-5/8	15/64 x 2-3/4	ICSS014	37.64			
1/4	3/32	3	3-13/16	15/64 x 3-1/16	ICSS016	33.88	1	ICTS016	33.88
9/32	3/32	3	3-13/16	17/64 x 3-1/16	ICSS018	33.88	1	ICTS018	33.88
5/16	3/32	3	3-13/16	19/64 x 3-1/16	ICSS020	34.82	1	ICTS020	34.82
11/32	3/32	3	3-13/16	5/16 x 3-1/16	ICSS022	35.54	1	ICTS022	35.54
3/8	5/32	3	4-1/16	5/16 x 3-1/16	ICSS024	35.54	1	ICTS024	35.54
13/32	5/32	3	4-1/16	3/8 x 3-1/16	ICSS026	37.88	1	ICTS026	37.88
7/16	5/32	3	4-1/16	3/8 x 3-1/16	ICSS028	37.88	1	ICTS028	37.88
15/32	3/16	3	4-5/16	7/16 x 3-1/16	ICSS030	39.76	1	ICTS030	39.76
1/2	3/16	3	4-5/16	7/16 x 3-1/16	ICSS032	39.76	1	ICTS032	39.76
17/32	3/16	3	4-5/16	1/2 x 3-1/16	ICSS034	44.24	1	ICTS034	44.24
9/16	3/16	3	4-5/16	1/2 x 3-1/16	ICSS036	44.24	1	ICTS036	44.24
19/32	3/16	3	5-1/8	1/2 x 3-7/8	ICSS038	47.28	2	ICTS038	47.28
5/8	3/16	3	5-1/8	1/2 x 3-7/8	ICSS040	47.68	2	ICTS040	47.68
21/32	3/16	3	5-1/8	1/2 x 3-7/8	ICSS042	52.24	2	ICTS042	52.24
11/16	3/16	3	5-1/8	1/2 x 3-7/8	ICSS044	52.24	2	ICTS044	52.24
23/32	1/4	3	5-3/8	1/2 x 3-7/8	ICSS046	54.36	2	ICTS046	54.36
3/4	1/4	3	5-3/8	1/2 x 3-7/8	ICSS048	54.36	2	ICTS048	54.36
25/32	1/4	3	5-3/8	5/8 x 3-7/8	ICSS050	57.40	2	ICTS050	57.40
13/16	1/4	3	5-3/8	5/8 x 3-7/8	ICSS052	55.52	2	ICTS052	55.52
27/32	1/4	3	5-3/8	3/4 x 3-7/8	ICSS054	60.92	2	ICTS054	60.92
7/8	1/4	3	5-3/8	3/4 x 3-7/8	ICSS056	58.34	2	ICTS056	58.34
29/32	1/4	3	6-1/8	3/4 x 4-5/8	ICSS058	61.16	3	ICTS058	61.16
15/16	1/4	3	6-1/8	3/4 x 4-5/8	ICSS060	61.16	3	ICTS060	61.16
31/32	5/16	3	6-3/8	3/4 x 4-5/8	ICSS062	72.92	3	ICTS062	72.92
1	5/16	3	6-3/8	3/4 x 4-5/8	ICSS100	72.92	3	ICTS100	72.92
1-1/16	5/16	3	6-3/8	3/4 x 4-5/8	ICSS104	82.32	3	ICTS104	82.32
1-1/8	5/16	3	6-3/8	1 x 4-5/8	ICSS108	82.32	3	ICTS108	82.32
1-3/16	5/16	3	6-3/8	1 x 4-5/8	ICSS112	89.38	3	ICTS112	89.38
1-1/4	3/8	5	6-5/8	1 x 4-5/8	ICSS116	103.50	3	ICTS116	103.50
1-3/8	3/8	5	6-5/8	1 x 4-5/8	ICSS124	119.96	3	ICTS124	119.96
1-1/2	3/8	5	7-7/8	1-1/4 x 5-7/8	ICSS132	134.06	3	ICTS132	134.06
1-5/8	7/16	5	8-1/8	1-1/4 x 5-7/8	ICSS140	181.10	4	ICTS140	181.10
1-3/4	7/16	5	8-1/8	1-1/4 x 5-7/8	ICSS148	195.22	4	ICTS148	195.22
1-7/8	7/16	5	8-1/8	1-1/2 x 5-7/8	ICSS156	214.04	4	ICTS156	214.04
2	1/2	5	8-3/8	1-1/2 x 5-7/8	ICSS200	242.26	4	ICTS200	242.26
2-1/8	1/2	5	9-7/8	1-1/2 x 7-3/8	ICSS208	317.52	5	ICTS208	317.52
2-1/4	1/2	5	9-7/8	1-1/2 x 7-3/8	ICSS216	331.80	5	ICTS216	331.80
2-3/8	1/2	5	9-7/8	1-1/2 x 7-3/8	ICSS224	354.90	5	ICTS224	354.90
2-1/2	1/2	5	9-7/8	1-1/2 x 7-3/8	ICSS232	367.50	5	ICTS232	367.50
2-5/8	1/2	5	9-7/8	1-3/4 x 7-3/8	ICSS240	463.06	5	ICTS240	463.06
2-3/4	1/2	5	9-7/8	1-3/4 x 7-3/8	ICSS248	492.46	5	ICTS248	492.46
2-7/8	1/2	5	9-7/8	1-3/4 x 7-3/8	ICSS256	512.40	5	ICTS256	512.40
3	1/2	5	9-7/8	1-3/4 x 7-3/8	ICSS300	530.26	5	ICTS300	530.26

INTERCHANGEABLE PILOT COUNTERBORE SET

WOOD BOX

DESCRIPTION	TYPE OF COUNTERBORE	ITEM NO.	PRICE
39 PIECE INTERCHANGEABLE PILOT & COUNTERBORE SET 	Straight Shank - 1/4 to 1" by 16ths Interchangeable Pilots 1/8, 5/32, 3/16, 1/4 with 3/32 Shank 3/16, 7/32, 1/4, 9/32, 5/16 with 5/32 Shank 1/4, 5/16, 3/8, 7/16, 1/2 with 3/16 Shank 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 with 1/4 Shank 3/8, 7/16, 1/2, 9/16, 5/8, 3/4 with 5/16 Shank	CS-ICP-39	538.12

METRIC CAP SCREW COUNTERBORE SET

RT-2

WOOD STAND

DESCRIPTION	TYPE OF COUNTERBORE	ITEM NO.	PRICE
7 PC METRIC CAP SCREW COUNTERBORE SET Sizes M3, M4, M5, M6 M8, M10, M12 (Not Illustrated)	Metric Cap Screw Counterbore 3 Flute - Straight Shank	CS-CSC3FM-7	282.98

HIGH SPEED STEEL

FILLISTER HEAD SCREW COUNTERBORES

ICS USA

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT SHANK



TWO FLUTE SOLID PILOT

High Speed Steel Fillister Head Screw Counterbores are designed to create a recess for small fillister and flat head machine screws. Solid pilot will not score or damage pilot hole. Cutting action is chatterless.

SCREW SIZE	PILOT SIZE	CUTTING DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
#2	.085	.155	3/16	2-1/2	FHSC#02	-
#3	.098	.176	3/16	2-1/2	FHSC#03	-
#4	.111	.198	.198	2-1/2	FHSC#04	-
#5	.124	.220	.220	2-1/2	FHSC#05	-
#6	.137	.241	.241	2-1/2	FHSC#06	CALL FOR PRICE
#8	.163	.285	.285	2-3/4	FHSC#08	
#10	.189	.328	.328	2-3/4	FHSC#10	
#12	.215	.372	.372	3	FHSC#12	
1/4	1/4	13/32	5/16	3-5/8	FHSC016	-
5/16	5/16	15/32	3/8	4	FHSC020	-
3/8	3/8	19/32	7/16	4-3/8	FHSC024	-
7/16	7/16	21/32	1/2	4-3/4	FHSC028	-
1/2	1/2	9/16	9/16	5-1/4	FHSC032	-

FILLISTER HEAD SCREW COUNTERBORE SETS

WOOD STAND

DESCRIPTION	TYPE OF COUNTERBORE	ITEM NO.	PRICE
5 PC FILLISTER HEAD COUNTERBORE SET Sizes #2, #4, #6, #8, #10 (Not Illustrated)	Fillister Head Screw Counterbore 2 Flute - Straight Shank	CS-FHSC-5	75.26
4 PC FILLISTER HEAD COUNTERBORE SET Sizes 1/4, 5/16, 3/8, 1/2 (Not Illustrated)	Fillister Head Screw Counterbore 2 Flute - Straight Shank	CS-FHSC-4	129.36

COUNTERBORE PILOTS - INTERCHANGEABLE**ICS USA****SPECIAL PURPOSE****SOLID PILOT**

Interchangeable counterbore pilots are used with interchangeable pilot style counterbores and spot facers, including carbide tipped and aircraft counterbores to produce various combinations of sizes. All counterbore pilots have a flat on one side of the shank for the set screw to hold the pilot in place. To order, select a pilot with a shank diameter to fit the pilot hole diameter of the counterbore being used.

NOTE: Flatted shank may need an additional flat to work with all the different brands of counterbores, as there is no industry standard for where the set screws are placed.

PILOT SIZE	ITEM NO.	PRICE
3/32" SHANK		
3/32	ICP006X006	5.76
1/8	ICP006X080	5.76
5/32	ICP006X010	5.76
3/16	ICP006X012	5.76
7/32	ICP006X014	5.76
1/4	ICP006X016	6.52
9/32	ICP006X018	6.52
5/16	ICP006X020	6.52
11/32	ICP006X022	6.52
3/8	ICP006X024	6.52
7/16	ICP006X028	6.52
1/2	ICP006X032	6.52
3/4	ICP006X048	6.52
1/8" SHANK		
1/8	ICP008X008	5.76
5/32	ICP008X010	5.76
3/16	ICP008X012	5.76
7/32	ICP008X014	5.76
1/4	ICP008X016	6.52
9/32	ICP008X018	6.52
5/16	ICP008X020	6.52
11/32	ICP008X022	6.52
3/8	ICP008X024	6.52
13/32	ICP008X026	6.52
7/16	ICP008X028	6.52
15/32	ICP008X030	8.50
1/2	ICP008X032	8.50
17/32	ICP008X034	8.50
9/16	ICP008X036	8.50
5/32" SHANK		
5/32	ICP010X010	5.76
3/16	ICP010X012	5.76
7/32	ICP010X014	5.76
1/4	ICP010X016	6.52
9/32	ICP010X018	6.52
5/16	ICP010X020	6.52
11/32	ICP010X022	6.52
3/8	ICP010X024	6.52
13/32	ICP010X026	6.52
7/16	ICP010X028	6.52
1/2	ICP010X032	8.50
3/16" SHANK		
3/16	ICP012X012	5.76
7/32	ICP012X014	5.76
1/4	ICP012X016	6.52
9/32	ICP012X018	6.52
5/16	ICP012X020	6.52
11/32	ICP012X022	6.52

PILOT SIZE	ITEM NO.	PRICE
3/16" SHANK		
3/8	ICP012X024	6.52
13/32	ICP012X026	6.52
7/16	ICP012X028	6.52
15/32	ICP012X030	8.50
1/2	ICP012X032	8.50
17/32	ICP012X034	8.50
9/16	ICP012X036	8.50
5/8	ICP012X040	8.50
11/16	ICP012X044	8.50
3/4	ICP012X048	8.50
1/4" SHANK		
1/4	ICP016X016	6.52
9/32	ICP016X018	6.52
5/16	ICP016X020	6.52
11/32	ICP016X022	6.52
3/8	ICP016X024	6.52
13/32	ICP016X026	6.52
7/16	ICP016X028	6.52
15/32	ICP016X030	8.50
1/2	ICP016X032	8.50
17/32	ICP016X034	8.50
9/16	ICP016X036	8.50
19/32	ICP016X038	8.50
5/8	ICP016X040	8.50
21/32	ICP016X042	8.50
11/16	ICP016X044	8.50
3/4	ICP016X048	8.50
13/16	ICP016X052	8.50
7/8	ICP016X056	13.50
15/16	ICP016X060	13.50
1	ICP016X100	13.50
5/16" SHANK		
5/16	ICP020X020	8.50
11/32	ICP020X022	8.50
3/8	ICP020X024	8.50
13/32	ICP020X026	8.50
7/16	ICP020X028	8.50
15/32	ICP020X030	12.26
1/2	ICP020X032	12.26
17/32	ICP020X034	12.26
9/16	ICP020X036	12.26
19/32	ICP020X038	12.26
5/8	ICP020X040	12.26
21/32	ICP020X042	12.26
11/16	ICP020X044	12.26
3/4	ICP020X048	12.26
13/16	ICP020X052	12.26
7/8	ICP020X056	14.76

PILOT SIZE	ITEM NO.	PRICE
5/16" SHANK		
15/16	ICP020X060	14.76
1	ICP020X100	14.76
1-1/16	ICP020X104	17.52
1-1/8	ICP020X108	17.52
3/8" SHANK		
3/8	ICP024X024	9.96
13/32	ICP024X026	9.96
7/16	ICP024X028	9.96
15/32	ICP024X030	9.96
1/2	ICP024X032	9.96
17/32	ICP024X034	11.52
9/16	ICP024X036	11.52
5/8	ICP024X040	13.26
11/16	ICP024X044	13.26
3/4	ICP024X048	13.26
13/16	ICP024X052	14.12
7/8	ICP024X056	14.12
15/16	ICP024X060	14.12
1	ICP024X100	17.24
1-1/16	ICP024X104	17.24
1-1/8	ICP024X108	17.24
1-5/32	ICP024X110	20.22
1-3/16	ICP024X112	20.22
1-1/4	ICP024X116	20.22
1-5/16	ICP024X120	20.22
1-3/8	ICP024X124	20.22
1-7/16	ICP024X128	21.72
1-1/2	ICP024X132	23.86
7/16" SHANK		
7/16	ICP028X028	12.82
1/2	ICP028X032	12.82
9/16	ICP028X036	12.82
5/8	ICP028X040	12.82
11/16	ICP028X044	14.76
3/4	ICP028X048	14.76
13/16	ICP028X052	14.76
7/8	ICP028X056	14.76
15/16	ICP028X060	14.76
1	ICP028X100	19.26
1-1/16	ICP028X104	19.26
1-1/8	ICP028X108	19.26
1-3/16	ICP028X112	19.26
1-1/4	ICP028X116	21.02
1-5/16	ICP028X120	21.02
1-3/8	ICP028X124	21.02
1-7/16	ICP028X128	21.02
1-1/2	ICP028X132	21.02
1-9/16	ICP028X136	22.50

PILOT SIZE	ITEM NO.	PRICE
7/16" SHANK		
1-5/8	ICP028X140	22.50
1-11/16	ICP028X144	22.50
1-3/4	ICP028X148	22.50
1-13/16	ICP028X152	22.50
1-7/8	ICP028X156	22.50
1/2" SHANK		
1/2	ICP032X032	12.02
17/32	ICP032X034	12.02
9/16	ICP032X036	12.02
5/8	ICP032X040	12.02
11/16	ICP032X044	12.02
3/4	ICP032X048	12.02
13/16	ICP032X052	14.98
7/8	ICP032X056	14.98
15/16	ICP032X060	14.98
1	ICP032X100	21.76
1-1/16	ICP032X104	19.26
1-1/8	ICP032X108	19.26
1-3/16	ICP032X112	21.76
1-1/4	ICP032X116	21.76
1-5/16	ICP032X120	21.76
1-3/8	ICP032X124	26.04
1-7/16	ICP032X128	26.04
1-1/2	ICP032X132	26.04
1-9/16	ICP032X136	26.04
1-5/8	ICP032X140	30.30
1-11/16	ICP032X144	30.30
1-3/4	ICP032X148	30.30
1-13/16	ICP032X152	33.42
1-7/8	ICP032X156	33.42
1-15/16	ICP032X160	33.42
2	ICP032X200	40.46
2-1/16	ICP032X204	40.46
2-1/8	ICP032X208	40.46
2-3/16	ICP032X212	46.30
2-1/4	ICP032X216	46.30
2-5/16	ICP032X220	46.30
2-3/8	ICP032X224	57.94
2-7/16	ICP032X228	57.94
2-1/2	ICP032X232	57.94
2-9/16	ICP032X236	61.00
2-5/8	ICP032X240	61.00
2-11/16	ICP032X244	61.00
2-3/4	ICP032X248	79.74
2-13/16	ICP032X252	79.74
2-7/8	ICP032X256	87.10
2-15/16	ICP032X260	87.10
3	ICP032X300	87.10

SHANK DIA.	SHANK LENGTH
3/32	1-1/4
1/8	1-1/2
5/32	1-1/2

SHANK DIA.	SHANK LENGTH
3/16	1-3/4
1/4	1-7/8
5/16	2-1/8

SHANK DIA.	SHANK LENGTH
3/8	2-3/8
7/16	2-5/8
1/2	2-3/4

Length of pilot head is equal to its diameter.

CAP SCREW COUNTERBORES

ICS USA

SPECIAL PURPOSE

RIGHT HAND CUT



STRAIGHT SHANK

3 FLUTE
SOLID PILOT

TAPER SHANK

High Speed Steel Cap Screw Counterbores are designed to create a recess for socket head cap screws and shoulder screws. They are also used for spot facing smaller spots, enlarging or cleaning holes. Solid pilot will not score or damage pilot hole. Cutting action is chatterless. They are available with a straight shank or a Morse taper shank.

CAP SCREW SIZE	PILOT DIA.	CUTTING DIA.	SHANK DIA.	STRAIGHT SHANK			TAPER SHANK			
				LENGTH	ITEM NO.	PRICE	MORSE TAPER	LENGTH	ITEM NO.	PRICE
#5	.141	.221	3/16	3	CSC3F#05	-				
#6	.150	.242	7/32	3	CSC3F#06	-				
#8	11/64	19/64	1/4	3	CSC3F#08	-				
#10	13/64	21/64	5/16	3-1/2	CSC3F#10	-				
1/4	9/32	13/32	3/8	5	CSC3F016	-	1	5-3/4	CSC3FTS016	-
5/16	11/32	1/2	7/16	5	CSC3F020	CALL FOR PRICE	2	6	CSC3FTS020	-
3/8	13/32	19/32	1/2	6	CSC3F024		2	6-1/2	CSC3FTS024	-
7/16	15/32	11/16	1/2	7	CSC3F028		2	7	CSC3FTS028	CALL FOR PRICE
1/2	17/32	25/32	1/2	7-1/2	CSC3F032		2	7-1/4	CSC3FTS032	
5/8	21/32	31/32	3/4	7-1/2	CSC3F040	-	3	7-1/2	CSC3FTS040	
3/4	13/16	1-3/16	1	8	CSC3F048	-	3	9	CSC3FTS048	-
7/8	15/16	1-3/8	1	8	CSC3F056	-	3	9	CSC3FTS056	-
1	1-1/16	1-9/16	1	10	CSC3F100	-	3	10	CSC3FTS100	-

CAP SCREW COUNTERBORE SET

WOOD STAND

DESCRIPTION	TYPE OF COUNTERBORE	ITEM NO.	PRICE
4 PC CAP SCREW COUNTERBORE SET Sizes #8, #10, 1/4, 3/8 (Not Illustrated)	Cap Screw Counterbore - 3 Flute - Straight Shank	CS-CSC3F-4	105.84

CAP SCREW COUNTERBORES - METRIC

ICS USA

SPECIAL PURPOSE

RIGHT HAND CUT



STRAIGHT SHANK

3 FLUTE
SOLID PILOT

TAPER SHANK

High Speed Steel Metric Cap Screw Counterbores are designed to create a recess for socket head cap screws and shoulder screws. They are also used for spot facing smaller spots, enlarging or cleaning holes. Solid pilot will not score or damage pilot hole. Cutting action is chatterless. They are available with a straight shank or a Morse taper shank.

CAP SCREW SIZE (mm)	PILOT DIA. (mm)	CUTTING DIA. (mm)	SHANK DIA. (mm)	STRAIGHT SHANK			TAPER SHANK			
				LENGTH	ITEM NO.	PRICE	MORSE TAPER	LENGTH	ITEM NO.	PRICE
3.00	3.40	6.00	7/32	3	CSC3FM03.00	-				
4.00	4.50	8.00	5/16	3-1/2	CSC3FM04.00	-				
5.00	5.50	10.00	5/16	4-1/2	CSC3FM05.00	-				
6.00	6.60	11.00	3/8	5	CSC3FM06.00	-				
8.00	9.00	15.00	1/2	6	CSC3FM08.00	CALL FOR PRICE	1	6	CSC3FTSM06.00	-
10.00	11.00	18.00	1/2	7	CSC3FM10.00		2	7	CSC3FTSM08.00	-
12.00	14.00	20.00	5/8	7-1/2	CSC3FM12.00		2	7-9/32	CSC3FTSM10.00	CALL FOR PRICE
14.00	15.00	24.00	3/4	8	CSC3FM14.00		2	7-1/2	CSC3FTSM12.00	
16.00	17.00	26.00	1	9	CSC3FM16.00	-	2	8	CSC3FTSM14.00	
20.00	21.00	26.00	1	10	CSC3FM20.00	-	3	9	CSC3FTSM16.00	
24.00	26.00	40.00				-	3	10	CSC3FTSM20.00	-
						-	3	10-3/4	CSC3FTSM24.00	-

HIGH SPEED STEEL COMBINED DRILLS & COUNTERSINKS

ICS WIS

GENERAL PURPOSE

118° POINT

PLAIN
TYPE60°, 82° & 90°
INCLUDED ANGLES

Plain Type Combined Drills & Countersinks are designed to produce accurate center holes in components which require machining between centers. Sizes #0 to #000 are often referred to as Missile & Aircraft Series.

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.		PRICE EACH	PKG. QTY.
					60°			
000	1/8	.020	.020	1-1/4	CDC#000		4.68	10
00	1/8	0.25	.025	1-1/4	CDC#00		4.68	10
0	1/8	1/32	1/32	1-1/4	CDC#0		4.68	10
1	1/8	3/64	3/64	1-1/4	CDC#01		1.76	10
2	3/16	5/64	5/64	1-7/8	CDC#02		1.98	10
3	1/4	7/64	7/64	2	CDC#03		1.98	10
4	5/16	1/8	1/8	2-1/8	CDC#04		2.12	10
4-1/2	3/8	9/64	9/64	2-1/2	CDC#04.5		3.68	10
5	7/16	3/16	3/16	2-3/4	CDC#05		4.82	10
6	1/2	7/32	7/32	3	CDC#06		8.40	5
7	5/8	1/4	1/4	3-1/4	CDC#07		14.90	1
8	3/4	5/16	5/16	3-1/2	CDC#08		20.44	1
9	7/8	11/32	11/32	3-5/8	CDC#09		46.20	1
10	1	3/8	3/8	3-3/4	CDC#10		63.00	1
					82°	90°		
1	1/8	3/64	3/64	1-1/4	CDC082#01	CDC090#01	4.12	10
2	3/16	5/64	5/64	1-7/8	CDC082#02	CDC090#02	5.00	10
3	1/4	7/64	7/64	2	CDC082#03	CDC090#03	5.46	10
4	5/16	1/8	1/8	2-1/8	CDC082#04	CDC090#04	6.60	10
5	7/16	3/16	3/16	2-3/4	CDC082#05	CDC090#05	11.60	10
6	1/2	7/32	7/32	3	CDC082#06	CDC090#06	15.38	5
7	5/8	1/4	1/4	3-1/4	CDC082#07	CDC090#07	25.96	1
8	3/4	5/16	5/16	3-1/2	CDC082#08	CDC090#08	39.82	1

Available with Titanium Nitride (TiN) Coating. Inquire for pricing.

HIGH SPEED STEEL COMBINED DRILLS & COUNTERSINKS

ICS WIS

GENERAL PURPOSE

118° POINT

BELL
TYPE60° & 82°
INCLUDED ANGLES

Bell Type Combined Drills & Countersinks are designed with an additional small 120° chamfer to protect the edges of the 60° hole.

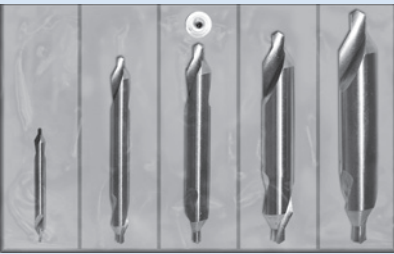
SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
11	1/8	3/64	1-1/4	CDC#11	3.62	10
12	3/16	1/16	1-7/8	CDC#12	3.62	10
13	1/4	3/32	2	CDC#13	3.62	10
14	5/16	7/64	2-1/8	CDC#14	3.62	10

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
15	7/16	5/32	2-3/4	CDC#15	7.06	10
16	1/2	3/16	3	CDC#16	10.54	5
17	5/8	7/32	3-1/4	CDC#17	14.06	5
18	3/4	1/4	3-1/2	CDC#18	18.86	5

COMBINED DRILL & COUNTERSINK SETS

RT-6

VINYL POUCH

ILLUSTRATION	DESCRIPTION	TYPE OF DRILL	ITEM NO.	PRICE
	5 PC SET Sizes #1 to #5	HSS - Plain - 60° Titanium Nitride Coated - Plain - 60° Cobalt - Plain - 60°	DS-CDC-5 DS-CDCT-5 DS-CDCC-5	21.18 48.80 60.04
	5 PC SET Sizes #11 to #15 (Not Illustrated)	HSS - Bell - 60°	DS-CDC-5B	25.00

HIGH SPEED STEEL

LONG LENGTH COMBINED DRILL & COUNTERSINKS

ICS

WIS

GENERAL PURPOSE

118° POINT

PLAIN
TYPE



60° INCLUDED
ANGLE

Long Length Combined Drills & Countersinks are designed to provide access to areas where standard lengths will not reach.

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH
1	1/8	3/64	3	CDCL#103	13.24
1	1/8	3/64	4	CDCL#104	14.04
1	1/8	3/64	5	CDCL#105	19.38
1	1/8	3/64	6	CDCL#106	25.34
2	3/16	5/64	4	CDCL#204	15.36
2	3/16	5/64	5	CDCL#205	19.38
2	3/16	5/64	6	CDCL#206	25.52
3	1/4	7/64	4	CDCL#304	16.12
3	1/4	7/64	5	CDCL#305	21.14
3	1/4	7/64	6	CDCL#306	25.52
4	5/16	1/8	4	CDCL#404	17.60
4	5/16	1/8	5	CDCL#405	22.72

SIZE	BODY DIA.	DRILL DIA.	OVERALL LENGTH	ITEM NO.	PRICE EACH
4	5/16	1/8	6	CDCL#406	25.98
4-1/2	3/8	9/64	4	CDCL#454	19.38
4-1/2	3/8	9/64	5	CDCL#455	23.10
4-1/2	3/8	9/64	6	CDCL#456	27.68
5	7/16	3/16	4	CDCL#504	21.74
5	7/16	3/16	5	CDCL#505	25.98
5	7/16	3/16	6	CDCL#506	29.36
6	1/2	7/32	5	CDCL#605	27.38
6	1/2	7/32	6	CDCL#606	33.00
7	5/8	1/4	5	CDCL#705	54.16
7	5/8	1/4	6	CDCL#706	61.46
8	3/4	5/16	6	CDCL#806	66.20

COBALT COMBINED DRILL & COUNTERSINKS

ICS

WIS

HEAVY DUTY

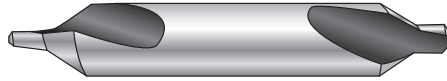
118° POINT

PLAIN
TYPE



60° INCLUDED
ANGLE

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
1	1/8	3/64	3/64	1-1/4	CDCC#01	8.56	10
2	3/16	5/64	5/64	1-7/8	CDCC#02	8.56	10
3	1/4	7/64	7/64	2	CDCC#03	8.56	10
4	5/16	1/8	1/8	2-1/8	CDCC#04	10.32	10
5	7/16	3/16	3/16	2-3/4	CDCC#05	20.58	10
6	1/2	7/32	7/32	3	CDCC#06	35.54	5
7	5/8	1/4	1/4	3-1/4	CDCC#07	66.18	1
8	3/4	5/16	5/16	3-1/2	CDCC#08	80.62	1

COMBINED DRILL & COUNTERSINKS - METRIC**ICS WIS****GENERAL PURPOSE****118° POINT**PLAIN
TYPE60° INCLUDED
ANGLE

High Speed Steel Plain Type Metric Combined Drill and Countersinks are designed to produce accurate center holes in components which require machining between centers.

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	PKG. QTY.
1.00	3.15	1.00	1.00	33.50	CDCM01.00	CALL	10
1.25	3.15	1.25	1.25	33.50	CDCM01.25	FOR	10
1.60	4.00	1.60	1.60	37.50	CDCM01.60	PRICE	10
2.00	5.00	2.00	2.00	42.00	CDCM02.00	3.20	10
2.50	6.30	2.50	2.50	47.00	CDCM02.50	3.96	10
3.15	8.00	3.15	3.15	52.00	CDCM03.15	4.62	10
4.00	10.00	4.00	4.00	59.00	CDCM04.00	7.06	10
5.00	12.50	5.00	5.00	66.00	CDCM05.00	10.02	5
6.30	16.00	6.30	6.30	74.00	CDCM06.30	16.66	5
8.00	20.00	8.00	8.00	83.00	CDCM08.00	32.20	1
10.00	25.00	10.00	10.00	103.00	CDCM10.00	46.62	1

SOLID CARBIDE COMBINED DRILL & COUNTERSINKS**ICS WIS****HEAVY DUTY****118° POINT**PLAIN
ANGLE60° INCLUDED
ANGLE

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	ITEM NO.	PRICE EACH	PKG. QTY.
00	1/8	.025	.025	1-1/4	SCCDC#00	25.76	1
0	1/8	1/32	1/32	1-1/4	SCCDC#0	25.76	1
1	1/8	3/64	3/64	1-1/4	SCCDC#01	23.30	1
2	3/16	5/64	5/64	1-7/8	SCCDC#02	26.96	1
3	1/4	7/64	7/64	2	SCCDC#03	38.98	1
4	5/16	1/8	1/8	2-1/8	SCCDC#04	55.64	1
5	7/16	3/16	3/16	2-3/4	SCCDC#05	92.86	1
6	1/2	7/32	7/32	3	SCCDC#06	108.56	1

PREMIUM (10% COBALT) MICROGRAIN CARBIDE**SOLID CARBIDE COMBINED DRILL & COUNTERSINKS****ICS USA****GENERAL PURPOSE****118° POINT**PLAIN
TYPEINCLUDED ANGLES
60° - 82° - 90°

LONG LENGTH

Solid Carbide Long Length Combined Drill & Countersinks are designed to provide access to areas where standard lengths will not reach.

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	UNCOATED			PRICE	TIN COATED		PKG. QTY.
					60°	82°	120°		60°	PRICE	
1	1/8	3/64	3/64	4	SCCDCL060-#01	SCCDCL082-#01	SCCDCL090-#01	-	SCCDCL060T-#01	-	1
2	3/16	5/64	5/64	4	SCCDCL060-#02	SCCDCL082-#02	SCCDCL090-#02	-	SCCDCL060T-#02	-	1
3	1/4	7/64	7/64	4	SCCDCL060-#03	SCCDCL082-#03	SCCDCL090-#03	CALL	SCCDCL060T-#03	CALL	1
4	5/16	1/8	1/8	4	SCCDCL060-#04	SCCDCL082-#04	SCCDCL090-#04	FOR	SCCDCL060T-#04	FOR	1
5	7/16	3/16	3/16	6	SCCDCL060-#05	SCCDCL082-#05	SCCDCL090-#05	PRICE	SCCDCL060T-#05	PRICE	1
6	1/2	7/32	7/32	6	SCCDCL060-#06	SCCDCL082-#06	SCCDCL090-#06	-	SCCDCL060T-#06	-	1
7	5/8	1/4	1/4	6	SCCDCL060-#07	SCCDCL082-#07	SCCDCL090-#07	-	SCCDCL060T-#07	-	1
8	3/4	5/16	5/16	6	SCCDCL060-#08	SCCDCL082-#08	SCCDCL090-#08	-	SCCDCL060T-#08	-	1

90° ANGLE STEP DRILLS

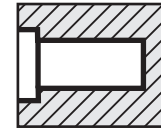
RT-8

ICS USA

SPECIAL PURPOSE

118° POINT

High Speed Steel 90° Angle Step Drills are designed for drilling and counterboring 90° cap screw clearance holes in one operation, saving machine time and reducing set up time. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.



For Drilling 90° Holes and Counterboring Cap Screw Clearance Holes

SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4	.136	7/32	3/8	7/32	2-1/2	3-3/4	SDJL90-#04	12.22
#5	.141	#1	3/8	#1	2-5/8	3-7/8	SDJL90-#05	13.06
#6	.150	1/4	1/2	1/4	2-3/4	4	SDJL90-#06	13.88
#8	.178	"L"	1/2	"L"	2-15/16	4-1/4	SDJL90-#08	15.94
#10	.204	"Q"	5/8	"Q"	3-7/16	4-3/4	SDJL90-#10	17.30
1/4	9/32	13/32	11/16	13/32	3-7/8	5-1/4	SDJL90-016	20.06
5/16	11/32	1/2	3/4	1/2	4-1/2	6	SDJL90-020	48.80
3/8	13/32	19/32	7/8	19/32	5-3/16	7-1/8	SDJL90-024	38.18
7/16	15/32	21/32	1	21/32	5-3/16	7-1/8	SDJL90-028	46.18
*1/2	17/32	25/32	1	25/32	3-1/4	5-1/8	SDJL90-032	53.20
*5/8	21/32	31/32	1	31/32	3-7/8	5-7/8	SDJL90-040	66.68

*Shorter than jobber length. • Reduced 1/2" shank available on screw sizes 3/8 to 5/8. (Add \$3.00)

45° ANGLE STEP DRILLS

ICS USA

SPECIAL PURPOSE

118° POINT

High Speed Steel 45° Angle Step Drills are designed for drilling 45° chamfered holes to be tapped in one operation. The chamfered hole ensures alignment of tap threads and should always be used with thread forming taps as they displace metal above the mouth of the hole. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.



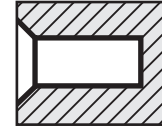
For Drilling 45° Chamfered Holes to be Tapped (to produce approx. 70° thread)

SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4-40	.089	.1285	3/8	.1285	1-5/8	2-3/4	SDJL45-#04-40	12.08
#5-40	.101	9/64	1/2	9/64	1-3/4	2-7/8	SDJL45-#05-40	12.92
#6-32	.109	5/32	1/2	5/32	2	3-1/8	SDJL45-#06-32	12.94
#8-32	.136	3/16	1/2	3/16	2-5/16	3-1/2	SDJL45-#08-32	13.26
#8-36	.136	3/16	1/2	3/16	2-5/16	3-1/2	SDJL45-#08-36	13.44
#10-24	.152	1/4	5/8	1/4	2-3/4	4	SDJL45-#10-24	14.28
#10-32	.161	1/4	5/8	1/4	2-3/4	4	SDJL45-#10-32	14.28
#12-24	.179	9/32	11/16	9/32	2-15/16	4-1/4	SDJL45-#10-24	16.36
1/4-20	.204	21/64	13/16	21/64	3-5/16	4-5/8	SDJL45-016-20	17.56
1/4-28	.218	21/64	13/16	21/64	3-5/16	4-5/8	SDJL45-016-28	17.56
5/16-18	.261	13/32	15/16	13/32	3-7/8	5-1/4	SDJL45-020-18	20.06
5/16-24	.272	13/32	15/16	13/32	3-7/8	5-1/4	SDJL45-020-24	20.06
3/8-16	.316	31/64	1	31/64	4-3/8	5-7/8	SDJL45-024-16	26.52
3/8-24	.339	31/64	1	31/64	4-3/8	5-7/8	SDJL45-024-24	26.52
7/16-14	.375	17/32	1-1/16	17/32	4-13/16	6-5/8	SDJL45-028-14	36.52
7/16-20	.390	17/32	1-1/16	17/32	4-13/16	6-5/8	SDJL45-028-20	36.52
1/2-13	.437	5/8	1-1/16	5/8	5-3/16	7-1/8	SDJL45-032-13	43.24
1/2-20	.452	5/8	1-1/16	5/8	5-3/16	7-1/8	SDJL45-032-20	43.24
5/8-11	.531	3/4	1-1/16	3/4	5-5/8	7-5/8	SDJL45-040-11	46.58

*Shorter than jobber length. • Reduced 1/2" shank available on screw sizes 3/8 to 5/8. (Add \$3.00)

82° ANGLE STEP DRILLS**ICS USA****SPECIAL PURPOSE****118° POINT**

High Speed Steel 82° Angle Step Drills are designed for drilling and countersinking 82° flat head machine screw clearance holes in one operation, saving machine time and reducing set up time. They can be resharpened or modified for a special length of step and are available in jobber length or taper length drill styles.

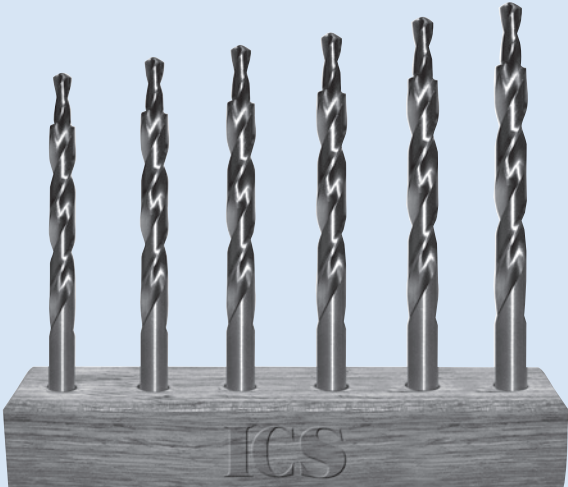
**For Drilling and Countersinking 82° Flat Head Machine Screw Clearance Holes**

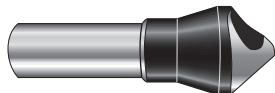
SCREW SIZE	MINOR DIA.	MAJOR DIA.	STEP LENGTH	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
#4	.116	15/64	3/8	15/64	2-5/8	3-7/8	SDJL82-#04	13.76
#5	.128	"F"	3/8	"F"	2-7/8	4-1/8	SDJL82-#05	13.80
#6	.142	9/32	1/2	9/32	2-15/16	4-1/4	SDJL82-#06	14.04
#8	.169	"Q"	1/2	"Q"	3-7/16	4-3/4	SDJL82-#08	17.48
#10	.196	"W"	5/8	"W"	3-3/4	5-1/8	SDJL82-#10	19.42
1/4	.257	1/2	11/16	1/2	4-1/2	6	SDJL82-016	23.66
5/16	.320	5/8	3/4	5/8	5-3/16	7-1/8	SDJL82-020	35.32
*3/8	.383	3/4	7/8	3/4	3-1/8	5	SDJL82-024	48.02
*7/16	.446	13/16	1	13/16	3-3/8	5-1/4	SDJL82-028	54.58
*1/2	.510	7/8	1	7/8	3-1/2	5-1/2	SDJL82-032	64.56

*Shorter than jobber length. • Reduced 1/2" shank available on screw sizes 5/16 to 1/2. (Add \$3.00)

HIGH SPEED STEEL
STEP DRILL SETS
WOOD STAND

High Speed Steel 6 Piece Step Drill Sets contain #6 to 3/8 screw sizes and are available in 45°, 82°, and 90° step angles in jobber length and taper length drill styles.

DESCRIPTION	TYPE OF STEP DRILL	ITEM NO.	PRICE
6 PC STEP DRILL SET #6 to 3/8 	Jobber Length 45°	SDJLS45-6	102.58
	Jobber Length 82°	SDJLS82-6	152.30
	Jobber Length 90°	SDJLS90-6	127.66

COUNTERSINKS - ZERO FLUTE (DEBURRING)**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT****STRAIGHT
SHANK**

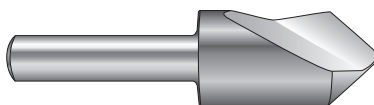
#0 DOUBLE END -DE

**AXIAL
RELIEF**

High Speed Steel Zero Flute Countersinks are designed for countersinking and deburring operations. The single cutting edge removes stock quickly and prevents chatter. They can be resharpened by using an Axial Relieving Fixture or by using a small mounted grinding wheel and inserting it into the hole. Also known as Anti-Vibration Through-Hole Countersinks.

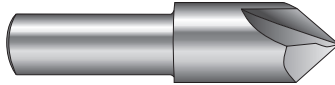
SIZE NO.	SHANK DIA.	OVERALL LENGTH	HOLE SIZE RANGE		ITEM NO.				PRICE EACH
			LARGE DIA.	SMALL DIA.	60°	82°	90°	100°	
0	1/4	1-3/4	1/16	15/64	CSK060-#0	CSK082-#0	CSK090-#0	CSK0100-#0	14.08
0	1/4	1-3/4	1/16	15/64	CSK060-#0-DE	CSK082-#0-DE	CSK090-#0-DE	CSK0100-#0-DE	13.60
1	1/4	1-3/4	5/32	13/32	CSK060-#01	CSK082-#01	CSK090-#01	CSK0100-#01	15.78
2	1/4	2	3/16	17/32	CSK060-#02	CSK082-#02	CSK090-#02	CSK0100-#02	17.02
3	1/2	2-3/4	5/16	25/32	CSK060-#03	CSK082-#03	CSK090-#03	CSK0100-#03	27.70
4	1/2	3	9/16	1-1/16	CSK060-#04	CSK082-#04	CSK090-#04	CSK0100-#04	42.20
5	1/2	3-3/4	5/8	1-15/32		CSK082-#05			67.92
6	5/8	4	3/4	1-3/4		CSK082-#06			101.62
7	5/8	4-3/8	1	2		CSK082-#07			122.62
8	3/4	4-3/4	1-1/4	2-1/2		CSK082-#08			144.42

DE = Double End

COUNTERSINKS - SINGLE FLUTE**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT****STRAIGHT
SHANK****RADIAL
RELIEF**

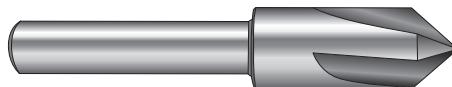
High Speed Steel Single Flute Countersinks should be used when multi-flute countersinks chatter or the hole is too small for a multi-flute countersink to enter. Use for machine and portable work when operating at higher speeds. Drilled hole should be at least 10% of the diameter of countersink. Single flute countersinks are available with 60 degree, 82 degree, 90 degree, 100 degree, 110 degree and 120 degree point angles. They are also available in 5 piece sets and 6" length.

			ITEM NO.						
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE						PRICE EACH
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	55° / 110°	60° / 120°	
1/8	1/8	1-1/2	CSK160-008	CSK182-008	CSK190-008	CSK100-008	CSK110-008	CSK120-008	7.06
3/16	3/16	1-1/2	CSK160-012	CSK182-012	CSK190-012	CSK100-012	CSK110-012	CSK120-012	7.06
1/4	3/16	1-1/2	CSK160-016	CSK182-016	CSK190-016	CSK100-016	CSK110-016	CSK120-016	7.06
5/16	1/4	1-7/8	CSK160-020	CSK182-020	CSK190-020	CSK100-020	CSK110-020	CSK120-020	7.62
3/8	1/4	1-7/8	CSK160-024	CSK182-024	CSK190-024	CSK100-024	CSK110-024	CSK120-024	9.02
1/2	1/4	2	CSK160-032	CSK182-032	CSK190-032	CSK100-032	CSK110-032	CSK120-032	12.94
1/2	3/8	2	CSK160-032A	CSK182-032A	CSK190-032A	CSK100-032A	CSK110-032A	CSK120-032A	12.94
5/8	3/8	2-1/4	CSK160-040	CSK182-040	CSK190-040	CSK100-040			18.00
3/4	3/8	2-1/2	CSK160-048	CSK182-048	CSK190-048	CSK100-048	CSK110-048	CSK120-048	25.28
3/4	1/2	2-1/2	CSK160-048A	CSK182-048A	CSK190-048A	CSK100-048A	CSK110-048A	CSK120-048A	24.12
7/8	1/2	2-1/2	CSK160-056	CSK182-056	CSK190-056	CSK100-056	CSK110-056	CSK120-056	34.94
1	1/2	2-3/4	CSK160-100	CSK182-100	CSK190-100	CSK100-100	CSK110-100		38.26
1-1/4	1/2	3-3/8	CSK160-116	CSK182-116	CSK190-116	CSK100-116	CSK110-116		65.52
1-1/4	3/4	3-3/8	CSK160-116A	CSK182-116A	CSK190-116A	CSK100-116A	CSK110-116A		65.52
1-1/2	1/2	3-1/2	CSK160-132	CSK182-132	CSK190-132	CSK100-132			91.74
1-1/2	3/4	3-1/2	CSK160-132A	CSK182-132A	CSK190-132A	CSK100-132A	CSK110-132A		82.32
2	1/2	4	CSK160-200	CSK182-200	CSK190-200	CSK100-200			159.04
2	3/4	4	CSK160-200A	CSK182-200A	CSK190-200A	CSK100-200A	CSK110-200A		149.62
2-1/2	3/4	5			CSK190-232				329.28
3	3/4	5-1/4	CSK160-300		CSK190-300				411.60

COUNTERSINKS - THREE FLUTE (CENTER REAMER)**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT**STRAIGHT
SHANKRADIAL
RELIEF

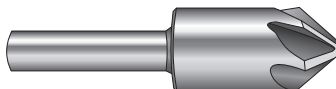
High Speed Steel Three Flute Countersinks should be used at a slower speed. (1/2 to 2/3 the speed used for drilling)
Recommended for machine and portable work. Because of their centering ability, they are widely used in portable applications. They are also available in 5 piece sets.

ITEM NO.									
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE						PRICE EACH
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	55° / 110°	60° / 120°	
1/4	3/16	1-1/2	CSK360-016	CSK382-016	CSK390-016	CSK300-016	CSK310-016	CSK320-016	7.06
5/16	1/4	1-7/8	CSK360-020	CSK382-020	CSK390-020	CSK300-020	CSK310-020	CSK320-020	7.62
3/8	1/4	1-7/8	CSK360-024	CSK382-024	CSK390-024	CSK300-024	CSK310-024	CSK320-024	9.02
1/2	1/4	2	CSK360-032	CSK382-032	CSK390-032	CSK300-032			12.94
1/2	3/8	2	CSK360-032A	CSK382-032A	CSK390-032A	CSK300-032A	CSK310-032A	CSK320-032A	12.94
5/8	3/8	2-1/4	CSK360-040	CSK382-040	CSK390-040	CSK300-040	CSK310-040	CSK320-040	18.00
3/4	3/8	2-1/2	CSK360-048A	CSK382-048A	CSK390-048A	CSK300-048A			25.28
3/4	1/2	2-1/2	CSK360-048	CSK382-048	CSK390-048	CSK300-048	CSK310-048	CSK320-048	24.12
7/8	1/2	2-1/2	CSK360-056	CSK382-056	CSK390-056	CSK300-056	CSK310-056	CSK320-056	34.94
1	1/2	2-3/4	CSK360-100	CSK382-100	CSK390-100	CSK300-100			38.26
1-1/4	1/2	3-3/8	CSK360-116	CSK382-116	CSK390-116				65.52
1-1/2	1/2	3-1/2	CSK360-132	CSK382-132	CSK390-132				91.74
1-1/2	3/4	3-1/2	CSK360-132A	CSK382-132A	CSK390-132A	CSK300-132A			82.32
2	3/4	4	CSK360-200A	CSK382-200A	CSK390-200A	CSK300-200A			159.04

COUNTERSINKS - FOUR FLUTE (MACHINE)**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT**STRAIGHT
SHANKRADIAL
RELIEF

High Speed Steel Four Flute Machine Countersinks have a longer shank for use in turret lathes and for screw machine work. They are also available in 5 piece sets.

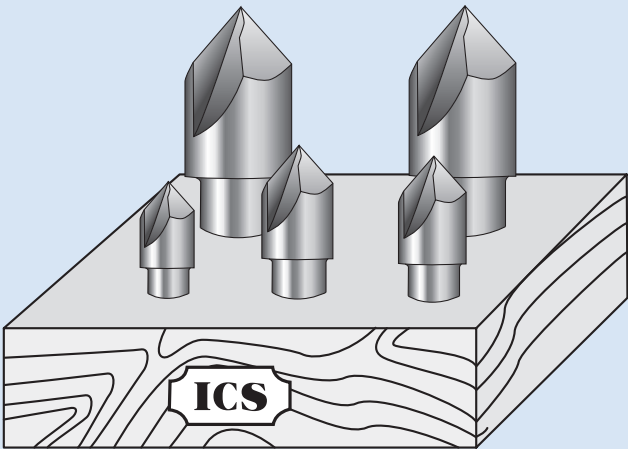
			ITEM NO.			
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE			PRICE EACH
			30° / 60°	41° / 82°	45° / 90°	
1/2	1/2	3-7/8	CSK460-032	CSK482-032	CSK490-032	23.86
5/8	1/2	4	CSK460-040	CSK482-040	CSK490-040	27.70
3/4	1/2	4-1/8	CSK460-048	CSK482-048	CSK490-048	40.62
7/8	1/2	4-1/4	CSK460-056	CSK482-056	CSK490-056	44.50
1	1/2	4-3/8	CSK460-100	CSK482-100	CSK490-100	50.78
1-1/4	1/2	5	CSK460-116	CSK482-116	CSK490-116	67.04
1-1/2	1/2	5-3/8	CSK460-132	CSK482-132	CSK490-132	90.56

SIX FLUTE (CHATTERLESS) COUNTERSINKS**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT****STRAIGHT
SHANK****RADIAL
RELIEF**

High Speed Steel Six Flute Countersinks are designed for fast shearing and chatterless cuts. They produce an exceptionally fine finish and can be run at maximum speed. The six cutting edges quickly center in hole and produce a smaller chip load for chatterless machining. They are also available in 5 piece sets and 6" length.

			ITEM NO.					
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE					PRICE EACH
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	60° / 120°	
1/8	1/8	1-1/2	CSK660-008	CSK682-008	CSK690-008	CSK600-008	CSK620-008	8.42
3/16	3/16	1-1/2	CSK660-012	CSK682-012	CSK690-012	CSK600-012	CSK620-012	8.42
1/4	1/4	2	CSK660-016	CSK682-016	CSK690-016	CSK600-016	CSK620-016	8.90
5/16	1/4	2	CSK660-020	CSK682-020	CSK690-020	CSK600-020	CSK620-020	9.72
3/8	1/4	2	CSK660-024	CSK682-024	CSK690-024	CSK600-024	CSK620-024	11.52
1/2	1/4	2	CSK660-032	CSK682-032	CSK690-032	CSK600-032	CSK620-032	14.30
1/2	3/8	2	CSK660-032A	CSK682-032A	CSK690-032A	CSK600-032A	CSK620-032A	14.30
5/8	3/8	2-3/4	CSK660-040	CSK682-040	CSK690-040	CSK600-040	CSK620-040	20.42
3/4	1/2	2-3/4	CSK660-048	CSK682-048	CSK690-048	CSK600-048	CSK620-048	30.12
7/8	1/2	2-3/4	CSK660-056	CSK682-056	CSK690-056	CSK600-056	CSK620-056	36.60
1	1/2	2-3/4	CSK660-100	CSK682-100	CSK690-100	CSK600-100	CSK620-100	43.94
1-1/4	3/4	3-3/8	CSK660-116	CSK682-116	CSK690-116	CSK600-116	CSK620-116	65.32
1-1/2	3/4	3-1/2	CSK660-132	CSK682-132	CSK690-132	CSK600-132	CSK620-132	92.98
1-3/4	3/4	4-1/4	CSK660-148	CSK682-148	CSK690-148	CSK600-148	CSK620-148	123.14
2	3/4	4-3/8	CSK660-200	CSK682-200	CSK690-200	CSK600-200	CSK620-200	143.80

**HIGH SPEED STEEL
COUNTERSINK SETS****WOOD STANDS**

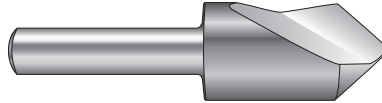
DESCRIPTION	ITEM NO.	INCLUDED ANGLE	PRICE
5 PC COUNTERSINK SETS  SIZES IN SETS 1/4", 3/8", 1/2", 5/8", 3/4" 1/2", 5/8", 3/4", 7/8", 1" #0, 1, 2, 3, 4 Custom sets are available Inquire for pricing.	SINGLE FLUTE		
	CSKS 160-5	60°	82.28
	CSKS 182-5	82°	82.28
	CSKS 190-5	90°	82.28
	CSKS 100-5	100°	82.28
	CSKS 110-5	110°	82.28
	CSKS 120-5	120°	82.28
	THREE FLUTE (CENTER REAMER)		
	CSKS 360-5	60°	82.28
	CSKS 382-5	82°	82.28
	CSKS 390-5	90°	82.28
	CSKS 300-5	100°	82.28
	CSKS 310-5	110°	82.28
	CSKS 320-5	120°	82.28
	SIX FLUTE (CHATTERLESS)		
	CSKS 660-5	60°	96.38
	CSKS 682-5	82°	96.38
	CSKS 690-5	90°	96.38
	CSKS 600-5	100°	96.38
	CSKS 620-5	120°	96.38
	FOUR FLUTE (MACHINE)		
	CSKS 460-5	60°	197.70
	CSKS 482-5	82°	197.70
	CSKS 490-5	90°	197.70
	ZERO FLUTE (DEBURRING)		
	CSKS 060-5	60°	80.40
	CSKS 082-5	82°	80.40
	CSKS 090-5	90°	80.40

SOLID CARBIDE SINGLE FLUTE COUNTERSINKS

ICS USA

GENERAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKECCENTRIC
RELIEF

Solid Carbide Single Flute Countersinks are used for softer materials.

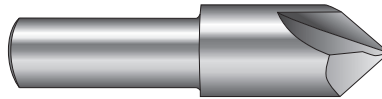
ITEM NO.									
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE					PRICE EACH	
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	60° / 120°		
1/8	1/8	1-1/2	SCCSK160-008	SCCSK182-008	SCCSK190-008	SCCSK100-008	SCCSK120-008	12.08	
3/16	3/16	2	SCCSK160-012	SCCSK182-012	SCCSK190-012	SCCSK100-012	SCCSK120-012	19.12	
1/4	1/4	2	SCCSK160-016	SCCSK182-016	SCCSK190-016	SCCSK100-016	SCCSK120-016	21.10	
3/8	1/4	2-3/8	SCCSK160-024	SCCSK182-024	SCCSK190-024	SCCSK100-024	SCCSK120-024	37.00	
1/2	1/4	2-1/2	SCCSK160-032	SCCSK182-032	SCCSK190-032	SCCSK100-032	SCCSK120-032	49.28	
5/8	3/8	3	SCCSK160-040	SCCSK182-040	SCCSK190-040	SCCSK100-040	SCCSK120-040	66.36	
3/4	1/2	3	SCCSK160-048	SCCSK182-048	SCCSK190-048	SCCSK100-048	SCCSK120-048	98.30	
1	1/2	3	SCCSK160-100	SCCSK182-100	SCCSK190-100	SCCSK100-100	SCCSK120-100	155.80	
1-1/4	3/4	3-1/4	SCCSK160-116	SCCSK182-116	SCCSK190-116	SCCSK100-116	SCCSK120-116	279.44	
1-1/2	3/4	3-1/2	SCCSK160-132	SCCSK182-132	SCCSK190-132	SCCSK100-132	SCCSK120-132	401.06	

SOLID CARBIDE THREE FLUTE COUNTERSINKS

ICS USA

GENERAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKECCENTRIC
RELIEF

Solid Carbide Three Flute Countersinks are used for general purpose work.

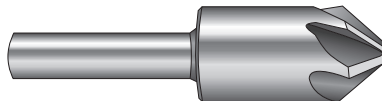
ITEM NO.									
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE					PRICE EACH	
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	60° / 120°		
1/8	1/8	1-1/2	SCCSK360-008	SCCSK382-008	SCCSK390-008	SCCSK300-008	SCCSK320-008	12.08	
3/16	3/16	2	SCCSK360-012	SCCSK382-012	SCCSK390-012	SCCSK300-012	SCCSK320-012	19.12	
1/4	1/4	2	SCCSK360-016	SCCSK382-016	SCCSK390-016	SCCSK300-016	SCCSK320-016	21.10	
3/8	1/4	2-3/8	SCCSK360-024	SCCSK382-024	SCCSK390-024	SCCSK300-024	SCCSK320-024	37.00	
1/2	1/4	2-1/2	SCCSK360-032	SCCSK382-032	SCCSK390-032	SCCSK300-032	SCCSK320-032	49.28	
5/8	3/8	3	SCCSK360-040	SCCSK382-040	SCCSK390-040	SCCSK300-040	SCCSK320-040	66.36	
3/4	1/2	3	SCCSK360-048	SCCSK382-048	SCCSK390-048	SCCSK300-048	SCCSK320-048	98.30	
1	1/2	3	SCCSK360-100	SCCSK382-100	SCCSK390-100	SCCSK300-100	SCCSK320-100	155.80	
1-1/4	3/4	3-1/4	SCCSK360-116	SCCSK382-116	SCCSK390-116	SCCSK300-116	SCCSK320-116	279.44	
1-1/2	3/4	3-1/2	SCCSK360-132	SCCSK382-132	SCCSK390-132	SCCSK300-132	SCCSK320-132	401.06	

SOLID CARBIDE SIX FLUTE COUNTERSINKS

ICS USA

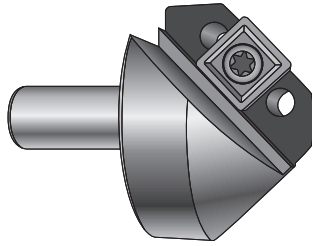
HEAVY DUTY

RIGHT HAND CUT

STRAIGHT
SHANKRADIAL
RELIEF

Solid Carbide Six Flute Countersinks are used for hardened steels and metals.

ITEM NO.									
SIZE NO.	SHANK DIA.	OVERALL LENGTH	CENTERLINE ANGLE / INCLUDED ANGLE					PRICE EACH	
			30° / 60°	41° / 82°	45° / 90°	50° / 100°	60° / 120°		
1/8	1/8	1-1/2	SCCSK660-008	SCCSK682-008	SCCSK690-008	SCCSK600-008	SCCSK620-008	12.08	
3/16	3/16	2	SCCSK660-012	SCCSK682-012	SCCSK690-012	SCCSK600-012	SCCSK620-012	19.12	
1/4	1/4	2	SCCSK660-016	SCCSK682-016	SCCSK690-016	SCCSK600-016	SCCSK620-016	21.10	
3/8	1/4	2-3/8	SCCSK660-024	SCCSK682-024	SCCSK690-024	SCCSK600-024	SCCSK620-024	37.00	
1/2	1/4	2-1/2	SCCSK660-032	SCCSK682-032	SCCSK690-032	SCCSK600-032	SCCSK620-032	49.28	
5/8	3/8	3	SCCSK660-040	SCCSK682-040	SCCSK690-040	SCCSK600-040	SCCSK620-040	66.36	
3/4	1/2	3	SCCSK660-048	SCCSK682-048	SCCSK690-048	SCCSK600-048	SCCSK620-048	98.30	
1	1/2	3	SCCSK660-100	SCCSK682-100	SCCSK690-100	SCCSK600-100	SCCSK620-100	155.80	
1-1/4	3/4	3-1/4	SCCSK660-116	SCCSK682-116	SCCSK690-116	SCCSK600-116	SCCSK620-116	279.44	
1-1/2	3/4	3-1/2	SCCSK660-132	SCCSK682-132	SCCSK690-132	SCCSK600-132	SCCSK620-132	401.06	

INDEXABLE COUNTERSINKS**ICS WIS****HEAVY DUTY****POSITIVE RAKE**60°, 82°, 90°
POINT ANGLE

Indexable Countersinks are designed with a positive rake for smooth cutting without chatter. No tool resharpener needed. Uses standard square or triangle inserts that come with countersink.

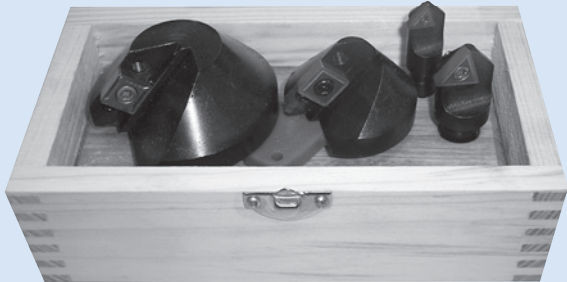
CUTTER BODY DIA.		SHANK DIA.	INSERTS USED	60° CSK ITEM NO.	82° CSK ITEM NO.	90° CSK ITEM NO.	PRICE
MIN	MAX						
1/8	1/2	3/8	TCMT21.51SC6	ICSK060-032	ICSK082-032	ICSK090-032	33.14
1/4	3/4	1/2	TCMT32.51SC6	ICSK060-048	ICSK082-048	ICSK090-048	38.56
1/2	1-3/4	1/2	SCMT432C6	ICSK060-148	ICSK082-148	ICSK090-148	49.38
1-1/4	2-1/2	3/4	SCMT432C6	ICSK060-232	ICSK082-232	ICSK090-232	60.54

CARBIDE (INDEXABLE) INSERTS**ICS WIS****SPECIAL PURPOSE****PRECISION GROUND**

For use with ICS Indexable Countersinks. Choose a C6 or Titanium Nitride coated.

INSERT STYLE	GRADE	RADIUS	INSCRIBED CRICLE (I.C.)	ITEM NO.	PRICE
TRIANGLE	C-6	1/64	1/4	I-TCMT21.51SC6	7.02
	TiN Coat	1/64	1/4	I-TCMT21.51ST6	9.82
	C-6	1/64	3/8	I-TCMT32.51SC6	7.02
	TiN Coat	1/64	3/8	I-TCMT32.51ST6	9.82
SQUARE	C-6	1/32	1/2	I-SCMT432C6	14.06
	TiN Coat	1/32	1/2	I-SCMT432T6	16.86

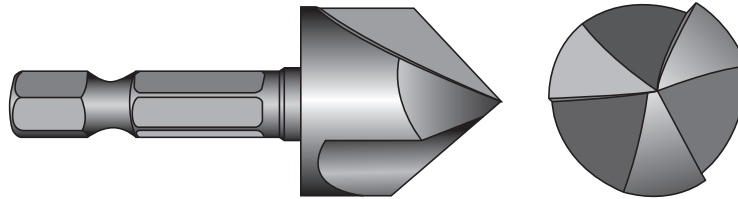
INDEXABLE COUNTERSINK SETS**WOOD CASE**

DESCRIPTION	POINT ANGLE	ITEM NO.	PRICE
3 PC INDEXABLE COUNTERSINK SET (NOT ILLUSTRATED) SIZES 3/4, 1-3/4, 2-1/2	60°	ICSKS060-3	163.16
	82°	ICSKS082-3	163.16
	90°	ICSKS090-3	163.16
4 PC INDEXABLE COUNTERSINK SET  SIZES 1/2, 3/4, 1-3/4, 2-1/2	60°	ICSKS060-4	199.60
	82°	ICSKS082-4	199.60
	90°	ICSKS090-4	199.60

THREE FLUTE (QUICK CHANGE) COUNTERSINKS

ICS

WIS

GENERAL PURPOSE**RIGHT HAND CUT**QUICK CHANGE
1/4" HEX SHANK82°
POINT ANGLE

High Speed Steel Three Flute Quick Change Countersinks fit into a 1/4" hex power driver or any 3-jaw style power drill chuck. Used to countersink most ferrous and non-ferrous metals, plastic, wood, etc...

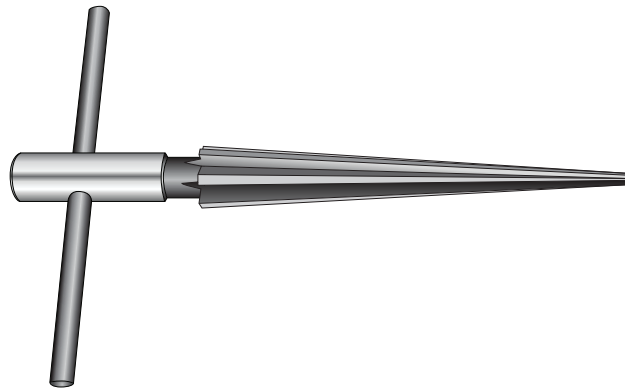
SIZE	OVERALL LENGTH	ITEM NO.	CENTERLINE ANGLE/ INCLUDED ANGLE	PRICE
1/4	2"	CSKQC382-016	41° / 82°	5.26
3/8	2"	CSKQC382-024	41° / 82°	5.78
1/2	2"	CSKQC382-032	41° / 82°	6.30
5/8	2"	CSKQC382-040	41° / 82°	10.50
3/4	2"	CSKQC382-048	41° / 82°	12.60

TOOL STEEL / HIGH SPEED STEEL

REPAIRMAN'S TAPER REAMER

ICS

WIS

GENERAL PURPOSE / HEAVY DUTY**60° POINT**T-HANDLE
SHANKSTRAIGHT
FLUTE

Tool Steel Repairman's Taper Reamers are used to enlarge and countersink holes in soft metals, plastics, and similar materials. High Speed Steel Repairman's Taper Reamers are designed for removing burrs from small holes, tubing, and enlarging holes in sheet metal. They are used by plumbers, mechanics, electricians, and machinists. Not for use in machine power tools.

POINT DIA.	LARGE DIA.	LENGTH OF CUT	OVERALL LENGTH	SHANK DIA.	FLUTE END STYLE	ITEM NO.	PRICE
TOOL STEEL							
1/8	1/2	3-1/2	5-5/8	1/2	60° POINT	RTR032	11.00
3/16	5/8	4-1/4	6	12MM (.4724)	60° POINT	RTR040	12.88
3/16	5/8	4-1/4	6	9/16 HEX	60° POINT	RTR040HX	15.00
HIGH SPEED STEEL							
1/8	1/2	3-5/8	5-9/16	1/2	60° POINT	RTRHD032	15.50
1/8	5/8	3-5/8	5-9/16	1/2	60° POINT	RTRHD040	18.20
3/8	1	4-1/2	6	1/2	60° POINT	RTRHD100	39.96

HIGH SPEED STEEL COUNTERSINKS - SINGLE FLUTE - LONG REACH

ICS USA

SPECIAL PURPOSE

RIGHT HAND CUT

EXTRA LENGTH
STRAIGHT SHANKFAST CUT
60°, 82°, 90° & 100° POINT ANGLESECCENTRIC
RELIEF

High Speed Steel Long-Reach (Extended Length) Single Flute Countersinks are used for difficult to reach tool and die work. The single flute is designed for chamfering and deburring holes too small for multi-flute countersinks.

SIZE	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.				PRICE
			60°	82°	90°	100°	
1/4	1/4	6	CSKXL160-016	CSKXL182-016	CSKXL190-016	CSKXL100-016	19.66
5/16	1/4	6	CSKXL160-020	CSKXL182-020	CSKXL190-020	CSKXL100-020	20.22
3/8	1/4	6	CSKXL160-024	CSKXL182-024	CSKXL190-024	CSKXL100-024	23.10
1/2	3/8	6	CSKXL160-032	CSKXL182-032	CSKXL190-032	CSKXL100-032	31.50
5/8	3/8	6	CSKXL160-040	CSKXL182-040	CSKXL190-040	CSKXL100-040	37.28
3/4	1/2	6	CSKXL160-048	CSKXL182-048	CSKXL190-048	CSKXL100-048	41.90
1	1/2	6	CSKXL160-100	CSKXL182-100	CSKXL190-100	CSKXL100-100	61.96

Note: Special length countersinks are available. Inquire for pricing.

HIGH SPEED STEEL COUNTERSINKS - SIX FLUTE - LONG REACH

ICS USA

SPECIAL PURPOSE

RIGHT HAND CUT

EXTRA LENGTH
STRAIGHT SHANKFAST CUT
60°, 82°, 90° & 100° POINT ANGLESECCENTRIC
RELIEF

High Speed Steel Long-Reach (Extended Length) Six Flute Countersinks are used for difficult to reach tool and die work requiring fine finish cuts. The six cutting edges quickly center in hole and produce a smaller chip load.

SIZE	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.				PRICE
			60°	82°	90°	100°	
1/4	1/4	6	CSKXL660-016	CSKXL682-016	CSKXL690-016	CSKXL600-016	21.02
5/16	1/4	6	CSKXL660-020	CSKXL682-020	CSKXL690-020	CSKXL600-020	22.34
3/8	1/4	6	CSKXL660-024	CSKXL682-024	CSKXL690-024	CSKXL600-024	25.26
1/2	3/8	6	CSKXL660-032	CSKXL682-032	CSKXL690-032	CSKXL600-032	33.60
5/8	3/8	6	CSKXL660-040	CSKXL682-040	CSKXL690-040	CSKXL600-040	40.36
3/4	1/2	6	CSKXL660-048	CSKXL682-048	CSKXL690-048	CSKXL600-048	47.26
1	1/2	6	CSKXL660-100	CSKXL682-100	CSKXL690-100	CSKXL600-100	65.10

Note: Special length countersinks are available. Inquire for pricing.

CHUCKING REAMERS - STRAIGHT SHANK

ICS

WIS

GENERAL PURPOSE**RIGHT HAND CUT**

STRAIGHT FLUTE

High Speed Steel Straight Shank Straight Flute Fractional Size Chucking Reamers are designed for general purpose reaming of most ferrous and non-ferrous metals. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers. Available in 29 piece sets.



HELICAL FLUTE

High Speed Steel Helical Flute Fractional Size Chucking Reamers are designed for reaming materials where additional shear is necessary and to improve chip removal in blind holes. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers. Available in 29 piece sets.

Fractional Sizes (Straight Shank) 3/64" to 2" Dia.

HSS						
SIZE	DEC. EQUIV.	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE CRSF	HELICAL FLUTE CRHF
3/64	.0469	.0455	1/2	2-1/2	14.02	-
1/16	.0625	.0585	1/2	2-1/2	14.02	-
5/64	.0781	.0720	3/4	3	12.36	-
3/32	.0938	.0880	3/4	3	10.58	-
7/64	.1094	.1030	7/8	3-1/2	12.36	-
1/8	.1250	.1190	7/8	3-1/2	9.30	12.06
9/64	.1406	.1350	1	4	14.84	16.98
5/32	.1562	.1510	1	4	13.76	16.98
11/64	.1719	.1645	1-1/8	4-1/2	14.84	16.98
3/16	.1875	.1805	1-1/8	4-1/2	13.76	16.98
13/64	.2031	.1945	1-1/4	5	18.16	19.18
7/32	.2188	.2075	1-1/4	5	17.38	18.76
15/64	.2344	.2265	1-1/2	6	18.16	19.18
1/4	.2500	.2405	1-1/2	6	14.96	17.54
17/64	.2656	.2485	1-1/2	6	19.98	21.34
9/32	.2812	.2485	1-1/2	6	19.98	21.34
19/64	.2969	.2807	1-1/2	6	21.46	21.34
5/16	.3125	.2807	1-1/2	6	17.64	19.90
21/64	.3281	.2807	1-1/2	6	22.94	23.94
11/32	.3438	.2807	1-1/2	6	22.94	23.94
23/64	.3594	.3120	1-3/4	7	22.94	23.94
3/8	.3750	.3120	1-3/4	7	19.40	23.18
25/64	.3906	.3120	1-3/4	7	23.42	26.66
13/32	.4062	.3120	1-3/4	7	23.42	26.66
27/64	.4219	.3745	1-3/4	7	26.32	27.90
7/16	.4375	.3745	1-3/4	7	23.42	26.66
29/64	.4531	.3745	1-3/4	7	29.30	28.78
15/32	.4688	.3745	1-3/4	7	27.96	28.66
31/64	.4844	.4375	2	8	29.30	29.96
1/2	.5000	.4375	2	8	24.64	26.82
33/64	.5156	.4375	2	8	43.24	45.28
17/32	.5313	.4375	2	8	31.30	34.70
35/64	.5469	.4375	2	8	42.30	45.28
9/16	.5625	.4375	2	8	30.00	33.52
37/64	.5781	.4375	2	8	48.94	50.82
19/32	.5938	.4375	2	8	35.76	38.92
39/64	.6094	.5620	2-1/4	9	48.94	50.46
5/8	.6250	.5620	2-1/4	9	34.10	36.72
41/64	.6406	.5620	2-1/4	9	56.12	57.88

TOLERANCES

3/64 - 1/2 dia.: +.0002 -.0000"
 33/64 - 5/8 dia.: +.0003 -.0000"
 41/64 - 1-1/2 dia.: +.0001 -.0005"
 1-9/16 - 2 dia.: +.0002 -.0006"

HSS						
SIZE	DEC. EQUIV.	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE CRSF	HELICAL FLUTE CRHF
21/32	.6562	.5620	2-1/4	9	41.00	43.70
43/64	.6719	.5620	2-1/4	9	64.22	43.70
11/16	.6875	.5620	2-1/4	9	39.76	42.92
45/64	.7031	.5620	2-1/4	9	64.22	42.92
23/32	.7188	.5620	2-1/4	9	46.36	49.58
47/64	.7344	.6245	2-1/2	9-1/2	50.22	49.58
3/4	.7500	.6245	2-1/2	9-1/2	46.46	48.58
49/64	.7656	.6245	2-1/2	9-1/2	69.38	48.58
25/32	.7812	.6245	2-1/2	9-1/2	52.70	55.76
51/64	.7969	.6245	2-1/2	9-1/2	69.38	55.76
13/16	.8125	.6245	2-1/2	9-1/2	51.70	55.76
53/64	.8281	.6245	2-1/2	9-1/2	79.98	55.76
27/32	.8438	.6245	2-1/2	9-1/2	59.82	62.62
55/64	.8594	.7495	2-5/8	10	79.98	62.94
7/8	.8750	.7495	2-5/8	10	57.30	62.64
57/64	.8906	.7495	2-5/8	10	88.20	62.64
29/32	.9062	.7495	2-5/8	10	65.98	69.38
59/64	.9219	.7495	2-5/8	10	88.20	69.38
15/16	.9375	.7495	2-5/8	10	64.66	69.38
61/64	.9531	.7495	2-5/8	10	98.62	69.38
31/32	.9688	.7495	2-5/8	10	74.08	78.20
63/64	.9844	.8745	2-3/4	10-1/2	98.62	78.20
1	1.0000	.8745	2-3/4	10-1/2	70.46	78.20
1-1/32	1.0312	.8745	2-3/4	10-1/2	87.44	78.20
1-1/16	1.0625	.8745	2-3/4	10-1/2	81.74	87.98
1-3/32	1.0938	.8745	2-7/8	11	99.72	87.98
1-1/8	1.1250	.8745	2-7/8	11	87.44	96.88
1-5/32	1.1562	.8745	2-7/8	11	108.34	96.88
1-3/16	1.1875	.9995	2-7/8	11	99.72	106.62
1-1/4	1.2500	.9995	3	11-1/2	108.34	118.32
1-5/16	1.3125	.9995	3	11-1/2	129.96	129.72
1-3/8	1.3750	.9995	3-1/4	12	129.96	142.28
1-7/16	1.4375	1.2495	3-1/2	12-1/2	157.00	154.04
1-1/2	1.5000	1.2495	3-1/2	12-1/2	151.70	164.64
1-9/16	1.5625	1.2495	3-1/2	12-1/2	211.68	-
1-5/8	1.6250	1.2495	3-1/2	13	235.68	-
1-11/16	1.6875	1.2495	3-1/2	13	257.98	-
1-3/4	1.7500	1.2495	4	13-1/2	271.24	-
1-7/8	1.8750	1.5000	4	14	311.90	-
2	2.0000	1.5000	4	14	331.64	-

NUMBER OF FLUTES

3/64 - 5/32 dia.: 4 Flutes
 11/64 - 39/64 dia.: 6 Flutes
 5/8 - 1-1/32 dia.: 8 Flutes
 1-1/16 - 1-5/16 dia.: 10 Flute
 1-3/8 - 1-1/2 dia.: 12 Flutes
 1-9/16 - 1-7/8 dia.: 14 Flutes
 2" dia.: 16 Flutes

CHUCKING REAMERS - STRAIGHT SHANK

ICS

WIS

GENERAL PURPOSE**RIGHT HAND CUT**

STRAIGHT FLUTE

High Speed Steel Straight Shank Straight Flute Wire Gauge and Letter Size Chucking Reamers are designed for general purpose reaming of most ferrous and non-ferrous metals. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers. Available in 60 piece sets (wire gauge) and 26 piece sets (letter).

Wire Gauge Sizes (Straight Shank) #1 to #60 Dia.

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	.2173	1-1/2	CRSF#01	15.44
2	.2210	.2173	1-1/2	CRSF#02	15.44
3	.2130	.2075	1-1/4	CRSF#03	15.44
4	.2090	.2016	1-1/4	CRSF#04	15.44
5	.2055	.2016	1-1/4	CRSF#05	15.44
6	.2040	.1945	1-1/4	CRSF#06	15.44
7	.2010	.1945	1-1/4	CRSF#07	15.44
8	.1990	.1895	1-1/4	CRSF#08	15.44
9	.1960	.1895	1-1/4	CRSF#09	15.44
10	.1935	.1860	1-1/4	CRSF#10	15.44
11	.1910	.1860	1-1/4	CRSF#11	15.44
12	.1890	.1805	1-1/8	CRSF#12	13.12
13	.1850	.1805	1-1/8	CRSF#13	14.46
14	.1820	.1755	1-1/8	CRSF#14	14.46
15	.1800	.1755	1-1/8	CRSF#15	14.46
16	.1770	.1704	1-1/8	CRSF#16	13.12
17	.1730	.1645	1-1/8	CRSF#17	13.12
18	.1695	.1595	1-1/8	CRSF#18	12.26
19	.1660	.1595	1-1/8	CRSF#19	12.26
20	.1610	.1530	1-1/8	CRSF#20	12.26
21	.1590	.1530	1-1/8	CRSF#21	12.14
22	.1570	.1510	1	CRSF#22	12.14
23	.1549	.1460	1	CRSF#23	12.14
24	.1520	.1460	1	CRSF#24	12.14
25	.1490	.1430	1	CRSF#25	12.14
26	.1470	.1430	1	CRSF#26	12.14
27	.1440	.1350	1	CRSF#27	12.32
28	.1405	.1350	1	CRSF#28	12.32
29	.1360	.1275	1	CRSF#29	12.14
30	.1285	.1190	7/8	CRSF#30	9.20

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
31	.1200	.1120	7/8	CRSF#31	10.28
32	.1160	.1120	7/8	CRSF#32	10.28
33	.1130	.1055	7/8	CRSF#33	10.28
34	.1110	.1055	7/8	CRSF#34	10.28
35	.1100	.1030	7/8	CRSF#35	10.28
36	.1055	.1030	7/8	CRSF#36	10.28
37	.1040	.0950	7/8	CRSF#37	10.28
38	.1010	.0950	7/8	CRSF#38	10.28
39	.0995	.0928	7/8	CRSF#39	10.28
40	.0980	.0928	7/8	CRSF#40	10.28
41	.0960	.0928	7/8	CRSF#41	10.28
42	.0935	.0880	3/4	CRSF#42	10.28
43	.0890	.0810	3/4	CRSF#43	10.28
44	.0860	.0810	3/4	CRSF#44	10.28
45	.0820	.0771	3/4	CRSF#45	10.28
46	.0810	.0771	3/4	CRSF#46	10.28
47	.0785	.0720	3/4	CRSF#47	10.28
48	.0760	.0720	3/4	CRSF#48	10.28
49	.0730	.0660	3/4	CRSF#49	10.28
50	.0700	.0660	3/4	CRSF#50	10.28
51	.0670	.0660	3/4	CRSF#51	11.64
52	.0635	.0585	1/2	CRSF#52	11.64
53	.0595	.0585	1/2	CRSF#53	12.14
54	.0550	.0510	1/2	CRSF#54	12.14
55	.0520	.0510	1/2	CRSF#55	12.14
56	.0465	.0455	1/2	CRSF#56	12.14
57	.0430	.0390	1/2	CRSF#57	12.14
58	.0420	.0390	1/2	CRSF#58	12.14
59	.0410	.0390	1/2	CRSF#59	12.14
60	.0400	.0390	1/2	CRSF#60	12.14

Letter Sizes (Straight Shank) "A" to "Z" Dia.

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
A	.234	.2265	1-1/2	CRSF"A"	19.40
B	.238	.2329	1-1/2	CRSF"B"	19.40
C	.242	.2329	1-1/2	CRSF"C"	19.40
D	.246	.2329	1-1/2	CRSF"D"	19.40
E	.250	.2405	1-1/2	CRSF"E"	14.96
F	.257	.2485	1-1/2	CRSF"F"	13.52
G	.261	.2485	1-1/2	CRSF"G"	13.52
H	.266	.2485	1-1/2	CRSF"H"	21.76
I	.272	.2485	1-1/2	CRSF"I"	21.76
J	.277	.2485	1-1/2	CRSF"J"	21.76
K	.281	.2485	1-1/2	CRSF"K"	21.76
L	.290	.2792	1-1/2	CRSF"L"	21.76
M	.295	.2792	1-1/2	CRSF"M"	21.76

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
N	.302	.2792	1-1/2	CRSF"N"	21.76
O	.316	.2792	1-1/2	CRSF"O"	23.06
P	.323	.2792	1-1/2	CRSF"P"	23.06
Q	.332	.2792	1-1/2	CRSF"Q"	23.06
R	.339	.2792	1-1/2	CRSF"R"	23.06
S	.348	.3105	1-3/4	CRSF"S"	23.06
T	.358	.3105	1-3/4	CRSF"T"	23.06
U	.368	.3105	1-3/4	CRSF"U"	23.06
V	.377	.3105	1-3/4	CRSF"V"	30.18
W	.386	.3105	1-3/4	CRSF"W"	25.82
X	.397	.3105	1-3/4	CRSF"X"	25.82
Y	.404	.3105	1-3/4	CRSF"Y"	26.60
Z	.413	.3735	1-3/4	CRSF"Z"	26.60

TOLERANCES

1 - #60 dia.: +.0002 - .0000" • A - Z dia.: +.0002 - .0000"

HIGH SPEED STEEL COBALT (M42) CHUCKING REAMERS

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

Cobalt Chucking Reamers are designed for reaming tough steels, stainless steel, titanium, and inconel. They can be run about 25% faster than high speed steel and produce a smoother finished hole. Tool life is increased up to 500%.

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
3/64	.0469	.0455	1/2	2-1/2	4	CRSFC003 22.52
1/16	.0625	.0585	1/2	2-1/2	4	CRSFC004 22.52
5/64	.0781	.0720	3/4	3	4	CRSFC005 20.56
3/32	.0938	.0880	3/4	3	4	CRSFC006 17.82
7/64	.1094	.1030	7/8	3-1/2	4	CRSFC007 20.56
1/8	.1250	.1190	7/8	3-1/2	4	CRSFC008 15.68
9/64	.1406	.1350	1	4	4	CRSFC009 24.46
5/32	.1562	.1510	1	4	4	CRSFC010 22.08
11/64	.1719	.1645	1-1/8	4-1/2	6	CRSFC011 24.46
3/16	.1875	.1805	1-1/8	4-1/2	6	CRSFC012 21.32
13/64	.2031	.1945	1-1/4	5	6	CRSFC013 28.74
7/32	.2188	.2075	1-1/4	5	6	CRSFC014 27.50
15/64	.2344	.2265	1-1/2	6	6	CRSFC015 28.74
1/4	.2500	.2405	1-1/2	6	6	CRSFC016 34.96
17/64	.2656	.2485	1-1/2	6	6	CRSFC017 32.62
9/32	.2812	.2485	1-1/2	6	6	CRSFC018 33.88
19/64	.2969	.2792	1-1/2	6	6	CRSFC019 37.00
5/16	.3125	.2792	1-1/2	6	6	CRSFC020 30.34
21/64	.3281	.2792	1-1/2	6	6	CRSFC021 36.54
11/32	.3438	.2792	1-1/2	6	6	CRSFC022 36.54
23/64	.3594	.3105	1-3/4	7	6	CRSFC023 38.96
3/8	.3750	.3105	1-3/4	7	6	CRSFC024 33.76
25/64	.3906	.3105	1-3/4	7	6	CRSFC025 45.16

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
13/32	.4062	.3105	1-3/4	7	6	CRSFC026 48.68
27/64	.4219	.3730	1-3/4	7	6	CRSFC027 51.92
7/16	.4375	.3730	1-3/4	7	6	CRSFC028 45.72
29/64	.4531	.3730	1-3/4	7	6	CRSFC029 57.72
15/32	.4688	.3730	1-3/4	7	6	CRSFC030 57.72
31/64	.4844	.4355	2	8	6	CRSFC031 57.72
1/2	.5000	.4355	2	8	6	CRSFC032 50.04
17/32	.5312	.4355	2	8	6	CRSFC034 54.70
9/16	.5625	.4355	2	8	6	CRSFC036 54.70
19/32	.5938	.4355	2	8	6	CRSFC038 54.70
5/8	.6250	.5620	2-1/4	9	8	CRSFC040 63.84
21/32	.6562	.5620	2-1/4	9	8	CRSFC042 72.18
11/16	.6875	.5620	2-1/4	9	8	CRSFC044 72.18
23/32	.7188	.5620	2-1/4	9	8	CRSFC046 80.60
3/4	.7500	.6245	2-1/2	9-1/2	8	CRSFC048 81.02
25/32	.7812	.6245	2-1/2	9-1/2	8	CRSFC050 87.36
13/16	.8125	.6245	2-1/2	9-1/2	8	CRSFC052 87.36
27/32	.8438	.6245	2-1/2	9-1/2	8	CRSFC054 103.38
7/8	.8750	.7495	2-5/8	10	8	CRSFC056 105.80
29/32	.9062	.7495	2-5/8	10	8	CRSFC058 113.96
15/16	.9375	.7495	2-5/8	10	8	CRSFC060 113.96
31/32	.9688	.7495	2-5/8	10	8	CRSFC062 127.68
1	1.000	.8745	2-3/4	10-1/2	8	CRSFC100 128.90

HIGH SPEED STEEL CHUCKING REAMERS - CARBIDE TIPPED

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

Carbide Tipped Chucking Reamers are designed for reaming highly abrasive materials and sizing holes that have work-hardened. They are also used when sand or scale is encountered in reaming holes in castings and other hard metals. Tolerance is +.0003" -.0000".

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
3/16	11/64	1-1/8	4-1/2	4	CTCRSF012 145.90
7/32	13/64	1-1/4	5	4	CTCRSF014
1/4	15/64	1-1/2	6	4	CTCRSF016 CALL
9/32	15/64	1-1/2	6	4	CTCRSF018 FOR
5/16	9/32	1-1/2	6	4	CTCRSF020 PRICE
11/32	9/32	1-1/2	6	4	CTCRSF022
3/8	5/16	1-3/4	7	4	CTCRSF024 58.90
13/32	5/16	1-3/4	7	4	CTCRSF026 61.70
7/16	3/8	1-3/4	7	4	CTCRSF028 65.80
15/32	3/8	1-3/4	7	4	CTCRSF030 67.00
1/2	7/16	2	8	6	CTCRSF032 72.50
9/16	7/16	2	8	6	CTCRSF036 78.02

DEC. SIZE	SHANK EQUIV.	FLUTE DIA.	OVERALL LENGTH	ITEM NO.	PRICE
5/8	9/16	2-1/4	9	6	CTCRSF040 85.70
11/16	9/16	2-1/4	9	6	CTCRSF044 CALL
3/4	5/8	2-1/2	9-1/2	6	CTCRSF048 90.52
13/16	5/8	2-1/2	9-1/2	6	CTCRSF052 93.66
7/8	3/4	2-5/8	10	6	CTCRSF056 97.36
15/16	3/4	2-5/8	10	6	CTCRSF060 CALL
1	7/8	2-3/4	10-1/2	6	CTCRSF100 119.02

* Inquire for other sizes not listed

HIGH SPEED STEEL CHUCKING REAMERS - DOWEL PIN SIZES

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

High Speed Steel Dowel Pin Size Chucking Reamers are used to size holes in preparation for installing dowel pins. Listed below are two reamer sizes that can be used for each size dowel pin, depending on how tight a pin fit is required. Diameter tolerance is $+.0000$ $-.0002$ ". They are also available in 14 piece sets.

USE FOR	FLUTE	OVERALL	ITEM		
SIZE	DOWEL PIN	LENGTH	LENGTH	NO.	PRICE
.1230	1/8	7/8	3-1/2	CRSFDP.1230	18.32
.1247	1/8	7/8	3-1/2	CRSFDP.1247	18.32
.1855	3/16	1-1/8	4-1/2	CRSFDP.1855	18.82
.1870	3/16	1-1/8	4-1/2	CRSFDP.1870	18.82
.2480	1/4	1-1/2	6	CRSFDP.2480	21.06
.2495	1/4	1-1/2	6	CRSFDP.2495	21.06
.3105	5/16	1-1/2	6	CRSFDP.3105	24.26

USE FOR	FLUTE	OVERALL	ITEM		
SIZE	DOWEL PIN	LENGTH	LENGTH	NO.	PRICE
.3120	5/16	1-1/2	6	CRSFDP.3120	24.26
.3730	3/8	1-3/4	7	CRSFDP.3730	30.18
.3745	3/8	1-3/4	7	CRSFDP.3745	30.18
.4355	7/16	1-3/4	7	CRSFDP.4355	30.18
.4370	7/16	1-3/4	7	CRSFDP.4370	30.18
.4980	1/2	2	8	CRSFDP.4980	37.52
.4995	1/2	2	8	CRSFDP.4995	37.52

HIGH SPEED STEEL CHUCKING REAMERS - OVER & UNDER SIZES

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

High Speed Steel Oversize Chucking Reamers are $+.001$ " and Undersize Chucking Reamers are $-.001$ " from common fractional sizes of 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, and 1/2. They are also available in 14 piece sets.

OVERSIZE REAMERS

USE FOR	FLUTE	OVERALL	ITEM		
SIZE	FRAC. SIZE	LENGTH	LENGTH	NO.	PRICE
.1260	1/8	7/8	3-1/2	CRSFOS.1260	18.32
.1885	3/16	1-1/8	4-1/2	CRSFOS.1885	18.82
.2510	1/4	1-1/2	6	CRSFOS.2510	21.06
.3135	5/16	1-1/2	6	CRSFOS.3135	24.26
.3760	3/8	1-3/4	7	CRSFOS.3760	30.18
.4385	7/16	1-3/4	7	CRSFOS.4385	30.18
.5010	1/2	2	8	CRSFOS.5010	37.52

UNDERSIZE REAMERS

USE FOR	FLUTE	OVERALL	ITEM		
SIZE	FRAC. SIZE	LENGTH	LENGTH	NO.	PRICE
.1240	1/8	7/8	3-1/2	CRSFUS.1260	18.32
.1865	3/16	1-1/8	4-1/2	CRSFUS.1885	18.82
.2490	1/4	1-1/2	6	CRSFUS.2510	21.06
.3115	5/16	1-1/2	6	CRSFUS.3135	24.26
.3740	3/8	1-3/4	7	CRSFUS.3760	30.18
.4365	7/16	1-3/4	7	CRSFUS.4385	30.18
.4990	1/2	2	8	CRSFUS.5010	37.52

CHUCKING REAMERS - STANDARD DECIMAL SIZES

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

High Speed Steel Decimal Size Chucking Reamers are designed to remove a very small (.0005 to .001 inch) amount of metal when sizing a hole.

Standard Intermediate Decimal Sizes .1230 to .2830 Diameter

FLUTE SIZE	OVERALL LENGTH	NO. OF FLUTES	PRICE CRSFD
.1230	7/8	3-1/2	6 18.32
.1240	7/8	3-1/2	6 18.32
.1245	7/8	3-1/2	6 18.32
.1247	7/8	3-1/2	6 18.32
.1255	7/8	3-1/2	6 18.32
.1260	7/8	3-1/2	6 18.32
.1265	7/8	3-1/2	6 18.32
.1270	7/8	3-1/2	6 18.32
.1280	7/8	3-1/2	6 18.32
.1290	7/8	3-1/2	6 18.32
.1295	7/8	3-1/2	6 18.32
.1300	7/8	3-1/2	6 18.32
.1370	1	4	6 18.82
.1375	1	4	6 18.82
.1380	1	4	6 18.82
.1400	1	4	6 18.82
.1410	1	4	6 18.82
.1415	1	4	6 18.82
.1420	1	4	6 18.82
.1520	1	4	6 18.82
.1560	1	4	6 18.82
.1580	1	4	6 18.82
.1670	1-1/8	4-1/2	6 18.82
.1720	1-1/8	4-1/2	6 18.82
.1740	1-1/8	4-1/2	6 18.82
.1750	1-1/8	4-1/2	6 18.82
.1760	1-1/8	4-1/2	6 18.82
.1770	1-1/8	4-1/2	6 18.82
.1810	1-1/8	4-1/2	6 18.82
.1820	1-1/8	4-1/2	6 18.82
.1840	1-1/8	4-1/2	6 18.82
.1845	1-1/8	4-1/2	6 18.82
.1850	1-1/8	4-1/2	6 18.82
.1855	1-1/8	4-1/2	6 18.82
.1860	1-1/8	4-1/2	6 18.82
.1865	1-1/8	4-1/2	6 18.82
.1870	1-1/8	4-1/2	6 18.82
.1875	1-1/8	4-1/2	6 18.82
.1880	1-1/8	4-1/2	6 18.82

FLUTE SIZE	OVERALL LENGTH	NO. OF FLUTES	PRICE CRSFD
.1885	1-1/8	4-1/2	6 18.82
.1895	1-1/8	4-1/2	6 18.82
.1900	1-1/8	4-1/2	6 18.82
.1905	1-1/4	5	6 21.06
.1910	1-1/4	5	6 21.06
.1915	1-1/4	5	6 21.06
.1920	1-1/4	5	6 21.06
.1930	1-1/4	5	6 21.06
.1940	1-1/4	5	6 21.06
.1950	1-1/4	5	6 21.06
.1960	1-1/4	5	6 21.06
.1970	1-1/4	5	6 21.06
.1980	1-1/4	5	6 21.06
.1990	1-1/4	5	6 21.06
.2000	1-1/4	5	6 21.06
.2020	1-1/4	5	6 21.06
.2024	1-1/4	5	6 21.06
.2030	1-1/4	5	6 21.06
.2050	1-1/4	5	6 21.06
.2060	1-1/4	5	6 21.06
.2070	1-1/4	5	6 21.06
.2080	1-1/4	5	6 21.06
.2090	1-1/4	5	6 21.06
.2100	1-1/4	5	6 21.06
.2110	1-1/4	5	6 21.06
.2120	1-1/4	5	6 31.50
.2140	1-1/4	5	6 21.06
.2150	1-1/4	5	6 21.06
.2155	1-1/4	5	6 21.06
.2160	1-1/4	5	6 21.06
.2170	1-1/4	5	6 21.06
.2180	1-1/4	5	6 21.06
.2190	1-1/4	5	6 21.06
.2200	1-1/4	5	6 21.06
.2211	1-1/2	6	6 21.06
.2270	1-1/2	6	6 21.06
.2300	1-1/2	6	6 21.06
.2310	1-1/2	6	6 21.06
.2320	1-1/2	6	6 21.06

FLUTE SIZE	OVERALL LENGTH	NO. OF FLUTES	PRICE CRSFD
.2340	1-1/2	6	6 21.06
.2350	1-1/2	6	6 21.06
.2360	1-1/2	6	6 21.06
.2370	1-1/2	6	6 21.06
.2380	1-1/2	6	6 21.06
.2390	1-1/2	6	6 21.06
.2400	1-1/2	6	6 21.06
.2410	1-1/2	6	6 21.06
.2420	1-1/2	6	6 21.06
.2430	1-1/2	6	6 21.06
.2440	1-1/2	6	6 21.06
.2450	1-1/2	6	6 21.06
.2460	1-1/2	6	6 21.06
.2470	1-1/2	6	6 21.06
.2475	1-1/2	6	6 21.06
.2480	1-1/2	6	6 21.06
.2485	1-1/2	6	6 21.06
.2490	1-1/2	6	6 21.06
.2495	1-1/2	6	6 21.06
.2505	1-1/2	6	6 21.06
.2510	1-1/2	6	6 21.06
.2515	1-1/2	6	6 21.06
.2520	1-1/2	6	6 21.06
.2530	1-1/2	6	6 21.06
.2540	1-1/2	6	6 21.06
.2550	1-1/2	6	6 21.06
.2560	1-1/2	6	6 21.06
.2570	1-1/2	6	6 21.06
.2580	1-1/2	6	6 21.06
.2590	1-1/2	6	6 21.06
.2600	1-1/2	6	6 21.06
.2650	1-1/2	6	6 24.26
.2690	1-1/2	6	6 24.26
.2710	1-1/2	6	6 24.26
.2760	1-1/2	6	6 24.26
.2770	1-1/2	6	6 24.26
.2800	1-1/2	6	6 24.26
.2820	1-1/2	6	6 24.26
.2830	1-1/2	6	6 24.26

CHUCKING REAMERS - STANDARD DECIMAL SIZES**ICS WIS****SPECIAL PURPOSE****RIGHT HAND CUT****STRAIGHT
SHANK****STRAIGHT
FLUTE**

High Speed Steel Decimal Size Chucking Reamers are designed to remove a very small (.0005 to .001 inch) amount of metal when sizing a hole.

Standard Intermediate Decimal Sizes .2840 to .7580 Diameter

FLUTE		OVERALL NO. OF		PRICE
SIZE	LENGTH	LENGTH	FLUTES	CRSFDS
.2840	1-1/2	6	6	24.26
.2860	1-1/2	6	6	24.26
.2870	1-1/2	6	6	24.26
.2890	1-1/2	6	6	24.26
.2900	1-1/2	6	6	24.26
.2920	1-1/2	6	6	24.26
.2930	1-1/2	6	6	24.26
.2940	1-1/2	6	6	24.26
.2960	1-1/2	6	6	24.26
.2980	1-1/2	6	6	24.26
.2990	1-1/2	6	6	24.26
.3030	1-1/2	6	6	24.26
.3050	1-1/2	6	6	24.26
.3060	1-1/2	6	6	24.26
.3070	1-1/2	6	6	24.26
.3090	1-1/2	6	6	24.26
.3100	1-1/2	6	6	24.26
.3105	1-1/2	6	6	24.26
.3110	1-1/2	6	6	24.26
.3115	1-1/2	6	6	24.26
.3120	1-1/2	6	6	24.26
.3130	1-1/2	6	6	24.26
.3135	1-1/2	6	6	24.26
.3140	1-1/2	6	6	24.26
.3145	1-1/2	6	6	24.26
.3150	1-1/2	6	6	24.26
.3160	1-1/2	6	6	24.26
.3165	1-1/2	6	6	24.26
.3170	1-1/2	6	6	24.26
.3180	1-1/2	6	6	24.26
.3190	1-1/2	6	6	24.26
.3200	1-1/2	6	6	24.26
.3220	1-1/2	6	6	24.26
.3240	1-1/2	6	6	24.26
.3250	1-1/2	6	6	24.26
.3270	1-1/2	6	6	24.26
.3280	1-1/2	6	6	24.26
.3290	1-1/2	6	6	24.26
.3300	1-1/2	6	6	24.26

FLUTE		OVERALL NO. OF		PRICE
SIZE	LENGTH	LENGTH	FLUTES	CRSFDS
.3360	1-1/2	6	6	24.26
.3370	1-1/2	6	6	24.26
.3440	1-1/2	6	6	24.26
.3490	1-3/4	7	6	30.18
.3490	1-3/4	7	6	30.18
.3550	1-3/4	7	6	30.18
.3590	1-3/4	7	6	30.18
.3690	1-3/4	7	6	30.18
.3730	1-3/4	7	6	30.18
.3740	1-3/4	7	6	30.18
.3745	1-3/4	7	6	30.18
.3755	1-3/4	7	6	30.18
.3760	1-3/4	7	6	30.18
.3765	1-3/4	7	6	30.18
.3770	1-3/4	7	6	30.18
.3790	1-3/4	7	6	30.18
.3800	1-3/4	7	6	30.18
.3860	1-3/4	7	6	30.18
.3880	1-3/4	7	6	30.18
.4000	1-3/4	7	6	30.18
.4070	1-3/4	7	6	30.18
.4300	1-3/4	7	6	30.18
.4320	1-3/4	7	6	30.18
.4355	1-3/4	7	6	30.18
.4365	1-3/4	7	6	30.18
.4370	1-3/4	7	6	30.18
.4385	1-3/4	7	6	30.18
.4390	1-3/4	7	6	30.18
.4410	1-3/4	7	6	30.18
.4420	1-3/4	7	6	30.18
.4430	1-3/4	7	6	30.18
.4440	1-3/4	7	6	30.18
.4480	1-3/4	7	6	30.18
.4490	1-3/4	7	6	30.18
.4550	1-3/4	7	6	30.18
.4560	1-3/4	7	6	30.18
.4820	2	8	6	37.52
.4900	2	8	6	37.52
.4970	2	8	6	37.52

FLUTE		OVERALL	NO. OF	PRICE
SIZE	LENGTH	LENGTH	FLUTES	CRSFDS
.4980	2	8	6	37.52
.4990	2	8	6	37.52
.4995	2	8	6	37.52
.5010	2	8	6	37.52
.5015	2	8	6	37.52
.5020	2	8	6	37.52
.5030	2	8	6	37.52
.5040	2	8	6	37.52
.5050	2	8	6	37.52
.5240	2	8	6	37.52
.5250	2	8	6	37.52
.5260	2	8	6	37.52
.5300	2	8	6	37.52
.5500	2	8	6	37.52
.5580	2	8	6	37.52
.5590	2	8	6	37.52
.5615	2	8	6	37.52
.5690	2	8	6	37.52
.5740	2	8	6	37.52
.5840	2	8	6	43.46
.5850	2	8	6	43.46
.5860	2	8	6	43.46
.5880	2	8	6	43.46
.6050	2-1/4	9	6	43.46
.6220	2-1/4	9	6	43.46
.6240	2-1/4	9	6	43.46
.6250	2-1/4	9	6	43.46
.6255	2-1/4	9	6	43.46
.6260	2-1/4	9	6	43.46
.6300	2-1/4	9	6	43.46
.7480	2-1/2	9-1/2	8	47.94
.7490	2-1/2	9-1/2	8	47.94
.7510	2-1/2	9-1/2	8	47.94
.7580	2-1/2	9-1/2	8	47.94

CHUCKING REAMERS - NON-STANDARD DECIMAL SIZES

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

High Speed Steel Decimal Size Chucking Reamers are designed to remove a very small (.0005 to .001 inch) amount of metal when sizing a hole.

Non-Standard Decimal Sizes .0100 to 2.0000 DiameterITEM NO. - **CRSFDS** + DECIMAL SIZEEX: **CRSFDS.0100**

(PLEASE INQUIRE FOR PRICING)

METRIC CHUCKING REAMERS

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

High Speed Steel Straight Shank Straight Flute Metric Size Chucking Reamers are designed for general purpose reaming of most ferrous and non-ferrous metals. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers.

Metric Sizes 2.00mm to 25.00mm Diameter

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
2.0	.0787	3/4	3	CRSFM02.00	10.96
2.5	.0984	7/8	3-1/2	CRSFM02.50	10.96
3.0	.1181	7/8	3-1/2	CRSFM03.00	10.96
3.5	.1378	1	4	CRSFM03.50	13.78
4.0	.1575	1	4	CRSFM04.00	13.78
4.5	.1772	1-1/8	4-1/2	CRSFM04.50	13.78
5.0	.1968	1-1/4	5	CRSFM05.00	16.12
5.5	.2165	1-1/4	5	CRSFM05.50	16.12
6.0	.2362	1-1/2	6	CRSFM06.00	16.12
6.5	.2559	1-1/2	6	CRSFM06.50	17.38
7.0	.2756	1-1/2	6	CRSFM07.00	17.98
7.5	.2953	1-1/2	6	CRSFM07.50	17.98
8.0	.3150	1-1/2	6	CRSFM08.00	19.82
8.5	.3346	1-1/2	6	CRSFM08.50	19.82
9.0	.3543	1-3/4	7	CRSFM09.00	19.82
9.5	.3740	1-3/4	7	CRSFM09.50	19.82
10.0	.3937	1-3/4	7	CRSFM10.00	22.22
10.5	.4134	1-3/4	7	CRSFM10.50	22.22
11.0	.4331	1-3/4	7	CRSFM11.00	22.22
11.5	.4528	1-3/4	7	CRSFM11.50	24.70
12.0	.4724	2	8	CRSFM12.00	28.52
12.5	.4921	2	8	CRSFM12.50	23.96
13.0	.5118	2	8	CRSFM13.00	27.64
13.5	.5315	2	8	CRSFM13.50	27.64

DEC. SIZE	FLUTE EQUIV.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
14.0	.5512	2	8	CRSFM14.00	27.64
14.5	.5709	2	8	CRSFM14.50	27.64
15.0	.5906	2	8	CRSFM14.00	30.08
15.5	.6102	2-1/4	9	CRSFM15.50	30.08
16.0	.6299	2-1/4	9	CRSFM16.00	32.24
16.5	.6496	2-1/4	9	CRSFM16.50	34.62
17.0	.6693	2-1/4	9	CRSFM17.00	36.46
17.5	.6890	2-1/4	9	CRSFM17.50	36.46
18.0	.7087	2-1/4	9	CRSFM18.00	39.64
18.5	.7283	2-1/2	9-1/2	CRSFM18.50	39.64
19.0	.7480	2-1/2	9-1/2	CRSFM19.00	45.04
19.5	.7677	2-1/2	9-1/2	CRSFM19.50	45.04
20.0	.7874	2-1/2	9-1/2	CRSFM20.00	46.46
20.5	.8071	2-1/2	9-1/2	CRSFM20.50	46.46
21.0	.8268	2-1/2	9-1/2	CRSFM21.00	50.44
21.5	.8465	2-5/8	10	CRSFM21.50	50.44
22.0	.8661	2-5/8	10	CRSFM22.00	54.10
22.5	.8858	2-5/8	10	CRSFM22.50	54.10
23.0	.9055	2-5/8	10	CRSFM23.00	55.40
23.5	.9252	2-5/8	10	CRSFM23.50	55.40
24.0	.9449	2-5/8	10	CRSFM24.00	59.28
24.5	.9646	2-5/8	10	CRSFM24.50	62.32
25.0	.9843	2-3/4	10-1/2	CRSFM25.00	67.04

TOLERANCES

M2.0 - M25.0: +.0001 - +.0005"

1/2" SHANK SILVER & DEMING REAMERS - 6" LENGTH**ICS WIS****GENERAL PURPOSE****RIGHT HAND CUT**

STRAIGHT FLUTE

High Speed Steel 1/2" Shank Straight Flute Silver & Deming Reamers are designed for general purpose reaming where shorter length and extra rigidity are needed. They are ideal for Bridgeport and hand held applications. Ground with a 45° chamfer.



HELICAL FLUTE

High Speed Steel 1/2" Shank Helical Flute Silver & Deming Reamers are designed for reaming materials where additional shear is necessary and to improve chip removal in blind holes. The shorter length provides extra rigidity and strength in tough materials. Ground with a 45° chamfer.

SIZE	DEC EQUIV	FLUTE LENGTH	STRAIGHT FLUTE		HELICAL FLUTE		RECOMMENDED S&D DRILL	ITEM NO.
			ITEM NO.	PRICE	ITEM NO.	PRICE		
5/8	.6250	2-1/4	CRSFRS6L040	44.60	CRHFRS6L040	49.32	39/64	SND039
21/32	.6562	2-1/4	CRSFRS6L042	51.50	CRHFRS6L042	56.30	41/64	SND041
11/16	.6875	2-1/4	CRSFRS6L044	50.26	CRHFRS6L044	55.52	43/64	SND043
3/4	.7500	2-1/2	CRSFRS6L048	52.84	CRHFRS6L048	61.18	47/64	SND047
13/16	.8125	2-1/2	CRSFRS6L052	62.20	CRHFRS6L052	68.36	51/64	SND051
7/8	.8750	2-5/8	CRSFRS6L056	67.80	CRHFRS6L056	78.40	55/64	SND055
1	1.0000	2-3/4	CRSFRS6L100	80.96	CRHFRS6L100	90.80	63/64	SND063
1-1/8	1.1250	2-7/8	CRSFRS6L108	97.94	CRHFRS6L108	112.62	1-7/64	SND107
1-1/4	1.2500	3	CRSFRS6L116	118.84	CRHFRS6L116	134.06	1-15/64	SND115
1-3/8	1.3750	3-1/4	CRSFRS6L124	142.48	CRHFRS6L124	158.02	1-23/64	SND123
1-1/2	1.5000	3-1/2	CRSFRS6L132	164.30	CRHFRS6L132	180.40	1-31/64	SND131

NOTE: Additional sizes are available. Inquire for pricing.

1/2" SHANK SILVER & DEMING REAMER SETS**ICS WIS****PLASTIC CASE**

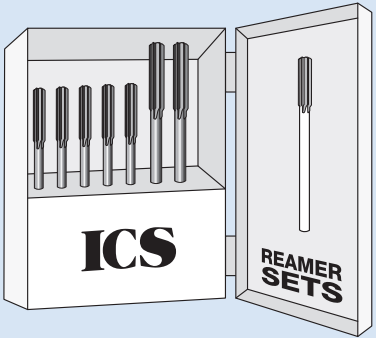
DESCRIPTION	SIZES IN SET	ITEM NO.	PRICE
	6 PC S&D REAMER SET SIZES 5/8, 11/16, 3/4, 13/16, 7/8, 1 1/2 SHANK - STRAIGHT FLUTE REAMERS	RS-CRSFRS6L-6	369.14
	4 PC S&D REAMER SET SIZES 1-1/8, 1-1/4, 1-3/8, 1-1/2 1/2 SHANK - STRAIGHT FLUTE REAMERS	RS-CRSFRS6L-4	534.08
	6 PC S&D REAMER SET SIZES 5/8, 11/16, 3/4, 13/16, 7/8, 1 1/2 SHANK - HELICAL FLUTE REAMERS	RS-CRHFRS6L-6	414.06
	4 PC S&D REAMER SET SIZES 1-1/8, 1-1/4, 1-3/8, 1-1/2 1/2 SHANK - HELICAL FLUTE REAMERS	RS-CRHFRS6L-4	595.60

HIGH SPEED STEEL CHUCKING REAMER SETS

STRAIGHT
SHANK

METAL INDEX

STRAIGHT
FLUTE

ILLUSTRATION	DESCRIPTION	TYPE OF REAMER	ITEM NO.	PRICE
	14 PC REAMER SETS Dowel Pin Sizes .1230 to .4995	Chuckling Reamers-SF-SS	RS-CRSFDP-14	321.54
	14 PC REAMER SETS Over & Under Sizes .1240 to .5010	Chuckling Reamers-SF-SS	RS-CRSFOU-14	321.16
	26 PC REAMER SETS Letter Sizes A to Z	Chuckling Reamers-SF-SS	RS-CRSF-26	523.78
	29 PC REAMER SETS Sizes 1/16 to 1/2 by 64ths	Chuckling Reamers-SF-SS	RS-CRSF-29	489.86
	60 PC REAMER SETS Wire Gauge Sizes 1 to 60	Chuckling Reamers-SF-SS	RS-CRSF-60	733.96

HIGH SPEED STEEL EXTRA LENGTH CHUCKING REAMERS

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANKSTRAIGHT
FLUTE

Extra Length Chucking Reamers are designed for reaming and sizing holes in inaccessible places which cannot be reached with standard length chucking reamers. Various combinations of diameter and overall lengths are available.

SIZE	DEC EQUIV.	SHANK DIA.	FLUTE LENGTH	12" LENGTH		16" LENGTH	
				OAL	ITEM NO.	OAL	ITEM NO.
1/8	.1250	.1190	7/8	12	CRSFXL008X12	16	CRSFXL008X16
5/32	.1562	.1510	1	12	CRSFXL010X12	16	CRSFXL010X16
3/16	.1875	.1805	1-1/8	12	CRSFXL012X12	16	CRSFXL012X16
7/32	.2188	.2075	1-1/4	12	CRSFXL014X12	16	CRSFXL014X16
1/4	.2500	.2405	1-1/2	12	CRSFXL016X12	16	CRSFXL016X16
9/32	.2812	.2485	1-1/2	12	CRSFXL018X12	16	CRSFXL018X16
5/16	.3125	.2807	1-1/2	12	CRSFXL020X12	16	CRSFXL020X16
11/32	.3438	.2807	1-1/2	12	CRSFXL022X12	16	CRSFXL022X16
3/8	.3750	.3120	1-3/4	12	CRSFXL024X12	16	CRSFXL024X16
13/32	.4062	.3120	1-3/4	12	CRSFXL026X12	16	CRSFXL026X16
7/16	.4375	.3745	1-3/4	12	CRSFXL028X12	16	CRSFXL028X16
15/32	.4688	.3745	1-3/4	12	CRSFXL030X12	16	CRSFXL030X16
1/2	.5000	.4375	2	12	CRSFXL032X12	16	CRSFXL032X16
17/32	.5313	.4375	2	12	CRSFXL034X12	16	CRSFXL034X16
9/16	.5625	.4375	2	12	CRSFXL036X12	16	CRSFXL036X16
19/32	.5938	.4375	2	12	CRSFXL038X12	16	CRSFXL038X16
5/8	.6250	.5620	2-1/4	12	CRSFXL040X12	16	CRSFXL040X16
21/32	.6562	.5620	2-1/4	12	CRSFXL042X12	16	CRSFXL042X16
11/16	.6875	.5620	2-1/4	12	CRSFXL044X12	16	CRSFXL044X16
23/32	.7188	.5620	2-1/4	12	CRSFXL046X12	16	CRSFXL046X16
3/4	.7500	.6245	2-1/2	12	CRSFXL048X12	16	CRSFXL048X16
13/16	.8125	.6245	2-1/2	12	CRSFXL052X12	16	CRSFXL052X16

REGARDING USAGE

Extended reamers are designed for use in drill presses, turret lathes, screw machines, etc. **They are not designed for CNC machines.** The best results are obtained with a floating type holder which permits the reamer to align itself with the hole being reamed.

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
CHUCKING REAMERS - SOLID CARBIDE

RT-26

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

**STRAIGHT
SHANK**



**STRAIGHT
FLUTE**

Solid Carbide Straight Flute Fractional Size Chucking Reamers are used for reaming abrasive materials, hard steels up to RC50, aluminum, brass, bronze and plastics. Available fractional, wire gauge, letter, metric and decimal sizes.

Fractional Sizes 1/32" to 1/2" Diameter

DEC SIZE	FLUTE EQUIV	OVERALL LENGTH	ITEM NO.	PRICE
1/32	.0312	1/4	1-1/2	SCCRSF002 16.36
3/64	.0469	3/8	1-1/2	SCCRSF003 18.58
1/16	.0629	3/8	1-1/2	SCCRSF004 19.66
5/64	.0781	1/2	1-3/4	SCCRSF005 21.52
3/32	.0938	1/2	2	SCCRSF006 22.90
7/64	.1094	5/8	2-1/4	SCCRSF007 23.60
1/8	.1250	5/8	2-1/4	SCCRSF008 25.30
9/64	.1406	3/4	2-1/2	SCCRSF009 27.98
5/32	.1562	3/4	2-1/2	SCCRSF010 29.14
11/64	.1719	7/8	2-3/4	SCCRSF011 33.02
3/16	.1875	7/8	2-3/4	SCCRSF012 33.64
13/64	.2031	1	3	SCCRSF013 37.56
7/32	.2188	1	3	SCCRSF014 38.66
15/64	.2344	1	3	SCCRSF015 38.72
1/4	.2500	1	3	SCCRSF016 39.92
17/64	.2656	1-1/8	3-1/4	SCCRSF017 49.94

DEC SIZE	FLUTE EQUIV	OVERALL LENGTH	ITEM NO.	PRICE
9/32	.2812	1-1/8	3-1/4	SCCRSF018 48.50
19/64	.2969	1-1/8	3-1/4	SCCRSF019 53.34
5/16	.3125	1-1/8	3-1/4	SCCRSF020 54.98
21/64	.3281	1-1/4	3-1/2	SCCRSF021 63.10
11/32	.3438	1-1/4	3-1/2	SCCRSF022 61.26
23/64	.3594	1-1/4	3-1/2	SCCRSF023 70.76
3/8	.3750	1-1/4	3-1/2	SCCRSF024 68.68
25/64	.3906	1-1/4	3-1/2	SCCRSF025 85.94
13/32	.4062	1-1/4	3-1/2	SCCRSF026 81.30
27/64	.4219	1-3/8	4	SCCRSF027 100.22
7/16	.4375	1-3/8	4	SCCRSF028 91.52
29/64	.4531	1-3/8	4	SCCRSF029 108.14
15/32	.4688	1-3/8	4	SCCRSF030 104.62
31/64	.4844	1-1/2	4	SCCRSF031 121.34
1/2	.5000	1-1/2	4	SCCRSF032 119.28

Letter Sizes "A" to "Z" Diameter

DEC SIZE	FLUTE EQUIV	OVERALL LENGTH	ITEM NO.	PRICE
A	.2340	1	3	SCCRSF"A" 42.44
B	.2380	1	3	SCCRSF"B" 42.44
C	.2420	1	3	SCCRSF"C" 41.18
D	.2460	1	3	SCCRSF"D" 41.18
E	.2500	1-1/8	3-1/4	SCCRSF"E" 39.92
F	.2570	1-1/8	3-1/4	SCCRSF"F" 51.50
G	.2610	1-1/8	3-1/4	SCCRSF"G" 51.50
H	.2660	1-1/8	3-1/4	SCCRSF"H" 53.10
I	.2720	1-1/8	3-1/4	SCCRSF"I" 53.10
J	.2770	1-1/8	3-1/4	SCCRSF"J" 51.50
K	.2810	1-1/8	3-1/4	SCCRSF"K" 51.50
L	.2900	1-1/8	3-1/4	SCCRSF"L" 56.72
M	.2950	1-1/8	3-1/4	SCCRSF"M" 58.42

DEC SIZE	FLUTE EQUIV	OVERALL LENGTH	ITEM NO.	PRICE
N	.3020	1-1/8	3-1/4	SCCRSF"N" 56.72
O	.3160	1-1/8	3-1/4	SCCRSF"O" 67.90
P	.3230	1-1/4	3-1/2	SCCRSF"P" 67.90
Q	.3320	1-1/4	3-1/2	SCCRSF"Q" 65.88
R	.3390	1-1/4	3-1/2	SCCRSF"R" 67.90
S	.3480	1-1/4	3-1/2	SCCRSF"S" 72.98
T	.3580	1-1/4	3-1/2	SCCRSF"T" 72.98
U	.3680	1-1/4	3-1/2	SCCRSF"U" 75.20
V	.3770	1-1/4	3-1/2	SCCRSF"V" 83.86
W	.3860	1-1/4	3-1/2	SCCRSF"W" 83.86
X	.3970	1-1/4	3-1/2	SCCRSF"X" 87.00
Y	.4040	1-1/4	3-1/2	SCCRSF"Y" 83.86
Z	.4130	1-1/4	3-1/2	SCCRSF"Z" 100.22

NUMBER OF FLUTES
 .0280 - .2500 dia.: 4 Flutes
 .2501 - .5000 dia.: 6 Flutes

DIAMETER	DIAMETER TOLERANCES
.0280 to .2500	+0000 / +.0002
.2501 to .5000	+0000 / +.0003

CHUCKING REAMERS - SOLID CARBIDE**ICS WIS****SPECIAL PURPOSE****RIGHT HAND CUT****STRAIGHT
SHANK****STRAIGHT
FLUTE**

Solid Carbide Chucking Reamers are used for reaming abrasive materials, hard steels up to RC50, aluminum, brass, bronze and plastics. Available fractional, wire gauge, letter, metric and decimal sizes.

Wire Gauge Sizes #1 to #70 Diameter

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1	.2280	1	3	SCCRSF#01	42.44
2	.2210	1	3	SCCRSF#02	39.92
3	.2130	1	3	SCCRSF#03	41.14
4	.2090	1	3	SCCRSF#04	41.14
5	.2055	1	3	SCCRSF#05	39.92
6	.2040	1	3	SCCRSF#06	41.14
7	.2010	1	3	SCCRSF#07	39.92
8	.1990	1	3	SCCRSF#08	39.92
9	.1960	1	3	SCCRSF#09	41.14
10	.1935	1	3	SCCRSF#10	39.92
11	.1910	7/8	2-3/4	SCCRSF#11	39.92
12	.1890	7/8	2-3/4	SCCRSF#12	36.88
13	.1850	7/8	2-3/4	SCCRSF#13	35.76
14	.1820	7/8	2-3/4	SCCRSF#14	35.76
15	.1800	7/8	2-3/4	SCCRSF#15	36.88
16	.1770	7/8	2-3/4	SCCRSF#16	36.88
17	.1730	7/8	2-3/4	SCCRSF#17	39.92
18	.1695	7/8	2-3/4	SCCRSF#18	34.02
19	.1660	7/8	2-3/4	SCCRSF#19	35.06
20	.1610	7/8	2-3/4	SCCRSF#20	35.06
21	.1590	3/4	2-1/2	SCCRSF#21	30.00
22	.1570	3/4	2-1/2	SCCRSF#22	30.94
23	.1549	3/4	2-1/2	SCCRSF#23	30.00
24	.1520	3/4	2-1/2	SCCRSF#24	30.94
25	.1490	3/4	2-1/2	SCCRSF#25	30.94
26	.1470	3/4	2-1/2	SCCRSF#26	30.94
27	.1440	3/4	2-1/2	SCCRSF#27	30.00
28	.1405	3/4	2-1/2	SCCRSF#28	30.00
29	.1360	3/4	2-1/2	SCCRSF#29	30.94
30	.1285	5/8	2-1/4	SCCRSF#30	27.72
31	.1200	5/8	2-1/4	SCCRSF#31	26.92
32	.1160	5/8	2-1/4	SCCRSF#32	26.92
33	.1130	5/8	2-1/4	SCCRSF#33	25.18
34	.1110	5/8	2-1/4	SCCRSF#34	25.94
35	.1100	5/8	2-1/4	SCCRSF#35	25.18

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
36	.1055	5/8	2-1/4	SCCRSF#36	25.94
37	.1040	5/8	2-1/4	SCCRSF#37	25.18
38	.1010	5/8	2-1/4	SCCRSF#38	25.94
39	.0995	5/8	2-1/4	SCCRSF#39	25.18
40	.0980	5/8	2-1/4	SCCRSF#40	25.94
41	.0960	1/2	2	SCCRSF#41	25.18
42	.0935	1/2	2	SCCRSF#42	24.30
43	.0890	1/2	2	SCCRSF#43	23.56
44	.0860	1/2	2	SCCRSF#44	23.56
45	.0820	1/2	2	SCCRSF#45	24.30
46	.0810	1/2	1-3/4	SCCRSF#46	23.56
47	.0785	1/2	1-3/4	SCCRSF#47	22.90
48	.0760	1/2	1-3/4	SCCRSF#48	22.22
49	.0730	1/2	1-3/4	SCCRSF#49	22.90
50	.0700	1/2	1-3/4	SCCRSF#50	22.90
51	.0670	1/2	1-3/4	SCCRSF#51	22.22
52	.0635	3/8	1-1/2	SCCRSF#52	20.30
53	.0595	3/8	1-1/2	SCCRSF#53	20.90
54	.0550	3/8	1-1/2	SCCRSF#54	20.30
55	.0520	3/8	1-1/2	SCCRSF#55	20.08
56	.0465	3/8	1-1/2	SCCRSF#56	19.76
57	.0430	3/8	1-1/2	SCCRSF#57	19.76
58	.0420	3/8	1-1/2	SCCRSF#58	19.16
59	.0410	1/4	1-1/2	SCCRSF#59	19.16
60	.0400	1/4	1-1/2	SCCRSF#60	19.76
61	.0390	1/4	1-1/2	SCCRSF#61	19.46
62	.0380	1/4	1-1/2	SCCRSF#62	18.70
63	.0370	1/4	1-1/2	SCCRSF#63	18.14
64	.0360	1/4	1-1/2	SCCRSF#64	18.70
65	.0350	1/4	1-1/2	SCCRSF#65	17.00
66	.0330	1/4	1-1/2	SCCRSF#66	17.00
67	.0320	1/4	1-1/2	SCCRSF#67	16.86
68	.0310	1/4	1-1/2	SCCRSF#68	20.24
69	.0292	1/4	1-1/2	SCCRSF#69	20.24
70	.0280	1/4	1-1/2	SCCRSF#70	20.24

Metric Sizes 1.0mm to 12.5mm Diameter

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1.0	.0395	1/4	1-1/2	4	SCCRSFM01.00	19.46
1.5	.0610	3/8	1-1/2	4	SCCRSFM01.50	20.98
2.0	.0787	1/2	1-3/4	4	SCCRSFM02.00	23.30
2.5	.0984	5/8	2-1/4	4	SCCRSFM02.50	26.50
3.0	.1181	5/8	2-1/4	4	SCCRSFM03.00	27.04
3.5	.1378	3/4	2-1/2	6	SCCRSFM03.50	30.70
4.0	.1575	3/4	2-1/2	6	SCCRSFM04.00	30.94
4.5	.1772	7/8	2-3/4	6	SCCRSFM04.50	37.46
5.0	.1968	1	3	6	SCCRSFM05.00	40.84
5.5	.2165	1	3	6	SCCRSFM05.50	49.60
6.0	.2362	1	3	6	SCCRSFM06.00	42.32
6.5	.2559	1-1/8	3-1/4	6	SCCRSFM06.50	52.26

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
7.0	.2756	1-1/8	3-1/4	6	SCCRSFM07.00	51.24
7.5	.2953	1-1/8	3-1/4	6	SCCRSFM07.50	60.72
8.0	.3150	1-1/8	3-1/4	6	SCCRSFM08.00	67.50
8.5	.3346	1-1/4	3-1/2	6	SCCRSFM08.50	70.20
9.0	.3543	1-1/4	3-1/2	6	SCCRSFM09.00	72.74
9.5	.3740	1-1/4	3-1/2	6	SCCRSFM09.50	78.66
10.0	.3937	1-1/4	3-1/2	6	SCCRSFM10.00	91.82
10.5	.4134	1-1/4	3-1/2	6	SCCRSFM10.50	107.40
11.0	.4331	1-3/8	4	6	SCCRSFM11.00	111.66
11.5	.4528	1-3/8	4	6	SCCRSFM11.50	114.88
12.0	.4724	1-3/8	4	6	SCCRSFM12.00	113.22
12.5	.4921	1-1/2	4	6	SCCRSFM12.50	129.26

NUMBER OF FLUTES

.0280 - .2500 dia.: 4 Flutes
 .2501 - .5000 dia.: 6 Flutes

DIAMETER**DIAMETER TOLERANCES**

.0280 to .2500
 .2501 to .5000

+0000 / +.0002
 +0000 / +.0003

TAPER SHANK CHUCKING REAMERS**ICS USA****GENERAL PURPOSE****RIGHT HAND CUT****STRAIGHT FLUTE**

High Speed Steel Straight Flute Taper Shank Chucking Reamers are designed for general purpose reaming of most ferrous and non-ferrous metals. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers.

**HELICAL FLUTE**

High Speed Steel Helical Flute Taper Shank Chucking Reamers are designed for reaming materials where additional shear is necessary and to improve chip removal in blind holes. The cutting edge is ground with a 45° chamfer angle for easy hole entry. They are also known as Machine Reamers.

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	MORSE TAPER	STRAIGHT FLUTE		HELICAL FLUTE	
					ITEM NO.	PRICE	ITEM NO.	PRICE
1/4	.2500	1-1/2	6	1	TSCRSF016	32.86	TSCRHF016	40.18
9/32	.2812	1-1/2	6	1	TSCRSF018	40.18	TSCRHF018	43.26
5/16	.3125	1-1/2	6	1	TSCRSF020	40.18	TSCRHF020	43.26
11/32	.3438	1-1/2	6	1	TSCRSF022	40.70	TSCRHF022	43.26
3/8	.3750	1-3/4	6	1	TSCRSF024	41.48	TSCRHF024	44.32
13/32	.4062	1-3/4	6	1	TSCRSF026	42.38	TSCRHF026	45.58
7/16	.4375	1-3/4	7	1	TSCRSF028	42.38	TSCRHF028	45.58
15/32	.4688	1-3/4	7	1	TSCRSF030	47.26	TSCRHF030	48.06
1/2	.5000	2	8	1	TSCRSF032	48.06	TSCRHF032	53.02
17/32	.5312	2	8	1	TSCRSF034	51.98	TSCRHF034	54.88
9/16	.5629	2	8	1	TSCRSF036	51.98	TSCRHF036	58.02
19/32	.5938	2	8	1	TSCRSF038	56.18	TSCRHF038	58.02
5/8	.6250	2-1/4	9	2	TSCRSF040	58.02	TSCRHF040	72.72
21/32	.6562	2-1/4	9	2	TSCRSF042	59.86	TSCRHF042	72.72
11/16	.6875	2-1/4	9	2	TSCRSF044	59.86	TSCRHF044	72.72
23/32	.7188	2-1/4	9	2	TSCRSF046	68.22	TSCRHF046	72.72
3/4	.7500	2-1/2	9-1/2	2	TSCRSF048	72.72	TSCRHF048	81.12
25/32	.7812	2-1/2	9-1/2	2	TSCRSF050	74.40	TSCRHF050	81.12
13/16	.8125	2-1/2	9-1/2	2	TSCRSF052	74.40	TSCRHF052	89.26
27/32	.8438	2-1/2	9-1/2	2	TSCRSF054	88.20	TSCRHF054	92.86
7/8	.8750	2-5/8	10	2	TSCRSF056	92.92	TSCRHF056	99.22
29/32	.9062	2-5/8	10	2	TSCRSF058	96.08	TSCRHF058	101.54
15/16	.9375	2-5/8	10	3	TSCRSF060	109.20	TSCRHF060	127.32
31/32	.9688	2-5/8	10	3	TSCRSF062	115.78	TSCRHF062	127.32
1	1.0000	2-3/4	10-1/2	3	TSCRSF100	115.78	TSCRHF100	127.32
1-1/32	1.0312	2-3/4	10-1/2	3	TSCRSF102	123.90	TSCRHF102	138.08
1-1/16	1.0625	2-3/4	10-1/2	3	TSCRSF104	115.78	TSCRHF104	127.32
1-1/8	1.1250	2-7/8	11	3	TSCRSF108	127.32	TSCRHF108	140.46
1-5/32	1.1562	2-7/8	11	3	TSCRSF110	151.20	TSCRHF110	166.96
1-3/16	1.1875	2-7/8	11	3	TSCRSF112	140.46	TSCRHF112	154.10
1-1/4	1.2500	3	11-1/2	4	TSCRSF116	165.12	TSCRHF116	188.48
1-5/16	1.3125	3	11-1/2	4	TSCRSF120	175.36	TSCRHF120	188.48
1-3/8	1.3750	3-1/4	12	4	TSCRSF124	185.08	TSCRHF124	195.82
1-7/16	1.4375	3-1/4	12	4	TSCRSF128	200.02	TSCRHF128	221.30
1-1/2	1.5000	3-1/2	12-1/2	4	TSCRSF132	214.72	TSCRHF132	237.06
1-3/4	1.7500	4	13-1/2	4	TSCRSF148	310.28	TSCRHF148	325.50
2	2.0000	4	14-1/2	4	TSCRSF200	385.88	TSCRHF200	404.26

Other sizes are available. Please inquire for price and delivery.

TOLERANCES

3/64 - 1/2 dia.: +.0002 -.0000"
 33/64 - 5/8 dia.: +.0003 -.0000"
 41/64 - 1-1/2 dia.: +.0001 -.0005"
 1-9/16 - 2 dia.: +.0002 -.0006"

NUMBER OF FLUTES

3/64 - 5/32 dia.: 4 Flutes
 11/64 - 39/64 dia.: 6 Flutes
 5/8 - 1-1/32 dia.: 8 Flutes
 1-1/16 - 1-5/16 dia.: 10 Flutes
 1-3/8 - 1-1/2 dia.: 12 Flutes
 1-9/16 - 1-7/8 dia.: 14 Flutes
 2" dia.: 16 Flutes

HIGH SPEED STEEL CHUCKING REAMERS - EXPANSION

ICS USA

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT SHANK - STRAIGHT FLUTE

TAPER SHANK - STRAIGHT FLUTE

High Speed Steel Expansion Chucking Reamers are designed to maintain the initial size by compensating for wear on the cutting end. When the reamer has been worn undersize, it may be expanded oversize by tightening the adjusting screw then reground to size and resharpened on the bevel cutting lead. They should not be considered an adjustable reamer to provide holes of different sizes.

SIZE	DEC EQUIV	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT SHANK		TAPER SHANK		
				ITEM NO.	PRICE	MORSE TAPER	ITEM NO.	PRICE
3/8	.3750	3/4	7	XCRSFSS024	51.12	1	XCRSFTS024	58.60
13/32	.4062	3/4	7	XCRSFSS026	54.46	1	XCRSFTS026	62.04
7/16	.4375	7/8	7	XCRSFSS028	54.46	1	XCRSFTS028	62.04
15/32	.4688	7/8	7	XCRSFSS030	56.56	1	XCRSFTS030	63.52
1/2	.5000	1	8	XCRSFSS032	57.54	1	XCRSFTS032	64.76
17/32	.5312	1	8	XCRSFSS034	59.98	1	XCRSFTS034	67.36
9/16	.5625	1-1/8	8	XCRSFSS036	60.42	1	XCRSFTS036	66.14
19/32	.5938	1-1/8	8	XCRSFSS038	61.34	1	XCRSFTS038	68.54
5/8	.6250	1-1/4	9	XCRSFSS040	63.22	2	XCRSFTS040	71.00
21/32	.6562	1-1/4	9	XCRSFSS042	65.74	2	XCRSFTS042	72.96
11/16	.6875	1-1/4	9	XCRSFSS044	66.20	2	XCRSFTS044	73.40
23/32	.7188	1-1/4	9	XCRSFSS046	70.48	2	XCRSFTS046	78.30
3/4	.7500	1-3/8	9-1/2	XCRSFSS048	72.92	2	XCRSFTS048	80.76
25/32	.7812	1-3/8	9-1/2	XCRSFSS050	77.20	2	XCRSFTS050	84.42
13/16	.8125	1-3/8	9-1/2	XCRSFSS052	80.16	2	XCRSFTS052	85.68
27/32	.8438	1-3/8	9-1/2	XCRSFSS054	84.44	2	XCRSFTS054	90.68
7/8	.8750	1-1/2	10	XCRSFSS056	86.86	2	XCRSFTS056	94.26
29/32	.9062	1-1/2	10	XCRSFSS058	90.56	2	XCRSFTS058	99.16
15/16	.9375	1-1/2	10	XCRSFSS060	94.78	3	XCRSFTS060	101.64
31/32	.9688	1-1/2	10	XCRSFSS062	99.06	3	XCRSFTS062	105.90
1	1.0000	1-5/8	10-1/2	XCRSFSS100	104.50	3	XCRSFTS100	112.02
1-1/16	1.0312	1-5/8	10-1/2	XCRSFSS104	115.50	3	XCRSFTS104	121.88
1-1/8	1.1250	1-3/4	11	XCRSFSS108	126.40	3	XCRSFTS108	131.70
1-3/16	1.1875	1-3/4	11	XCRSFSS112	133.12	3	XCRSFTS112	142.62
1-1/4	1.2500	1-7/8	11-1/2	XCRSFSS116	143.48	4	XCRSFTS116	154.96
1-5/16	1.3125	1-7/8	11-1/2	XCRSFSS120	148.26	4	XCRSFTS120	161.02
1-3/8	1.3750	2	12	XCRSFSS124	153.72	4	XCRSFTS124	167.68
1-7/16	1.4375	2	12	XCRSFSS128	159.82	4	XCRSFTS128	177.52
1-1/2	1.5000	2-1/8	12-1/2	XCRSFSS132	166.56	4	XCRSFTS132	183.60
1-9/16	1.5625	2-1/8	12-1/2	XCRSFSS136	225.22	4	XCRSFTS136	246.02
1-5/8	1.6250	2-1/4	13	XCRSFSS140	228.70	4	XCRSFTS140	249.48
1-11/16	1.6875	2-1/4	13	XCRSFSS144	242.56	4	XCRSFTS144	263.34
1-3/4	1.7500	2-3/8	13-1/2	XCRSFSS148	275.82	5	XCRSFTS148	303.54
1-13/16	1.8125	2-3/8	13-1/2	XCRSFSS152	294.52	5	XCRSFTS152	325.72
1-7/8	1.8750	2-1/2	14	XCRSFSS156	332.64	5	XCRSFTS156	363.82
1-15/16	1.9375	2-1/2	14	XCRSFSS160	341.26	5	XCRSFTS160	367.50
2	2.0000	2-1/2	14	XCRSFSS200	349.96	5	XCRSFTS200	384.62
2-1/8	2.1250	2-3/4	14			5	XCRSFTS208	460.84
2-1/4	2.2500	2-3/4	14-1/2			5	XCRSFTS216	483.00
2-3/8	2.3750	2-3/4	15			5	XCRSFTS224	519.76
2-1/2	2.5000	3	15			5	XCRSFTS232	550.94
3	3.0000	3	15			5	XCRSFTS300	1036.04

Maximum expansion to 1/2" - approximately .006, to 1" - approximately .010

Maximum expansion to 1-1/2" - approximately .012, to 3" - approximately .015

HIGH SPEED STEEL TAPER SHANK JOBBER REAMERS

RT-30

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

LONG
FLUTE



45°
CHAMFER

High Speed Steel Taper Shank Jobber Reamers with Straight Flutes are designed for machine use in applications where long flutes are required. They have approximately the same flute length as hand reamers and are furnished with a 45° chamfer. For longer flutes and overall lengths, see our Machine Reamers on the following pages.

SIZE	DEC EQUIV	MORSE TAPER SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
1/4	.2500	1	2	5-3/16	TSJRSF016	57.30
9/32	.2812	1	2	5-3/16	TSJRSF018	60.44
5/16	.3125	1	2-1/4	5-1/2	TSJRSF020	59.64
11/32	.3438	1	2-1/4	5-1/2	TSJRSF022	63.46
3/8	.3750	1	2-1/2	5-3/16	TSJRSF024	69.02
13/32	.4062	1	2-1/2	5-13/16	TSJRSF026	72.02
7/16	.4375	1	2-3/4	6-1/8	TSJRSF028	77.92
15/32	.4688	1	2-3/4	6-1/8	TSJRSF030	77.92
1/2	.5000	1	3	6-7/16	TSJRSF032	77.92
17/32	.5312	1	3	6-7/16	TSJRSF034	80.46
9/16	.5625	1	3-1/4	6-3/4	TSJRSF036	88.20
19/32	.5938	1	3-1/4	6-3/4	TSJRSF038	90.20
5/8	.6250	2	3-1/2	7-9/16	TSJRSF040	91.90
21/32	.6562	2	3-1/2	7-9/16	TSJRSF042	97.64
11/16	.6875	2	3-7/8	8	TSJRSF044	107.10
23/32	.7188	2	3-7/8	8	TSJRSF046	107.10
3/4	.7500	2	4-3/16	8-3/8	TSJRSF048	107.10
25/32	.7812	2	4-3/16	8-3/8	TSJRSF050	101.48
13/16	.8125	2	4-9/16	8-13/16	TSJRSF052	120.30
27/32	.8438	2	4-7/8	9-13/16	TSJRSF054	109.18
7/8	.8750	2	4-7/8	9-13/16	TSJRSF056	134.62
15/16	.9375	3	5-1/8	10	TSJRSF060	141.76
1	1.0000	3	5-7/16	10-3/8	TSJRSF100	153.94
1-1/16	1.0625	3	5-5/8	10-3/8	TSJRSF104	163.76
1-1/8	1.1250	3	5-13/16	10-7/8	TSJRSF108	183.86
1-3/16	1.1875	3	6	11-1/8	TSJRSF112	204.76
1-1/4	1.2500	4	6-1/8	12-9/16	TSJRSF116	210.00
1-5/16	1.3125	4	6-1/4	12-11/16	TSJRSF120	220.50
1-3/8	1.3750	4	6-5/16	12-13/16	TSJRSF124	236.26
1-7/16	1.4375	4	6-7/16	13	TSJRSF128	294.48
1-1/2	1.5000	4	6-3/4	13-5/8	TSJRSF132	260.40

HIGH SPEED STEEL JOBBER REAMER SET - TAPER SHANK

ICS WIS

PLASTIC CASE

RIGHT HAND CUT

DESCRIPTION	SIZES IN SET	ITEM NO.	PRICE
10 PC TAPER SHANK JOBBER REAMER SET (not pictured)	Each set contains: 15/16, 1, 1-1/16, 1-1/8, 1-3/16 1-1/4, 1-5/16, 1-3/8, 1-7/16, 1-1/2	RS-TSJRSF-10	2649.96

HIGH SPEED STEEL MACHINE REAMERS Taper Shank - Extra Long Flute

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

LONG
BODYLEFT HAND
FLUTE 7°-10°

High Speed Steel Extra Long Fluted Machine Reamers are designed to fill the needs of users requiring a machine reamer with extra long flutes to ream materials where additional shear is needed. They are manufactured with a 7° - 10° left hand spiral flute and 45° bevel lead for machine use for holes to H7 tolerance.

SIZE	DEC EQUIV	MORSE TAPER SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
3/16	.1875	1	4-13/16	8	MRHFTSXL012X08	155.92
7/32	.2188	1	4-13/16	8	MRHFTSXL014X08	155.92
1/4	.2500	1	4-13/16	8	MRHFTSXL016X08	95.82
1/4	.2500	1	6-13/16	10	MRHFTSXL016X10	181.12
9/32	.2812	1	4-13/16	8	MRHFTSXL018X08	126.00
5/16	.3125	1	4-13/16	8	MRHFTSXL020X08	96.08
5/16	.3125	1	6-13/16	10	MRHFTSXL020X10	163.80
5/16	.3125	1	8-13/16	12	MRHFTSXL020X12	299.26
11/32	.3438	1	4-13/16	8	MRHFTSXL022X08	198.46
3/8	.3750	1	4-13/16	8	MRHFTSXL024X08	118.12
3/8	.3750	1	6-13/16	10	MRHFTSXL024X10	152.78
3/8	.3750	1	8-13/16	12	MRHFTSXL024X12	228.38
7/16	.4219	1	4-13/16	8	MRHFTSXL028X08	132.30
7/16	.4219	1	6-13/16	10	MRHFTSXL028X10	176.40
7/16	.4219	1	8-13/16	12	MRHFTSXL028X12	225.22
1/2	.5000	1	4-13/16	8	MRHFTSXL032X08	114.98
1/2	.5000	1	6-13/16	10	MRHFTSXL032X10	163.80
1/2	.5000	1	8-13/16	12	MRHFTSXL032X12	233.10
9/16	.5625	2	8-1/16	12	MRHFTSXL036X12	248.86
5/8	.6250	2	8-1/16	12	MRHFTSXL040X12	189.00
5/8	.6250	2	11-1/16	15	MRHFTSXL040X15	389.02
11/16	.6875	2	8-1/16	12	MRHFTSXL044X12	300.82
3/4	.7500	2	8-1/16	12	MRHFTSXL048X12	209.48
3/4	.7500	2	11-1/16	15	MRHFTSXL048X15	371.70
25/32	.7812	2	8-1/16	12	MRHFTSXL050X12	311.86
13/16	.8125	2	8-1/16	12	MRHFTSXL052X12	330.76
7/8	.8750	2	11-1/16	15	MRHFTSXL056X15	335.48
7/8	.8750	2	14-1/16	18	MRHFTSXL056X18	497.70
1	1.0000	3	10-1/4	15	MRHFTSXL100X15	335.48
1	1.0000	3	13-1/4	18	MRHFTSXL100X18	559.12
1-1/8	1.1250	3	10-1/4	15	MRHFTSXL108X15	467.78
1-1/4	1.2500	3	10-1/4	15	MRHFTSXL116X15	505.58
1-1/4	1.2500	3	13-1/4	18	MRHFTSXL116X18	760.72
1-3/8	1.3750	4	12-1/8	18	MRHFTSXL124X18	1023.76
1-1/2	1.5000	4	12-1/8	18	MRHFTSXL132X18	1181.26

NOTE: Other sizes and lengths can be made to order. Quantity will determine price. Inquire for quote and lead time.

MACHINE REAMERS**Taper Shank - Extra Long Flute - Metric****ICS WIS****SPECIAL PURPOSE****RIGHT HAND CUT****LONG
BODY****LEFT HAND
FLUTE 7°-10°**

High Speed Steel Extra Long Fluted Metric Machine Reamers are designed to fill the needs of users requiring a machine reamer with extra long flutes to ream materials where additional shear is needed. They are manufactured with a 7° - 10° left hand spiral flute and 45° bevel lead for machine use for holes to H7 tolerance.

SIZE mm	DEC EQUIV	MORSE TAPER SHANK	FLUTE LENGTH (mm)	OVERALL LENGTH (mm)	ITEM NO.	PRICE
5.50mm	.2165	1	120mm	200mm	MRHFTSM055X200	176.40
6.00mm	.2362	1	120mm	200mm	MRHFTSM060X200	76.86
6.50mm	.2559	1	120mm	200mm	MRHFTSM065X200	158.76
7.00mm	.2756	1	120mm	200mm	MRHFTSM070X200	107.10
8.00mm	.3150	1	120mm	200mm	MRHFTSM080X200	76.86
8.00mm	.3150	1	170mm	250mm	MRHFTSM080X250	141.12
8.00mm	.3150	1	220mm	300mm	MRHFTSM080X300	239.40
8.50mm	.3346	1	120mm	200mm	MRHFTSM085X200	151.20
9.00mm	.3543	1	120mm	200mm	MRHFTSM090X200	158.76
10.00mm	.3937	1	120mm	200mm	MRHFTSM100X200	115.92
10.00mm	.3937	1	170mm	250mm	MRHFTSM100X250	146.16
10.00mm	.3937	1	220mm	300mm	MRHFTSM100X300	210.42
11.00mm	.4331	1	120mm	200mm	MRHFTSM110X200	153.72
12.00mm	.4724	1	120mm	200mm	MRHFTSM120X200	119.70
12.00mm	.4724	1	170mm	250mm	MRHFTSM120X250	149.94
12.00mm	.4724	1	220mm	300mm	MRHFTSM120X300	183.96
13.00mm	.5118	1	170mm	250mm	MRHFTSM130X250	207.90
14.00mm	.5512	1	170mm	250mm	MRHFTSM140X250	185.22
14.00mm	.5512	1	270mm	350mm	MRHFTSM140X350	274.68
15.00mm	.5512	2	122mm	220mm	MRHFTSM150X220	148.68
16.00mm	.6299	2	150mm	250mm	MRHFTSM160X250	138.60
16.00mm	.6299	2	200mm	300mm	MRHFTSM160X300	151.20
16.00mm	.6299	2	300mm	400mm	MRHFTSM160X400	447.30
17.00mm	.6693	2	200mm	300mm	MRHFTSM170X300	240.66
18.00mm	.7087	2	200mm	300mm	MRHFTSM180X300	214.20
19.00mm	.7480	2	200mm	300mm	MRHFTSM190X300	220.50
19.00mm	.7480	2	300mm	400mm	MRHFTSM190X400	451.08
19.50mm	.7677	2	150mm	250mm	MRHFTSM195X250	226.80
19.50mm	.7677	2	200mm	300mm	MRHFTSM195X300	264.60
20.00mm	.7844	2	200mm	300mm	MRHFTSM200X300	173.88
20.00mm	.7844	2	250mm	350mm	MRHFTSM200X350	279.72
20.00mm	.7844	2	300mm	400mm	MRHFTSM200X400	487.62
22.00mm	.8661	2	200mm	300mm	MRHFTSM220X300	239.40
24.00mm	.9449	3	223mm	350mm	MRHFTSM240X350	315.00
25.00mm	.9843	3	223mm	350mm	MRHFTSM250X350	283.50
25.00mm	.9843	3	273mm	400mm	MRHFTSM250X400	414.54
26.00mm	1.0433	3	273mm	400mm	MRHFTSM260X400	497.70
28.00mm	1.1024	3	273mm	400mm	MRHFTSM280X400	497.70
30.00mm	1.1811	3	223mm	350mm	MRHFTSM300X350	395.64
30.00mm	1.1811	3	273mm	400mm	MRHFTSM300X400	535.50
32.00mm	1.2598	4	245mm	400mm	MRHFTSM320X400	618.66
35.00mm	1.3780	4	195mm	350mm	MRHFTSM350X350	462.42
35.00mm	1.3780	4	245mm	400mm	MRHFTSM350X400	686.70
38.00mm	1.4961	4	245mm	400mm	MRHFTSM380X400	812.70
40.00mm	1.5748	4	245mm	400mm	MRHFTSM400X400	907.20
50.00mm	1.9865	4	245mm	400mm	MRHFTSM500X400	1184.40

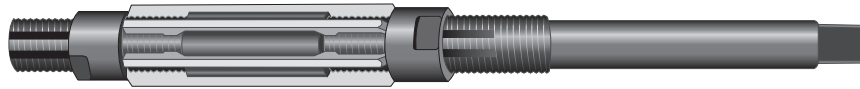
NOTE: Other sizes and lengths can be made to order. Quantity will determine price. Inquire for quote and lead time.

HIGH SPEED STEEL ADJUSTABLE HAND REAMERS

ICS WIS

GENERAL PURPOSE

RIGHT HAND CUT



High Speed Steel Adjustable Hand Reamers are designed with enough of an adjustment range to ream almost any odd size hole encountered in reaming. The blades are made of high speed steel for long life and can be adjusted by loosening one nut while tightening the other. They are used mostly for repair work in the field. They are also known as Adjustable King Pin Reamers. Ends are center drilled so blades can be sharpened in place.

INDUSTRY SIZE	RANGE OF ADJUSTMENT		BLADE LENGTH	OVERALL LENGTH	NO. OF BLADES	ITEM NO.	PRICE
	FRACTIONAL	METRIC					
8A	1/4 to 9/32	6.30mm to 7.14mm	1-11/32	3-1/4	4	AHR016	37.46
7A	9/32 to 5/16	7.14mm to 7.93mm	1-11/32	3-1/2	4	AHR018	37.46
6A	5/16 to 11/32	7.93mm to 8.73mm	1-1/2	4-1/8	4	AHR020	36.32
5A	11/32 to 3/8	8.73mm to 9.52mm	1-1/2	4-3/8	4	AHR022	36.32
4A	3/8 to 13/32	9.52mm to 10.31mm	1-1/2	4-3/4	4	AHR024	36.32
3A	13/32 to 7/16	10.31mm to 11.11mm	1-1/2	5	6	AHR026	36.32
2A	7/16 to 15/32	11.11mm to 11.90mm	1-5/8	5-1/4	6	AHR028	36.32
A	15/32 to 17/32	11.90mm to 13.49mm	1-5/8	5-1/2	6	AHR030	37.04
B	17/32 to 19/32	13.49mm to 15.08mm	1-13/16	5-3/4	6	AHR034	39.36
C	19/32 to 21/32	15.08mm to 16.66mm	2-1/16	6-1/2	7	AHR038	40.88
D	21/32 to 23/32	16.66mm to 18.25mm	2-3/16	6-3/4	7	AHR042	42.40
E	23/32 to 25/32	18.25mm to 19.84mm	2-1/2	7	7	AHR046	44.66
F	25/32 to 27/32	19.84mm to 21.43mm	2-5/8	7-3/8	7	AHR050	46.70
G	27/32 to 15/16	21.43mm to 23.81mm	3	8	7	AHR054	50.70
H	15/16 to 1-1/16	23.81mm to 26.98mm	3-1/4	9	7	AHR060	56.74
I	1-1/16 to 1-3/16	26.98mm to 30.16mm	3-3/8	10	7	AHR104	79.44
J	1-3/16 to 1-11/32	30.16mm to 34.13mm	3-7/8	11	7	AHR112	86.98
K	1-11/32 to 1-1/2	34.13mm to 38.10mm	4-1/4	12	7	AHR122	109.68
L	1-1/2 to 1-13/16	38.10mm to 46.03mm	4-7/16	14	7	AHR132	162.72
M	1-13/16 to 2-7/32	46.03mm to 56.35mm	5	16	7	AHR152	234.56
N	2-7/32 to 2-3/4	56.35mm to 69.85mm	4-13/16	18	7	AHR214	423.36
O	2-3/4 to 3-11/32	69.85mm to 84.93mm	5-3/16	20	7	AHR248	529.20

ADJUSTABLE HAND REAMER SETS

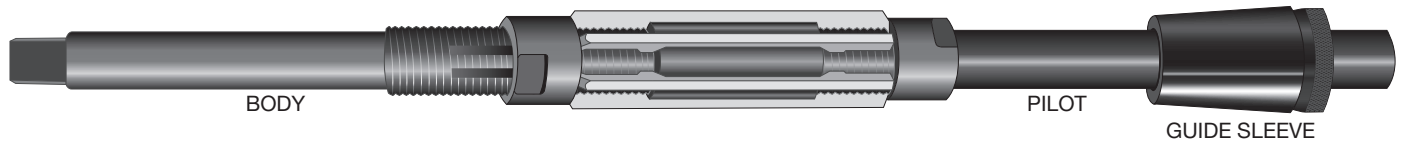
ICS WIS

PLASTIC CASE

RIGHT HAND CUT

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	4 PC SET Sizes 8A to 5A	RS-AHR-4	232.42
	8 PC SET Sizes A to H	RS-AHR-8	559.08
	11 PC SET Sizes A to K	RS-AHR-11	839.08

* Custom sets can be made per customer requirements. Inquire for pricing.

LONG PILOT ADJUSTABLE HAND REAMERS**ICS WIS****SPECIAL PURPOSE****RIGHT HAND CUT**

High Speed Steel Long Pilot Adjustable Hand Reamers are designed for in line reaming when two holes are spaced far apart. The solid ground pilot uses a “floating” tapered guide sleeve which is seated in one hole to guide the reamer as it reams the other hole. The tapered guide sleeve can be used at either end of the other hole. They are also known Long Pilot Adjustable Blade Reamers, Adjustable In Line Reamers or Adjustable King Pin Reamers. Ends are center drilled so blades can be sharpened in place.

INDUSTRY SIZE	RANGE OF ADJUSTMENT		BLADE LENGTH	OVERALL LENGTH	NO. OF BLADES	ITEM NO.	PRICE
	FRACTIONAL	METRIC					
8A	1/4 to 9/32	6.30mm to 7.14mm	1-5/16	5-1/8	4	LPAHR016	106.26
7A	9/32 to 5/16	7.14mm to 7.93mm	1-3/8	5-1/2	4	LPAHR018	106.26
6A	5/16 to 11/32	7.93mm to 8.73mm	1-3/8	6-1/16	4	LPAHR020	106.26
5A	11/32 to 3/8	8.73mm to 9.52mm	1-3/8	6-1/4	4	LPAHR022	106.26
4A	3/8 to 13/32	9.52mm to 10.31mm	1-3/8	6-1/2	4	LPAHR024	106.26
3A	13/32 to 7/16	10.31mm to 11.11mm	1-7/16	6-9/16	6	LPAHR026	106.26
2A	7/16 to 15/32	11.11mm to 11.90mm	1-1/2	6-15/16	6	LPAHR028	106.26
A	15/32 to 17/32	11.90mm to 13.49mm	1-1/2	7-1/4	6	LPAHR030	106.56
B	17/32 to 19/32	13.49mm to 15.08mm	1-3/4	7-7/16	6	LPAHR034	108.86
C	19/32 to 21/32	15.08mm to 16.66mm	2	8-1/2	6	LPAHR038	110.38
D	21/32 to 23/32	16.66mm to 18.25mm	2-3/16	9-5/8	6	LPAHR042	111.92
E	23/32 to 25/32	18.25mm to 19.84mm	2-3/16	10	6	LPAHR046	114.16
F	25/32 to 27/32	19.84mm to 21.43mm	2-3/16	10	6	LPAHR050	116.22
G	27/32 to 15/16	21.43mm to 23.81mm	2-9/16	11-1/2	6	LPAHR054	120.20
H	15/16 to 1-1/16	23.81mm to 26.98mm	2-3/4	12-3/8	6	LPAHR060	129.16
I	1-1/16 to 1-3/16	26.98mm to 30.16mm	2-3/4	13-1/8	6	LPAHR104	157.66
J	1-3/16 to 1-11/32	30.16mm to 34.13mm	3-1/4	14-3/8	6	LPAHR112	178.26
K	1-11/32 to 1-1/2	34.13mm to 38.10mm	3-1/4	16	6	LPAHR122	219.76
L	1-1/2 to 1-13/16	38.10mm to 46.03mm	3-1/4	16-1/4	6	LPAHR132	332.90
M	1-13/16 to 2-7/32	46.03mm to 56.35mm	4	18	6	LPAHR152	448.92

LONG PILOT ADJUSTABLE HAND REAMER SETS**ICS WIS****PLASTIC CASE****RIGHT HAND CUT**

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	4 PC SET Sizes 8A to 5A	RS-LPAHR-4	480.34
	8 PC SET Sizes A to H	RS-LPAHR-8	983.28
	11 PC SET Sizes A to K	RS-LPAHR-11	1605.40

* Custom sets can be made per customer requirements. Inquire for pricing.

HIGH SPEED STEEL HAND EXPANSION REAMERS

ICS USA

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT FLUTE
(General Purpose Reaming)



HELICAL FLUTE, LEFT HAND HELIX
(Reaming keyways & interrupted cut holes)

High Speed Steel Hand Expansion Reamers are designed to enlarge reamed holes by a few thousandths. The pilot and guide on these reamers are ground slightly undersize for clearance and to guide reamer. The flutes also have a ground starting taper to help guide reamer into hole. Reamer can be expanded slightly by turning adjusting screw on end of reamer.

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				STRAIGHT FLUTE	HELICAL FLUTE
				HERSF	HERHF
3/16	.1875	1-1/8	3-3/8	67.20	67.20
1/4	.2500	1-7/16	4-1/4	73.50	86.24
5/16	.3125	1-3/4	4-1/2	84.00	88.88
3/8	.3750	1-3/4	5	94.04	100.42
13/32	.4062	1-3/4	5	98.84	103.74
7/16	.4375	1-3/4	5	100.42	105.42
15/32	.4688	1-13/16	5-1/2	101.86	106.98
1/2	.5000	1-13/16	5-1/2	100.84	105.88
17/32	.5312	2-1/8	6	106.94	112.32
9/16	.5629	2-1/8	6	110.12	105.14
19/32	.5938	2-1/2	6	140.50	154.74
5/8	.6250	2-1/2	6-1/2	119.32	124.74
21/32	.6562	2-1/2	7	157.00	178.42
11/16	.6875	2-1/2	6-3/4	136.22	143.02
23/32	.7188	2-11/16	7	172.76	197.32
3/4	.7500	2-11/16	7-1/16	150.70	158.22
25/32	.7812	3-1/16	8	192.78	209.16
13/16	.8125	3-1/16	7-9/16	169.56	178.00
27/32	.8438	3-5/16	8	212.06	224.66

SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	HIGH SPEED STEEL	
				STRAIGHT FLUTE	HELICAL FLUTE
				HERSF	HERHF
7/8	.8750	3-5/16	8	182.58	191.70
29/32	.9062	3-9/16	9	238.14	269.52
15/16	.9375	3-9/16	8-3/8	208.66	219.08
31/32	.9688	3-3/4	9	266.00	280.98
1	1.0000	3-3/4	8-7/8	222.18	233.32
1-1/16	1.0625	4	9-3/16	231.84	243.44
1-1/8	1.1250	4-1/8	9-1/2	251.16	263.72
1-3/16	1.1875	4-1/4	9-7/8	256.00	268.80
1-1/4	1.2500	4-3/8	10-1/4	261.46	275.90
1-5/16	1.3125	4-1/2	10-5/8	275.32	289.10
1-3/8	1.3750	4-9/16	11	299.46	314.46
1-7/16	1.4375	4-3/4	11-3/8	328.44	344.86
1-1/2	1.5000	4-13/16	11-5/8	378.00	395.60
1-9/16	1.5625	4-13/16	11-7/8	397.04	416.90
1-5/8	1.6250	4-7/8	12	407.66	428.02
1-3/4	1.7500	5	12-3/8	469.48	492.96
1-7/8	1.8750	5	12-3/4	511.98	537.60
2	2.0000	5	13-1/16	598.92	628.88

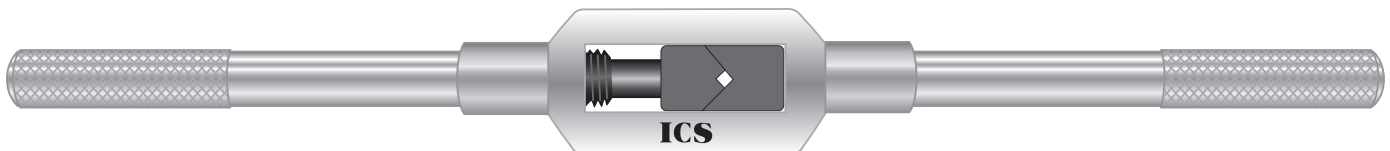
The maximum expansion on these reamers is as follows: .006 inch up to 7/16" sizes, .010 inch up to 15/16" sizes and .012 inch up to 1-1/2" sizes.

ADJUSTABLE TAP AND REAMER WRENCHES

ICS USA

GENERAL PURPOSE

STRAIGHT TYPE



Solid Die Cast Adjustable Tap and Reamer Wrenches are solidly built for a lifetime of industrial service under normal conditions. Size 0 to 7 wrenches have solid handles, one of which is forged integral with the body. The other handles turn for size adjustment. Size 7-1/2 to 8 wrenches have solid handles which are removable. One handle turns for size adjustment.

CAPACITY								
OVERALL LENGTH	SCREW EXTRACTOR	HAND TAPS	MACHINE TAPS	PIPE TAPS	HAND REAMERS	ADJUSTABLE HAND REAMERS	ITEM NO.	PRICE
6-1/2	#1 - 3	1/16 - 1/4	0 - 14	-	1/8 - 21/64	8A - A	TW-0	9.18
9	#4	1/16 - 3/8	0 - 14	-	1/8 - 25/64	8A - C	TW-4	12.84
10	#5	5/32 - 1/2	7 - 14	1/8 - 1/4	11/64 - 7/16	8A - F	TW-5	15.52
13-1/2	#6	5/32 - 3/4	7 - 14	1/8 - 1/4	11/64 - 41/64	8A - G	TW-6	20.00
19	#7	1/4 - 1-1/8	-	1/8 - 3/4	9/32 - 29/32	3A - K	TW-7	35.18
31	#8	1/2 - 1-3/8	-	1/8 - 1	3/4 - 1-5/32	B - L	TW-7.5	96.44
40	#10	3/4 - 1-5/8	-	3/8 - 1-1/4	37/64 - 1-11/32	C - M	TW-8	147.00
54	#11 - 12	1 - 2-1/2	-	3/4 - 2	7/8 - 2-1/8	J - O	TW-9.5	177.94

HIGH SPEED STEEL METRIC HAND REAMERS

RT-36

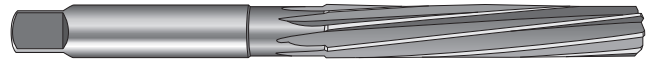
ICS WIS

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT FLUTE
(General Purpose Reaming)



HELICAL FLUTE, LEFT HAND HELIX
(Reaming keyways & interrupted cut holes)

High Speed Steel Metric Hand Reamers are designed for extreme accuracy and are used by hand for final sizing of drilled holes. Both styles of hand reamers have a 45° bevel lead and a ground starting taper ranging from 1/2" to 1" on the cutting end for easy entry. They are not suitable for reaming blind holes if bottoming is required. Square end can be held in a vise or a tap wrench depending on whether the work or the reamer is rotating. Special Metric Hand Reamers with straight flutes and without the taper lead (suitable for full bottoming) may be made to order. Hand Reamers are also commonly known as Parallel Hand Reamers in Europe and Asia.

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE HRSFM	HELICAL FLUTE HRHFM
1.50	.0591	25/32	1-5/8	-	-
2.00	.0787	13/16	2	-	-
2.50	.0984	1-1/8	2-1/4	-	-
3.00	.1181	1-7/32	2-7/16	45.88	45.88
3.20	.1260	1-1/4	2-1/2	45.88	45.88
3.50	.1378	1-3/8	2-3/4	45.88	45.88
4.00	.1575	1-1/2	3	45.88	45.88
4.50	.1772	1-5/8	3-1/4	45.88	45.88
5.00	.1969	1-3/4	3-1/2	48.52	48.52
5.50	.2165	1-13/16	3-5/8	48.52	48.52
6.00	.2362	1-13/16	3-5/8	48.52	48.52
6.50	.2559	2	3-15/16	-	-
7.00	.2756	2-1/8	4-1/4	51.98	51.98
7.50	.2953	2-1/8	4-3/16	-	-
8.00	.3150	2-1/4	4-1/2	60.76	60.76
8.50	.3346	2-1/4	4-1/2	-	-
9.00	.3543	2-7/16	4-7/8	60.76	60.76
9.50	.3740	2-7/16	4-7/8	-	-
10.00	.3937	2-5/8	5-1/4	65.94	65.94
10.50	.4134	2-5/8	5-1/4	-	-
11.00	.4331	2-13/16	5-5/8	65.94	65.94
11.50	.4528	2-13/16	5-5/8	-	-
12.00	.4724	3	6	72.98	72.98
12.50	.4724	3	6	-	-
13.00	.5118	3	6	80.60	80.60
13.50	.5118	3-1/16	6-7/16	-	-
14.00	.5512	3-1/16	6-7/16	80.60	80.60
14.50	.5709	3-1/16	6-7/16	-	-
15.00	.5906	3-1/16	6-7/16	92.36	92.36
15.50	.6102	3-7/16	6-7/8	-	-
16.00	.6299	3-7/16	6-7/8	101.12	101.12
16.50	.6495	3-7/16	6-7/8	-	-
17.00	.6693	3-7/16	6-7/8	101.12	101.12
17.50	.6890	3-11/16	7-7/16	-	-
18.00	.7087	3-11/16	7-7/16	107.32	107.32
18.50	.7283	3-11/16	7-7/16	-	-
19.00	.7480	3-11/16	7-7/16	123.54	123.54

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE HRSFM	HELICAL FLUTE HRHFM
19.50	.7677	3-15/16	7-15/16	-	-
20.00	.7874	3-15/16	7-15/16	123.54	123.54
20.50	.8071	3-15/16	7-15/16	-	-
21.00	.8268	3-15/16	7-15/16	-	-
21.50	.8465	4-3/16	8-1/2	-	-
22.00	.8661	4-3/16	8-1/2	-	-
22.50	.8858	4-3/16	8-1/2	-	-
23.00	.9055	4-3/16	8-1/2	-	-
23.50	.9252	4-3/16	8-1/2	-	-
24.00	.9449	4-1/2	9-1/16	-	-
24.50	.9646	4-1/2	9-1/16	-	-
25.00	.9842	4-1/2	9-1/16	-	-
26.00	1.0236	4-1/2	9-1/16	-	-
27.00	1.0630	4-7/8	9-3/4	-	-
28.00	1.1024	4-7/8	9-3/4	-	-
29.00	1.1417	4-7/8	9-3/4	CALL FOR PRICE	CALL FOR PRICE
30.00	1.1811	4-7/8	9-3/4	-	-
31.00	1.2205	5-1/4	10-7/16	-	-
32.00	1.2598	5-1/4	10-7/16	-	-
33.00	1.2992	5-1/4	10-7/16	-	-
34.00	1.3386	5-5/8	11-3/16	-	-
35.00	1.3780	5-5/8	11-3/16	-	-
36.00	1.4173	5-5/8	11-3/16	-	-
37.00	1.4567	5-5/8	11-3/16	-	-
38.00	1.4961	6	12	-	-
39.00	1.5354	6	12	-	-
40.00	1.5748	6	12	-	-
41.00	1.6142	6	12	-	-
42.00	1.6535	6	12	-	-
43.00	1.6929	6-7/16	12-13/16	-	-
44.00	1.7323	6-7/16	12-13/16	-	-
45.00	1.7716	6-7/16	12-13/16	-	-
46.00	1.8110	6-7/16	12-13/16	-	-
47.00	1.8504	6-7/8	13-11/16	-	-
48.00	1.8898	6-7/8	13-11/16	-	-
49.00	1.9291	6-7/8	13-11/16	-	-
50.00	1.9685	6-7/8	13-11/16	-	-

Please inquire for price and delivery for sizes listed without pricing.

HIGH SPEED STEEL HAND REAMERS

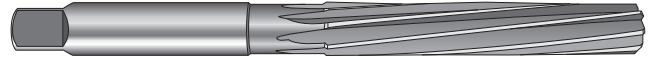
ICS WIS

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT FLUTE
(General Purpose Reaming)



HELICAL FLUTE, LEFT HAND HELIX
(Reaming keyways & interrupted cut holes)

High Speed Steel Hand Reamers are designed for extreme accuracy and are used by hand for final sizing of drilled holes. Both styles of hand reamers have a 45° bevel lead and a ground starting taper ranging from 1/2" to 1" on the cutting end for easy entry. They are not suitable for reaming blind holes if bottoming is required. Square end can be held in a vise or a tap wrench depending on whether the work or the reamer is rotating. Special Hand Reamers with straight flutes and without the taper lead (suitable for full bottoming) may be made to order. Hand Reamers are also commonly known as Parallel Hand Reamers in Europe and Asia.

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE HRSF	HELICAL FLUTE HRHF
1/16	.0625	1	2	-	-
5/64	.0781	1	2	-	-
3/32	.0938	1-1/8	2-1/4	-	-
7/64	.1094	1-7/32	2-7/16	-	-
1/8	.1250	1-5/16	2-5/8	-	-
9/64	.1406	1-3/8	2-13/16	-	-
5/32	.1562	1-1/2	3	-	-
11/64	.1719	1-5/8	3-3/16	-	-
3/16	.1875	1-3/4	3-7/16	-	-
13/64	.2031	1-3/4	3-7/16	-	-
7/32	.2188	1-7/8	3-11/16	-	-
15/64	.2344	1-7/8	3-11/16	-	-
1/4	.2500	2	3-15/16	-	-
17/64	.2656	2-1/8	4-3/16	-	-
9/32	.2812	2-1/8	4-3/16	-	-
19/64	.2969	2-1/4	4-1/2	-	-
5/16	.3125	2-1/4	4-1/2	-	-
21/64	.3281	2-1/4	4-1/2	CALL FOR PRICE	CALL FOR PRICE
11/32	.3438	2-7/16	4-7/8	-	-
23/64	.3594	2-7/16	4-7/8	-	-
3/8	.3750	2-5/8	5-1/4	-	-
25/64	.3906	2-5/8	5-1/4	-	-
13/32	.4062	2-5/8	5-1/4	-	-
27/64	.4219	2-13/16	5-5/8	-	-
7/16	.4375	2-13/16	5-5/8	-	-
29/64	.4531	2-13/16	5-5/8	-	-
15/32	.4688	3	6	-	-
31/64	.4844	3	6	-	-
1/2	.5000	3	6	-	-
33/64	.5156	3	6	-	-
17/32	.5312	3-3/16	6-7/16	-	-
35/64	.5469	3-3/16	6-7/16	-	-
9/16	.5625	3-3/16	6-7/16	-	-
37/64	.5781	3-3/16	6-7/16	-	-
19/32	.5938	3-7/16	6-7/8	-	-
39/64	.6094	3-7/16	6-7/8	-	-
5/8	.6250	3-7/16	6-7/8	-	-
41/64	.6406	3-7/16	6-7/8	-	-
21/32	.6562	3-7/16	6-7/8	-	-
43/64	.6719	3-11/16	7-7/16	-	-
11/16	.6875	3-11/16	7-7/16	-	-
45/64	.7031	3-11/16	7-7/16	-	-
23/32	.7188	3-11/16	7-7/16	-	-

HIGH SPEED STEEL					
SIZE	DEC. EQUIV.	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE HRSF	HELICAL FLUTE HRHF
47/64	.7344	3-11/16	7-7/16	-	-
3/4	.7500	3-15/16	7-15/16	-	-
49/64	.7656	3-15/16	7-15/16	-	-
25/32	.7812	3-15/16	7-15/16	-	-
51/64	.7969	3-15/16	7-15/16	-	-
13/16	.8125	3-15/16	7-15/16	-	-
53/64	.8281	3-15/16	7-15/16	-	-
27/32	.8438	4-3/16	8-1/2	-	-
55/64	.8594	4-3/16	8-1/2	-	-
7/8	.8750	4-3/16	8-1/2	-	-
57/64	.8906	4-3/16	8-1/2	-	-
29/32	.9062	4-3/16	8-1/2	-	-
59/64	.9219	4-3/16	8-1/2	-	-
15/16	.9375	4-1/2	9-1/16	-	-
61/64	.9531	4-1/2	9-1/16	-	-
31/32	.9688	4-1/2	9-1/16	-	-
63/64	.9844	4-1/2	9-1/16	-	-
1	1.0000	4-1/2	9-1/16	CALL FOR PRICE	CALL FOR PRICE
1-1/32	1.0312	4-1/2	9-1/16	-	-
1-1/16	1.0625	4-7/8	9-3/4	-	-
1-3/32	1.0938	4-7/8	9-3/4	-	-
1-1/8	1.1250	4-7/8	9-3/4	-	-
1-5/32	1.1562	4-7/8	9-3/4	-	-
1-3/16	1.1875	5-1/4	10-7/16	-	-
1-7/32	1.2188	5-1/4	10-7/16	-	-
1-1/4	1.2500	5-1/4	10-7/16	-	-
1-9/32	1.2812	5-1/4	10-7/16	-	-
1-5/16	1.3125	5-1/4	10-7/16	-	-
1-11/32	1.3438	5-5/8	11-3/16	-	-
1-3/8	1.3750	6-5/16	12-5/8	-	-
1-13/32	1.4062	5-5/8	11-3/16	-	-
1-7/16	1.4375	5-5/8	11-3/16	-	-
1-15/32	1.4688	5-5/8	11-3/16	-	-
1-1/2	1.5000	6	12	-	-
1-9/16	1.5625	6	12	-	-
1-5/8	1.6250	6	12	-	-
1-11/16	1.6875	6-7/16	12-13/16	-	-
1-3/4	1.7500	6-7/16	12-13/16	-	-
1-13/16	1.8125	6-7/16	12-13/16	-	-
1-7/8	1.8750	6-7/8	13-11/16	-	-
1-15/16	1.9375	6-7/8	13-11/16	-	-
2	2.0000	6-7/8	13-11/16	-	-

TOLERANCES

1/16 - 1/4 dia.: +.0001 to +.0004"

1/4 - 1" dia.: +.0001 to +.0005"

1" - 3" dia.: +.0002 to +.0006"

HIGH SPEED STEEL TOWER BOLT REAMERS

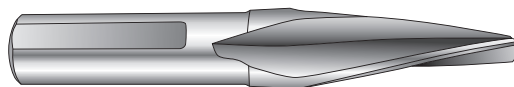
RT-38

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

STRAIGHT
SHANK



LEFT HAND
FLUTE

High Speed Steel Tower Bolt Reamers are designed for lining up bolt holes on cell phone towers, wind mills, and transmission towers. They have three flats on the shank for use in 1/2" three jaw power tools and pneumatic equipment. The extra short length makes them more useful in close quarters.

SIZE	SHANK DIAMETER	DIAMETER AT POINT	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9/16	1/2	13/64	1-39/64	3-1/2	TBR036	44.88
11/16	1/2	3/8	2-33/64	4-21/64	TBR044	58.46
13/16	1/2	15/32	2-59/64	4-51/64	TBR052	78.26

TOWER BOLT REAMER SET

DESCRIPTION	TOWER BOLT REAMER SIZES	ITEM NO.	PRICE
3 PIECE - HIGH SPEED STEEL 	9/16, 11/16, 13/16	TBR3-3	181.90

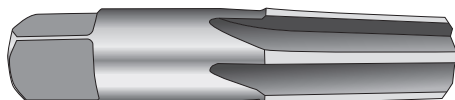
HIGH SPEED STEEL PIPE REAMERS

ICS WIS

SPECIAL PURPOSE

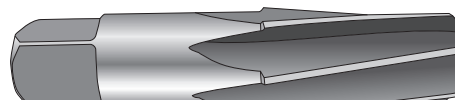
RIGHT HAND CUT

High Speed Steel Taper Pipe Reamers are manufactured with a taper of 3/4" per foot. They are used prior to tapping dry seal and ANPT threads when high quality threads are required.



STRAIGHT FLUTE

Straight Flute Pipe Reamers are designed for use in easy to ream materials.



SPIRAL FLUTE

Spiral Flute Pipe Reamers are designed for reaming harder materials where additional shear is needed.

SIZE	SHANK DIA.	DIAMETER		FLUTE LENGTH	OVERALL LENGTH	NO. OF FLUTES	SIZE OF SQUARE	STRAIGHT FLUTE		SPIRAL FLUTE	
		SMALL END	LARGE END					ITEM NO.	PRICE	ITEM NO.	PRICE
1/16	.3125	.2320	.2910	3/4	2	6		PRSF004	18.60	PRSP004	22.44
1/8	.4375	.3160	.3620	3/4	2-1/8	6	.328	PRSF008	18.60	PRSP008	22.44
1/4	.5625	.4060	.4620	1-1/16	2-7/16	6	.421	PRSF016	30.68	PRSP016	27.36
3/8	.7000	.5400	.6060	1-1/16	2-9/16	8	.531	PRSF024	38.88	PRSP024	30.00
1/2	.6875	.6650	.7510	1-3/8	3-1/8	8	.515	PRSF032	43.24	PRSP032	47.50
3/4	.9063	.8760	.9620	1-3/8	3-1/4	10	.679	PRSF048	57.20	PRSP048	67.60
1	1.1250	1.1030	1.2120	1-3/4	3-3/4	10	.843	PRSF100	88.80	PRSP100	96.72
1-1/4	1.3125	1.4440	1.5530	1-3/4	4	10	.984	PRSF116	132.16	PRSP116	157.36
1-1/2	1.5000	1.6840	1.7930	1-3/4	4-1/4	10	1.125	PRSF132	195.08	PRSP132	191.60
2	1.8750	2.1590	2.2680	1-3/4	4-1/2	12	1.406	PRSF200	270.40	PRSP200	254.16
2-1/2	2.2050	2.5610	2.7720	2-5/8	5-1/2	12		PRSF232	485.60	PRSP232	540.00
3	2.6250	3.2020	3.3800	2-3/4	6	12		PRSF300	636.80	PRSP300	708.00

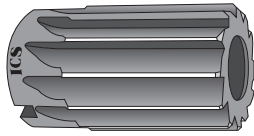
HIGH SPEED STEEL SHELL REAMERS

ICS

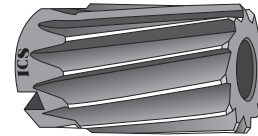
WIS

GENERAL PURPOSE

RIGHT HAND CUT



STRAIGHT FLUTE

SRSFCALL FOR
PRICE

HELICAL FLUTE - LH 10° HELIX

SRHF

High Speed Steel Shell Reamers are designed to be used as a chucking reamer for reaming bearings and other similar work. They are fluted almost their whole length and have a tapered 1/8" per foot hole to be used with shell reamer arbors. One arbor fits several sizes of reamers so only 9 sizes of arbors are needed to fit all sizes of reamers.

SIZE	OVERALL LENGTH	HOLE DIA.	NO. OF FLUTES	FITS ARBOR NO.	STRAIGHT FLUTE ITEM NO.	HELICAL FLUTE ITEM NO.
3/4	2-1/4	3/8	10	4	SRSF048	SRHF048
13/16	2-1/2	1/2	10	5	SRSF052	SRHF052
7/8	2-1/2	1/2	10	5	SRSF056	SRHF056
15/16	2-1/2	1/2	10	5	SRSF060	SRHF060
1	2-1/2	1/2	10	5	SRSF100	SRHF100
1-1/16	2-3/4	5/8	10	6	SRSF104	SRHF104
1-1/8	2-3/4	5/8	10	6	SRSF108	SRHF108
1-3/16	2-3/4	5/8	10	6	SRSF112	SRHF112
1-1/4	2-3/4	5/8	12	6	SRSF116	SRHF116
1-5/16	3	3/4	12	7	SRSF120	SRHF120
1-3/8	3	3/4	12	7	SRSF124	SRHF124
1-7/16	3	3/4	12	7	SRSF128	SRHF128
1-1/2	3	3/4	12	7	SRSF132	SRHF132
1-9/16	3	3/4	12	7	SRSF136	SRHF136
1-5/8	3	3/4	12	7	SRSF140	SRHF140
1-11/16	3-1/2	1	12	8	SRSF144	SRHF144
1-3/4	3-1/2	1	12	8	SRSF148	SRHF148
1-13/16	3-1/2	1	12	8	SRSF152	SRHF152
1-7/8	3-1/2	1	12	8	SRSF156	SRHF156
1-15/16	3-1/2	1	12	8	SRSF160	SRHF160
2	3-1/2	1	14	8	SRSF200	SRHF200
2-1/16	3-3/4	1-1/4	14	9	SRSF204	SRHF204
2-1/8	3-3/4	1-1/4	14	9	SRSF208	SRHF208
2-3/16	3-3/4	1-1/4	14	9	SRSF212	SRHF212
2-1/4	3-3/4	1-1/4	14	9	SRSF216	SRHF216
2-5/16	3-3/4	1-1/4	14	9	SRSF220	SRHF220
2-3/8	3-3/4	1-1/4	14	9	SRSF224	SRHF224

SIZE	OVERALL LENGTH	HOLE DIA.	NO. OF FLUTES	FITS ARBOR NO.	STRAIGHT FLUTE ITEM NO.	HELICAL FLUTE ITEM NO.
2-7/16	3-3/4	1-1/4	14	9	SRSF228	SRHF228
2-1/2	3-3/4	1-1/4	14	9	SRSF232	SRHF232
2-9/16	4	1-1/2	16	10	SRSF236	SRHF236
2-5/8	4	1-1/2	16	10	SRSF240	SRHF240
2-11/16	4	1-1/2	16	10	SRSF244	SRHF244
2-3/4	4	1-1/2	16	10	SRSF248	SRHF248
2-13/16	4	1-1/2	16	10	SRSF252	SRHF252
2-7/8	4	1-1/2	16	10	SRSF256	SRHF256
2-15/16	4	1-1/2	16	10	SRSF260	SRHF260
3	4	1-1/2	16	10	SRSF300	SRHF300
3-1/16	4-1/2	1-3/4	18	11	SRSF304	SRHF304
3-1/8	4-1/2	1-3/4	18	11	SRSF308	SRHF308
3-3/16	4-1/2	1-3/4	18	11	SRSF312	SRHF312
3-1/4	4-1/2	1-3/4	18	11	SRSF316	SRHF316
3-5/16	4-1/2	1-3/4	18	11	SRSF320	SRHF320
3-3/8	4-1/2	1-3/4	18	11	SRSF324	SRHF324
3-7/16	4-1/2	1-3/4	18	11	SRSF328	SRHF328
3-1/2	4-1/2	1-3/4	18	11	SRSF332	SRHF332
3-9/16	5	2	20	12	SRSF336	SRHF336
3-5/8	5	2	20	12	SRSF340	SRHF340
3-11/16	5	2	20	12	SRSF344	SRHF344
3-3/4	5	2	20	12	SRSF348	SRHF348
3-13/16	5	2	20	12	SRSF352	SRHF352
3-7/8	5	2	20	12	SRSF356	SRHF356
3-15/16	5	2	20	12	SRSF360	SRHF360
4	5	2	20	12	SRSF400	SRHF400
4-3/8	5	2	20	12	SRSF424	

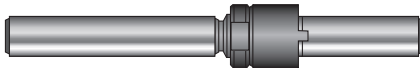
SHELL REAMER ARBORS

ICS

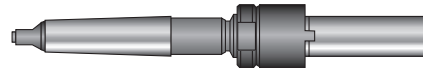
WIS

ADAPTERS

GROUND FINISH



STRAIGHT SHANK

SRASSCALL FOR
PRICE

TAPER SHANK

SRATS

High Speed Steel Shell Reamer Arbors are tapered to fit the hole in the Shell Reamer. They fit together with slots in the reamer which engage lugs on the arbor for driving power.

SIZE	FITS REAMER SIZES	OVERALL LENGTH	ARBOR DIA.	WRENCH SIZE	STRAIGHT SHANK DIA.	STRAIGHT SHANK ITEM NO.	TAPER SHANK TPR LNTH	TAPER SHANK NO.	TAPER SHANK ITEM NO.
4	21/32 - 25/32	9	3/8	19/32	1/2	SRASS#04	2-1/4	2	SRATS#04
5	13/16 - 1-1/32	9-1/2	1/2	25/32	5/8	SRASS#05	2-1/2	2	SRATS#05
6	1-1/16 - 1-9/32	10	5/8	7/8	3/4	SRASS#06	2-3/4	3	SRATS#06
7	1-5/16 - 1-21/32	11	3/4	1-1/16	7/8	SRASS#07	3	3	SRATS#07
8	1-11/16 - 2	12	1	1-7/16	1-1/8	SRASS#08	3-1/2	4	SRATS#08
9	2-1/16 - 2-1/2	13	1-1/4	1-13/16	1-3/8	SRASS#09	3-3/4	4	SRATS#09
10	2-9/16 - 3	14	1-1/2	2-3/16	1-5/8	SRASS#10	4	5	SRATS#10
11	3-1/16 - 3-1/2	15	1-3/4	2-9/16	2	SRASS#11	4-1/2	5	SRATS#11
12	3-9/16 - 4	16	2	3-1/8	2-1/8	SRASS#12	5	5	SRATS#12

HIGH SPEED STEEL

RT-40

AUTOMOTIVE STEERING AND SUSPENSION REAMERS

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

3 FLAT
1/2" SHANKLEFT HAND
FLUTE

20° SPIRAL FLUTE

High Speed Steel Automotive Steering and Suspension Reamers are designed for rebuilding and repairing automotive suspension systems. They are used to deburr and enlarge tapered holes for tie rod ends, steering arms, and ball joint applications. They are also referred to as Automotive Taper Reamers or Ball Joint Taper Reamers.

DIAMETER		FLUTE LENGTH	OVERALL LENGTH	SHANK DIAMETER	TAPER	ITEM NO.	PRICE
SMALL END	LARGE END						
.4375 (7/16)	.8125 (13/16)	3	5-1/2	1/2	1-1/2"/ft. (7.15°)	ASSR028	57.50
.7500 (3/4)	1.3125 (1-5/16)	4-1/2	7	1/2	1-1/2"/ft. (7.15°)	ASSR048	148.40
.9375 (15/16)	1.5000 (1-1/2)	4-1/2	6-1/2	1/2	1-1/2"/ft. (7.15°)	ASSR060	162.60
.3750 (3/8)	1.1250 (1-1/8)	4-1/2	6-1/2	1/2	2"/ft. (9.56°)	ASSRA024	118.34
.4370 (11.1mm)	0.8870 (22.8mm)	4-1/2	6-1/2	1/2	10:1 (5.71°)	ASSRM11.1	75.50

HIGH SPEED STEEL

AUTOMOTIVE STEERING AND SUSPENSION REAMER SET

ICS WIS

PLASTIC CASE

RIGHT HAND CUT

DESCRIPTION	SIZES IN SET	ITEM NO.	PRICE
2 PC AUTOMOTIVE STEERING & SUSPENSION REAMER SET 	2 PIECE SET .4375, .7500 (7/16) (3/4)	RS-ASSR-2	237.34
	3 PIECE SET .4375, .7500, .9375 (7/16) (3/4) (15/16)	RS-ASSR-3	399.94
	4 PIECE SET .4375, .7500, .9375, .3750 (7/16) (3/4) (15/16) (3/8)	RS-ASSR-4	518.28
	5 PIECE SET .4375, .7500, .9375, .3750, .4370 (7/16) (3/4) (15/16) (3/8) (11.1mm)	RS-ASSR-5	593.78

HIGH SPEED STEEL CAR REAMERS - TAPER SHANK

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

SHORT
BODYLEFT HAND
FLUTE

HELICAL FLUTE

Taper Shank Car Reamers are designed with a short flute and overall length to permit use in cramped quarters or where a bridge reamer would be too long. They are primarily used to repair railroad cars and for construction work, especially involving the rectification of misaligned holes. They are often referred to as Construction Taper Reamers or Aligning Reamers.

SIZE	DEC. EQUIV.	DIAMETER AT POINT	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
5/16	.3125	11/64	1	2-3/4	5-11/16	CR-HFTS020	-
3/8	.3750	15/64	1	2-3/4	5-11/16	CR-HFTS024	-
7/16	.4375	1/4	2	3-1/2	6-15/16	CR-HFTS028	-
1/2	.5000	19/64	2	4	7-9/16	CR-HFTS032	-
9/16	.5625	9/32	2	4	7-9/16	CR-HFTS036	-
5/8	.6250	5/16	2	4-1/2	8-1/16	CR-HFTS040	CALL FOR PRICE
11/16	.6875	3/8	3	5	8-13/16	CR-HFTS044	
3/4	.7500	13/32	3	5	9-1/2	CR-HFTS048	-
13/16	.8125	15/32	3	5	9-1/2	CR-HFTS052	-
7/8	.8750	35/64	3	5	9-1/2	CR-HFTS056	-
15/16	.9375	19/32	3	5	9-1/2	CR-HFTS060	-
1	1.0000	3/4	3	5	9-1/2	CR-HFTS100	-
1-1/16	1.0625	13/16	3	5	9-1/2	CR-HFTS104	-

HIGH SPEED STEEL CAR REAMERS - 1/2" ROUND SHANK

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

3 FLAT
SHANKLEFT HAND
FLUTE

FAST SPIRAL

High Speed Steel Round Shank Car Reamers are designed for lining up holes in structural steel fabrication bridgework, ship construction, automotive maintenance, and railroad car manufacture. Short Length makes it useful in close quarters with any 1/2" 3 jaw power tool. They are also known as Construction Reamers or Aligning Reamers.

SIZE	DEC. EQUIV.	SHANK		FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
		DIAMETER	LENGTH				
5/16	.3125	1/2	1-1/2	2-3/4	4-5/8	CR-RS020	43.36
3/8	.3750	1/2	1-1/2	2-3/4	4-5/8	CR-RS024	43.36
7/16	.4375	1/2	1-1/2	3-1/2	5-3/8	CR-RS028	43.36
1/2	.5000	1/2	1-1/2	4	5-7/8	CR-RS032	48.70
9/16	.5625	1/2	1-1/2	4	5-7/8	CR-RS036	53.00
5/8	.6250	1/2	1-1/2	4-1/2	6-3/8	CR-RS040	58.80
-	.6520	1/2	1-1/2	4-1/2	6-3/8	*BBBR.6520	61.96
11/16	.6875	1/2	1-1/2	4-1/2	6-3/8	CR-RS044	65.86
3/4	.7500	1/2	1-1/2	5	6-7/8	CR-RS048	78.92
-	.7760	1/2	1-1/2	5	6-7/8	*BBBR.7760	80.56
13/16	.8125	1/2	1-1/2	5	6-7/8	CR-RS052	80.56
7/8	.8750	1/2	1-1/2	5	6-7/8	CR-RS056	85.26
15/16	.9375	1/2	1-1/2	5	6-7/8	CR-RS060	89.38
1	1.0000	1/2	1-1/2	5	6-7/8	CR-RS100	103.50
1-1/16	1.0625	1/2	1-1/2	5	6-7/8	CR-RS104	119.96
1-1/8	1.1250	1/2	1-1/2	5	6-7/8	CR-RS108	133.38
1-3/16	1.1875	1/2	1-1/2	5	6-7/8	CR-RS112	144.34
1-1/4	1.2500	1/2	1-1/2	5	6-7/8	CR-RS116	157.72
1-5/16	1.3125	1/2	1-1/2	5	6-7/8	CR-RS120	171.08
1-3/8	1.3750	1/2	1-1/2	5	6-7/8	CR-RS124	203.60
1-7/16	1.4375	1/2	1-1/2	5	6-7/8	CR-RS128	215.36
1-1/2	1.5000	1/2	1-1/2	5	6-7/8	CR-RS132	239.90

* Body Bound Bolt Reamer sizes

HIGH SPEED STEEL BODY BOUND BOLT REAMERS

RT-42

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

3 FLAT
SHANK



FAST SPIRAL

LEFT HAND
FLUTE

Body Bound Bolt Reamers are designed to prevent the movement of a body bound bolt within the hole. They are manufactured to a tight tolerance slightly under the bolt size and used primarily for shoulder bolts on truck frames.

DECIMAL SIZE	SHANK		FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
	DIAMETER	LENGTH				
.6520	1/2	1-1/2	4-1/2	6-3/8	BBBR.6520	61.96
.7760	1/2	1-1/2	5	6-7/8	BBBR.7760	80.56

HIGH SPEED STEEL METRIC 1/2" ROUND SHANK CAR REAMERS

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

3 FLAT
SHANK



FAST SPIRAL

LEFT HAND
FLUTE

High Speed Steel Metric 1/2" Round Shank Car Reamers are designed for lining up holes in structural steel fabrication bridgework, ship construction, automotive maintenance, and railroad car manufacture. Short Length makes it useful in close quarters with any 1/2" 3 jaw power tool. They are also known as Construction Reamers or Aligning Reamers.

SIZE	DEC. EQUIV.	SHANK		FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
		DIAMETER	LENGTH				
12mm	.4724	1/2	1-1/2	102mm	152mm	CR-RSM12.0	43.36
14mm	.5512	1/2	1-1/2	102mm	152mm	CR-RSM14.0	53.00
16mm	.6299	1/2	1-1/2	125mm	178mm	CR-RSM16.0	58.80
18mm	.7087	1/2	1-1/2	125mm	178mm	CR-RSM18.0	65.86
19mm	.7480	1/2	1-1/2	132mm	184mm	CR-RSM19.0	78.92
20mm	.7874	1/2	1-1/2	132mm	184mm	CR-RSM20.0	80.56
22mm	.8661	1/2	1-1/2	132mm	184mm	CR-RSM22.0	80.56
24mm	.9449	1/2	1-1/2	132mm	184mm	CR-RSM24.0	89.38
25mm	.9843	1/2	1-1/2	132mm	184mm	CR-RSM25.0	103.50
26mm	1.0256	1/2	1-1/2	132mm	184mm	CR-RSM26.0	113.40
28mm	1.1024	1/2	1-1/2	132mm	184mm	CR-RSM28.0	119.96
30mm	1.1811	1/2	1-1/2	132mm	184mm	CR-RSM30.0	144.34
32mm	1.2598	1/2	1-1/2	132mm	184mm	CR-RSM32.0	157.72

HIGH SPEED STEEL METRIC HEX SHANK CAR REAMERS

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

SAFETY STYLE
HEX SHANK



HELICAL FLUTE

LEFT HAND
FLUTE

Metric High Speed Steel Hex Shank Car Reamers are designed to be used in portable pneumatic equipment for structural steel erection. Their short overall length makes them useful in close quarters. Hex shank sizes are the same as the socket size for the bolt being used in the reamed hole. They are sometimes referred to as Erector Reamers. All ICS Safety Style Hex Shank Reamers are designed to protect against the danger and loss of falling objects such as a reamer. See OSHA 29CFR Part 1926.759 (falling object protection).

SIZE	DEC. EQUIV.	HEX SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
12mm	.4724	24mm	102mm	140mm	CR-HXM12.00	60.00
14mm	.5512	24mm	102mm	140mm	CR-HXM14.00	69.82
16mm	.6299	24mm	114mm	152mm	CR-HXM16.00	69.42
18mm	.7087	24mm	114mm	165mm	CR-HXM18.00	75.40
20mm	.7874	32mm	114mm	178mm	CR-HXM20.00	85.90
22mm	.8661	36mm	127mm	178mm	CR-HXM22.00	93.82
24mm	.9449	36mm	127mm	178mm	CR-HXM24.00	93.82
26mm	1.0256	41mm	127mm	178mm	CR-HXM26.00	113.40
28mm	1.1024	41mm	127mm	178mm	CR-HXM28.00	120.00
30mm	1.1811	46mm	127mm	178mm	CR-HXM30.00	170.62
32mm	1.2598	46mm	127mm	178mm	CR-HXM32.00	178.50
33mm	1.2992	46mm	127mm	200mm	CR-HXM33.00	204.30
36mm	1.4173	46mm	127mm	200mm	CR-HXM36.00	230.00
39mm	1.5354	50mm	127mm	200mm	CR-HXM39.00	241.50

CAR REAMERS - COMBINATION HEX/ROUND SHANK**ICS WIS****HEAVY DUTY****RIGHT HAND CUT**1-1/4 HEX SHANK
ADAPTER

FAST SPIRAL

LEFT HAND
FLUTE

High Speed Steel Combination Hex/Round Shank Car Reamers can be used with ANY 1/2" 3 jaw power tool or in portable pneumatic equipment. They are designed for lining up holes in structural steel fabrication, bridgework, ship construction, automotive maintenance, and railroad manufacturing. Short length makes it useful in close quarters. Safety Style 1-1/4" hex shank size requires only one size square drive impact wrench socket to use. All ICS Safety Style Hex Shank Reamers are designed to protect against the danger and loss of falling objects such as a reamer. See OSHA 29CFR Part 1926.759 (falling object protection).

SIZE	DEC. EQUIV.	SHANK		FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
		DIAMETER	LENGTH				
5/16	.3125	1/2	1-1/2	2-3/4	4-5/8	CR-HXC020	69.50
3/8	.3750	1/2	1-1/2	2-3/4	4-5/8	CR-HXC024	69.50
7/16	.4375	1/2	1-1/2	3-1/2	5-3/8	CR-HXC028	69.50
1/2	.5000	1/2	1-1/2	4	5-7/8	CR-HXC032	74.82
9/16	.5625	1/2	1-1/2	4	5-7/8	CR-HXC036	79.14
5/8	.6250	1/2	1-1/2	4-1/2	6-3/8	CR-HXC040	84.94
11/16	.6875	1/2	1-1/2	4-1/2	6-3/8	CR-HXC044	92.00
3/4	.7500	1/2	1-1/2	5	6-7/8	CR-HXC048	105.04
13/16	.8125	1/2	1-1/2	5	6-7/8	CR-HXC052	106.70
7/8	.8750	1/2	1-1/2	5	6-7/8	CR-HXC056	111.40
15/16	.9375	1/2	1-1/2	5	6-7/8	CR-HXC060	115.52
1	1.0000	1/2	1-1/2	5	6-7/8	CR-HXC100	129.64
1-1/16	1.0625	1/2	1-1/2	5	6-7/8	CR-HXC104	146.10
1-1/8	1.1250	1/2	1-1/2	5	6-7/8	CR-HXC108	159.50
1-3/16	1.1875	1/2	1-1/2	5	6-7/8	CR-HXC112	170.46
1-1/4	1.2500	1/2	1-1/2	5	6-7/8	CR-HXC116	183.84
1-5/16	1.3125	1/2	1-1/2	5	6-7/8	CR-HXC120	197.22
1-3/8	1.3750	1/2	1-1/2	5	6-7/8	CR-HXC124	215.36
1-7/16	1.4375	1/2	1-1/2	5	6-7/8	CR-HXC128	227.26
1-1/2	1.5000	1/2	1-1/2	5	6-7/8	CR-HXC132	251.66

CAR REAMERS - HEX SHANK**ICS WIS****HEAVY DUTY****RIGHT HAND CUT**SAFETY STYLE
HEX SHANK

HELICAL FLUTE

LEFT HAND
FLUTE

High Speed Steel Hex Shank Car Reamers are designed to be used in portable pneumatic equipment for structural steel erection. Their short overall length makes them useful in close quarters. Hex shank sizes are the same as the socket size for the bolt being used in the reamed hole. They are sometimes referred to as Erector Reamers. All ICS Safety Style Hex Shank Reamers are designed to protect against the danger and loss of falling objects such as a reamer. See OSHA 29CFR Part 1926.759 (falling object protection).

SIZE	DEC. EQUIV.	APPROX. POINT SIZE	HEX SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
9/16	.5625	9/32	1-1/16	5	5-1/2	CR-HX036	69.82
5/8	.6250	9/32	1-1/16	4-1/2	6	CR-HX040	69.82
11/16	.6875	3/8	1-1/16	4-1/2	6-3/8	CR-HX044	75.40
3/4	.7500	13/32	1-1/4	5	7	CR-HX048	85.90
13/16	.8125	15/32	1-1/4	5	7	CR-HX052	85.90
7/8	.8750	15/32	1-7/16	5	7	CR-HX056	93.82
15/16	.9375	19/32	1-7/16	5	7	CR-HX060	93.82
1	1.0000	5/8	1-7/16	5	7	CR-HX100	105.38
1-1/16	1.0625	13/16	1-5/8	5	7	CR-HX104	113.40
1-1/8	1.1250	55/64	1-5/8	5	7	CR-HX108	126.00
1-3/16	1.1875	59/64	1-13/16	5	7	CR-HX112	170.62
1-1/4	1.2500	15/16	1-13/16	5	7	CR-HX116	178.50
1-5/16	1.3125	1-1/16	2	5	7-7/8	CR-HX120	204.30
1-3/8	1.3750	1-1/8	2	5	7-7/8	CR-HX124	220.50
1-7/16	1.4375	1-1/8	2	5	7-7/8	CR-HX128	230.00
1-1/2	1.5000	1-1/4	2	5	7-7/8	CR-HX132	241.50
1-9/16	1.5625	1-5/16	2	5	7-7/8	CR-HX136	309.08

BRIDGE REAMERS - COMBINATION HEX/ROUND SHANK**ICS WIS****HEAVY DUTY****RIGHT HAND CUT**1-1/4 HEX SHANK
ADAPTERLEFT HAND
FLUTE

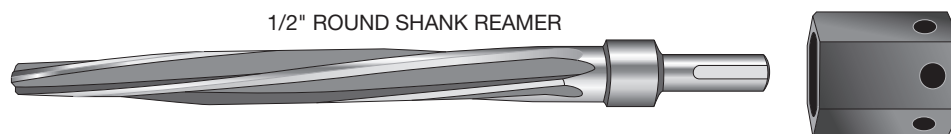
SLOW SPIRAL

High Speed Steel Combination Hex/Round Shank Bridge Reamers can be used with ANY 1/2" 3 jaw power tool or in portable pneumatic equipment. They are designed for lining up holes in structural steel fabrication, bridgework, ship construction, automotive maintenance, and railroad manufacturing. Short length makes it useful in close quarters. Safety Style 1-1/4" hex shank size requires only one size square drive impact wrench socket to use. All ICS Safety Style Hex Shank Reamers are designed to protect against the danger and loss of falling objects such as a reamer. See OSHA 29CFR Part 1926.759 (falling object protection).

SIZE	DEC. EQUIV.	DIAMETER AT POINT	SHANK		FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
			DIAMETER	LENGTH				
7/16	.4375	17/64	1/2	1-1/2	4-3/8	5-7/8	BRHFHXC028	51.16
1/2	.5000	5/16	1/2	1-1/2	5-1/8	6-5/8	BRHFHXC032	53.40
9/16	.5625	3/8	1/2	1-1/2	5-1/8	6-5/8	BRHFHXC036	55.58
5/8	.6250	25/64	1/2	1-1/2	6-1/8	7-5/8	BRHFHXC040	64.04
11/16	.6875	13/32	1/2	1-1/2	7-1/8	8-5/8	BRHFHXC044	76.90
3/4	.7500	15/32	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC048	84.02
13/16	.8125	35/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC052	88.72
7/8	.8750	39/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC056	100.28
15/16	.9375	43/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC060	108.08
1	1.0000	47/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC100	116.66
1-1/16	1.0625	13/16	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC104	125.90
1-1/8	1.1250	55/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC108	134.24
1-3/16	1.1875	59/64	1/2	1-1/2	7-3/8	8-7/8	BRHFHXC112	144.26
1-1/4	1.2500	63/64	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC116	160.04
1-5/16	1.3125	1-1/16	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC120	168.24
1-3/8	1.3750	1-1/8	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC124	181.26
1-7/16	1.4375	1-3/16	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC128	191.18
1-1/2	1.5000	1-1/4	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC132	220.16
1-9/16	1.5625	1-1/4	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC136	350.92
1-5/8	1.6250	1-1/4	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC140	350.92
1-11/16	1.6875	1-3/8	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC144	368.90
1-3/4	1.7500	1-3/8	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC148	404.76
1-13/16	1.8125	1-7/16	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC152	422.70
1-7/8	1.8750	1-1/2	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC156	440.64
1-15/16	1.9375	1-1/2	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC160	458.62
2	2.0000	1-3/4	1/2	1-1/2	7-3/8	11-1/2	BRHFHXC200	476.58

BRIDGE/CAR REAMER ADAPTER/SOCKET

The ICS Hex Shank Adapter eliminates the need to weld a nut to the back of your car or bridge reamer. The ICS Hex Shank Adapter converts all 1/2" Round Shanks to a standard 1-1/4" Hex Shank for use in pneumatic equipment.

ADAPTER ASSEMBLY LAYOUT

1/2" ROUND SHANK REAMER

HEX SHANK ADAPTER
for 1/2" Round Shanks

Three set screws included for non-slip chucking of car reamer

DESCRIPTION	ITEM NO.	PRICE
1-1/4" Hex Shank to 1/2" Round Shank Safety Adapter	HSA116	28.00

HIGH SPEED STEEL BRIDGE REAMERS - HEX SHANK

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

SAFETY STYLE
HEX SHANKLEFT HAND
FLUTE

HELICAL FLUTE

High Speed Steel Hex Shank Bridge Reamers are designed to be used in portable pneumatic equipment for structural steel erection. Their short overall length makes them useful in close quarters. Hex shank sizes are the same as the socket size for the bolt being used in the reamed hole. They are sometimes referred to as Erector Reamers. All ICS Safety Style Hex Shank Reamers are designed to protect against the danger and loss of falling objects such as a reamer. See OSHA 29CFR Part 1926.759 (falling object protection).

SIZE	DEC. EQUIV.	DIAMETER AT POINT	HEX SHANK	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE
7/16	.4375	17/64	1-1/16	4-3/8	5-7/8	BRHFHX028	51.16
1/2	.5000	5/16	1-1/16	5-1/8	6-5/8	BRHFHX032	53.40
9/16	.5625	3/8	1-1/16	5-1/8	6-5/8	BRHFHX036	55.58
5/8	.6250	25/64	1-1/16	6-1/8	7-5/8	BRHFHX040	64.04
11/16	.6875	13/32	1-1/16	7-1/8	8-5/8	BRHFHX044	76.90
3/4	.7500	15/32	1-1/4	7-3/8	8-7/8	BRHFHX048	84.02
13/16	.8125	35/64	1-1/4	7-3/8	8-7/8	BRHFHX052	88.72
7/8	.8750	39/64	1-7/16	7-3/8	8-7/8	BRHFHX056	100.28
15/16	.9375	43/64	1-7/16	7-3/8	8-7/8	BRHFHX060	108.08
1	1.0000	47/64	1-7/16	7-3/8	8-7/8	BRHFHX100	116.66
1-1/16	1.0625	13/16	1-5/8	7-3/8	8-7/8	BRHFHX104	131.26
1-1/8	1.1250	55/64	1-5/8	7-3/8	8-7/8	BRHFHX108	147.94
1-3/16	1.1875	59/64	1-13/16	7-3/8	8-7/8	BRHFHX112	165.38
1-1/4	1.2500	63/64	1-13/16	7-3/8	11-1/2	BRHFHX116	185.86
1-5/16	1.3125	1-1/16	2	7-3/8	11-1/2	BRHFHX120	190.78
1-3/8	1.3750	1-1/8	2	7-3/8	11-1/2	BRHFHX124	218.92
1-7/16	1.4375	1-3/16	2	7-3/8	11-1/2	BRHFHX128	227.60
1-1/2	1.5000	1-1/4	2	7-3/8	11-1/2	BRHFHX132	258.40
1-9/16	1.5625	1-1/4	2	7-3/8	11-1/2	BRHFHX136	350.92
1-5/8	1.6250	1-1/4	2	7-3/8	11-1/2	BRHFHX140	358.06
1-11/16	1.6875	1-3/8	2	7-3/8	11-1/2	BRHFHX144	368.90
1-3/4	1.7500	1-3/8	2	7-3/8	11-1/2	BRHFHX148	404.76
1-13/16	1.8125	1-7/16	2	7-3/8	11-1/2	BRHFHX152	422.70
1-7/8	1.8750	1-1/2	2	7-3/8	11-1/2	BRHFHX156	440.64
1-15/16	1.9375	1-1/2	2	7-3/8	11-1/2	BRHFHX160	458.62
2	2.0000	1-3/4	2	7-3/8	11-1/2	BRHFHX200	476.58

HIGH SPEED STEEL TAPER SHANK BRIDGE REAMERS

RT-46

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

LONG
BODY

LEFT HAND
FLUTE



STRAIGHT FLUTE



HELICAL FLUTE

High Speed Steel Taper Shank Bridge Reamers are designed for use in structural steel fabrication bridge work and ship construction to line up bolt and rivet holes. The front portion of the reamer is tapered at approximately 1" in 10 and the balance of the flute is parallel. They can be used in portable electric or pneumatic equipment. NOTE: Because of the heavy duty work involved, some sizes have larger Morse taper shanks than is usual for the diameter. These tools are also referred to as Boilermaker's Reamers, Rivet Hole Reamers, Aligning Reamers, or Construction Taper Reamers.

HSS							
SIZE	DEC. EQUIV	DIA. AT POINT	FLUTE LENGTH	OVERALL LENGTH	MORSE TAPER SHANK	STRAIGHT FLUTE BRSF	HELICAL FLUTE BRHF
5/16	.3125	11/64	4-3/8	8-1/4	2	34.86	34.86
3/8	.3750	7/32	4-3/8	8-1/4	2	34.86	34.86
13/32	.4062	7/32	5-1/8	8-1/4	2	34.86	34.86
7/16	.4375	17/64	4-3/8	8-1/4	2	39.12	39.12
15/32	.4688	9/32	5-1/8	8-1/4	2	39.40	39.40
1/2	.5000	5/16	5-1/8	9	2	39.12	39.12
17/32	.5312	11/32	5-1/8	9	2	41.14	41.14
9/16	.5625	3/8	5-1/8	9	2	41.64	41.64
5/8	.6250	25/64	6-1/8	10	2	50.46	50.46
11/16	.6875	13/32	7-1/8	11-3/4	3	60.64	60.64
3/4	.7500	15/32	7-3/8	12	3	65.12	65.12
13/16	.8125	35/64	7-3/8	12	3	70.74	70.74
7/8	.8750	39/64	7-3/8	12	3	78.50	78.50
15/16	.9375	43/64	7-3/8	12	3	80.88	80.88
1	1.0000	47/64	7-3/8	12	3	89.70	89.70
1-1/16	1.0625	13/16	7-3/8	12	3	98.74	98.74

HSS							
SIZE	DEC. EQUIV	DIA. AT POINT	FLUTE LENGTH	OVERALL LENGTH	MORSE TAPER SHANK	STRAIGHT FLUTE BRSF	HELICAL FLUTE BRHF
1-1/8	1.1250	55/64	7-3/8	12	3	109.96	109.96
1-3/16	1.1875	59/64	7-3/8	12	3	122.26	122.26
1-1/4	1.2500	63/64	7-3/8	13	4	135.96	135.96
1-5/16	1.3125	1-1/16	7-3/8	13	4	148.14	148.14
1-3/8	1.3750	1-1/8	7-3/8	13	4	154.00	154.00
1-7/16	1.4375	1-3/16	7-3/8	13	4	165.82	165.82
1-1/2	1.5000	1-1/4	7-3/8	13	4	187.34	187.34
1-9/16	1.5625	1-1/4	7-3/8	13	4	269.24	269.24
1-5/8	1.6250	1-1/4	7-3/8	13	4	269.24	269.24
1-11/16	1.6875	1-3/8	7-3/8	13	4	287.18	287.18
1-3/4	1.7500	1-3/8	7-3/8	13	4	323.08	323.08
1-13/16	1.8125	1-7/16	7-3/8	13	4	341.02	341.02
1-7/8	1.8750	1-1/2	7-3/8	13	4	358.98	358.98
1-15/16	1.9375	1-1/2	7-3/8	13	4	376.96	376.96
2	2.0000	1-3/4	7-3/8	13	4	394.90	394.90
2-1/16	2.0625	1-13/16	7-3/8	13	4	-	452.02

Larger sizes are available. Inquire for quote.

HIGH SPEED STEEL ROUND SHANK BRIDGE REAMERS

ICS WIS

HEAVY DUTY

RIGHT HAND CUT

STRAIGHT
SHANK



HELICAL FLUTE

LEFT HAND
FLUTE

High Speed Steel Round Shank Bridge Reamers are designed for lining up holes in structural steel fabrication bridgework, ship construction, automotive maintenance, and railroad car manufacture. The front portion of the reamer is tapered at approximately 1" in 10 and the balance of the flute is parallel. Can be used with any 1/2" 3 jaw power tool. Round Shank design helps prevent "whip" caused by tool snagging or binding.

HSS					
SIZE	SHANK DIA.	DIA. AT POINT	FLUTE LENGTH	SHANK LENGTH	STRAIGHT SHANK BRHFRS
7/16	1/2	17/64	4-3/8	1-1/2	45.14
1/2	1/2	5/16	5-1/8	1-1/2	49.74
9/16	1/2	3/8	5-1/8	1-1/2	51.94
5/8	1/2	25/64	6-1/8	1-1/2	58.72
11/16	1/2	13/32	7-1/8	1-1/2	69.08
3/4	1/2	15/32	7-3/8	1-1/2	73.66
13/16	1/2	35/64	7-3/8	1-1/2	73.66
7/8	1/2	39/64	7-3/8	1-1/2	80.54
15/16	1/2	43/64	7-3/8	1-1/2	82.78

HSS					
SIZE	SHANK DIA.	DIA. AT POINT	FLUTE LENGTH	SHANK LENGTH	STRAIGHT SHANK BRHFRS
1	1/2	47/64	7-3/8	1-1/2	91.10
1-1/16	1/2	13/16	7-3/8	1-1/2	99.62
1-1/8	*1/2	55/64	7-3/8	1-1/2	110.12
1-3/16	*1/2	59/64	7-3/8	1-1/2	121.68
1-1/4	*1/2	63/64	7-3/8	1-1/2	134.76
1-5/16	*1/2	1-1/16	7-3/8	1-1/2	152.78
1-3/8	*1/2	1-1/8	7-3/8	1-1/2	164.32
1-7/16	*1/2	1-3/16	7-3/8	1-1/2	175.90
1-1/2	*1/2	1-1/4	7-3/8	1-1/2	196.96

* Optional 3/4" Dia. Shank

Note: If work space is limited, consider using car reamers or tower bolt reamers to do the same job.

HIGH SPEED STEEL TAPER PIN DRILL/REAMERS

ICS WIS

SPECIAL PURPOSE

118° POINT

DUAL
PURPOSETAPERED
FLUTES

High Speed Steel Taper Pin Drill/Reamers are designed to drill and ream tapered holes in metal to fit taper pins in one operation. They are made with an included taper of 1 in 48 (1/4" per foot) and have chip breakers along the cutting edge.

SIZE	DIAMETER		FLUTE LENGTH	OVERALL LENGTH	FOR NO. SIZE	ITEM NO.	PRICE
	SMALL END	LARGE END					
3/32	.0664	.095	1-3/8	2-9/16	5/0	TPD/R006	54.48
7/64	.0772	.111	1-5/8	2-7/8	4/0	TPD/R007	54.48
1/8	.0879	.127	1-7/8	3-1/8	3/0	TPD/R008	55.22
9/64	.1013	.143	2	3-1/4	2/0	TPD/R009	70.04
5/32	.1137	.158	2-1/8	3-3/8	0	TPD/R010	63.20
11/64	.1245	.174	2-3/8	3-3/4	1	TPD/R011	79.60
3/16	.1325	.195	3	4-3/8	2	TPD/R012	79.68
7/32	.1575	.220	3	4-1/2	3	TPD/R014	102.86
1/4	.1775	.253	3-5/8	5-1/4	4	TPD/R016	82.26
9/32	.1983	.292	4-1/2	6-1/4	5	TPD/R018	129.04
5/16	.2223	.316	4-1/2	6-3/8	-	TPD/R020	129.04
11/32	.2455	.347	4-7/8	6-7/8	6	TPD/R022	187.48
3/8	.2664	.381	5-1/2	7-3/4	-	TPD/R024	187.48
13/32	.2818	.412	6-1/4	8-1/2	7	TPD/R026	207.36
7/16	.3128	.443	6-1/4	8-7/8	-	TPD/R028	207.36
1/2	.3600	.506	7	9-3/4	8	TPD/R032	219.92
5/8	.4638	.633	8-1/8	11-3/8	9	TPD/R040	414.72
3/4	.5647	.760	9-3/8	12-7/8	10	TPD/R048	467.10
7/8	.7060	.878	8-1/4	11-1/4	11	TPD/R056	663.40
1-1/32	.8420	1.050	10	13-5/8	12	TPD/R102	798.00
1-1/4	1.009	1.259	12	14	13	TPD/R116	840.00
1-1/2	1.250	1.342	14	18-1/4	14	TPD/R132	945.00

HIGH SPEED STEEL TAPER PIN REAMERS

RT-48

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

High Speed Steel Taper Pin Reamers are manufactured with a taper of 1/4" per foot. They are used to ream holes into which standard taper pins will fit. The point of each reamer will enter hole reamed by next smaller size. Hole to be reamed should be a few thousandths smaller than the small diameter of the finished reamed hole.

ITEM NO.	FLUTE STYLE	DESIGN USE	REAMING APPLICATION
TPRSF	 OXIDE FINISH	Hand	For use in easy to ream materials.
TPRSP	 BLACK/GOLD FINISH	Hand	For use in hard to ream materials and where the reamer tends to wedge itself.
TPRHF	 GOLD COBALT FINISH	Machine	For machine reaming of holes for taper pins on a production basis. Helical design throws the chips forward to alleviate packing of the flutes.

NOMINAL SIZE	PIN SIZE NO.	DIAMETER		FLUTE LENGTH	OVERALL LENGTH	NO. OF FLUTES	SHANK DIA.	SIZE OF SQUARE	HIGH SPEED STEEL		
		SMALL END	LARGE END						STRAIGHT FLUTE	SPIRAL FLUTE	HELICAL FLUTE
									TPRSF	TPRSP	TPRHF
5/64	7/0	.0497	.0666	13/16	1-13/16	4	5/64	.060	25.66	26.76	26.76
3/32	6/0	.0611	.0806	15/16	1-15/16	4	3/32	.070	25.66	26.76	26.76
7/64	5/0	.0719	.0966	1-3/16	2-3/16	4	7/64	.080	23.50	25.66	25.66
1/8	4/0	.0869	.1142	1-5/16	2-5/16	4	1/8	.095	23.50	25.66	25.66
9/64	3/0	.1029	.1302	1-5/16	2-5/16	4	9/64	.105	23.50	25.66	25.66
5/32	2/0	.1137	.1462	1-9/16	2-9/16	4	5/32	.115	21.00	22.42	22.42
11/64	0	.1287	.1638	1-11/16	2-15/16	6	11/64	.130	20.14	21.60	21.60
3/16	1	.1447	.1798	1-11/16	2-15/16	6	3/16	.140	19.66	21.82	21.82
13/64	2	.1605	.2008	1-15/16	3-3/16	6	13/64	.150	19.66	22.14	22.14
15/64	3	.1813	.2294	2-5/16	3-11/16	6	15/64	.175	19.66	22.14	22.14
17/64	4	.2071	.2604	2-9/16	4-1/16	6	17/64	.200	21.82	23.70	23.70
5/16	5	.2409	.2994	2-13/16	4-5/16	6	5/16	.235	23.50	25.52	25.52
23/64	6	.2773	.3540	3-11/16	5-7/16	6	23/64	.270	28.30	31.34	31.34
13/32	7	.3297	.4220	4-7/16	6-5/16	6	13/32	.305	36.38	39.40	39.40
7/16	8	.3971	.5050	5-3/16	7-3/16	6	7/16	.330	46.46	50.90	50.90
9/16	9	.4805	.6066	6-1/16	8-5/16	6	9/16	.420	56.52	61.54	61.54
5/8	10	.5799	.7216	6-13/16	9-5/16	6	5/8	.470	62.12	68.26	68.26
7/8	11	.7060	.8780	8-1/4	11-1/4	6	11/16	.503	120.76	149.10	149.10
1	12	.8420	1.0500	10	13-5/8	6	3/4	.569	147.00	198.22	198.22
1-1/4	13	1.0090	1.2590	12	16	6	1-1/16	.855	262.50	283.50	283.50
1-1/2	14	1.2500	1.5420	14	18-1/4	6	1-3/8	1.072	403.20	418.90	418.90

HIGH SPEED STEEL TAPER PIN REAMER SETS

ICS WIS

PLASTIC CASE

RIGHT HAND CUT

DESCRIPTION	SIZES IN SET	ITEM NO.	PRICE
11 PC TAPER PIN REAMER SETS	Straight Flute • 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	RS-TPRSF-11	CALL
	Spiral Flute • 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	RS-TPRSP-11	411.40
	Helical • 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	RS-TPRHF-11	CALL

HIGH SPEED STEEL METRIC TAPER PIN REAMERS

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

High Speed Steel Metric Taper Pin Reamers are manufactured with a taper of 1 in 50. They are used to ream holes into which standard taper pins will fit. The point of each reamer will enter a hole reamed by next smaller size. Hole to be reamed should be a few thousandths smaller than the small diameter of the finished reamed hole.

ITEM NO.	FLUTE STYLE	DESIGN USE	REAMING APPLICATION
TPRSFM	 Straight (Right Hand) Flute	Hand or Machine	For hand or machine reaming tapered holes in easy to ream materials to receive 1:50 taper pins (DIN1 and DIN7178) (metric sizes)
TPRHFM	 Helical Slow Spiral (Left Hand) Flute	Hand or Machine	For hand or machine reaming tapered holes in hard to ream materials to receive 1:50 taper pins (DIN1 and DIN7178) (metric sizes)

SIZE	PIN SIZE NO.	DIAMETER		FLUTE LENGTH	OVERALL LENGTH	SHANK DIAMETER	STRAIGHT FLUTE		HELICAL FLUTE	
		SMALL END	LARGE END				ITEM NO.	PRICE	ITEM NO.	PRICE
1.50	1.50	1.40	2.14	37.00	57.00	2.15	TPRSFM01.50	CALL	TPRHFM01.50	CALL
2.00	2.00	1.90	2.86	48.00	68.00	3.10	TPRSFM02.00	36.12	TPRHFM02.00	36.12
2.50	2.50	2.40	3.36	48.00	68.00	3.20	TPRSFM02.50	36.12	TPRHFM02.50	36.12
3.00	3.00	2.90	4.06	58.00	80.00	4.00	TPRSFM03.00	25.00	TPRHFM03.00	25.00
4.00	4.00	3.90	5.26	68.00	93.00	5.00	TPRSFM04.00	25.10	TPRHFM04.00	25.10
5.00	5.00	4.90	6.36	73.00	100.00	6.25	TPRSFM05.00	25.10	TPRHFM05.00	25.10
6.00	6.00	5.90	8.00	105.00	135.00	8.00	TPRSFM06.00	28.34	TPRHFM06.00	28.34
6.50	6.50	6.40	8.60	110.00	140.00	8.20	TPRSFM06.50	CALL	TPRHFM06.50	31.86
7.00	7.00	6.90	9.40	125.00	160.00	9.00	TPRSFM07.00	CALL	TPRHFM07.00	36.12
8.00	8.00	7.90	10.80	145.00	180.00	10.00	TPRSFM08.00	38.46	TPRHFM08.00	38.46
10.00	10.00	9.90	13.40	175.00	215.00	12.50	TPRSFM10.00	56.54	TPRHFM10.00	56.54
12.00	12.00	11.86	16.00	210.00	255.00	14.00	TPRSFM12.00	60.90	TPRHFM12.00	60.90
13.00	13.00	12.86	17.00	210.00	255.00	16.00	TPRSFM13.00	124.70	TPRHFM13.00	124.70
14.00	14.00	13.96	18.50	227.00	303.00	16.00	TPRSFM14.00	CALL	TPRHFM14.00	CALL
16.00	16.00	15.80	20.40	230.00	280.00	18.00	TPRSFM16.00	126.00	TPRHFM16.00	126.00
20.00	20.00	19.80	24.80	250.00	310.00	22.50	TPRSFM20.00	175.30	TPRHFM20.00	175.30
25.00	25.00	24.70	30.70	300.00	370.00	28.00	TPRSFM25.00	279.42	TPRHFM25.00	279.42
30.00	30.00	29.70	36.10	320.00	400.00	31.50	TPRSFM30.00	390.70	TPRHFM30.00	390.70
40.00	40.00	39.70	46.50	340.00	430.00	40.00	TPRSFM40.00	631.58	TPRHFM40.00	631.58
50.00	50.00	49.70	56.90	360.00	460.00	50.00	TPRSFM50.00	938.70	TPRHFM50.00	938.70

HIGH SPEED STEEL METRIC TAPER PIN DRILL/REAMERS

ICS WIS

SPECIAL PURPOSE

RIGHT HAND CUT

DUAL PURPOSE



TAPERED FLUTES

High Speed Steel Metric Taper Pin Drill/Reamers are designed to drill and ream tapered holes in metal to fit taper pins in one operation. They are made with an included taper of 1 in 50 and have chip breakers along the cutting edge.

SIZE	METRIC DIAMETER		METRIC FLUTE LENGTH	METRIC OVERALL LENGTH	FOR NO. SIZE	SHANK DIAMETER	ITEM NO.	PRICE
	SMALL END	LARGE END						
2.00	1.98	2.84	43.00	65.00	2.00	2.82	TPD/RM02.00	48.92
2.50	2.33	3.46	56.00	89.00	2.50	3.50	TPD/RM02.50	44.84
3.00	2.84	4.16	66.00	98.00	3.00	4.12	TPD/RM03.00	44.80
4.00	3.78	5.40	81.00	119.00	4.00	5.32	TPD/RM04.00	70.04
5.00	4.70	6.64	97.00	138.00	5.00	6.61	TPD/RM05.00	86.76
6.00	5.71	8.28	129.00	179.00	6.00	8.21	TPD/RM06.00	78.58
8.00	7.64	10.72	154.00	211.00	8.00	10.07	TPD/RM08.00	110.72
10.00	9.65	13.16	175.00	246.00	10.00	13.10	TPD/RM10.00	141.80
12.00	11.96	15.70	198.00	275.00	12.00	15.65	TPD/RM12.00	220.02
13.00	12.61	16.74	206.00	303.00	13.00	16.71	TPD/RM13.00	266.48
14.00	13.80	18.00	210.00	310.00	14.00	18.00	TPD/RM14.00	283.50
16.00	15.80	20.40	230.00	335.00	16.00	21.00	TPD/RM16.00	415.00

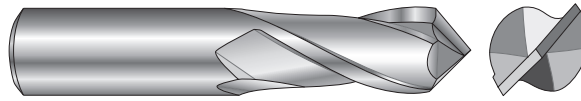
SOLID CARBIDE 60° & 90° DRILL MILLS

ICS USA

HEAVY DUTY

RIGHT HAND CUT

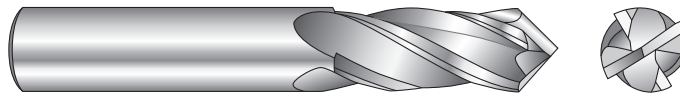
2 FLUTE - SINGLE END



Solid Carbide Drill Mills are designed to be a 5 in 1 multi-purpose tool for drilling, chamfering, spotting, side milling, and countersinking.

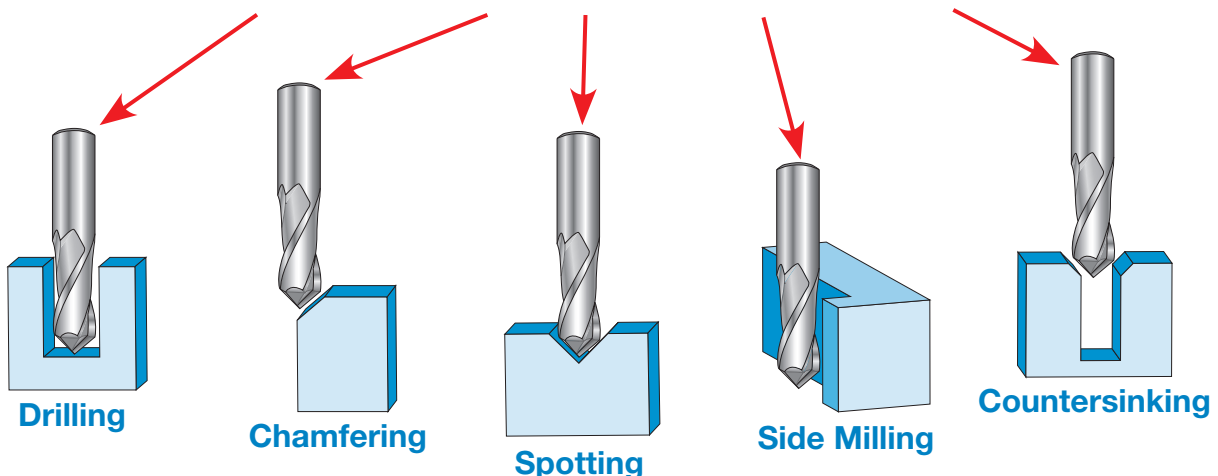
SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	2 FLUTE - 60° POINT ANGLE		2 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM260-008	17.02	SCDM290-008	17.02
3/16	3/16	5/8	2	SCDM260-012	22.68	SCDM290-012	22.68
1/4	1/4	3/4	2-1/2	SCDM260-016	30.46	SCDM290-016	30.46
5/16	5/16	13/16	2-1/2	SCDM260-020	41.16	SCDM290-020	41.16
3/8	3/8	1	2-1/2	SCDM260-024	42.64	SCDM290-024	42.64
7/16	7/16	1	2-3/4	SCDM260-028	43.44	SCDM290-028	43.44
1/2	1/2	1	3	SCDM260-032	79.60	SCDM290-032	79.60
5/8	5/8	1-1/4	3-1/2	SCDM260-040	133.78	SCDM290-040	133.78
3/4	3/4	1-1/2	4	SCDM260-048	220.92	SCDM290-048	220.92

4 FLUTE - SINGLE END



SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	4 FLUTE - 60° POINT ANGLE		4 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM460-008	17.02	SCDM490-008	17.02
3/16	3/16	5/8	2	SCDM460-012	22.68	SCDM490-012	22.68
1/4	1/4	3/4	2-1/2	SCDM460-016	30.46	SCDM490-016	30.46
5/16	5/16	13/16	2-1/2	SCDM460-020	41.16	SCDM490-020	41.16
3/8	3/8	1	2-1/2	SCDM460-024	42.64	SCDM490-024	42.64
7/16	7/16	1	2-3/4	SCDM460-028	43.44	SCDM490-028	43.44
1/2	1/2	1	3	SCDM460-032	79.60	SCDM490-032	79.60
5/8	5/8	1-1/4	3-1/2	SCDM460-040	133.78	SCDM490-040	133.78
3/4	3/4	1-1/2	4	SCDM460-048	220.92	SCDM490-048	220.92

5 USES IN 1 TOOL



THREADING TOOLS

TAPS

Carbon Steel

Automotive Rethreading	31
Fractional	17
Machine Screw	17
Metric	17
Pipe	
Taper	37
Taper (British Standard)	37
Spark Plug Rethreading	31

Cobalt

Spiral Flute (CNC)	29
Spiral Point	22

High Speed Steel

Fractional	5
Left Hand	7
Left Hand - Metric	15
Special Thread	10-12
Machine Screw	5
Metric	13
Metric - Special Thread	
M1.4 to M19	14
M19 to M52	15

8 Pitch	8
10 Pitch (Sucker Rod)	8
Automotive	62

British Standard Pipe	
Parallel (G or Rp)	36
Taper (Rc)	36
Taper (Long)	36
Metric	36

Coil Rod Thread	9
Lead Taps (Double, Triple & Quad)	6
Nut Taps	28
Oversize +.005	7
Oversize - Special	7

Pipe	
Left Hand	36
Interrupted	35
Straight	35
Taper	35

Pulley	28
Spiral Point	27
Screw Thread Insert	19

Spiral Flute	
High Performance	26
Fast Spiral	29
Regular Spiral	29

Spiral Point	
Fractional	20
High Performance	26
High Performance - Long Length	26
Screw Thread Insert	19
Oversize +.005	22
Pulley	27
Metric	21

Spiral Point Extension Taps	22
Tandem "Acme" Thread Taps	33
Spiral Flute	34
Thread Forming Taps	30

Solid Carbide

Left Hand	24
Right Hand	24
Left Hand - Metric	25
Right Hand - Metric	25

Pipe (Taper)	23
Spiral Point	23

TiN Coated

Fractional	5
Machine Screw	5
Thread Forming Taps	30

Tap Extensions	38
Tap Guide	80

DIES

Carbon Steel

2 Piece Adjustable	61
Hexagon Rethreading	58
Bearing Locknut	49
British	51
Pipe	58
Solid Square Bolt Dies	65

Cobalt

Automatic Thread	50

High Speed Steel

Cone (Acorn)	63
Holder	63
Coil Rod Thread	9
Hexagon Rethreading	
Acme Thread	64
Automotive	62
Bearing Locknut	49

Hexagon Threading	
Hex Nut Diameter	60
Hex Nut Diameter - NPT	60
Standard Diameter	59
Standard Diameter - NPT	59
Round Adjustable	50
Bearing Locknut	50
British Standard	51
Parallel Pipe	48
Taper Pipe	48
Left Hand	41
Right Hand	40
Metric	42

Pipe	
Straight Pipe	47
Taper Pipe	47
Special Thread	
#4 to 5/8"	44
5/8" to 1-3/16"	45
1-3/16" to 3-1/2"	46
Special Thread - Metric	43

Tool Steel

Hexagon Rethreading	
Hex Nut Diameter	
Left Hand	52
Right hand	52
Metric	55
Metric (Special Thread)	55

Pipe	
NPS	53
NPT	53
Special Thread	54

Die Adapters	79
Die Holders (Floating Round)	79
Die Stocks	79
Die Stock Screwdriver	80
Hex Die Stock Tap Adapter	80

SCREW EXTRACTORS

Helical Flute	1
Straight Flute	
Round Shank	1
Square Shank	2

Broken Tap Extractors	4

SETS

Carbon Steel

3 pc (Taper, Plug & Bottoming Chamfer)	5
117 pc (Taps, Dies, Drills, Screw Extractors)	69

Pipe

British Standard	39
Taper	39

Tap and Hex Die

12 pc Pipe (1/8 to 1)	57
40 pc (#4 to 1/2)	67
40 pc Metric (M3 to M12)	67
58 pc (#6 to 1)	68
65 pc (#4 to 1)	68
Automotive Rethreading	73

Tap & Round Adjustable Die

45 pc Fractional (1/4-20 to 1-14)	70
45 pc Metric (M6 to M24)	70

High Speed Steel

Miniature

30 pc (#00 to #3)	74
30 pc - Metric (M1 to M2.5)	74

Pipe

British Standard	39
Taper	39

Tap and Hex Die

12 pc Pipe (1/8 to 1)	57
40 pc (#4 to 1/2)	67
58 pc (#6 to 1)	68
65 pc (#4 to 1)	68

Tap & Round Adjustable Die

21 pc (1/4 to 3/4)	72
21 pc Metric (M6 to M20)	72
45 pc Fractional (1/4-20 to 1-14)	70
45 pc Metric (M6 to M24)	70

TiN Coated

Tap & Round Adjustable Die

21 pc (1/4 to 3/4)	72
21 pc Metric (M6 to M20)	72

Tool Steel

Hexagon Rethreading

Die	56
Pipe Die	56

Hexagon Threading

Die	66

Bolt And Nut Extractor	3

Broken Tap Extractor	4

Model Airplane Tap	74

Multi-Spline Screw Extractor	3

Ratcheting

5 pc Tap And Die	76
7 pc Pipe Threader	75
8 pc Pipe Threader	75
Tap And Drill Sets	71

Screw Extractor Sets	2

Screw Extractor And Drill Sets	2

Thread Box And Tap Set	81

Tap And Drill Dispenser	71

Tap Dispensers	71

OTHER

Screw Pitch Gauges	80

T-Handle Tap Wrenches

3/8" Square Drive Type	78
Piloted Spindle	78
Plain Type	78
Ratchet Type	78
Tap And Reamer Wrenches (Adjustable)	77

Threadlock Plug Gauges	32

Thread Restoring Files	72

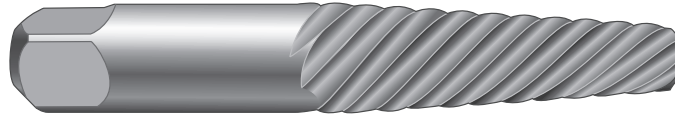
Valve Core Tool	82

HELICAL FLUTE SCREW EXTRACTORS

ICS WIS

SPECIAL PURPOSE

LEFT HAND CUT

ROUND
SHANKHELICAL
FLUTE

Round Shank Helical Flute Screw Extractors are used to remove broken screws, bolts, studs, pipe, and lubrication fittings without damage to the threaded hole. They are designed with a left hand helical flute to firmly grip and remove any right hand threaded screw or bolt from 3/16" to 3-1/2" in size. They can also be used for turning threaded pipe sections. Sizes #1 to #5 have ground center punch points. Meets Government Specs. GGG-E936B.

SIZE	DRILL SIZE	TAP WRENCH	FOR SCREW	FOR PIPE	ITEM	PRICE EACH	
	TO USE	TO USE	& BOLT SIZES	SIZES	NO.	BULK	PKG.
1	5/64	TW-0	3/16 - 1/4	-	SXHF#01	1.64	2.10
2	7/64	TW-0	1/4 - 5/16	-	SXHF#02	1.68	2.14
3	5/32	TW-0	5/16 - 7/16	-	SXHF#03	1.84	2.30
4	1/4	TW-4	7/16 - 9/16	-	SXHF#04	2.18	2.68
5	19/64	TW-5	9/16 - 3/4	1/8 - 1/4	SXHF#05	2.68	3.14
5-1/4	23/64	TW-6	11/16 - 15/16	1/4	SXHF#05.25	5.26	5.74
6	13/32	TW-6	3/4 - 1	3/8	SXHF#06	6.04	6.52
6-3/8	31/64	TW-6	15/16 - 1-1/8	3/8	SXHF#06.375	8.40	8.88
7	17/32	TW-7	1 - 1-3/8	1/2	SXHF#07	10.26	10.72
7-1/2	39/64	TW-7	1-1/8 - 1-1/2	1/2	SXHF#07.5	13.12	13.64
8	13/16	TW-7	1-3/8 - 1-3/4	3/4	SXHF#08	17.20	17.68
9	1-1/16	TW-7.5	1-3/4 - 2-1/8	1	SXHF#09	24.12	24.60
10	1-5/16	TW-8	2-1/8 - 2-1/2	1-1/4	SXHF#10	42.34	-
11	1-9/16	TW-9.5	2-1/2 - 3	1-1/2	SXHF#11	63.48	-
12	1-15/16	TW-9.5	3 - 3-1/2	2	SXHF#12	102.66	-

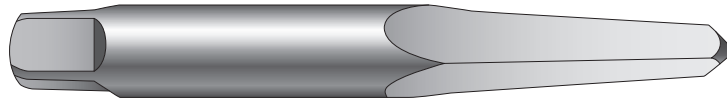
Please specify Bulk or Packaged when ordering.

STRAIGHT FLUTE SCREW EXTRACTORS

ICS WIS

SPECIAL PURPOSE

RIGHT or LEFT HAND CUT

ROUND
SHANKSTRAIGHT
FLUTE

Round Shank Straight Flute Screw Extractors are used to remove broken right or left hand threaded screws, bolts, studs, pipe, and lubrication fittings without damage to the threaded hole. They are designed with four sharp cutting edges to give a right or left hand positive gripping action without binding or chewing. They are preferred for soft metals and thin walled parts as they do not expand the part being removed. Meets Government Specs. GGG-E936C.

SIZE	DRILL SIZE	TAP WRENCH	FOR SCREW	FOR PIPE	ITEM	PRICE EACH	
	TO USE	TO USE	& BOLT SIZES	SIZES	NO.	BULK	PKG.
1	5/64	TW-0	1/4 - 5/16	-	SXSFRL#01	2.10	2.58
2	7/64	TW-0	3/8	-	SXSFRL#02	2.24	2.70
3	5/32	TW-0	7/16	1/8	SXSFRL#03	2.42	2.88
4	1/4	TW-4	1/2 - 9/16	1/4	SXSFRL#04	2.90	3.38
5	19/64	TW-5	5/8	3/8	SXSFRL#05	3.44	3.92
6	13/32	TW-6	3/4	1/2	SXSFRL#06	5.66	6.14
7	17/32	TW-7	7/8	-	SXSFRL#07	7.38	7.84

Please specify Bulk or Packaged when ordering.

STRAIGHT FLUTE SCREW EXTRACTORS

ICS WIS

SPECIAL PURPOSE

LEFT HAND CUT

SQUARE
SHANKSTRAIGHT
FLUTE

Square Shank Straight Flute Screw Extractors are used to remove broken screws, bolts, studs, pipe, and lubrication fittings without damage to the threaded hole. They are designed with four sharp edges to give a positive gripping action without binding or chewing. They are preferred for soft metals and thin walled parts as they do not expand the part being removed. Meets Government Specs. GGG-E936C.

SIZE	DRILL SIZE	TAP WRENCH	FOR SCREW	FOR PIPE	ITEM	PRICE EACH	
	TO USE	TO USE	& BOLT SIZES	SIZES	NO.	BULK	PKG.
1	9/64	TW-0	1/4 - 5/16	-	SXSF#01	2.10	2.58
2	3/16	TW-0	3/8	-	SXSF#02	2.24	2.70
3	15/64	TW-0	7/16	1/8	SXSF#03	2.42	2.88
4	5/16	TW-4	1/2 - 9/16	1/4	SXSF#04	2.90	3.38
5	3/8	TW-5	5/8	3/8	SXSF#05	3.44	3.92
6	15/32	TW-6	3/4	1/2	SXSF#06	5.66	6.14
7	9/16	TW-7	7/8	-	SXSF#07	7.38	7.84

Please specify Bulk or Packaged when ordering.

SCREW EXTRACTOR SETS

PLASTIC CASE

ILLUSTRATION	CONTENTS	TYPE	ITEM NO.	PRICE
9 PC SCREW EXTRACTOR SET 	Sizes #1 to #9	Helical Flute - Round Shank	SXS-HF-9	100.56
	Sizes #1 to #7		SXS-HF-07	30.00
	Sizes #1 to #6		SXS-HF-06	26.80
	Sizes #1 to #7	Straight Flute - Straight Shank	SXS-SF-07	44.04
VINYL POUCH				
5 PC SCREW EXTRACTOR SETS (VINYL POUCH)	Sizes #1 to #5	Helical Flute - Round Shank	SXS-HF-5	12.28
	Sizes #1 to #5	Straight Flute - Square Shank	SXS-SF-5	15.40
	Sizes #1 to #5	Straight Flute - Round Shank	SXS-SFR-5	17.34

SCREW EXTRACTOR AND DRILL SETS

METAL CASE

CONTENTS	TYPE OF SCREW EXTRACTOR & DRILLS	ITEM NO.	PRICE
10 PC SCREW EXTRACTOR SET One each Sizes #1 to #5 Screw Extractors One each 5/64, 7/64, 5/32, 1/4, 19/64 Screw Machine Drills with RH or LH cut	Helical Flute Screw Extractors Screw Machine Drills - RH cut	SXDS-10	23.52
	Helical Flute Screw Extractors Screw Machine Drills - LH cut	SXDS-10L	36.50

10 PC MULTI-SPLINE SCREW EXTRACTOR SET

PLASTIC CASE

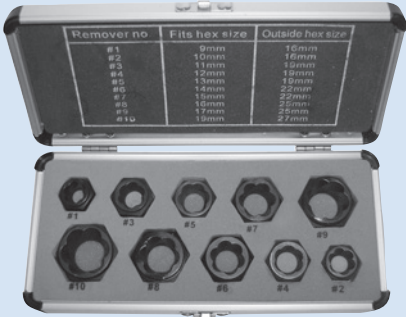
Hex Head Multi-Spline Screw Extractors are used to remove broken studs, bolts, socket screws, and lubrication fittings. They are designed with an aggressive left hand spiral design for maximum gripping power and can be used with a socket or flat wrench.

ILLUSTRATION	DESCRIPTION		ITEM NO.	PRICE
	Each set contains the following multi-spline screw extractor sizes:		MSSXS-10	32.30
	1/8, 5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, 3/8, 13/32			
	MULTI-SPLINE SCREW EXTRACTOR	FOR BOLT SIZE	MULTI-SPLINE SCREW EXTRACTOR	FOR BOLT SIZE
	1/8	#12	9/32	1/2
	5/32	1/4	5/16	9/16
	3/16	5/16	11/32	5/8
	7/32	3/8	3/8	11/16
	1/4	7/16	13/32	3/4

10 PC BOLT AND NUT EXTRACTOR SET

ALUMINUM CASE

Hex Head Bolt and Nut Extractors are used for removing damaged fasteners and rounded-off hex bolts and nuts. They are designed with a reverse spiral flute to grip a damaged fastener as you turn the tool and they can be used with most wrenches or a ratchet socket. They will remove both metric and inch size fasteners from 9-19mm or 3/8" to 3/4".

ILLUSTRATION	DESCRIPTION		ITEM NO.	PRICE
	Each set contains one each:		BNXS-10M	32.56
	#1 to #10 extractor			
	BOLT & NUT EXTRACTOR	FITS HEX SIZE	BOLT & NUT EXTRACTOR	FITS HEX SIZE
	#1	9mm 3/8	#6	14mm 9/16
	#2	10mm	#7	15mm
	#3	11mm 7/16	#8	16mm 5/8
#4	12mm	#9	17mm	
#5	13mm 1/2	#10	19mm 3/4	

10 PC BROKEN TAP EXTRACTOR SET

ICS WIS

PLASTIC CASE

ICS Broken Tap Extractors are used to remove broken taps without damage to the threaded hole. They have hardened steel fingers to fit in the flutes of a broken tap to turn it out safely, and can be used with a socket or tap wrench.

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE																																															
	Each set contains tap extractors #1 to #10	BTXS-10	51.24																																															
	<table border="1"> <thead> <tr> <th>TAP EXTRACTOR SIZE</th><th colspan="2">FOR TAP SIZE</th><th>NO. OF FLUTES</th></tr> <tr> <th></th><th>INCH</th><th>METRIC</th><th></th></tr> </thead> <tbody> <tr><td>#1</td><td>#6</td><td>4mm</td><td>3</td></tr> <tr><td>#2</td><td>#8-10</td><td>5mm</td><td>3</td></tr> <tr><td>#3</td><td>1/4</td><td>6mm</td><td>4</td></tr> <tr><td>#4</td><td>5/16</td><td>8mm</td><td>4</td></tr> <tr><td>#5</td><td>3/8</td><td>10mm</td><td>4</td></tr> <tr><td>#6</td><td>1/2</td><td>12mm</td><td>4</td></tr> <tr><td>#7</td><td>9/16</td><td>14mm</td><td>4</td></tr> <tr><td>#8</td><td>5/8</td><td>16mm</td><td>4</td></tr> <tr><td>#9</td><td>3/4</td><td>18-20mm</td><td>4</td></tr> <tr><td>#10</td><td>7/8</td><td>22mm</td><td>4</td></tr> </tbody> </table>	TAP EXTRACTOR SIZE	FOR TAP SIZE		NO. OF FLUTES		INCH	METRIC		#1	#6	4mm	3	#2	#8-10	5mm	3	#3	1/4	6mm	4	#4	5/16	8mm	4	#5	3/8	10mm	4	#6	1/2	12mm	4	#7	9/16	14mm	4	#8	5/8	16mm	4	#9	3/4	18-20mm	4	#10	7/8	22mm	4	
TAP EXTRACTOR SIZE	FOR TAP SIZE		NO. OF FLUTES																																															
	INCH	METRIC																																																
#1	#6	4mm	3																																															
#2	#8-10	5mm	3																																															
#3	1/4	6mm	4																																															
#4	5/16	8mm	4																																															
#5	3/8	10mm	4																																															
#6	1/2	12mm	4																																															
#7	9/16	14mm	4																																															
#8	5/8	16mm	4																																															
#9	3/4	18-20mm	4																																															
#10	7/8	22mm	4																																															

BROKEN TAP EXTRACTORS

ICS WIS

SPECIAL PURPOSE

ICS Broken Tap Extractors are used to remove broken taps without damage to the threaded hole. They have hardened steel fingers to fit in the flutes of a broken tap to turn it out safely, and can be used with a socket or tap wrench.



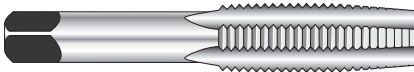
ITEM NO.	TAP EXTRACTOR SIZE	FOR TAP SIZE		NO. OF FLUTES	PRICE
		INCH	METRIC		
BTX#00	#0	#5	3mm	3	5.26
BTX#01	#1	#6	4mm	3	4.52
BTX#02	#2	#8-10	5mm	3	4.52
BTX#03	#3	1/4	6mm	4	4.52
BTX#04	#4	5/16	8mm	4	4.62
BTX#05	#5	3/8	10mm	4	4.94
BTX#06	#6	1/2	12mm	4	6.08
BTX#07	#7	9/16	14mm	4	6.90
BTX#08	#8	5/8	16mm	4	7.66
BTX#09	#9	3/4	18-20mm	4	9.48
BTX#10	#10	7/8	22mm	4	10.86
BTX#11	#11	1	24mm	4	20.48
BTX#12	#12	1-1/8	27mm	4	31.50
BTX#13	#13	1-1/4	30mm	4	39.38

HIGH SPEED STEEL - TITANIUM NITRIDE COATED STANDARD HAND TAPS

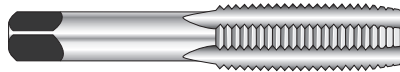
ICS WIS

GENERAL PURPOSE

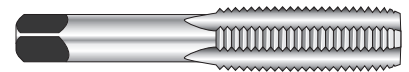
GROUND THREAD



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

High Speed Steel Hand Taps with straight flutes are designed for general purpose hand tapping or in production machines where ground thread accuracy and performance are required. They are suitable for tapping most materials in through or blind holes. Hand taps retain chips in the flutes during use and work best on materials that produce chips and the swarf breaks easily. They are also known as Straight Flute Taps.

THREADS PER INCH						PRICE EACH			TAP DRILL SIZE APPROXIMATELY 75% THREAD		
						HIGH SPEED STEEL		TIN COATED			
						TAPER, PLUG or BOTTOMING	TAPER, PLUG & BOTTOMING (3 PC SET)	TAPER, PLUG or BOTTOMING			
SIZE	NC UNC	NF UNF	NS	NO. OF FLUTES	LIMIT NO.	SHT	SHTS	SHTT			
0	-	80	-	2	H1	11.60	34.78	13.94	-	3/64	-
1	64	72	-	2	H1	10.78	32.32	13.12	53	53	-
2	56	64	-	3	H2	8.82	26.46	11.18	50	50	-
3	48	56	-	3	H2	7.18	21.56	9.54	47	45	-
4	40	48	36	3	H2	5.66	18.90	8.00	43	44	42
5	40	44	-	3	H2	5.66	16.96	8.00	38	37	-
6	32	40	-	3	H3	4.24	12.74	6.48	36	33	-
8	32	36	-	4	H3	4.58	13.74	8.68	29	29	-
10	24	32	-	4	H3	4.58	13.74	8.68	25	21	-
12	24	28	-	4	H3	6.14	18.40	10.36	16	14	-
1/4	20	28	-	4	H3	4.80	14.36	9.02	7	3	-
5/16	18	24	-	4	H3	6.30	18.90	12.08	"F"	"I"	-
3/8	16	24	-	4	H3	7.36	22.06	12.94	5/16	"Q"	-
7/16	14	20	-	4	H3	11.16	33.46	17.62	"U"	25/64	-
1/2	13	20	-	4	H3	12.78	38.30	19.68	27/64	29/64	-
9/16	12	18	-	4	H3	15.76	47.26	27.24	31/64	33/64	-
5/8	11	18	-	4	H3	19.70	59.10	30.84	17/32	37/64	-
11/16	-	-	11	4	H3	23.10	69.30	33.60	-	-	19/32
11/16	-	-	16	4	H3	23.10	69.30	33.60	-	-	5/8
3/4	10	16	-	4	H3	26.72	80.14	39.66	21/32	11/16	-
7/8	9	14	-	4	H4	36.94	110.82	55.04	49/64	13/16	-
1	8	12	14	4	H4	56.46	169.34	83.40	7/8	15/16	59/64
1-1/8	7	12	-	4	H4	84.28	252.82	138.04	63/64	1-3/64	-
1-1/4	7	12	-	4-6	H4	106.92	320.72	160.66	1-7/64	1-11/64	-
1-3/8	6	12	-	4-6	H4	134.42	403.26	188.16	1-7/32	1-19/64	-
1-1/2	6	12	-	4-6	H4	169.12	507.34	222.86	1-11/32	1-27/64	-
1-3/4	5	-	-	6	H4				1-9/16	-	-
2	4-1/2	-	-	6	H4	CALL	CALL	CALL	1-25/32	-	-
2-1/4	4-1/2	-	-	6	H6	FOR	FOR	FOR	2-1/32	-	-
2-1/2	4	-	-	6	H6	PRICE	PRICE	PRICE	2-1/4	-	-
3	4	-	-	6	H10				2-3/4	-	-
3-1/2	4	-	-	6	H10				3-1/4	-	-

PITCH DIAMETER LIMIT SYMBOLS

H: (High) Pitch Dia. is above basic. The number following "H" is the number of .0005" steps above the basic pitch diameter. Taps larger than 1" dia. have .0010" steps.

LIMITS FOR TAPS TO 1" DIAMETER

H1 = Basic to Basic + .0005"
H2 = Basic + .0005" to basic + .0010"
H3 = Basic + .0010" to basic + .0015"
H4 = Basic + .0015" to basic + .0020"

LIMITS FOR TAPS TO 1" DIAMETER

H4 = Basic + .001" to basic .002"

PACKAGING

#6 to 1/2 - 12 taps/box
9/16 to 1 - 3 taps/box
1-1/8 to 1-3/4 - 1 tap/tube

THREAD FORM SYMBOLS

NC	American National Coarse Thread Series
UNC	Unified Coarse Thread Series
NF	American National Fine Thread Series
UNF	Unified Fine Thread Series
NS	American National Thread - Special

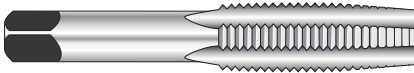
- Please specify Taper (T), Plug (P) or Bottoming (B) chamfer. Examples: SHT#06-32T, SHT#06-32P, SHT#06-32B.

HIGH SPEED STEEL DOUBLE, TRIPLE & QUAD LEAD TAPS

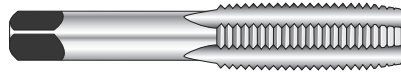
ICS USA

SPECIAL PURPOSE

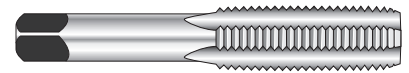
GROUND THREAD



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



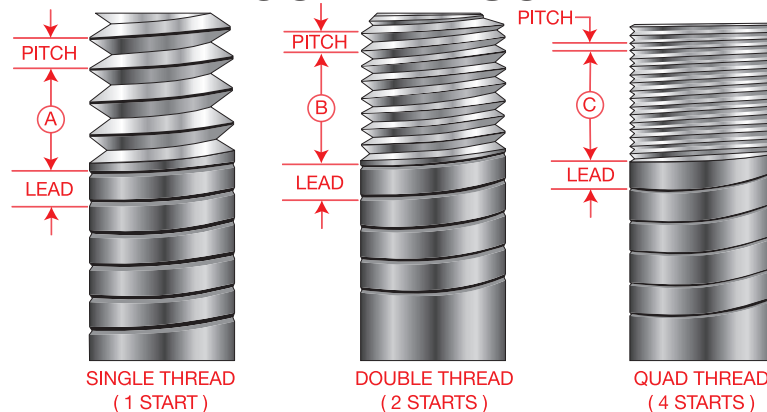
BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

Multiple Lead Taps are designed for use in adjusting mechanisms where a clockwise turn will make a linear distance movement 2, 3 or 4 times the distance of a single lead tap. Most standard and special sizes and different leads are available or can be manufactured. Please inquire for pricing. Multiple Lead Taps are also known as Multiple Start Taps.

SIZE	THREADS	NO. OF	LIMIT	ITEM NO.								
	PER INCH	FLUTES	NO.	DOUBLE LEAD			TRIPLE LEAD			QUAD LEAD		
NC - UNC Coarse Thread												
				BOTTOM	PLUG	TAPER	BOTTOM	PLUG	TAPER	BOTTOM	PLUG	TAPER
6	32	3	H3	HT2L#06-32B	HT2L#06-32P	HT2L#06-32T	HT3L#06-32B	HT3L#06-32P	HT3L#06-32T	HT4L#06-32B	HT4L#06-32P	HT4L#06-32T
8	32	4	H3	HT2L#08-32B	HT2L#08-32P	HT2L#08-32T	HT3L#08-32B	HT3L#08-32P	HT3L#08-32T	HT4L#08-32B	HT4L#08-32P	HT4L#08-32T
10	24	4	H3	HT2L#10-24B	HT2L#10-24P	HT2L#10-24T	HT3L#10-24B	HT3L#10-24P	HT3L#10-24T	HT4L#10-24B	HT4L#10-24P	HT4L#10-24T
12	24	4	H3	HT2L#12-24B	HT2L#12-24P	HT2L#12-24T	HT3L#12-24B	HT3L#12-24P	HT3L#12-24T	HT4L#12-24B	HT4L#12-24P	HT4L#12-24T
1/4	20	4	H3	HT2L016-20B	HT2L016-20P	HT2L016-20T	HT3L016-20B	HT3L016-20P	HT3L016-20T	HT4L016-20B	HT4L016-20P	HT4L016-20T
5/16	18	4	H3	HT2L020-18B	HT2L020-18P	HT2L020-18T	HT3L020-18B	HT3L020-18P	HT3L020-18T	HT4L020-18B	HT4L020-18P	HT4L020-18T
3/8	16	4	H3	HT2L024-16B	HT2L024-16P	HT2L024-16T	HT3L024-16B	HT3L024-16P	HT3L024-16T	HT4L024-16B	HT4L024-16P	HT4L024-16T
7/16	14	4	H3	HT2L028-14B	HT2L028-14P	HT2L028-14T	HT3L028-14B	HT3L028-14P	HT3L028-14T	HT4L028-14B	HT4L028-14P	HT4L028-14T
1/2	13	4	H3	HT2L032-13B	HT2L032-13P	HT2L032-13T	HT3L032-13B	HT3L032-13P	HT3L032-13T	HT4L032-13B	HT4L032-13P	HT4L032-13T
5/8	11	4	H3	HT2L040-11B	HT2L040-11P	HT2L040-11T	HT3L040-11B	HT3L040-11P	HT3L040-11T	HT4L040-11B	HT4L040-11P	HT4L040-11T
3/4	10	4	H3	HT2L048-10B	HT2L048-10P	HT2L048-10T	HT3L048-10B	HT3L048-10P	HT3L048-10T	HT4L048-10B	HT4L048-10P	HT4L048-10T
1	8	4	H4	HT2L100-08B	HT2L100-08P	HT2L100-08T	HT3L100-08B	HT3L100-08P	HT3L100-08T	HT4L100-08B	HT4L100-08P	HT4L100-08T
NF - UNF Fine Thread												
				BOTTOM	PLUG	TAPER	BOTTOM	PLUG	TAPER	BOTTOM	PLUG	TAPER
6	40	3	H3	HT2L#06-40B	HT2L#06-40P	HT2L#06-40T	HT3L#06-40B	HT3L#06-40P	HT3L#06-40T	HT4L#06-40B	HT4L#06-40P	HT4L#06-40T
8	36	4	H3	HT2L#08-36B	HT2L#08-36P	HT2L#08-36T	HT3L#08-36B	HT3L#08-36P	HT3L#08-36T	HT4L#08-36B	HT4L#08-36P	HT4L#08-36T
10	32	4	H3	HT2L#10-32B	HT2L#10-32P	HT2L#10-32T	HT3L#10-32B	HT3L#10-32P	HT3L#10-32T	HT4L#10-32B	HT4L#10-32P	HT4L#10-32T
12	28	4	H3	HT2L#12-28B	HT2L#12-28P	HT2L#12-28T	HT3L#12-28B	HT3L#12-28P	HT3L#12-28T	HT4L#12-28B	HT4L#12-28P	HT4L#12-28T
1/4	28	4	H3	HT2L016-28B	HT2L016-28P	HT2L016-28T	HT3L016-28B	HT3L016-28P	HT3L016-28T	HT4L016-28B	HT4L016-28P	HT4L016-28T
5/16	24	4	H3	HT2L020-24B	HT2L020-24P	HT2L020-24T	HT3L020-24B	HT3L020-24P	HT3L020-24T	HT4L020-24B	HT4L020-24P	HT4L020-24T
3/8	24	4	H3	HT2L024-24B	HT2L024-24P	HT2L024-24T	HT3L024-24B	HT3L024-24P	HT3L024-24T	HT4L024-24B	HT4L024-24P	HT4L024-24T
7/16	20	4	H3	HT2L028-20B	HT2L028-20P	HT2L028-20T	HT3L028-20B	HT3L028-20P	HT3L028-20T	HT4L028-20B	HT4L028-20P	HT4L028-20T
1/2	20	4	H3	HT2L032-20B	HT2L032-20P	HT2L032-20T	HT3L032-20B	HT3L032-20P	HT3L032-20T	HT4L032-20B	HT4L032-20P	HT4L032-20T
5/8	18	4	H3	HT2L040-18B	HT2L040-18P	HT2L040-18T	HT3L040-18B	HT3L040-18P	HT3L040-18T	HT4L040-18B	HT4L040-18P	HT4L040-18T
3/4	16	4	H3	HT2L048-16B	HT2L048-16P	HT2L048-16T	HT3L048-16B	HT3L048-16P	HT3L048-16T	HT4L048-16B	HT4L048-16P	HT4L048-16T
1	12	4	H4	HT2L100-12B	HT2L100-12P	HT2L100-12T	HT3L100-12B	HT3L100-12P	HT3L100-12T	HT4L100-12B	HT4L100-12P	HT4L100-12T

CALL FOR PRICING

LEAD TAP COMPARISON EXAMPLE



Multiple Lead Taps are also known as Multiple Start Taps.

NOTES

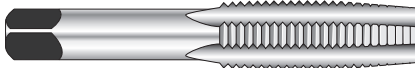
- 1) Small multiple lead taps should be double checked that they are centered in the hole.
- 2) Use a long lead chamfer and low speed to reduce pressure.
- 3) Consider doing threading in two steps using a roughing and finisher tap.

HIGH SPEED STEEL LEFT HAND TAPS

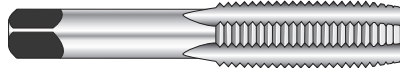
ICS USA

SPECIAL PURPOSE

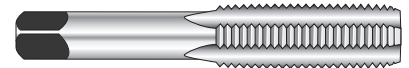
GROUND THREAD



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

High Speed Steel Left Hand Taps with straight flutes are designed to cut threads with a left hand rotation and are commonly used in applications where left hand studs and fasteners are needed. They can be used by hand or in production machines where ground thread accuracy and performance are required. They are suitable for tapping most materials in through or blind holes.

						PRICE	
SIZE	THREADS PER INCH			NO. OF FLUTES	LIMIT NO.	TAPER PLUG or BOTTOM	TAPER, PLUG & BOTTOM 3 PC SET
	NC UNC	NF UNF	NS			SHTL	SHTLS
6	32	-	-	3	H3	7.42	22.26
8	32	-	-	4	H3	7.42	22.26
10	24	32	-	4	H3	7.42	22.26
1/4	20	28	-	4	H3	7.70	23.10
5/16	18	24	-	4	H3	8.62	25.86
3/8	16	24	-	4	H3	10.38	31.14
7/16	14	20	-	4	H3	15.36	46.08
1/2	13	20	-	4	H3	18.06	54.18
9/16	12	18	-	4	H3	23.46	70.38

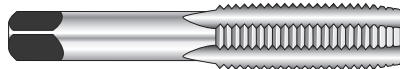
						PRICE	
SIZE	THREADS PER INCH			NO. OF FLUTES	LIMIT NO.	TAPER PLUG or BOTTOM	TAPER, PLUG & BOTTOM 3 PC SET
	NC UNC	NF UNF	NS			SHTL	SHTLS
5/8	11	18	-	4	H3	29.06	87.18
3/4	10	16	-	4	H3	40.70	122.10
7/8	9	14	12	4	H4	55.80	167.40
1	8	12	14	4	H4	76.52	229.56
1-1/8	7	12	8	4	H4	111.50	-
1-1/4	7	12	8	4-6	H4	149.30	-
1-3/8	6	12	8	4-6	H4	184.94	-
1-1/2	6	12	8	4-6	H4	219.68	-
1-3/4	-	-	8	6	H4	239.86	-

HIGH SPEED STEEL +.005 OVERSIZE HAND TAPS

ICS USA

SPECIAL PURPOSE

GROUND THREAD



**PLUG
CHAMFER**

High Speed Steel +.005 Oversize Hand Taps are designed to be used where a part will be plated or heat treated after tapping or where a loss of size is expected. They produce threads with a pitch diameter that is .005 larger than the basic pitch diameter. They are suitable for most materials in through or blind holes, especially plastics and synthetic resins. They are also referred to as Pre-Plate Taps.

THREADS PER INCH					PRICE
SIZE	NC UNC	NF UNF	NS	NO. OF FLUTES	HSS SHTO
6	32	40	-	3	7.34
8	32	36	-	4	7.34
10	24	32	-	4	7.34
1/4	20	28	-	4	7.34
5/16	18	24	-	4	8.62
3/8	16	24	-	4	10.44
7/16	14	20	-	4	17.40
1/2	13	20	-	4	18.08

THREADS PER INCH					PRICE
SIZE	NC UNC	NF UNF	NS	NO. OF FLUTES	HSS SHTO
5/8	11	18	-	4	35.46
3/4	10	16	-	4	49.66
7/8	9	14	-	4	58.94
1	8	12	14	4	78.54
1-1/8	7	12	-	4-6	101.40
1-1/4	7	12	-	4-6	128.84
1-3/8	6	12	-	4-6	158.40
1-1/2	6	12	-	4-6	186.04

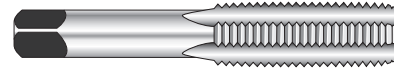
HIGH SPEED STEEL SPECIAL OVERSIZE HAND TAPS

ICS USA

SPECIAL PURPOSE

GROUND THREAD

**STEAM HOMO
THREAD PROTECTION**



**SPECIAL BOTTOM
CHAMFER**

Special Oversize Hand Taps are used for tough dirty jobs. Profiled (flame cut) parts, with scale, and punched holes with burs. The parts are subsequently shot-blasted and hot dip galvanized. The amount of oversize is to allow for heavy zinc deposition in the threads. They are also referred to as Pre-Plate Taps.

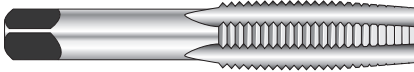
THREADS PER INCH				PRICE
SIZE	PER INCH	NO. OF FLUTES	DECIMAL OVERSIZE	HSS OHT
1/4	20	4	+.015	-
5/16	18	4	+.015	CALL FOR PRICE
3/8	16	4	+.015	CALL FOR PRICE
1/2	13	4	+.020	-
5/8	11	4	+.020	-
3/4	10	4	+.020	-

THREADS PER INCH				PRICE
SIZE	PER INCH	NO. OF FLUTES	DECIMAL OVERSIZE	HSS OHT
1	8	4	+.020	-
1-1/8	7	4	+.030	CALL FOR PRICE
1-1/4	7	4	+.030	CALL FOR PRICE
1-3/8	6	6	+.030	-
1-1/2	6	6	+.030	-

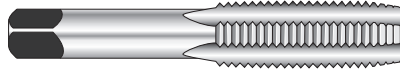
* Inquire for special oversize hand taps not listed.

* Price quoted upon request.

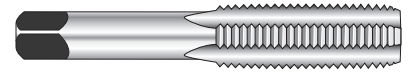
HIGH SPEED STEEL EIGHT PITCH HAND TAPS

ICS **WIS**
SPECIAL PURPOSE
GROUND THREAD


TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side

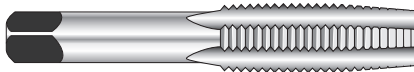


BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

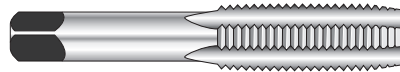
Eight Pitch Hand Taps are classified as coarse pitch series taps. They were originally designed for threading large diameter, high pressure joint bolts and nuts and are now used mainly by oil related industries, utilities, and general construction.

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.			PRICE
				TAPER	PLUG	BOTTOMING	
1-1/16	8	4	H4	STHT104-08T	STHT104-08P	STHT104-08B	89.60
1-1/8	8	4	H4	STHT108-08T	STHT108-08P	STHT108-08B	103.18
1-3/16	8	4	H4	STHT112-08T	STHT112-08P	STHT112-08B	124.32
1-1/4	8	4	H4	STHT116-08T	STHT116-08P	STHT116-08B	132.20
1-5/16	8	4	H4	STHT120-08T	STHT120-08P	STHT120-08B	167.74
1-3/8	8	4	H4	STHT124-08T	STHT124-08P	STHT124-08B	167.74
1-7/16	8	4	H5	STHT128-08T	STHT128-08P	STHT128-08B	194.20
1-1/2	8	4	H4	STHT132-08T	STHT132-08P	STHT132-08B	192.84
1-5/8	8	6	H6	STHT140-08T	STHT140-08P	STHT140-08B	221.44
1-3/4	8	6	H6	STHT148-08T	STHT148-08P	STHT148-08B	285.36
1-7/8	8	6	H6	STHT156-08T	STHT156-08P	STHT156-08B	390.62
2	8	6	H6	STHT200-08T	STHT200-08P	STHT200-08B	-
2-1/8	8	6	H6	STHT208-08T	STHT208-08P	STHT208-08B	-
2-1/4	8	6	H6	STHT216-08T	STHT216-08P	STHT216-08B	-
2-3/8	8	6	H6	STHT224-08T	STHT224-08P	STHT224-08B	-
2-1/2	8	6	H8	STHT232-08T	STHT232-08P	STHT232-08B	-
2-5/8	8	6	H8	STHT240-08T	STHT240-08P	STHT240-08B	-
2-3/4	8	6	H8	STHT248-08T	STHT248-08P	STHT248-08B	CALL FOR PRICE
2-7/8	8	6	H8	STHT256-08T	STHT256-08P	STHT256-08B	-
3	8	6	H8	STHT300-08T	STHT300-08P	STHT300-08B	-
3-1/8	8	6	H8	STHT308-08T	STHT308-08P	STHT308-08B	-
3-1/4	8	6	H8	STHT316-08T	STHT316-08P	STHT316-08B	-
3-3/8	8	6	H8	STHT324-08T	STHT324-08P	STHT324-08B	-
3-1/2	8	6	H8	STHT332-08T	STHT332-08P	STHT332-08B	-
3-3/4	8	6	H8	STHT348-08T	STHT348-08P	STHT348-08B	-
4	8	6	H10	STHT400-08T	STHT400-08P	STHT400-08B	-

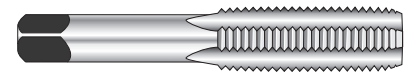
HIGH SPEED STEEL TEN PITCH SUCKER ROD HAND TAPS

ICS **WIS**
SPECIAL PURPOSE
GROUND THREAD


TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

High Speed Steel Ten Pitch Sucker Rod Hand Taps were designed for use by oil pumping stations to thread sucker rod and other applications requiring quick assembly. They are made specifically for this purpose and should not be considered the same as regular ten pitch intermediate series taps.

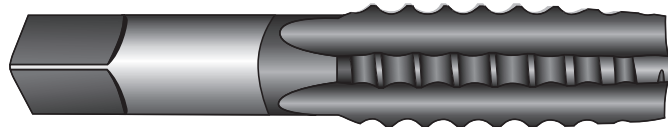
SIZE	THREADS PER INCH	SIZE OF ROD	NO. OF FLUTES	LIMIT NO.	ITEM NO.			PRICE
					TAPER	PLUG	BOTTOMING	
3/4	10	1/2	4	H3	SRHT048-10T	SRHT048-10P	SRHT048-10B	-
15/16	10	5/8	4	H4	SRHT060-10T	SRHT060-10P	SRHT060-10B	CALL FOR PRICE
1-1/16	10	3/4	4	H5	SRHT104-10T	SRHT104-10P	SRHT104-10B	-
1-3/16	10	7/8	4	H5	SRHT112-10T	SRHT112-10P	SRHT112-10B	-
1-3/8	10	1	4	H5	SRHT124-10T	SRHT124-10P	SRHT124-10B	-
1-9/16	10	1-1/8	6	H5	SRHT136-10T	SRHT136-10P	SRHT136-10B	-

HIGH SPEED STEEL COIL ROD THREAD TAPS

ICS USA

SPECIAL PURPOSE

GROUND THREAD

EXTRA
LONG LIFETiAlN
COATED

High Speed Steel Coil Rod Thread Taps are designed for threading or rethreading holes for coil threaded rod used in concrete forming applications. These taps are coated with Titanium Aluminum Nitride (TiAlN) to last up to 10 times longer than uncoated taps.

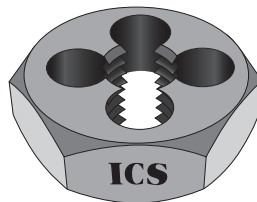
NOMINAL THREAD SIZE	SIZE OF COIL ROD	NO. OF FLUTES	TAP DRILL SIZE	ITEM NO.	PRICE
3/8 - 7	3/8	2	21/64	CRTT024-07	-
1/2 - 6	1/2	3-4	7/16	CRTT032-06	-
3/4 - 4-1/2	3/4	4	21/32	CRTT048-04.5	CALL
1 - 3-1/2	1	4	7/8	CRTT100-03.5	PRICE
1-1/4 - 3-1/2	1-1/4	4	1-1/8	CRTT116-03.5	-

HIGH SPEED STEEL COIL ROD THREADING HEX DIES

ICS USA

SPECIAL PURPOSE

GROUND THREAD



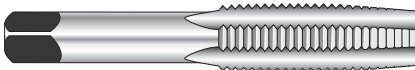
High Speed Steel Coil Rod Thread Hexagon Dies are of heavy duty extra thick construction for the rethreading and threading of coil thread rods, bolts and studs.

SIZE OF COIL ROD	THREAD SIZE	DIAMETER ACROSS FLATS	DIE THICKNESS	ITEM NO.	PRICE
1/2	1/2 - 6	1-1/16	.800	CRTTHTD032-06	CALL FOR PRICE
3/4	3/4 - 4-1/2	1-7/16	1.000	CRTTHTD048-04.5	
1	1 - 3-1/2	1-13/16	1.200	CRTTHTD100-03.5	
1-1/4	1-1/4 - 3-1/2	2-3/16	1.300	CRTTHTD116-03.5	

HIGH SPEED STEEL SPECIAL THREAD HAND TAPS

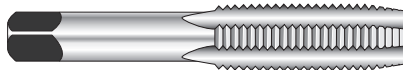
TT-10

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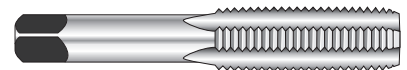
TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side

SPECIAL PURPOSE



PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side

GROUND THREAD



BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

Special Thread Hand Taps are designed for applications where standard coarse, fine, or extra-fine thread taps are not applicable or where design considerations require non-standard pitches. Most sizes are available in taper, bottoming or plug chamfer. When taper or bottoming chamfer taps are not available in size ordered, plug chamfer taps will be substituted to complete order.

SIZES #6 - 36 to 11/16" - 27

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
#6	36	BOTTOM	STHT#06-36B	10.30
#6	36	PLUG	STHT#06-36P	10.30
#6	36	TAPER	STHT#06-36T	10.30
#6	48	BOTTOM	STHT#06-48B	10.30
#6	48	PLUG	STHT#06-48P	10.30
#6	48	TAPER	STHT#06-48T	10.30
#7	36	BOTTOM	STHT#07-36B	10.30
#7	36	PLUG	STHT#07-36P	10.30
#7	36	TAPER	STHT#07-36T	10.30
#7	40	BOTTOM	STHT#07-40B	10.30
#7	40	PLUG	STHT#07-40P	10.30
#7	40	TAPER	STHT#07-40T	10.30
#7	48	BOTTOM	STHT#07-48B	10.30
#7	48	PLUG	STHT#07-48P	10.30
#7	48	TAPER	STHT#07-48T	10.30
#8	24	BOTTOM	STHT#08-24B	10.30
#8	24	PLUG	STHT#08-24P	10.30
#8	24	TAPER	STHT#08-24T	10.30
#8	40	BOTTOM	STHT#08-40B	10.30
#8	40	PLUG	STHT#08-40P	10.30
#8	40	TAPER	STHT#08-40T	10.30
#8	48	BOTTOM	STHT#08-48B	10.30
#8	48	PLUG	STHT#08-48P	10.30
#8	48	TAPER	STHT#08-48T	10.30
#10	28	BOTTOM	STHT#10-28B	10.30
#10	28	PLUG	STHT#10-28P	10.30
#10	28	TAPER	STHT#10-28T	10.30
#10	36	BOTTOM	STHT#10-36B	10.30
#10	36	PLUG	STHT#10-36P	10.30
#10	36	TAPER	STHT#10-36T	10.30
#10	40	BOTTOM	STHT#10-40B	10.30
#10	40	PLUG	STHT#10-40P	10.30
#10	40	TAPER	STHT#10-40T	10.30
#10	48	BOTTOM	STHT#10-48B	10.30
#10	48	PLUG	STHT#10-48P	10.30
#10	48	TAPER	STHT#10-48T	10.30
#12	32	BOTTOM	STHT#12-32B	10.30
#12	32	PLUG	STHT#12-32P	10.30
#12	32	TAPER	STHT#12-32T	10.30
#12	36	BOTTOM	STHT#12-36B	10.30
#12	36	PLUG	STHT#12-36P	10.30
#12	36	TAPER	STHT#12-36T	10.30
#12	40	BOTTOM	STHT#12-40B	10.30
#12	40	PLUG	STHT#12-40P	10.30
#12	40	TAPER	STHT#12-40T	10.30
#12	48	BOTTOM	STHT#12-48B	10.30
#12	48	PLUG	STHT#12-48P	10.30
#12	48	TAPER	STHT#12-48T	10.30
1/4	24	BOTTOM	STHT016-24B	8.92
1/4	24	PLUG	STHT016-24P	8.92
1/4	24	TAPER	STHT016-24T	8.92
1/4	26	BOTTOM	STHT016-26B	8.92
1/4	26	PLUG	STHT016-26P	8.92
1/4	26	TAPER	STHT016-26T	8.92
1/4	27	BOTTOM	STHT016-27B	8.92
1/4	27	PLUG	STHT016-27P	8.92
1/4	32	BOTTOM	STHT016-32B	8.92
1/4	32	PLUG	STHT016-32P	8.92
1/4	32	TAPER	STHT016-32T	8.92
1/4	36	BOTTOM	STHT016-36B	8.92
1/4	36	PLUG	STHT016-36P	8.92
1/4	36	TAPER	STHT016-36T	8.92
1/4	40	BOTTOM	STHT016-40B	8.92
1/4	40	PLUG	STHT016-40P	8.92
1/4	40	TAPER	STHT016-40T	8.92
1/4	48	BOTTOM	STHT016-48B	8.92
1/4	48	PLUG	STHT016-48P	8.92
1/4	48	TAPER	STHT016-48T	8.92
9/32	27	PLUG	STHT018-27P	13.12
9/32	32	BOTTOM	STHT018-32B	13.12
9/32	32	PLUG	STHT018-32P	13.12
9/32	32	TAPER	STHT018-32T	13.12
9/32	40	BOTTOM	STHT018-40B	13.12
9/32	40	PLUG	STHT018-40P	13.12
9/32	40	TAPER	STHT018-40T	13.12

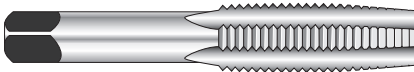
SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
5/16	20	BOTTOM	STHT020-20B	10.42
5/16	20	PLUG	STHT020-20P	10.42
5/16	20	TAPER	STHT020-20T	10.42
5/16	22	BOTTOM	STHT020-22B	10.42
5/16	22	PLUG	STHT020-22P	10.42
5/16	22	TAPER	STHT020-22T	10.42
5/16	27	PLUG	STHT020-27P	CALL
5/16	32	BOTTOM	STHT020-32B	10.42
5/16	32	PLUG	STHT020-32P	10.42
5/16	32	TAPER	STHT020-32T	10.42
5/16	36	BOTTOM	STHT020-36B	10.42
5/16	36	PLUG	STHT020-36P	10.42
5/16	36	TAPER	STHT020-36T	10.42
5/16	40	BOTTOM	STHT020-40B	10.42
5/16	40	PLUG	STHT020-40P	10.42
5/16	40	TAPER	STHT020-40T	10.42
11/32	32	BOTTOM	STHT022-32B	10.42
11/32	32	PLUG	STHT022-32P	10.42
11/32	32	TAPER	STHT022-32T	10.42
3/8	14	BOTTOM	STHT024-14B	9.44
3/8	14	PLUG	STHT024-14P	9.44
3/8	14	TAPER	STHT024-14T	9.44
3/8	18	BOTTOM	STHT024-18B	9.44
3/8	18	PLUG	STHT024-18P	9.44
3/8	18	TAPER	STHT024-18T	9.44
3/8	20	BOTTOM	STHT024-20B	9.44
3/8	20	PLUG	STHT024-20P	9.44
3/8	20	TAPER	STHT024-20T	9.44
3/8	28	BOTTOM	STHT024-28B	9.44
3/8	28	PLUG	STHT024-28P	9.44
3/8	28	TAPER	STHT024-28T	9.44
3/8	32	BOTTOM	STHT024-32B	9.44
3/8	32	PLUG	STHT024-32P	9.44
3/8	32	TAPER	STHT024-32T	9.44
7/16	24	BOTTOM	STHT028-24B	14.24
7/16	24	PLUG	STHT028-24P	14.24
7/16	24	TAPER	STHT028-24T	14.24
7/16	27	BOTTOM	STHT028-27B	14.24
7/16	27	PLUG	STHT028-27P	14.24
7/16	27	TAPER	STHT028-27T	14.24
7/16	28	BOTTOM	STHT028-28B	14.24
7/16	28	PLUG	STHT028-28P	14.24
7/16	28	TAPER	STHT028-28T	14.24
7/16	32	BOTTOM	STHT028-32B	14.24
7/16	32	PLUG	STHT028-32P	14.24
7/16	32	TAPER	STHT028-32T	14.24
7/16	40	BOTTOM	STHT028-40B	CALL
7/16	40	PLUG	STHT028-40P	FOR
7/16	40	TAPER	STHT028-40T	PRICE
15/32	32	BOTTOM	STHT030-32B	18.20
15/32	32	PLUG	STHT030-32P	18.20
15/32	32	TAPER	STHT030-32T	18.20
1/2	12	BOTTOM	STHT032-12B	18.20
1/2	12	PLUG	STHT032-12P	18.20
1/2	12	TAPER	STHT032-12T	18.20
1/2	14	BOTTOM	STHT032-14B	18.20
1/2	14	PLUG	STHT032-14P	18.20
1/2	14	TAPER	STHT032-14T	18.20
1/2	16	BOTTOM	STHT032-16B	18.20
1/2	16	PLUG	STHT032-16P	18.20
1/2	16	TAPER	STHT032-16T	18.20
1/2	18	BOTTOM	STHT032-18B	18.20
1/2	18	PLUG	STHT032-18P	18.20
1/2	18	TAPER	STHT032-18T	18.20
1/2	24	BOTTOM	STHT032-24B	18.20
1/2	24	PLUG	STHT032-24P	18.20
1/2	24	TAPER	STHT032-24T	18.20
1/2	27	BOTTOM	STHT032-27B	18.20
1/2	27	PLUG	STHT032-27P	18.20
1/2	27	TAPER	STHT032-27T	18.20
1/2	28	BOTTOM	STHT032-28B	18.20
1/2	28	PLUG	STHT032-28P	18.20
1/2	28	TAPER	STHT032-28T	18.20
1/2	32	BOTTOM	STHT032-32B	18.20
1/2	32	PLUG	STHT032-32P	18.20

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
1/2	32	TAPER	STHT032-32T	18.20
1/2	40	BOTTOM	STHT032-40B	18.20
1/2	40	PLUG	STHT032-40P	18.20
1/2	40	TAPER	STHT032-40T	18.20
9/16	16	BOTTOM	STHT036-16B	21.84
9/16	16	PLUG	STHT036-16P	21.84
9/16	16	TAPER	STHT036-16T	21.84
9/16	20	BOTTOM	STHT036-20B	21.84
9/16	20	PLUG	STHT036-20P	21.84
9/16	20	TAPER	STHT036-20T	21.84
9/16	24	BOTTOM	STHT036-24B	21.84
9/16	24	PLUG	STHT036-24P	21.84
9/16	24	TAPER	STHT036-24T	21.84
9/16	27	BOTTOM	STHT036-27B	21.84
9/16	27	PLUG	STHT036-27P	21.84
9/16	27	TAPER	STHT036-27T	21.84
9/16	28	BOTTOM	STHT036-28B	21.84
9/16	28	PLUG	STHT036-28P	21.84
9/16	28	TAPER	STHT036-28T	21.84
9/16	30	BOTTOM	STHT036-30B	21.84
9/16	30	PLUG	STHT036-30P	21.84
9/16	30	TAPER	STHT036-30T	21.84
9/16	32	BOTTOM	STHT036-32B	21.84
9/16	32	PLUG	STHT036-32P	21.84
9/16	32	TAPER	STHT036-32T	21.84
9/16	40	BOTTOM	STHT036-40B	21.84
9/16	40	PLUG	STHT036-40P	21.84
9/16	40	TAPER	STHT036-40T	21.84
5/8	12	BOTTOM	STHT040-12B	25.52
5/8	12	PLUG	STHT040-12P	25.52
5/8	12	TAPER	STHT040-12T	25.52
5/8	14	BOTTOM	STHT040-14B	25.52
5/8	14	PLUG	STHT040-14P	25.52
5/8	14	TAPER	STHT040-14T	25.52
5/8	16	BOTTOM	STHT040-16B	25.52
5/8	16	PLUG	STHT040-16P	25.52
5/8	16	TAPER	STHT040-16T	25.52
5/8	20	BOTTOM	STHT040-20B	25.52
5/8	20	PLUG	STHT040-20P	25.52
5/8	20	TAPER	STHT040-20T	25.52
5/8	24	BOTTOM	STHT040-24B	25.52
5/8	24	PLUG	STHT040-24P	25.52
5/8	24	TAPER	STHT040-24T	25.52
5/8	26	BOTTOM	STHT040-26B	25.52
5/8	26	PLUG	STHT040-26P	25.52
5/8	26	TAPER	STHT040-26T	25.52
5/8	27	BOTTOM	STHT040-27B	25.52
5/8	27	PLUG	STHT040-27P	25.52
5/8	27	TAPER	STHT040-27T	25.52
5/8	28	BOTTOM	STHT040-28B	25.52
5/8	28	PLUG	STHT040-28P	25.52
5/8	28	TAPER	STHT040-28T	25.52
5/8	32	BOTTOM	STHT040-32B	25.52
5/8	32	PLUG	STHT040-32P	25.52
5/8	32	TAPER	STHT040-32T	25.52
5/8	36	BOTTOM	STHT040-36B	25.52
5/8	36	PLUG	STHT040-36P	25.52
5/8	36	TAPER	STHT040-36T	25.52
5/8	40	BOTTOM	STHT040-40B	25.52
5/8	40	PLUG	STHT040-40P	25.52
5/8	40	TAPER	STHT040-40T	25.52
11/16	12	BOTTOM	STHT044-12B	35.18
11/16	12	PLUG	STHT044-12P	35.18
11/16	12	TAPER	STHT044-12T	35.18
11/16	18	BOTTOM	STHT044-18B	35.18
11/16	18	PLUG	STHT044-18P	35.18
11/16	18	TAPER	STHT044-18T	35.18
11/16	20	BOTTOM	STHT044-20B	35.18
11/16	20	PLUG	STHT044-20P	35.18
11/16	20	TAPER	STHT044-20T	35.18
11/16	24	BOTTOM	STHT044-24B	35.18
11/16	24	PLUG	STHT044-24P	35.18
11/16	24	TAPER	STHT044-24T	35.18
11/16	27	BOTTOM	STHT044-27B	35.18
11/16	27	PLUG	STHT044-27P	35.18

HIGH SPEED STEEL SPECIAL THREAD HAND TAPS

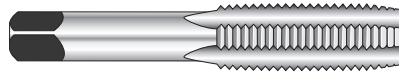
ICS

WIS



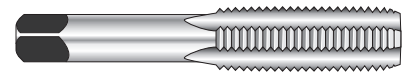
TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side

SPECIAL PURPOSE



PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side

GROUND THREAD



BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

SIZES 11/16" - 27 to 1-3/8" - 14

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
11/16	27	TAPER	STHT044-27T	35.18
11/16	32	BOTTOM	STHT044-32B	35.18
11/16	32	PLUG	STHT044-32P	35.18
11/16	32	TAPER	STHT044-32T	35.18
3/4	11-1/2	BOTTOM	STHT048-11.5B	CALL
3/4	12	BOTTOM	STHT048-12B	42.48
3/4	12	PLUG	STHT048-12P	42.48
3/4	12	TAPER	STHT048-12T	42.48
3/4	14	BOTTOM	STHT048-14B	42.48
3/4	14	PLUG	STHT048-14P	42.48
3/4	14	TAPER	STHT048-14T	42.48
3/4	18	BOTTOM	STHT048-18B	42.48
3/4	18	PLUG	STHT048-18P	42.48
3/4	18	TAPER	STHT048-18T	42.48
3/4	20	BOTTOM	STHT048-20B	42.48
3/4	20	PLUG	STHT048-20P	42.48
3/4	20	TAPER	STHT048-20T	42.48
3/4	24	BOTTOM	STHT048-24B	42.48
3/4	24	PLUG	STHT048-24P	42.48
3/4	24	TAPER	STHT048-24T	42.48
3/4	26	BOTTOM	STHT048-26B	42.48
3/4	26	PLUG	STHT048-26P	42.48
3/4	26	TAPER	STHT048-26T	42.48
3/4	27	BOTTOM	STHT048-27B	42.48
3/4	27	PLUG	STHT048-27P	42.48
3/4	27	TAPER	STHT048-27T	42.48
3/4	28	BOTTOM	STHT048-28B	42.48
3/4	28	PLUG	STHT048-28P	42.48
3/4	28	TAPER	STHT048-28T	42.48
3/4	32	BOTTOM	STHT048-32B	42.48
3/4	32	PLUG	STHT048-32P	42.48
3/4	32	TAPER	STHT048-32T	42.48
3/4	36	BOTTOM	STHT048-36B	42.48
3/4	36	PLUG	STHT048-36P	42.48
3/4	36	TAPER	STHT048-36T	42.48
13/16	12	BOTTOM	STHT052-12B	52.18
13/16	12	PLUG	STHT052-12P	52.18
13/16	12	TAPER	STHT052-12T	52.18
13/16	14	BOTTOM	STHT052-14B	52.18
13/16	14	PLUG	STHT052-14P	52.18
13/16	14	TAPER	STHT052-14T	52.18
13/16	16	BOTTOM	STHT052-16B	52.18
13/16	16	PLUG	STHT052-16P	52.18
13/16	16	TAPER	STHT052-16T	52.18
13/16	18	BOTTOM	STHT052-18B	52.18
13/16	18	PLUG	STHT052-18P	52.18
13/16	18	TAPER	STHT052-18T	52.18
13/16	20	BOTTOM	STHT052-20B	52.18
13/16	20	PLUG	STHT052-20P	52.18
13/16	20	TAPER	STHT052-20T	52.18
13/16	24	BOTTOM	STHT052-24B	52.18
13/16	24	PLUG	STHT052-24P	52.18
13/16	24	TAPER	STHT052-24T	52.18
13/16	26	BOTTOM	STHT052-26B	52.18
13/16	26	PLUG	STHT052-26P	52.18
13/16	26	TAPER	STHT052-26T	52.18
13/16	28	BOTTOM	STHT052-28B	52.18
13/16	28	PLUG	STHT052-28P	52.18
13/16	28	TAPER	STHT052-28T	52.18
13/16	32	BOTTOM	STHT052-32B	52.18
13/16	32	PLUG	STHT052-32P	52.18
13/16	32	TAPER	STHT052-32T	52.18
13/16	36	BOTTOM	STHT052-36B	52.18
13/16	36	PLUG	STHT052-36P	52.18
13/16	36	TAPER	STHT052-36T	52.18
7/8	12	BOTTOM	STHT056-12B	60.70
7/8	12	PLUG	STHT056-12P	60.70
7/8	12	TAPER	STHT056-12T	60.70
7/8	16	BOTTOM	STHT056-16B	60.70
7/8	16	PLUG	STHT056-16P	60.70
7/8	16	TAPER	STHT056-16T	60.70
7/8	18	BOTTOM	STHT056-18B	60.70
7/8	18	PLUG	STHT056-18P	60.70
7/8	18	TAPER	STHT056-18T	60.70
7/8	20	BOTTOM	STHT056-20B	60.70

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
7/8	20	PLUG	STHT056-20P	60.70
7/8	20	TAPER	STHT056-20T	60.70
7/8	24	BOTTOM	STHT056-24B	60.70
7/8	24	PLUG	STHT056-24P	60.70
7/8	24	TAPER	STHT056-24T	60.70
7/8	27	BOTTOM	STHT056-27B	60.70
7/8	27	PLUG	STHT056-27P	60.70
7/8	27	TAPER	STHT056-27T	60.70
7/8	32	BOTTOM	STHT056-32B	60.70
7/8	32	PLUG	STHT056-32P	60.70
7/8	32	TAPER	STHT056-32T	60.70
7/8	40	BOTTOM	STHT056-40B	60.70
7/8	40	PLUG	STHT056-40P	60.70
7/8	40	TAPER	STHT056-40T	60.70
15/16	12	BOTTOM	STHT060-12B	64.32
15/16	12	PLUG	STHT060-12P	64.32
15/16	12	TAPER	STHT060-12T	64.32
15/16	14	BOTTOM	STHT060-14B	CALL
15/16	14	PLUG	STHT060-14P	FOR
15/16	14	TAPER	STHT060-14T	PRICE
15/16	16	BOTTOM	STHT060-16B	64.32
15/16	16	PLUG	STHT060-16P	64.32
15/16	16	TAPER	STHT060-16T	64.32
15/16	18	BOTTOM	STHT060-18B	64.32
15/16	18	PLUG	STHT060-18P	64.32
15/16	18	TAPER	STHT060-18T	64.32
15/16	20	BOTTOM	STHT060-20B	64.32
15/16	20	PLUG	STHT060-20P	64.32
15/16	20	TAPER	STHT060-20T	64.32
15/16	24	BOTTOM	STHT060-24B	64.32
15/16	24	PLUG	STHT060-24P	64.32
15/16	24	TAPER	STHT060-24T	64.32
15/16	27	BOTTOM	STHT060-27B	64.32
15/16	27	PLUG	STHT060-27P	64.32
15/16	27	TAPER	STHT060-27T	64.32
15/16	32	BOTTOM	STHT060-32B	64.32
15/16	32	PLUG	STHT060-32P	64.32
15/16	32	TAPER	STHT060-32T	64.32
1	16	BOTTOM	STHT100-16B	78.88
1	16	PLUG	STHT100-16P	78.88
1	16	TAPER	STHT100-16T	78.88
1	18	BOTTOM	STHT100-18B	78.88
1	18	PLUG	STHT100-18P	78.88
1	18	TAPER	STHT100-18T	78.88
1	20	BOTTOM	STHT100-20B	78.88
1	20	PLUG	STHT100-20P	78.88
1	20	TAPER	STHT100-20T	78.88
1	24	BOTTOM	STHT100-24B	78.88
1	24	PLUG	STHT100-24P	78.88
1	24	TAPER	STHT100-24T	78.88
1	26	BOTTOM	STHT100-26B	78.88
1	26	PLUG	STHT100-26P	78.88
1	26	TAPER	STHT100-26T	78.88
1	27	BOTTOM	STHT100-27B	78.88
1	27	PLUG	STHT100-27P	78.88
1	27	TAPER	STHT100-27T	78.88
1	28	BOTTOM	STHT100-28B	78.88
1	28	PLUG	STHT100-28P	78.88
1	28	TAPER	STHT100-28T	78.88
1	32	BOTTOM	STHT100-32B	78.88
1	32	PLUG	STHT100-32P	78.88
1	32	TAPER	STHT100-32T	78.88
1	36	BOTTOM	STHT100-36B	78.88
1	36	PLUG	STHT100-36P	78.88
1	36	TAPER	STHT100-36T	78.88
1	40	BOTTOM	STHT100-40B	78.88
1	40	PLUG	STHT100-40P	78.88
1	40	TAPER	STHT100-40T	78.88
1-1/16	12	BOTTOM	STHT104-12B	89.60
1-1/16	12	PLUG	STHT104-12P	89.60
1-1/16	12	TAPER	STHT104-12T	89.60
1-1/8	14	BOTTOM	STHT108-14B	103.18
1-1/8	14	PLUG	STHT108-14P	103.18
1-1/8	14	TAPER	STHT108-14T	103.18
1-1/8	16	BOTTOM	STHT108-16B	103.18

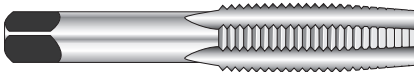
SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
1-1/8	16	PLUG	STHT108-16P	103.18
1-1/8	16	TAPER	STHT108-16T	103.18
1-1/8	18	BOTTOM	STHT108-18B	103.18
1-1/8	18	PLUG	STHT108-18P	103.18
1-1/8	18	TAPER	STHT108-18T	103.18
1-1/8	20	BOTTOM	STHT108-20B	103.18
1-1/8	20	PLUG	STHT108-20P	103.18
1-1/8	20	TAPER	STHT108-20T	103.18
1-1/8	24	BOTTOM	STHT108-24B	103.18
1-1/8	24	PLUG	STHT108-24P	103.18
1-1/8	24	TAPER	STHT108-24T	103.18
1-1/8	27	BOTTOM	STHT108-27B	103.18
1-1/8	27	PLUG	STHT108-27P	103.18
1-1/8	27	TAPER	STHT108-27T	103.18
1-1/8	32	BOTTOM	STHT108-32B	103.18
1-1/8	32	PLUG	STHT108-32P	103.18
1-1/8	32	TAPER	STHT108-32T	103.18
1-3/16	12	BOTTOM	STHT112-12B	113.82
1-3/16	12	PLUG	STHT112-12P	113.82
1-3/16	12	TAPER	STHT112-12T	113.82
1-3/16	14	BOTTOM	STHT112-14B	113.82
1-3/16	14	PLUG	STHT112-14P	113.82
1-3/16	14	TAPER	STHT112-14T	113.82
1-3/16	16	BOTTOM	STHT112-16B	113.82
1-3/16	16	PLUG	STHT112-16P	113.82
1-3/16	16	TAPER	STHT112-16T	113.82
1-3/16	18	BOTTOM	STHT112-18B	113.82
1-3/16	18	PLUG	STHT112-18P	113.82
1-3/16	18	TAPER	STHT112-18T	113.82
1-3/16	20	BOTTOM	STHT112-20B	113.82
1-3/16	20	PLUG	STHT112-20P	113.82
1-3/16	20	TAPER	STHT112-20T	113.82
1-3/16	24	BOTTOM	STHT112-24B	113.82
1-3/16	24	PLUG	STHT112-24P	113.82
1-3/16	24	TAPER	STHT112-24T	113.82
1-3/16	32	BOTTOM	STHT112-32B	113.82
1-3/16	32	PLUG	STHT112-32P	113.82
1-3/16	32	TAPER	STHT112-32T	113.82
1-1/4	14	BOTTOM	STHT116-14B	132.20
1-1/4	14	PLUG	STHT116-14P	132.20
1-1/4	14	TAPER	STHT116-14T	132.20
1-1/4	16	BOTTOM	STHT116-16B	132.20
1-1/4	16	PLUG	STHT116-16P	132.20
1-1/4	16	TAPER	STHT116-16T	132.20
1-1/4	18	BOTTOM	STHT116-18B	132.20
1-1/4	18	PLUG	STHT116-18P	132.20
1-1/4	18	TAPER	STHT116-18T	132.20
1-1/4	20	BOTTOM	STHT116-20B	132.20
1-1/4	20	PLUG	STHT116-20P	132.20
1-1/4	20	TAPER	STHT116-20T	132.20
1-1/4	24	BOTTOM	STHT116-24B	132.20
1-1/4	24	PLUG	STHT116-24P	132.20
1-1/4	24	TAPER	STHT116-24T	132.20
1-1/4	26	BOTTOM	STHT116-26B	132.20
1-1/4	26	PLUG	STHT116-26P	132.20
1-1/4	26	TAPER	STHT116-26T	132.20
1-1/4	32	BOTTOM	STHT116-32B	132.20
1-1/4	32	PLUG	STHT116-32P	132.20
1-1/4	32	TAPER	STHT116-32T	132.20
1-5/16	12	BOTTOM	STHT120-12B	167.74
1-5/16	12	PLUG	STHT120-12P	167.74
1-5/16	12	TAPER	STHT120-12T	167.74
1-5/16	14	BOTTOM	STHT120-14B	167.74
1-5/16	14	PLUG	STHT120-14P	167.74
1-5/16	14	TAPER	STHT120-14T	167.74
1-5/16	16	BOTTOM	STHT120-16B	167.74
1-5/16	16	PLUG	STHT120-16P	167.74
1-5/16	16	TAPER	STHT120-16T	167.74
1-5/16	18	BOTTOM	STHT120-18B	167.74
1-5/16	18	PLUG	STHT120-18P	167.74
1-5/16	18	TAPER	STHT120-18T	167.74
1-5/16	20	BOTTOM	STHT120-20B	167.74
1-5/16	20	PLUG	STHT120-20P	167.74
1-5/16	20	TAPER	STHT120-20T	167.74
1-3/8	14	BOTTOM	STHT124-14B	167.74

HIGH SPEED STEEL SPECIAL THREAD HAND TAPS

TT-12

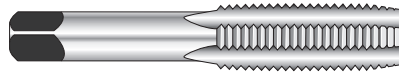
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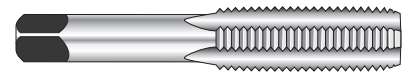
TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side

SPECIAL PURPOSE



PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side

GROUND THREAD



BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

SIZES 1-3/8" - 14 to 4" - 12

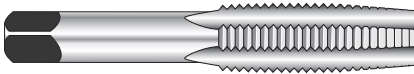
SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
1-3/8	14	PLUG	STHT124-14P	167.74
1-3/8	14	TAPER	STHT124-14T	167.74
1-3/8	16	BOTTOM	STHT124-16B	167.74
1-3/8	16	PLUG	STHT124-16P	167.74
1-3/8	16	TAPER	STHT124-16T	167.74
1-3/8	18	BOTTOM	STHT124-18B	167.74
1-3/8	18	PLUG	STHT124-18P	167.74
1-3/8	18	TAPER	STHT124-18T	167.74
1-3/8	20	BOTTOM	STHT124-20B	167.74
1-3/8	20	PLUG	STHT124-20P	167.74
1-3/8	20	TAPER	STHT124-20T	167.74
1-3/8	24	BOTTOM	STHT124-24B	167.74
1-3/8	24	PLUG	STHT124-24P	167.74
1-3/8	24	TAPER	STHT124-24T	167.74
1-7/16	12	BOTTOM	STHT128-12B	194.20
1-7/16	12	PLUG	STHT128-12P	194.20
1-7/16	12	TAPER	STHT128-12T	194.20
1-7/16	16	BOTTOM	STHT128-16B	194.20
1-7/16	16	PLUG	STHT128-16P	194.20
1-7/16	16	TAPER	STHT128-16T	194.20
1-7/16	18	BOTTOM	STHT128-18B	194.20
1-7/16	18	PLUG	STHT128-18P	194.20
1-7/16	18	TAPER	STHT128-18T	194.20
1-7/16	20	BOTTOM	STHT128-20B	194.20
1-7/16	20	PLUG	STHT128-20P	194.20
1-7/16	20	TAPER	STHT128-20T	194.20
1-1/2	14	BOTTOM	STHT132-14B	192.84
1-1/2	14	PLUG	STHT132-14P	192.84
1-1/2	14	TAPER	STHT132-14T	192.84
1-1/2	16	BOTTOM	STHT132-16B	192.84
1-1/2	16	PLUG	STHT132-16P	192.84
1-1/2	16	TAPER	STHT132-16T	192.84
1-1/2	18	BOTTOM	STHT132-18B	192.84
1-1/2	18	PLUG	STHT132-18P	192.84
1-1/2	18	TAPER	STHT132-18T	192.84
1-1/2	20	BOTTOM	STHT132-20B	192.84
1-1/2	20	PLUG	STHT132-20P	192.84
1-1/2	20	TAPER	STHT132-20T	192.84
1-1/2	24	BOTTOM	STHT132-24B	192.84
1-1/2	24	PLUG	STHT132-24P	192.84
1-1/2	24	TAPER	STHT132-24T	192.84
1-1/2	32	BOTTOM	STHT132-32B	192.84
1-1/2	32	PLUG	STHT132-32P	192.84
1-1/2	32	TAPER	STHT132-32T	192.84
1-9/16	12	BOTTOM	STHT136-12B	226.62
1-9/16	12	PLUG	STHT136-12P	226.62
1-9/16	12	TAPER	STHT136-12T	226.62
1-9/16	16	BOTTOM	STHT136-16B	226.62
1-9/16	16	PLUG	STHT136-16P	226.62
1-9/16	16	TAPER	STHT136-16T	226.62
1-9/16	18	BOTTOM	STHT136-18B	226.62
1-9/16	18	PLUG	STHT136-18P	226.62
1-9/16	18	TAPER	STHT136-18T	226.62
1-9/16	20	BOTTOM	STHT136-20B	262.22
1-9/16	20	PLUG	STHT136-20P	262.22
1-9/16	20	TAPER	STHT136-20T	262.22
1-5/8	5-1/2	BOTTOM	STHT140-05.5B	221.44
1-5/8	5-1/2	PLUG	STHT140-05.5P	221.44
1-5/8	5-1/2	TAPER	STHT140-05.5T	221.44
1-5/8	12	BOTTOM	STHT140-12B	293.16
1-5/8	12	PLUG	STHT140-12P	293.16
1-5/8	12	TAPER	STHT140-12T	293.16
1-5/8	16	BOTTOM	STHT140-16B	221.44
1-5/8	16	PLUG	STHT140-16P	221.44
1-5/8	16	TAPER	STHT140-16T	221.44
1-5/8	18	BOTTOM	STHT140-18B	221.44
1-5/8	18	PLUG	STHT140-18P	221.44
1-5/8	18	TAPER	STHT140-18T	221.44
1-11/16	12	BOTTOM	STHT144-12B	285.28
1-11/16	12	PLUG	STHT144-12P	285.28
1-11/16	12	TAPER	STHT144-12T	285.28
1-11/16	16	BOTTOM	STHT144-16B	285.28
1-11/16	16	PLUG	STHT144-16P	285.28
1-11/16	16	TAPER	STHT144-16T	285.28
1-11/16	18	BOTTOM	STHT144-18B	285.28

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
1-11/16	18	PLUG	STHT144-18P	285.28
1-11/16	18	TAPER	STHT144-18T	285.28
1-11/16	20	BOTTOM	STHT144-20B	285.28
1-11/16	20	PLUG	STHT144-20P	285.28
1-11/16	20	TAPER	STHT144-20T	285.28
1-3/4	6	BOTTOM	STHT148-06B	285.36
1-3/4	6	PLUG	STHT148-06P	285.36
1-3/4	6	TAPER	STHT148-06T	285.36
1-3/4	12	BOTTOM	STHT148-12B	285.36
1-3/4	12	PLUG	STHT148-12P	285.36
1-3/4	12	TAPER	STHT148-12T	285.36
1-3/4	14	BOTTOM	STHT148-14B	285.36
1-3/4	14	PLUG	STHT148-14P	285.36
1-3/4	14	TAPER	STHT148-14T	285.36
1-3/4	16	BOTTOM	STHT148-16B	285.36
1-3/4	16	PLUG	STHT148-16P	285.36
1-3/4	16	TAPER	STHT148-16T	285.36
1-3/4	18	BOTTOM	STHT148-18B	285.36
1-3/4	18	PLUG	STHT148-18P	285.36
1-3/4	18	TAPER	STHT148-18T	285.36
1-3/4	20	BOTTOM	STHT148-20B	285.36
1-3/4	20	PLUG	STHT148-20P	285.36
1-3/4	20	TAPER	STHT148-20T	285.36
1-3/4	24	BOTTOM	STHT148-24B	285.36
1-3/4	24	PLUG	STHT148-24P	285.36
1-3/4	24	TAPER	STHT148-24T	285.36
1-13/16	16	BOTTOM	STHT152-16B	214.58
1-13/16	16	PLUG	STHT152-16P	214.58
1-13/16	16	TAPER	STHT152-16T	214.58
1-7/8	5	BOTTOM	STHT156-05B	390.62
1-7/8	5	PLUG	STHT156-05P	390.62
1-7/8	5	TAPER	STHT156-05T	390.62
1-7/8	12	BOTTOM	STHT156-12B	390.62
1-7/8	12	PLUG	STHT156-12P	390.62
1-7/8	12	TAPER	STHT156-12T	390.62
1-7/8	16	BOTTOM	STHT156-16B	390.62
1-7/8	16	PLUG	STHT156-16P	390.62
1-7/8	16	TAPER	STHT156-16T	390.62
1-7/8	18	BOTTOM	STHT156-18B	390.62
1-7/8	18	PLUG	STHT156-18P	390.62
1-7/8	18	TAPER	STHT156-18T	390.62
1-7/8	20	BOTTOM	STHT156-20B	390.62
1-7/8	20	PLUG	STHT156-20P	390.62
1-7/8	20	TAPER	STHT156-20T	390.62
1-15/16	12	BOTTOM	STHT160-12B	390.62
1-15/16	12	PLUG	STHT160-12P	390.62
1-15/16	12	TAPER	STHT160-12T	390.62
1-15/16	16	BOTTOM	STHT160-16B	390.62
1-15/16	16	PLUG	STHT160-16P	390.62
1-15/16	16	TAPER	STHT160-16T	390.62
1-15/16	18	BOTTOM	STHT160-18B	390.62
1-15/16	18	PLUG	STHT160-18P	390.62
1-15/16	18	TAPER	STHT160-18T	390.62
2	6	BOTTOM	STHT200-06B	394.28
2	6	PLUG	STHT200-06P	394.28
2	6	TAPER	STHT200-06T	394.28
2	12	BOTTOM	STHT200-12B	394.28
2	12	PLUG	STHT200-12P	394.28
2	12	TAPER	STHT200-12T	394.28
2	14	BOTTOM	STHT200-14B	394.28
2	14	PLUG	STHT200-14P	394.28
2	14	TAPER	STHT200-14T	394.28
2	16	BOTTOM	STHT200-16B	394.28
2	16	PLUG	STHT200-16P	394.28
2	16	TAPER	STHT200-16T	394.28
2	18	BOTTOM	STHT200-18B	394.28
2	18	PLUG	STHT200-18P	394.28
2	18	TAPER	STHT200-18T	394.28
2	20	BOTTOM	STHT200-20B	394.28
2	20	PLUG	STHT200-20P	394.28
2	20	TAPER	STHT200-20T	394.28
2-1/16	12	BOTTOM	STHT204-12B	CALL FOR PRICE
2-1/16	12	PLUG	STHT204-12P	CALL FOR PRICE
2-1/16	12	TAPER	STHT204-12T	CALL FOR PRICE
2-1/8	12	BOTTOM	STHT208-12B	402.72

SIZE	T.P.I.	CHAMFER	ITEM NO.	PRICE
2-1/8	12	PLUG	STHT208-12P	402.72
2-1/8	12	TAPER	STHT208-12T	402.72
2-1/4	12	BOTTOM	STHT216-12B	527.68
2-1/4	12	PLUG	STHT216-12P	527.68
2-1/4	12	TAPER	STHT216-12T	527.68
2-1/4	14	BOTTOM	STHT216-14B	-
2-1/4	14	PLUG	STHT216-14P	-
2-1/4	14	TAPER	STHT216-14T	-
2-1/4	16	BOTTOM	STHT216-16B	-
2-1/4	16	PLUG	STHT216-16P	-
2-1/4	16	TAPER	STHT216-16T	-
2-1/4	18	BOTTOM	STHT216-18B	-
2-1/4	18	PLUG	STHT216-18P	CALL FOR PRICE
2-1/4	18	TAPER	STHT216-18T	CALL FOR PRICE
2-5/16	14	BOTTOM	STHT220-14B	-
2-5/16	14	PLUG	STHT220-14P	-
2-5/16	14	TAPER	STHT220-14T	-
2-5/16	16	BOTTOM	STHT220-16B	-
2-5/16	16	PLUG	STHT220-16P	-
2-5/16	16	TAPER	STHT220-16T	-
2-5/16	18	BOTTOM	STHT220-18B	-
2-5/16	18	PLUG	STHT220-18P	-
2-5/16	18	TAPER	STHT220-18T	-
2-3/8	12	BOTTOM	STHT224-12B	527.68
2-3/8	12	PLUG	STHT224-12P	527.68
2-3/8	12	TAPER	STHT224-12T	527.68
2-3/8	16	BOTTOM	STHT224-16B	527.68
2-3/8	16	PLUG	STHT224-16P	527.68
2-3/8	16	TAPER	STHT224-16T	527.68
2-3/8	18	BOTTOM	STHT224-18B	527.68
2-3/8	18	PLUG	STHT224-18P	527.68
2-3/8	18	TAPER	STHT224-18T	527.68
2-1/2	12	BOTTOM	STHT232-12B	775.96
2-1/2	12	PLUG	STHT232-12P	775.96
2-1/2	12	TAPER	STHT232-12T	775.96
2-1/2	16	BOTTOM	STHT232-16B	775.96
2-1/2	16	PLUG	STHT232-16P	775.96
2-1/2	16	TAPER	STHT232-16T	775.96
2-5/8	12	BOTTOM	STHT240-12B	-
2-5/8	12	PLUG	STHT240-12P	-
2-5/8	12	TAPER	STHT240-12T	-
2-5/8	16	BOTTOM	STHT240-16B	-
2-5/8	16	PLUG	STHT240-16P	-
2-5/8	16	TAPER	STHT240-16T	-
2-3/4	12	BOTTOM	STHT248-12B	CALL FOR PRICE
2-3/4	12	PLUG	STHT248-12P	CALL FOR PRICE
2-3/4	12	TAPER	STHT248-12T	CALL FOR PRICE
2-3/4	16	BOTTOM	STHT248-16B	-
2-3/4	16	PLUG	STHT248-16P	-
2-3/4	16	TAPER	STHT248-16T	-
2-7/8	12	BOTTOM	STHT256-12B	-
2-7/8	12	PLUG	STHT256-12P	-
2-7/8	12	TAPER	STHT256-12T	-
3	12	BOTTOM	STHT300-12B	966.00
3	12	PLUG	STHT300-12P	966.00
3	12	TAPER	STHT300-12T	966.00
3	16	BOTTOM	STHT300-16B	966.00
3	16	PLUG	STHT300-16P	966.00
3	16	TAPER	STHT300-16T	966.00
3	18	BOTTOM	STHT300-18B	966.00
3	18	PLUG	STHT300-18P	966.00
3	18	TAPER	STHT300-18T	966.00
3-1/8	12	BOTTOM	STHT308-12B	-
3-1/8	12	PLUG	STHT308-12P	-
3-1/8	12	TAPER	STHT308-12T	-
3-1/4	12	BOTTOM	STHT316-12B	-
3-1/4	12	PLUG	STHT316-12P	-
3-1/4	12	TAPER	STHT316-12T	CALL FOR PRICE
3-1/2	12	BOTTOM	STHT332-12B	CALL FOR PRICE
3-1/2	12	PLUG	STHT332-12P	CALL FOR PRICE

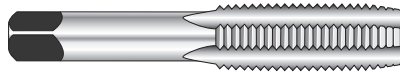
HIGH SPEED STEEL METRIC THREAD HAND TAPS

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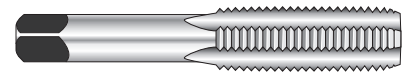
TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side

GENERAL PURPOSE



PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side

GROUND THREAD



BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

High Speed Steel Metric Thread Hand Taps with straight flutes are designed for general purpose hand tapping or in production machines where ground thread accuracy and performance are required. They are suitable for tapping most materials in through or blind holes. Hand taps retain chips in the flutes during use and work best on materials that produce chips and the swarf breaks easily. They are also known as Straight Flute Taps.

SIZE mm	PITCH mm	NO. OF FLUTES	PRICE		TAP DRILL SIZES mm
			TAPER, PLUG or BOTTOM	TAPER, PLUG & BOTTOM (3 PC SET)	
			SHTM	SHTMS	
M1.5	0.35	2	15.48	46.44	M1.15
M1.6	0.35	2	15.48	46.44	M1.25
M1.8	0.35	2	15.48	46.44	M1.45
M2	0.40	3	12.42	37.26	M1.60
M2	0.45	3	10.50	31.50	M2.05
M2.2	0.45	3	10.50	31.50	M1.75
M2.3	0.40	3	10.50	31.50	M1.90
M2.5	0.45	3	10.50	31.50	M2.05
M2.6	0.45	3	10.50	31.50	M2.20
M3	0.50	3	7.78	23.34	M2.50
M3	0.60	3	8.60	25.80	M2.40
M3.5	0.60	3	8.60	25.80	M2.90
M4	0.70	4	6.82	20.46	M3.30
M4	0.50	4	7.88	23.64	M3.50
M4.5	0.75	4	8.60	25.80	M3.70
M5	0.80	4	6.82	20.46	M4.20
M5	0.90	4	6.82	20.46	M4.10
M5.5	0.90	4	6.82	20.46	M4.60
M6	1.00	4	6.62	19.86	M5.00
M6.3	1.00	4	7.04	21.12	M5.30
M7	1.00	4	7.18	21.54	M6.00
M8	1.25	4	7.32	21.96	M6.80
M8	1.00	4	7.90	23.70	M7.00
M9	1.25	4	9.30	27.90	M7.80
M10	1.50	4	9.30	27.90	M8.50
M10	1.25	4	10.26	30.78	M8.80
M10	1.00	4	10.26	30.78	M9.00
M11	1.50	4	10.26	30.78	M9.50
M12	1.75	4	15.18	45.54	M10.20
M12	1.50	4	16.72	50.16	M10.50
M12	1.25	4	16.72	50.16	M10.80
M14	2.00	4	23.68	71.04	M12.00
M14	1.50	4	26.04	78.12	M12.50
M14	1.25	4	26.04	78.12	M12.80

SIZE mm	PITCH mm	NO. OF FLUTES	PRICE		TAP DRILL SIZES mm
			TAPER, PLUG or BOTTOM	TAPER, PLUG & BOTTOM (3 PC SET)	
			SHTM	SHTMS	
M16	2.00	4	31.52	94.56	M14.00
M16	1.50	4	31.52	94.56	M14.50
M18	2.50	4	34.86	104.58	M15.50
M18	2.00	4	38.30	114.90	M16.00
M18	1.00	4	38.30	114.90	M17.00
M18	1.50	4	38.30	114.90	M16.50
M20	2.50	4	39.46	118.38	M17.50
M20	1.50	4	43.34	130.02	M18.50
M20	1.00	4	43.34	130.02	M19.00
M20	2.00	4	43.34	130.02	M18.00
M22	2.50	4	54.98	164.94	M19.50
M22	1.50	4	60.42	181.26	M20.50
M24	3.00	4	73.50	220.50	M21.00
M24	2.00	4	80.82	242.46	M22.00
M24	1.50	4	80.82	242.46	M22.50
M27	3.00	4	97.50	292.50	M24.00
M27	2.00	4	107.20	321.60	M25.00
M30	3.50	4	146.38	439.14	M26.50
M30	2.00	4	146.38	439.14	M28.00
M30	1.50	4	146.38	439.14	M28.50
M32	2.00	4	146.38	439.14	M30.00
M33	3.50	4	158.60	475.80	M29.50
M33	2.00	4	174.44	523.32	M31.00
M36	4.00	4	191.06	573.18	M32.00
M36	3.00	4	276.50	829.50	M33.00
M39	4.00	6	220.46	661.38	M35.00
M39	3.00	6	242.44	727.32	M36.00
M42	4.50	6	261.24	783.72	M37.50
M42	1.50	6	261.24	783.72	M40.50
M45	4.50	6	295.16	885.48	M40.50
M45	1.50	6	295.16	885.48	M43.50
M48	5.00	6	299.34	898.02	M43.00
M48	1.50	6	329.24	987.72	M46.50
M52	5.00	6	386.64	1159.92	M47.00
M52	1.50	6	391.36	1174.08	M50.50

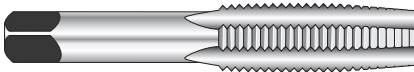
Metric pitches in **bold type** are **coarse thread** form.

- Please specify Taper (T), Plug (P) or Bottoming (B) chamfer. Examples: SHTM04X.70T, SHTM10X1.50P, SHTM24X1.50B.

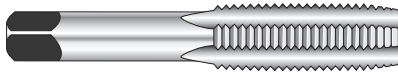
PACKAGING

M1.5 -M14 -12 Taps/Box • M16 - M24 - 3 Taps/Box • M27 - M52 - 1 Tap/Tub

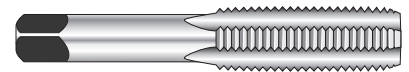
NOTE: Titanium Nitride Coated Metric Hand Taps are available upon request.
Tap pitch diameter limits are those recommended for Class 6H tolerances.

METRIC (SPECIAL THREAD) HAND TAPS**ICS****WIS**

TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side

GENERAL PURPOSE

PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side

GROUND THREAD

BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

Metric Special Thread Hand Taps are designed for applications where standard coarse, fine, or extra-fine thread taps are not applicable or where design considerations require non-standard pitches. Most sizes are available in taper, bottoming or plug chamfer. When taper or bottoming chamfer taps are not available in size ordered, plug chamfer taps will be substituted to complete order.

Sizes 1.4mm to 19mm

SIZE	PITCH	CHAMFER	ITEM NO.	PRICE
1.4	0.3	BOTTOM	STTM01.4X0.30B	16.00
1.4	0.3	PLUG	STTM01.4X0.30P	16.00
1.4	0.3	TAPER	STTM01.4X0.30T	16.00
1.7	0.2	BOTTOM	STTM01.7X0.20B	16.00
1.7	0.2	PLUG	STTM01.7X0.20P	16.00
1.7	0.2	TAPER	STTM01.7X0.20T	16.00
1.7	0.35	BOTTOM	STTM01.7X0.35B	16.00
1.7	0.35	PLUG	STTM01.7X0.35P	16.00
1.7	0.35	TAPER	STTM01.7X0.35T	16.00
2	0.25	BOTTOM	STTM02.0X0.25B	12.82
2	0.25	PLUG	STTM02.0X0.25P	12.82
2	0.25	TAPER	STTM02.0X0.25T	12.82
2	0.45	BOTTOM	STTM02.0X0.45B	12.82
2	0.45	PLUG	STTM02.0X0.45P	12.82
2	0.45	TAPER	STTM02.0X0.45T	12.82
2.2	0.4	BOTTOM	STTM02.2X0.40B	10.36
2.2	0.4	PLUG	STTM02.2X0.40P	10.36
2.2	0.4	TAPER	STTM02.2X0.40T	10.36
2.5	0.5	BOTTOM	STTM02.5X0.50B	10.36
2.5	0.5	PLUG	STTM02.5X0.50P	10.36
2.5	0.5	TAPER	STTM02.5X0.50T	10.36
2.6	0.35	BOTTOM	STTM02.6X0.35B	10.36
2.6	0.35	PLUG	STTM02.6X0.35P	10.36
2.6	0.35	TAPER	STTM02.6X0.35T	10.36
2.6	0.45	BOTTOM	STTM02.6X0.45B	CALL
2.6	0.45	PLUG	STTM02.6X0.45P	FOR
2.6	0.45	TAPER	STTM02.6X0.45T	PRICE
3	0.35	BOTTOM	STTM03.0X0.35B	8.00
3	0.35	PLUG	STTM03.0X0.35P	8.00
3	0.35	TAPER	STTM03.0X0.35T	8.00
3	0.6	BOTTOM	STTM03.0X0.60B	8.00
3	0.6	PLUG	STTM03.0X0.60P	8.00
3	0.6	TAPER	STTM03.0X0.60T	8.00
3.5	0.5	BOTTOM	STTM03.5X0.50B	8.00
3.5	0.5	PLUG	STTM03.5X0.50P	8.00
3.5	0.5	TAPER	STTM03.5X0.50T	8.00
4	0.5	BOTTOM	STTM04.0X0.50B	6.82
4	0.5	PLUG	STTM04.0X0.50P	6.82
4	0.5	TAPER	STTM04.0X0.50T	6.82
4	0.75	BOTTOM	STTM04.0X0.75B	6.82
4	0.75	PLUG	STTM04.0X0.75P	6.82
4	0.75	TAPER	STTM04.0X0.75T	6.82
4.5	0.5	BOTTOM	STTM04.5X0.50B	6.82
4.5	0.5	PLUG	STTM04.5X0.50P	6.82
4.5	0.5	TAPER	STTM04.5X0.50T	6.82
5	0.5	BOTTOM	STTM05.0X0.50B	6.82
5	0.5	PLUG	STTM05.0X0.50P	6.82
5	0.5	TAPER	STTM05.0X0.50T	6.82
5	0.7	BOTTOM	STTM05.0X0.70B	6.82
5	0.7	PLUG	STTM05.0X0.70P	6.82
5	0.7	TAPER	STTM05.0X0.70T	6.82
5	0.9	BOTTOM	STTM05.0X0.90B	6.82
5	0.9	PLUG	STTM05.0X0.90P	6.82
5	0.9	TAPER	STTM05.0X0.90T	6.82
5.5	0.7	BOTTOM	STTM05.5X0.70B	6.82
5.5	0.7	PLUG	STTM05.5X0.70P	6.82
5.5	0.7	TAPER	STTM05.5X0.70T	6.82
5.5	0.9	BOTTOM	STTM05.5X0.90B	6.82
5.5	0.9	PLUG	STTM05.5X0.90P	6.82
5.5	0.9	TAPER	STTM05.5X0.90T	6.82
6	0.5	BOTTOM	STTM06.0X0.50B	6.82
6	0.5	PLUG	STTM06.0X0.50P	6.82
6	0.5	TAPER	STTM06.0X0.50T	6.82
6	0.75	BOTTOM	STTM06.0X0.75B	6.96
6	0.75	PLUG	STTM06.0X0.75P	6.96
6	0.75	TAPER	STTM06.0X0.75T	6.96
7	0.5	BOTTOM	STTM07.0X0.50B	7.40
7	0.5	PLUG	STTM07.0X0.50P	7.40
7	0.5	TAPER	STTM07.0X0.50T	7.40
7	0.75	BOTTOM	STTM07.0X0.75B	7.40
7	0.75	PLUG	STTM07.0X0.75P	7.40
7	0.75	TAPER	STTM07.0X0.75T	7.40
7	1.25	BOTTOM	STTM07.0X1.25B	7.40
7	1.25	PLUG	STTM07.0X1.25P	7.40
7	1.25	TAPER	STTM07.0X1.25T	7.40

SIZE	PITCH	CHAMFER	ITEM NO.	PRICE
8	0.5	BOTTOM	STTM08.0X0.50B	8.20
8	0.5	PLUG	STTM08.0X0.50P	8.20
8	0.5	TAPER	STTM08.0X0.50T	8.20
8	0.75	BOTTOM	STTM08.0X0.75B	8.20
8	0.75	PLUG	STTM08.0X0.75P	8.20
8	0.75	TAPER	STTM08.0X0.75T	8.20
8	1.5	BOTTOM	STTM08.0X1.50B	8.20
8	1.5	PLUG	STTM08.0X1.50P	8.20
8	1.5	TAPER	STTM08.0X1.50T	8.20
9	0.5	BOTTOM	STTM09.0X0.50B	9.56
9	0.5	PLUG	STTM09.0X0.50P	9.56
9	0.5	TAPER	STTM09.0X0.50T	9.56
9	0.75	BOTTOM	STTM09.0X0.75B	9.56
9	0.75	PLUG	STTM09.0X0.75P	9.56
9	0.75	TAPER	STTM09.0X0.75T	9.56
9	1	BOTTOM	STTM09.0X1.00B	9.56
9	1	PLUG	STTM09.0X1.00P	9.56
9	1	TAPER	STTM09.0X1.00T	9.56
9	1.25	BOTTOM	STTM09.0X1.25B	9.56
9	1.25	PLUG	STTM09.0X1.25P	9.56
9	1.25	TAPER	STTM09.0X1.25T	9.56
10	0.5	BOTTOM	STTM10.0X0.50B	10.54
10	0.5	PLUG	STTM10.0X0.50P	10.54
10	0.5	TAPER	STTM10.0X0.50T	10.54
10	0.75	BOTTOM	STTM10.0X0.75B	10.54
10	0.75	PLUG	STTM10.0X0.75P	10.54
10	0.75	TAPER	STTM10.0X0.75T	10.54
10	1	BOTTOM	STTM10.0X1.00B	10.54
10	1	PLUG	STTM10.0X1.00P	10.54
10	1	TAPER	STTM10.0X1.00T	10.54
11	0.5	BOTTOM	STTM11.0X0.50B	12.70
11	0.5	PLUG	STTM11.0X0.50P	12.70
11	0.5	TAPER	STTM11.0X0.50T	12.70
11	0.75	BOTTOM	STTM11.0X0.75B	12.70
11	0.75	PLUG	STTM11.0X0.75P	12.70
11	0.75	TAPER	STTM11.0X0.75T	12.70
11	1	BOTTOM	STTM11.0X1.00B	12.70
11	1	PLUG	STTM11.0X1.00P	12.70
11	1	TAPER	STTM11.0X1.00T	12.70
11	1.25	BOTTOM	STTM11.0X1.25B	12.70
11	1.25	PLUG	STTM11.0X1.25P	12.70
11	1.25	TAPER	STTM11.0X1.25T	12.70
12	0.5	BOTTOM	STTM12.0X0.50B	18.74
12	0.5	PLUG	STTM12.0X0.50P	18.74
12	0.5	TAPER	STTM12.0X0.50T	18.74
12	0.75	BOTTOM	STTM12.0X0.75B	18.74
12	0.75	PLUG	STTM12.0X0.75P	18.74
12	0.75	TAPER	STTM12.0X0.75T	18.74
12	1	BOTTOM	STTM12.0X1.00B	18.74
12	1	PLUG	STTM12.0X1.00P	18.74
12	1	TAPER	STTM12.0X1.00T	18.74
12	1.5	BOTTOM	STTM12.0X1.50B	18.74
12	1.5	PLUG	STTM12.0X1.50P	18.74
12	1.5	TAPER	STTM12.0X1.50T	18.74
13	0.5	BOTTOM	STTM13.0X0.50B	26.44
13	0.5	PLUG	STTM13.0X0.50P	26.44
13	0.5	TAPER	STTM13.0X0.50T	26.44
13	1	BOTTOM	STTM13.0X1.00B	26.44
13	1	PLUG	STTM13.0X1.00P	26.44
13	1	TAPER	STTM13.0X1.00T	26.44
13	1.25	BOTTOM	STTM13.0X1.25B	26.44
13	1.25	PLUG	STTM13.0X1.25P	26.44
13	1.25	TAPER	STTM13.0X1.25T	26.44
13	1.5	BOTTOM	STTM13.0X1.50B	26.44
13	1.5	PLUG	STTM13.0X1.50P	26.44
13	1.5	TAPER	STTM13.0X1.50T	26.44
13	1.75	PLUG	STTM13.0X1.75P	26.44
13	2	BOTTOM	STTM13.0X2.00B	26.44
13	2	PLUG	STTM13.0X2.00P	26.44
13	2	TAPER	STTM13.0X2.00T	26.44
14	0.5	BOTTOM	STTM14.0X0.50B	28.00
14	0.5	PLUG	STTM14.0X0.50P	28.00
14	0.5	TAPER	STTM14.0X0.50T	28.00
14	0.75	BOTTOM	STTM14.0X0.75B	28.00
14	0.75	PLUG	STTM14.0X0.75P	28.00

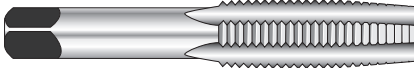
SIZE	PITCH	CHAMFER	ITEM NO.	PRICE
14	0.75	TAPER	STTM14.0X0.75T	28.00
14	1	BOTTOM	STTM14.0X1.00B	28.00
14	1	PLUG	STTM14.0X1.00P	28.00
14	1	TAPER	STTM14.0X1.00T	28.00
14	1.25	BOTTOM	STTM14.0X1.25B	28.00
14	1.25	PLUG	STTM14.0X1.25P	28.00
14	1.25	TAPER	STTM14.0X1.25T	28.00
14	1.75	BOTTOM	STTM14.0X1.75B	28.00
14	1.75	PLUG	STTM14.0X1.75P	28.00
14	1.75	TAPER	STTM14.0X1.75T	28.00
15	0.5	BOTTOM	STTM15.0X0.50B	28.00
15	0.5	PLUG	STTM15.0X0.50P	28.00
15	0.5	TAPER	STTM15.0X0.50T	28.00
15	1	BOTTOM	STTM15.0X1.00B	28.00
15	1	PLUG	STTM15.0X1.00P	28.00
15	1	TAPER	STTM15.0X1.00T	28.00
15	1.5	BOTTOM	STTM15.0X1.50B	28.00
15	1.5	PLUG	STTM15.0X1.50P	28.00
15	1.5	TAPER	STTM15.0X1.50T	28.00
15	2	BOTTOM	STTM15.0X2.00B	28.00
15	2	PLUG	STTM15.0X2.00P	28.00
15	2	TAPER	STTM15.0X2.00T	28.00
16	0.5	BOTTOM	STTM16.0X0.50B	32.58
16	0.5	PLUG	STTM16.0X0.50P	32.58
16	0.5	TAPER	STTM16.0X0.50T	32.58
16	0.75	BOTTOM	STTM16.0X0.75B	32.58
16	0.75	PLUG	STTM16.0X0.75P	32.58
16	0.75	TAPER	STTM16.0X0.75T	32.58
16	1	BOTTOM	STTM16.0X1.00B	32.58
16	1	PLUG	STTM16.0X1.00P	32.58
16	1	TAPER	STTM16.0X1.00T	32.58
16	1.25	BOTTOM	STTM16.0X1.25B	32.58
16	1.25	PLUG	STTM16.0X1.25P	32.58
16	1.25	TAPER	STTM16.0X1.25T	32.58
16	1.75	BOTTOM	STTM16.0X1.75B	32.58
16	1.75	PLUG	STTM16.0X1.75P	32.58
16	1.75	TAPER	STTM16.0X1.75T	32.58
16	2.5	BOTTOM	STTM16.0X2.50B	CALL
16	2.5	PLUG	STTM16.0X2.50P	FOR
16	2.5	TAPER	STTM16.0X2.50T	PRICE
17	0.5	BOTTOM	STTM17.0X0.50B	33.80
17	0.5	PLUG	STTM17.0X0.50P	33.80
17	0.5	TAPER	STTM17.0X0.50T	33.80
17	1	BOTTOM	STTM17.0X1.00B	33.80
17	1	PLUG	STTM17.0X1.00P	33.80
17	1	TAPER	STTM17.0X1.00T	33.80
17	1.5	BOTTOM	STTM17.0X1.50B	33.80
17	1.5	PLUG	STTM17.0X1.50P	33.80
17	1.5	TAPER	STTM17.0X1.50T	33.80
17	2	BOTTOM	STTM17.0X2.00B	33.80
17	2	PLUG	STTM17.0X2.00P	33.80
17	2	TAPER	STTM17.0X2.00T	33.80
18	0.5	BOTTOM	STTM18.0X0.50B	38.68
18	0.5	PLUG	STTM18.0X0.50P	38.68
18	0.5	TAPER	STTM18.0X0.50T	38.68
18	1	BOTTOM	STTM18.0X1.00B	38.68
18	1	PLUG	STTM18.0X1.00P	38.68
18	1	TAPER	STTM18.0X1.00T	38.68
18	1.25	BOTTOM	STTM18.0X1.25B	38.68
18	1.25	PLUG	STTM18.0X1.25P	38.68
18	1.25	TAPER	STTM18.0X1.25T	38.68
18	1.75	BOTTOM	STTM18.0X1.75B	38.68
18	1.75	PLUG	STTM18.0X1.75P	38.68
18	1.75	TAPER	STTM18.0X1.75T	38.68
18	2	BOTTOM	STTM18.0X2.00B	38.68
18	2	PLUG	STTM18.0X2.00P	

HIGH SPEED STEEL METRIC (SPECIAL THREAD) HAND TAPS

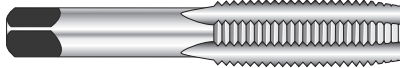
ICS WIS

GENERAL PURPOSE

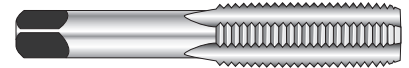
GROUND THREAD



TAPER TAP (T)
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP (P)
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP (B)
1-2 Thread Chamfer
at 18 degrees per side

Sizes 19mm to 52mm

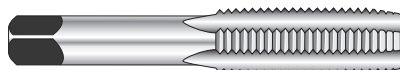
SIZE	PITCH	CHAMFER	ITEM NO.	PRICE	SIZE	PITCH	CHAMFER	ITEM NO.	PRICE	SIZE	PITCH	CHAMFER	ITEM NO.	PRICE
19	1.5	TAPER	STTM19.0X1.50T	40.48	25	2	TAPER	STTM25.0X2.0T	89.82	36	1.5	BOTTOM	STTM36.0X1.50B	172.56
19	2	BOTTOM	STTM19.0X2.0B	40.48	25	3	BOTTOM	STTM25.0X3.0B	89.82	36	1.5	PLUG	STTM36.0X1.50P	172.56
19	2	PLUG	STTM19.0X2.0P	40.48	25	3	PLUG	STTM25.0X3.0P	89.82	36	1.5	TAPER	STTM36.0X1.50T	172.56
19	2	TAPER	STTM19.0X2.0T	40.48	25	3	TAPER	STTM25.0X3.0T	89.82	38	1.5	BOTTOM	STTM38.0X1.50B	220.02
20	1	BOTTOM	STTM20.0X1.00B	44.80	26	1.5	BOTTOM	STTM26.0X1.5B	88.04	38	1.5	PLUG	STTM38.0X1.50P	220.02
20	1	PLUG	STTM20.0X1.00P	44.80	26	1.5	PLUG	STTM26.0X1.5P	88.04	38	1.5	TAPER	STTM38.0X1.50T	220.02
20	1	TAPER	STTM20.0X1.00T	44.80	26	1.5	TAPER	STTM26.0X1.5T	88.04	39	1.5	BOTTOM	STTM39.0X1.50B	228.02
20	1.25	BOTTOM	STTM20.0X1.25B	44.80	26	2	BOTTOM	STTM26.0X2.0B	88.04	39	1.5	PLUG	STTM39.0X1.50P	228.02
20	1.25	PLUG	STTM20.0X1.25P	44.80	26	2	PLUG	STTM26.0X2.0P	88.04	39	1.5	TAPER	STTM39.0X1.50T	228.02
20	1.25	TAPER	STTM20.0X1.25T	44.80	26	2	TAPER	STTM26.0X2.0T	88.04	40	1.5	BOTTOM	STTM40.0X1.50B	247.16
20	2	BOTTOM	STTM20.0X2.00B	44.80	27	1	BOTTOM	STTM27.0X1.0B	110.88	40	1.5	PLUG	STTM40.0X1.50P	247.16
20	2	PLUG	STTM20.0X2.00P	44.80	27	1	PLUG	STTM27.0X1.0P	110.88	40	1.5	TAPER	STTM40.0X1.50T	247.16
20	2	TAPER	STTM20.0X2.00T	44.80	27	1	TAPER	STTM27.0X1.0T	110.88	42	1.5	BOTTOM	STTM42.0X1.50B	247.16
21	1	BOTTOM	STTM21.0X1.0B	47.14	27	1.5	BOTTOM	STTM27.0X1.5B	110.88	42	1.5	PLUG	STTM42.0X1.50P	247.16
21	1	PLUG	STTM21.0X1.0P	47.14	27	1.5	PLUG	STTM27.0X1.5P	110.88	42	1.5	TAPER	STTM42.0X1.50T	247.16
21	1	TAPER	STTM21.0X1.0T	47.14	27	1.5	TAPER	STTM27.0X1.5T	110.88	42	3	BOTTOM	STTM42.0X3.0B	247.16
21	1.5	BOTTOM	STTM21.0X1.50B	47.14	27	2.5	BOTTOM	STTM27.0X2.5B	110.88	42	3	PLUG	STTM42.0X3.0P	247.16
21	1.5	PLUG	STTM21.0X1.50P	47.14	27	2.5	PLUG	STTM27.0X2.5P	110.88	42	3	TAPER	STTM42.0X3.0T	247.16
21	1.5	TAPER	STTM21.0X1.50T	47.14	27	2.5	TAPER	STTM27.0X2.5T	110.88	42	4.5	BOTTOM	STTM42.0X4.50B	247.16
21	2	BOTTOM	STTM21.0X2.0B	47.14	28	1.5	BOTTOM	STTM28.0X1.5B	127.16	42	4.5	PLUG	STTM42.0X4.50P	247.16
21	2	PLUG	STTM21.0X2.0P	47.14	28	1.5	PLUG	STTM28.0X1.5P	127.16	42	4.5	TAPER	STTM42.0X4.50T	247.16
21	2	TAPER	STTM21.0X2.0T	47.14	28	1.5	TAPER	STTM28.0X1.5T	127.16	45	1.5	BOTTOM	STTM45.0X1.50B	266.88
21	2.5	BOTTOM	STTM21.0X2.5B	47.14	28	2	BOTTOM	STTM28.0X2.0B	127.16	45	1.5	PLUG	STTM45.0X1.50P	266.88
21	2.5	PLUG	STTM21.0X2.5P	47.14	28	2	PLUG	STTM28.0X2.0P	127.16	45	1.5	TAPER	STTM45.0X1.50T	266.88
21	2.5	TAPER	STTM21.0X2.5T	47.14	28	2	TAPER	STTM28.0X2.0T	127.16	45	3	BOTTOM	STTM45.0X3.0B	266.88
22	1	BOTTOM	STTM22.0X1.0B	61.34	30	1	BOTTOM	STTM30.0X1.0B	150.68	45	3	PLUG	STTM45.0X3.0P	266.88
22	1	PLUG	STTM22.0X1.0P	61.34	30	1	PLUG	STTM30.0X1.0P	150.68	45	3	TAPER	STTM45.0X3.0T	266.88
22	1	TAPER	STTM22.0X1.0T	61.34	30	1	TAPER	STTM30.0X1.0T	150.68	45	4.5	BOTTOM	STTM45.0X4.50B	266.88
22	2	BOTTOM	STTM22.0X2.0B	61.34	30	2.5	BOTTOM	STTM30.0X2.50B	150.68	45	4.5	PLUG	STTM45.0X4.50P	266.88
22	2	PLUG	STTM22.0X2.0P	61.34	30	2.5	PLUG	STTM30.0X2.50P	150.68	45	4.5	TAPER	STTM45.0X4.50T	266.88
22	2	TAPER	STTM22.0X2.0T	61.34	30	2.5	TAPER	STTM30.0X2.50T	150.68	48	1.5	BOTTOM	STTM48.0X1.50B	288.94
23	1	BOTTOM	STTM23.0X1.00B	62.66	30	3	BOTTOM	STTM30.0X3.0B	150.68	48	1.5	PLUG	STTM48.0X1.50P	288.94
23	1	PLUG	STTM23.0X1.00P	62.66	30	3	PLUG	STTM30.0X3.0P	150.68	48	1.5	TAPER	STTM48.0X1.50T	288.94
23	1	TAPER	STTM23.0X1.00T	62.66	30	3	TAPER	STTM30.0X3.0T	150.68	48	3	BOTTOM	STTM48.0X3.0B	288.94
23	1.5	BOTTOM	STTM23.0X1.50B	62.66	32	1.5	BOTTOM	STTM32.0X1.50B	162.02	48	3	PLUG	STTM48.0X3.0P	288.94
23	1.5	PLUG	STTM23.0X1.50P	62.66	32	1.5	PLUG	STTM32.0X1.50P	162.02	48	3	TAPER	STTM48.0X3.0T	288.94
23	1.5	TAPER	STTM23.0X1.50T	62.66	32	1.5	TAPER	STTM32.0X1.50T	162.02	48	4.5	BOTTOM	STTM48.0X4.50B	288.94
23	2	BOTTOM	STTM23.0X2.0B	62.66	32	2	BOTTOM	STTM32.0X2.00B	162.02	48	4.5	PLUG	STTM48.0X4.50P	288.94
23	2	PLUG	STTM23.0X2.0P	62.66	32	2	PLUG	STTM32.0X2.00P	162.02	48	4.5	TAPER	STTM48.0X4.50T	288.94
23	2	TAPER	STTM23.0X2.0T	62.66	32	2	TAPER	STTM32.0X2.00T	162.02	48	5	BOTTOM	STTM48.0X5.00B	288.94
23	2.5	BOTTOM	STTM23.0X2.50B	62.66	33	1.5	BOTTOM	STTM33.0X1.5B	145.60	48	5	PLUG	STTM48.0X5.00P	288.94
23	2.5	PLUG	STTM23.0X2.50P	62.66	33	1.5	PLUG	STTM33.0X1.5P	145.60	48	5	TAPER	STTM48.0X5.00T	288.94
23	2.5	TAPER	STTM23.0X2.50T	62.66	33	1.5	TAPER	STTM33.0X1.5T	145.60	50	1.5	BOTTOM	STTM50.0X1.50B	355.54
23	3	BOTTOM	STTM23.0X3.0B	62.66	33	2	BOTTOM	STTM33.0X2.0B	145.60	50	1.5	PLUG	STTM50.0X1.50P	355.54
23	3	PLUG	STTM23.0X3.0P	62.66	33	2	PLUG	STTM33.0X2.0P	145.60	50	1.5	TAPER	STTM50.0X1.50T	355.54
23	3	TAPER	STTM23.0X3.0T	62.66	33	2	TAPER	STTM33.0X2.0T	145.60	50	3	BOTTOM	STTM50.0X3.0B	355.54
24	1	BOTTOM	STTM24.0X1.0B	69.64	33	3	BOTTOM	STTM33.0X3.0B	CALL	50	3	PLUG	STTM50.0X3.0P	355.54
24	1	PLUG	STTM24.0X1.0P	69.64	33	3	PLUG	STTM33.0X3.0P	FOR	50	3	TAPER	STTM50.0X3.0T	355.54
24	1	TAPER	STTM24.0X1.0T	69.64	33	3	TAPER	STTM33.0X3.0T	PRICE	52	1.5	BOTTOM	STTM52.0X1.50B	355.54
25	1	BOTTOM	STTM25.0X1.0B	89.82	33	3.5	BOTTOM	STTM33.0X3.5B		52	1.5	PLUG	STTM52.0X1.50P	355.54
25	1	PLUG	STTM25.0X1.0P	89.82	33	3.5	PLUG	STTM33.0X3.5P		52	1.5	TAPER	STTM52.0X1.50T	355.54
25	1	TAPER	STTM25.0X1.0T	89.82	33	3.5	TAPER	STTM33.0X3.5T		52	3	BOTTOM	STTM52.0X3.0B	355.54
25	1.5	BOTTOM	STTM25.0X1.50B	89.82	34	1.5	BOTTOM	STTM34.0X1.50B	193.36	52	3	PLUG	STTM52.0X3.0P	355.54
25	1.5	PLUG	STTM25.0X1.50P	89.82	34	1.5	PLUG	STTM34.0X1.50P	193.36	52	3	TAPER	STTM52.0X3.0T	355.54
25	1.5	TAPER	STTM25.0X1.50T	89.82	34	1.5	TAPER	STTM34.0X1.50T	193.36	52	5	BOTTOM	STTM52.0X5.00B	355.54
25	2	BOTTOM	STTM25.0X2.0B	89.82	35	1.5	BOTTOM	STTM35.0X1.50B	204.70	52	5	PLUG	STTM52.0X5.00P	355.54
25	2	PLUG	STTM25.0X2.0P	89.82	35	1.5	PLUG	STTM35.0X1.50P	204.70	52	5	TAPER	STTM52.0X5.00T	355.54
					35	1.5	TAPER	STTM35.0X1.50T	204.70					

HIGH SPEED STEEL LEFT HAND THREAD METRIC TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD



**PLUG
CHAMFER**

Metric Left Hand Taps are designed to cut threads with a left hand rotation and are commonly used in applications where left hand studs and fasteners are needed.

SIZE	PITCH	ITEM NO.	SIZE	PITCH	ITEM NO.	SIZE	PITCH	ITEM NO.	SIZE	PITCH	ITEM NO.
M2.0	.40	HTML02.0X0.40	M7.0	1.00	HTML07.0X1.00	M12	1.75	HTML12.0X1.75	M18	1.50	HTML18.0X1.50
M3.0	.50	HTML03.0X0.50	M8.0	1.25	HTML08.0X1.25	M14	1.50	HTML14.0X1.50	M18	2.00	HTML18.0X2.00
M4.0	.70	HTML04.0X0.70	M10	1.25	HTML10.0X1.25	M16	2.00	HTML16.0X2.00	M18	2.50	HTML18.0X2.50
M5.0	.80	HTML05.0X0.80	M10	1.50	HTML10.0X1.50	M16	1.50	HTML16.0X1.50	M20	1.50	HTML20.0X1.50
M6.0	1.00	HTML06.0X1.00	M12	1.25	HTML12.0X1.25	M16	2.00	HTML16.0X2.00	M20	2.50	HTML20.0X2.50

Metric pitches in **bold type** are **coarse thread** form.

CALL FOR PRICING

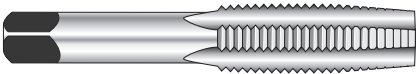
HIGH SPEED STEEL BRITISH STANDARD HAND TAPS

TT-16

ICS USA

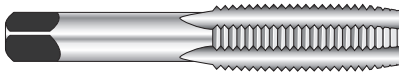
GENERAL PURPOSE

RIGHT HAND CUTTING



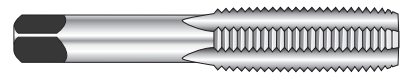
(B.S.W.)

The British Standard Whitworth Thread form is a coarse thread and its use is similar to the UNC or NC thread series. The sides of the thread form an angle of 55° with one another.



(B.S.F.)

The British Standard Fine Thread form is a fine thread and its use is similar to the UNF or NF thread series. The sides of the thread form an angle of 55° with one another.



(B.A.)

The British Association Thread form is an extra fine thread and its use is similar to the NEF thread series. The sides of the thread form an angle of 47.5° with one another.

ITEM NO. BSTW

ITEM NO. BSTF

ITEM NO. BSTA

All British Standard Hand Taps are available with a Taper, Plug, or Bottom chamfer

Tap pricing quoted upon request

SIZE	THREADS PER INCH			NO. OF FLUTES	TAP DRILL SIZES APPROX. 75-80% THREAD (mm)		
	(B.S.W.)	(B.S.F.)	(B.A.)		(B.S.W.)	(B.S.F.)	(B.A.)
0	-	-	25.4	3	-	-	M05.10
1	-	-	28.2	3	-	-	M04.50
2	-	-	31.4	3	-	-	M04.00
3	-	-	34.8	3	-	-	M03.40
4	-	-	38.5	3	-	-	M03.00
5	-	-	43.0	3	-	-	M02.65
6	-	-	47.9	3	-	-	M02.30
7	-	-	52.9	3	-	-	M02.05
8	-	-	59.1	3	-	-	M01.80
9	-	-	65.1	3	-	-	M01.55
10	-	-	72.6	3	-	-	M01.40
12	-	-	90.7	3	-	-	M01.05
1/8	40	-	-	3	M02.55	-	-
3/16	24	32	-	3	M03.70	M04.00	-
1/4	20	26	-	3	M05.10	M05.30	-
5/16	18	22	-	4	M06.50	M06.80	-
3/8	16	20	-	4	M07.90	M08.30	-
7/16	14	18	-	4	M09.30	M09.70	-
1/2	12	16	-	4	M10.50	M11.10	-
9/16	12	16	-	4	M12.10	M12.70	-
5/8	11	14	-	4	M13.50	M14.00	-
3/4	10	12	-	4	M16.25	M16.75	-
7/8	9	11	-	4	M19.25	M19.75	-
1	8	10	-	4	M22.00	M22.75	-
1-1/8	7	9	-	4	M24.75	M25.50	-
1-1/4	7	9	-	4	M28.00	M28.50	-
1-3/8	6	8	-	4	M30.50	M31.50	-
1-1/2	6	8	-	4	M33.50	M34.50	-
2	4-1/2	7	-	6	M44.50	M47.00	-

British Thread Spiral Point and Spiral Flute Taps can also be supplied to order.

PACKAGING

#0 to 12 - 12 Taps/Box
1/8 to 1/2 - 12 Taps/Box
9/16 to 1 - 3 Taps/Box
1-1/8 to 2 - 1 Tap/Tube

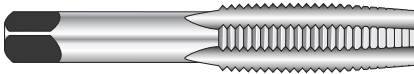
Tap pitch diameter limits are in accordance with BS 949 Part 2 - 1979

CARBON STEEL STANDARD HAND TAPS

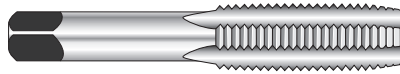
ICS USA

GENERAL PURPOSE

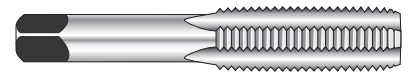
CUT THREAD



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

Carbon Steel Hand Taps with straight flutes are designed for general purpose hand tapping operations where ground thread accuracy and performance is not required. They can also be used for rethreading damaged threads. Carbon steel hand taps are the most cost effective threading tap available.

THREADS PER INCH				NO. OF	TAPER, PLUG, or BOTTOM	PKG.		TAPER, PLUG, & BOTTOM 3 pc set
SIZE	NC - UNC	NF - UNF	NS	FLUTES	CHT	QTY.		CHTS
#0	-	80	-	3	3.50	12		10.50
#1	64	72	-	3	3.50	12		10.50
#2	56	64	-	3	3.50	12		10.50
#3	48	-	-	3	3.26	12		9.78
#4	40	48	-	3	2.62	12		7.86
#5 - 1/8	40	44	-	3	2.40	12		7.20
#6	32	40	-	3	2.40	12		7.20
#8 - 5/32	32	36	-	4	2.40	12		7.20
#10 - 3/16	24	32	-	4	2.40	12		7.20
#12 - 7/32	24	28	-	4	2.50	12		7.50
1/4	20	28	-	4	2.44	12		7.32
5/16	18	24	-	4	3.36	12		10.08
3/8	16	24	-	4	3.72	12		11.16
7/16	14	20	-	4	4.28	12		12.84
1/2	13	20	-	4	4.78	12		14.34
9/16	12	18	-	4	6.86	3		20.58
5/8	11	18	-	4	8.42	3		25.26
3/4	10	16	-	4	11.32	3		33.96
7/8	9	14	-	4	16.26	3		48.78
1	8	12	14	4	19.84	3		59.52
1-1/8	7	12	-	4	24.96	1		74.88
1-1/4	7	12	-	4-6	33.18	1		99.54
1-3/8	6	12	-	4-6	41.64	1		124.92
1-1/2	6	12	-	4-6	49.94	1		149.82

CARBON STEEL METRIC HAND TAPS

ICS USA

GENERAL PURPOSE

CUT THREAD

SIZE	PITCH	ITEM NO.	PRICE	SIZE	PITCH	ITEM NO.	PRICE	SIZE	PITCH	ITEM NO.	PRICE
M3	0.50	CHTM03X.50()	2.90	*M9	0.75	CHTM09X0.75P	4.04	*M16	1.00	CHTM16X1.00P	8.72
*M3	0.60	CHTM03X.60P	2.90	*M9	1.00	CHTM09X1.0P	4.04	M16	1.50	CHTM16X1.50()	8.72
*M3.5	0.60	CHTM03.5X.60P	2.90	M9	1.25	CHTM09X1.25()	4.04	M16	2.00	CHTM16X2.00()	8.72
M4	0.70	CHTM04X.70()	2.40	M10	1.00	CHTM10X1.00()	4.66	M18	1.50	CHTM18X1.50()	10.04
*M4	0.75	CHTM04X.75P	2.40	M10	1.25	CHTM10X1.25()	4.66	M18	2.50	CHTM18X2.50()	10.04
M5	0.80	CHTM05X.80()	2.44	M10	1.50	CHTM10X1.50()	4.66	M20	1.50	CHTM20X1.50()	14.42
*M5	0.90	CHTM05X.90P	2.44	*M11	1.50	CHTM11X1.50P	5.02	M20	2.50	CHTM20X2.50()	14.42
*M5.5	0.90	CHTM05.5X.90P	2.44	M12	1.25	CHTM12X1.25()	5.66	M22	1.50	CHTM22X1.50()	15.04
M6	1.00	CHTM06X1.0()	2.72	M12	1.50	CHTM12X1.50()	5.66	M22	2.50	CHTM22X2.50()	15.04
*M6.3	1.00	CHTM06.3X1.0P	2.72	M12	1.75	CHTM12X1.75()	5.66	*M24	1.50	CHTM24X1.50P	18.42
M7	1.00	CHTM07X1.0()	3.02	M14	1.25	CHTM14X1.25()	7.14	M24	2.00	CHTM24X2.00()	18.42
M8	1.00	CHTM08X1.0()	3.36	M14	1.50	CHTM14X1.50()	7.14	M24	3.00	CHTM24X3.00()	18.42
M8	1.25	CHTM08X1.25()	3.36	M14	2.00	CHTM14X2.00()	7.14				

Metric pitches in **bold type** are **coarse thread** form.

- Please specify Taper (T), Plug (P) or Bottoming (B) chamfer. Examples: CHTM04X.70T, CHTM10X1.50P, CHTM24X1.50B.

* Plug only

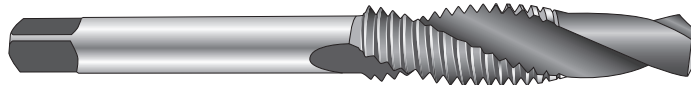
HIGH SPEED STEEL COMBINED DRILL AND TAPS

TT-18

ICS USA

HEAVY DUTY

118° NOTCHED POINT



RIGHT HAND
CUT

High Speed Steel Fractional Combined Drill and Taps are designed to drill and tap a threaded hole up to two times the tap diameter in one operation. Drill should protrude through material before tapping. The tap section has ground threads and a bottoming chamfer for easier tapping. They are designed to operate at speeds between the normal tapping speed and drilling speed for the specific type of material it is used in.

Machine Screw and Fractional Sizes (#4 To 3/4" Dia.)

TAP SIZE	THREADS PER INCH	NO. OF FLUTES	THREAD LENGTH	OVERALL LENGTH	DRILL DIAMETER	DRILL LENGTH	ITEM NO.	PRICE
4	40	2	9/16	1-7/8	.0930	1/4	CDT#04-40	-
4	48	2	9/16	1-7/8	.0930	1/4	CDT#04-48	-
5	40	2	5/8	1-15/16	.1040	9/32	CDT#05-40	-
5	44	2	5/8	1-15/16	.1040	9/32	CDT#05-44	-
6	32	2	11/16	2	.1150	5/16	CDT#06-32	-
6	40	2	11/16	2	.1150	5/16	CDT#06-40	-
8	32	2	7/16	2-1/8	.1385	5/16	CDT#08-32	-
8	36	2	3/4	2-1/8	.1385	3/8	CDT#08-36	-
10	24	2	5/8	2-3/8	.1535	3/8	CDT#10-24	-
10	32	2	5/8	2-3/8	.1535	3/8	CDT#10-32	-
12	24	2	5/8	2-3/8	.1772	3/8	CDT#12-24	-
12	28	2	7/8	2-3/8	.1772	15/32	CDT#12-28	-
1/4	20	2	11/16	2-3/8	.2008	1/2	CDT016-20	CALL FOR PRICE
1/4	28	2	11/16	2-1/2	.2008	1/2	CDT016-28	
5/16	18	2	13/16	3	.2559	5/8	CDT020-18	
5/16	24	2	13/16	3	.2559	5/8	CDT020-24	
3/8	16	2	7/8	3-1/2	.3150	3/4	CDT024-16	
3/8	24	2	7/8	3-1/2	.3150	3/4	CDT024-24	
7/16	14	2	1	3-7/8	.3622	7/8	CDT028-14	-
7/16	20	2	1	3-7/8	.3622	7/8	CDT028-20	-
1/2	13	2	1-1/8	4-1/4	.4252	1	CDT032-13	-
1/2	20	2	1-1/8	4-1/4	.4252	1	CDT032-20	-
9/16	12	2	1-3/16	4-7/8	.4803	1-3/16	CDT036-12	-
9/16	18	2	1-3/16	4-7/8	.4803	1-3/16	CDT036-18	-
5/8	11	2	1-1/4	5-1/4	.5315	1-1/4	CDT040-11	-
5/8	18	2	1-1/4	5-1/4	.5315	1-1/4	CDT040-18	-
3/4	10	2	1-3/8	5-5/8	.6920	1-3/8	CDT048-10	-
3/4	16	2	1-3/8	5-5/8	.6920	1-3/8	CDT048-16	-

NOTE: Combined Drill and Taps are available in longer lengths. Inquire for sizes and pricing.

High Speed Steel Metric Combined Drill and Taps are designed to drill and tap a threaded hole up to two times the tap diameter in one operation. Drill should protrude through material before tapping. The tap section has ground threads and a bottoming chamfer for easier tapping. They are designed to operate at speeds between the normal tapping speed and drilling speed for the specific type of material it is used in.

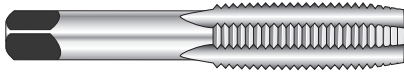
Metric Sizes (4.0mm To 12.0mm Dia.)

TAP SIZE	THREADS PER INCH	NO. OF FLUTES	THREAD LENGTH	OVERALL LENGTH	DRILL DIAMETER	DRILL LENGTH	ITEM NO.	PRICE
M4	0.70	2	7/16	2-9/16	.1299	5/16	CDTM04.0X0.70	-
M5	0.80	2	5/8	2-3/4	.1654	3/8	CDTM05.0X0.80	CALL FOR PRICE
M6	1.00	2	11/16	3-3/8	.1969	1/2	CDTM06.0X1.00	
M8	1.25	2	13/16	3-3/4	.2677	5/8	CDTM08.0X1.25	
M10	1.50	2	7/8	4-3/16	.3346	3/4	CDTM10.0X1.50	-
M12	1.75	2	1-1/8	4-1/2	.4016	1	CDTM12.0X1.75	-

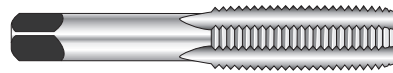
(STI) SCREW THREAD INSERT HAND TAPS

ICS

USA

SPECIAL PURPOSE**GROUND THREAD**

PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

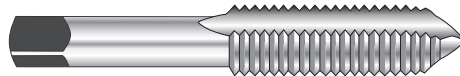
High Speed Steel STI (Screw Thread Insert) Hand Taps are oversize taps designed to produce threads that will accommodate a "Helicoil" or screw thread inserts of the same nominal size and pitch.

NO. OF LIMIT			NC UNC - COARSE THREAD			NF UNF - FINE THREAD			PRICE EACH
SIZE	FLUTES	NO.	TPI	ITEM NO.		TPI	ITEM NO.		
				PLUG	BOTTOMING		PLUG	BOTTOMING	
4	3	H2	40	STIT#04-40P	STIT#04-40B				21.46
6	3	H3	32	STIT#06-40P	STIT#06-40B				21.46
8	3	H3	32	STIT#08-32P	STIT#08-32B				23.42
10	3	H3	24	STIT#10-24P	STIT#10-24B	32	STIT#10-32P	STIT#10-32B	24.12
1/4	3	H3	20	STIT016-20P	STIT016-20B	28	STIT016-28P	STIT016-28B	23.46
5/16	4	H3	18	STIT020-18P	STIT020-18B	24	STIT020-24P	STIT020-24B	27.64
3/8	4	H3	16	STIT024-16P	STIT024-16B	24	STIT024-24P	STIT024-24B	35.88
7/16	4	H3	14	STIT028-14P	STIT028-14B	20	STIT028-20P	STIT028-20B	39.48
1/2	4	H3	13	STIT032-13P	STIT032-13B	20	STIT032-20P	STIT032-20B	46.12
3/4	4	H3	10	STIT048-10P	STIT048-10B				66.18

(STI) SCREW THREAD INSERT SPIRAL POINT PLUG TAPS

ICS

USA

SPECIAL PURPOSE**GROUND THREAD**

PLUG CHAMFER

High Speed Steel STI (Screw Thread Insert) Spiral Point Taps are oversize taps designed to produce threads that will accommodate a "Helicoil" or screw thread inserts of the same nominal size and pitch.

SIZE	NO. OF FLUTES	LIMIT NO.	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		PRICE EACH
			TPI	ITEM NO.	TPI	ITEM NO.	
				PLUG		PLUG	
4	2	H2	40	STISPT#04-40			22.94
6	2	H3	32	STISPT#06-40			22.94
8	2	H3	32	STISPT#08-32			24.70
10	2	H3	24	STISPT#10-24	32	STISPT#10-32	25.62
1/4	2	H3	20	STISPT016-20	28	STISPT016-28	25.26
5/16	3	H3	18	STISPT020-18	24	STISPT020-24	29.24
3/8	3	H3	16	STISPT024-16	24	STISPT024-24	38.48
7/16	3	H3	14	STISPT028-14	20	STISPT028-20	45.86
1/2	3	H3	13	STISPT032-13	20	STISPT032-20	49.98

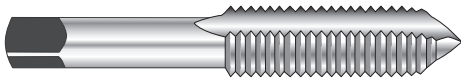
HIGH SPEED STEEL SPIRAL POINT TAPS (GUN TAPS)

TT-20

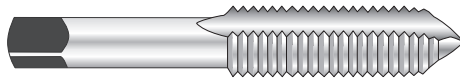
ICS WIS

GENERAL PURPOSE

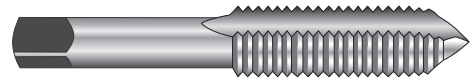
GROUND THREAD



HSS UNCOATED (Bright Finish)



CHROME PLATED (Silver Finish)



TiN COATED (Gold Finish)

High Speed Steel Spiral Point Taps are designed primarily for machine tapping in through holes with adequate bottom clearance for chips to accumulate. The cutting face of the first few threads are ground back relative to the axis of the tap to force the chips ahead of the tap. This reduces loading and clogging in flutes and allows a free flow of coolant to reach the cutting edge. The shallow straight flutes are not ground as deep as a hand tap, which gives the tap greater strength and can be run at higher speeds with less power. Ideal for tapping most ductile materials, aluminum, brass, copper die castings, soft steels, etc. They are also known as Gun Taps, Gun Nose Taps, Bull Nose Taps, or Chipdriver Taps.

Chrome Plated High Speed Steel Spiral Point Taps are plated with a very thin layer of hard chrome to produce a surface hardness of RC 72. Chrome plating reduces friction, improves lubrication, has excellent wear resistance, and prevents galling. Often used where lubrication is not possible or available. Can be operated at higher speeds. Chrome plated taps have a bright silver finish. Ideal for tapping most ferrous, non-ferrous, and non-metallic surfaces.

Titanium Nitride Coated High Speed Steel Spiral Point Taps have a bright gold coating of Titanium Nitride about .0001 thick to produce a surface hardness of RC 86. It refracts heat and acts as a thermal barrier between the chips and the tap. Titanium Nitride reduces friction and chip welding and can be operated at higher speeds. Ideal for tapping most ferrous, non-ferrous, and non-metallic materials.

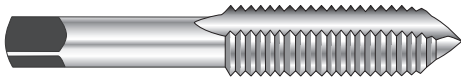
THREAD SIZE	NO. OF FLUTES	LIMIT NO.	HSS UNCOATED (Bright Finish)		CHROME PLATED (Silver Finish)		TiN COATED (Gold Finish)	
			ITEM NO.	PRICE	ITEM NO.	PRICE	ITEM NO.	PRICE
0-80	2	H2	SPT#00-80PH2	-	SPTCP#00-80PH2	-	SPTT#00-80PH2	-
1-64	2	H2	SPT#01-64PH2	-	SPTCP#01-64PH2	-	SPTT#01-64PH2	-
1-72	2	H2	SPT#01-72PH2	-	SPTCP#01-72PH2	-	SPTT#01-72PH2	-
2-56	2	H2	SPT#02-56PH2	-	SPTCP#02-56PH2	-	SPTT#02-56PH2	-
2-64	2	H2	SPT#02-64PH2	-	SPTCP#02-64PH2	-	SPTT#02-64PH2	-
3-48	2	H2	SPT#03-48PH2	-	SPTCP#03-48PH2	-	SPTT#03-48PH2	-
3-56	2	H2	SPT#03-56PH2	-	SPTCP#03-56PH2	-	SPTT#03-56PH2	-
4-40	2	H2	SPT#04-40PH2	-	SPTCP#04-40PH2	-	SPTT#04-40PH2	-
4-48	2	H2	SPT#04-48PH2	-	SPTCP#04-48PH2	-	SPTT#04-48PH2	-
5-40	2	H2	SPT#05-40PH2	-	SPTCP#05-40PH2	-	SPTT#05-40PH2	-
5-44	2	H2	SPT#05-44PH2	-	SPTCP#05-44PH2	-	SPTT#05-44PH2	-
6-32	2	H3	SPT#06-32PH3	-	SPTCP#06-32PH3	-	SPTT#06-32PH3	-
6-40	2	H3	SPT#06-40PH3	-	SPTCP#06-40PH3	-	SPTT#06-40PH3	-
8-32	2	H3	SPT#08-32PH3	-	SPTCP#08-32PH3	-	SPTT#08-32PH3	-
8-36	2	H3	SPT#08-36PH3	-	SPTCP#08-36PH3	-	SPTT#08-36PH3	-
10-24	2	H3	SPT#10-24PH3	-	SPTCP#10-24PH3	-	SPTT#10-24PH3	-
10-32	2	H3	SPT#10-32PH3	CALL FOR PRICE	SPTCP#10-32PH3	CALL FOR PRICE	SPTT#10-32PH3	CALL FOR PRICE
12-24	2	H3	SPT#12-24PH3	-	SPTCP#12-24PH3	-	SPTT#12-24PH3	-
12-32	2	H3	SPT#12-32PH3	-	SPTCP#12-32PH3	-	SPTT#12-32PH3	-
1/4-20	2	H3	SPT016-20PH3	-	SPTCP016-20PH3	-	SPTT016-20PH3	-
1/4-28	2	H3	SPT016-28PH3	-	SPTCP016-28PH3	-	SPTT016-28PH3	-
5/16-18	2	H3	SPT020-18PH3	-	SPTCP020-18PH3	-	SPTT020-18PH3	-
5/16-24	2	H3	SPT020-24PH3	-	SPTCP020-24PH3	-	SPTT020-24PH3	-
3/8-16	3	H3	SPT024-16PH3	-	SPTCP024-16PH3	-	SPTT024-16PH3	-
3/8-24	3	H3	SPT024-24PH3	-	SPTCP024-24PH3	-	SPTT024-24PH3	-
7/16-14	3	H3	SPT028-14PH3	-	SPTCP028-14PH3	-	SPTT028-14PH3	-
7/16-20	3	H3	SPT028-20PH3	-	SPTCP028-20PH3	-	SPTT028-20PH3	-
1/2-13	3	H3	SPT032-13PH3	-	SPTCP032-13PH3	-	SPTT032-13PH3	-
1/2-20	3	H3	SPT032-20PH3	-	SPTCP032-20PH3	-	SPTT032-20PH3	-
9/16-12	3	H3	SPT036-12PH3	-	SPTCP036-12PH3	-	SPTT036-12PH3	-
9/16-18	3	H3	SPT036-18PH3	-	SPTCP036-18PH3	-	SPTT036-18PH3	-
5/8-11	3	H3	SPT040-11PH3	-	SPTCP040-11PH3	-	SPTT040-11PH3	-
5/8-18	3	H3	SPT040-18PH3	-	SPTCP040-18PH3	-	SPTT040-18PH3	-
11/16-11	3	H3	SPT044-11PH3	-	SPTCP044-11PH3	-	SPTT044-11PH3	-
11/16-16	3	H3	SPT044-16PH3	-	SPTCP044-16PH3	-	SPTT044-16PH3	-
3/4-10	3	H3	SPT048-10PH3	-	SPTCP048-10PH3	-	SPTT048-10PH3	-
3/4-16	3	H3	SPT048-16PH3	-	SPTCP048-16PH3	-	SPTT048-16PH3	-
7/8-9	3	H3	SPT056-09PH3	-	SPTCP056-09PH3	-	SPTT056-09PH3	-
7/8-14	3	H3	SPT056-14PH3	-	SPTCP056-14PH3	-	SPTT056-14PH3	-
1-8	3	H3	SPT100-08PH3	-	SPTCP100-08PH3	-	SPTT100-08PH3	-
1-12	3	H3	SPT100-12PH3	-	SPTCP100-12PH3	-	SPTT100-12PH3	-
1-14	3	H3	SPT100-14PH3	-	SPTCP100-14PH3	-	SPTT100-14PH3	-

HIGH SPEED STEEL METRIC SPIRAL POINT TAPS (GUN TAPS)

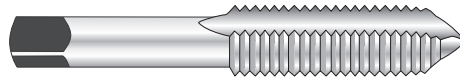
ICS WIS

GENERAL PURPOSE

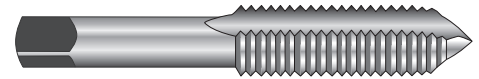
GROUND THREAD



HSS UNCOATED (Bright Finish)



CHROME PLATED (Silver Finish)



TiN COATED (Gold Finish)

High Speed Steel Metric Spiral Point Taps are designed primarily for machine tapping in through holes with adequate bottom clearance for chips to accumulate. The cutting face of the first few threads are ground back relative to the axis of the tap to force the chips ahead of the tap. This reduces loading and clogging in flutes and allows a free flow of coolant to reach the cutting edge. The shallow straight flutes are not ground as deep as a hand tap, which gives the tap greater strength and can be run at higher speeds with less power. Ideal for tapping most ductile materials, aluminum, brass, copper die castings, soft steels, etc. They are also known as Metric Gun Taps, Metric Gun Nose Taps, Metric Bull Nose Taps, or Metric Chipdriver Taps.

Chrome Plated High Speed Steel Metric Spiral Point Taps are plated with a very thin layer of hard chrome to produce a surface hardness of RC 72. Chrome plating reduces friction, improves lubrication, has excellent wear resistance, and prevents galling. Often used where lubrication is not possible or available. Can be operated at higher speeds. Chrome plated taps have a bright silver finish. Ideal for tapping most ferrous, non-ferrous, and non-metallic surfaces.

Titanium Nitride Coated High Speed Steel Metric Spiral Point Taps have a bright gold coating of Titanium Nitride about .0001 thick to produce a surface hardness of RC 86. It refracts heat and acts as a thermal barrier between the chips and the tap. Titanium Nitride reduces friction and chip welding and can be operated at higher speeds. Ideal for tapping most ferrous, non-ferrous, and non-metallic materials.

THREAD SIZE PITCH		NO. OF FLUTES	HSS UNCOATED (Bright Finish)		CHROME PLATED (Silver Finish)		TiN COATED (Gold Finish)	
			ITEM NO.	PRICE	ITEM NO.	PRICE	ITEM NO.	PRICE
M1.6	.35	2	SPTM01.6X.35	-	SPTMCP01.6X.35	-	SPTMT01.6X.35	-
M1.8	.35	2	SPTM01.8X.35	-	SPTMCP01.8X.35	-	SPTMT01.8X.35	-
M2.0	.40	2	SPTM02.0X.40	-	SPTMCP02.0X.40	-	SPTMT02.0X.40	-
M2.2	.45	2	SPTM02.2X.45	-	SPTMCP02.2X.45	-	SPTMT02.2X.45	-
M2.5	.45	2	SPTM02.5X.45	-	SPTMCP02.5X.45	-	SPTMT02.5X.45	-
M3.0	.50	2	SPTM03.0X.50	-	SPTMCP03.0X.50	-	SPTMT03.0X.50	-
M3.5	.60	2	SPTM03.5X.60	-	SPTMCP03.5X.60	-	SPTMT03.5X.60	-
M4.0	.70	2	SPTM04.0X.70	-	SPTMCP04.0X.70	-	SPTMT04.0X.70	-
M4.5	.75	2	SPTM04.5X.75	-	SPTMCP04.5X.75	-	SPTMT04.5X.75	-
M5.0	.80	2	SPTM05.0X.80	-	SPTMCP05.0X.80	-	SPTMT05.0X.80	-
M6.0	1.00	2	SPTM06.0X1.0	-	SPTMCP06.0X1.0	-	SPTMT06.0X1.0	-
M6.3	1.00	2	SPTM06.3X1.0	CALL	SPTMCP06.3X1.0	CALL	SPTMT06.3X1.0	CALL
M7.0	1.00	2	SPTM07.0X1.0	FOR	SPTMCP07.0X1.0	FOR	SPTMT07.0X1.0	FOR
M8.0	1.25	2	SPTM08.0X1.25	PRICE	SPTMCP08.0X1.25	PRICE	SPTMT08.0X1.25	PRICE
M8.0	1.00	2	SPTM08.0X1.0	-	SPTMCP08.0X1.0	-	SPTMT08.0X1.0	-
M10.0	1.50	3	SPTM10.0X1.5	-	SPTMCP10.0X1.5	-	SPTMT10.0X1.5	-
M10.0	1.25	3	SPTM10.0X1.25	-	SPTMCP10.0X1.25	-	SPTMT10.0X1.25	-
M12.0	1.75	3	SPTM12.0X1.75	-	SPTMCP12.0X1.75	-	SPTMT12.0X1.75	-
M12.0	1.25	3	SPTM12.0X1.25	-	SPTMCP12.0X1.25	-	SPTMT12.0X1.25	-
M14.0	2.00	3	SPTM14.0X2.0	-	SPTMCP14.0X2.0	-	SPTMT14.0X2.0	-
M14.0	1.50	3	SPTM14.0X1.5	-	SPTMCP14.0X1.5	-	SPTMT14.0X1.5	-
M16.0	2.00	3	SPTM16.0X2.0	-	SPTMCP16.0X2.0	-	SPTMT16.0X2.0	-
M16.0	1.50	3	SPTM16.0X1.5	-	SPTMCP16.0X1.5	-	SPTMT16.0X1.5	-
M18.0	1.50	3	SPTM18.0X1.5	-	SPTMCP18.0X1.5	-	SPTMT18.0X1.5	-
M18.0	2.50	3	SPTM18.0X2.5	-	SPTMCP18.0X2.5	-	SPTMT18.0X2.5	-
M20.0	1.50	3	SPTM20.0X1.5	-	SPTMCP20.0X1.5	-	SPTMT20.0X1.5	-
M20.0	2.50	3	SPTM20.0X2.5	-	SPTMCP20.0X2.5	-	SPTMT20.0X2.5	-
M24.0	3.00	3	SPTM24.0X3.0	-	SPTMCP24.0X3.0	-	SPTMT24.0X3.0	-

PACKAGING

M1.6 - M14 - 12 Taps/Box

M16 - M24 - 3 Taps/Box

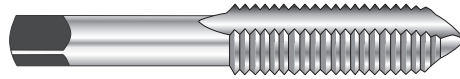
Metric pitches in **bold type** are **coarse thread** form.

+.005 OVERSIZE SPIRAL POINT TAPS

ICS WIS

GENERAL PURPOSE

GROUND THREAD

PLUG
CHAMFER

Oversize Spiral Point Taps are used primarily where a piece will be plated or heat treated after tapping. They are also used when tapping plastics or zinc alloys where it is difficult to maintain the proper tapped hole size because of abrasion or shrinkage.

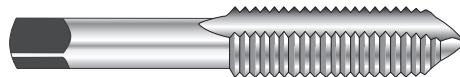
SIZE	NO. OF FLUTES	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		NS - SPECIAL THREAD		PRICE EACH
		TPI	ITEM NO.	TPI	ITEM NO.	TPI	ITEM NO.	
4	2	40	SPTO#04-40					8.14
5	2	40	SPTO#05-40					8.34
6	2	32	SPTO#06-32					6.96
8	2	32	SPTO#08-32					6.96
10	2	24	SPTO#10-24	32	SPTO#10-32			6.96
1/4	2	20	SPTO016-20	28	SPTO016-28			6.96
5/16	2	18	SPTO020-18	24	SPTO020-24			7.50
3/8	3	16	SPTO024-16	24	SPTO024-24			9.10
7/16	3	14	SPTO028-14	20	SPTO028-20			15.26
1/2	3	13	SPTO032-13	20	SPTO032-20			15.52
5/8	3	11	SPTO040-11	18	SPTO040-18			29.86
3/4	3	10	SPTO048-10	16	SPTO048-16			41.90
7/8	3	9	SPTO056-09	14	SPTO056-14			57.58
1	3	8	SPTO100-08	12	SPTO100-12	14	SPTO100-14	77.18

COBALT SPIRAL POINT TAPS

ICS WIS

HEAVY DUTY

GROUND THREAD

PLUG
CHAMFER

Cobalt Spiral Point Taps are designed for tapping difficult applications such as heat treated steels up to 45 RC, tool steels, and other tough alloys.

SIZE	NO. OF FLUTES	LIMIT NO	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		PRICE EACH
			TPI	ITEM NO.	TPI	ITEM NO.	
2	2	H3	56	SPTC#02-56	64	SPTC#02-64	12.88
3	2	H3	48	SPTC#03-48	56	SPTC#03-56	12.88
4	2	H3	40	SPTC#04-40	48	SPTC#04-48	11.26
6	2	H3	40	SPTC#06-40	32	SPTC#06-32	11.26
8	2	H3	32	SPTC#08-32	36	SPTC#08-36	11.26
10	2	H3	24	SPTC#10-24	32	SPTC#10-32	11.26
1/4	2	H3	20	SPTC016-20	28	SPTC016-28	12.60
5/16	2	H3	18	SPTC020-18	24	SPTC020-24	14.70
3/8	3	H3	16	SPTC024-16	24	SPTC024-24	17.18
7/16	3	H3	14	SPTC028-14	20	SPTC028-20	18.90
1/2	3	H3	13	SPTC032-13	20	SPTC032-20	20.36
5/8	3	H3	11	SPTC040-11	18	SPTC040-18	47.66
3/4	3	H3	10	SPTC048-10	16	SPTC048-16	72.30

SPIRAL POINT EXTENSION TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

DROP THRU
SHANKPLUG
CHAMFER

Spiral Point Extension Taps are designed for deep hole tapping where the work requires an undercut shank to follow through hole.

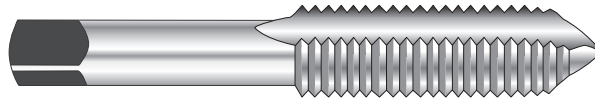
SIZE	NO. OF FLUTES	LIMIT NO	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		PRICE EACH	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		PRICE EACH
			TPI	ITEM NO.	TPI	ITEM NO.		TPI	ITEM NO.	TPI	ITEM NO.	
6	2	H3	32	SPET#06-32X06			30.92	32	SPET#06-32X12			-
8	2	H3	32	SPET#08-32X06			30.92	32	SPET#08-32X12			-
10	2	H3	24	SPET#10-24X06	32	SPET#10-32X06	30.92	24	SPET#10-24X12	32	SPET#10-32X12	CALL FOR PRICE
1/4	2	H3	20	SPET016-20X06	28	SPET016-28X06	30.92	20	SPET016-20X12	28	SPET016-28X12	-
5/16	2	H3	18	SPET020-18X06	24	SPET020-24X06	39.20	18	SPET020-18X12	24	SPET020-24X12	-
3/8	3	H3	16	SPET024-16X06	24	SPET024-24X06	43.90	16	SPET024-16X12	24	SPET024-24X12	-
7/16	3	H3	14	SPET028-14X06	20	SPET028-20X06	44.46	14	SPET028-14X12	20	SPET028-20X12	-
1/2	3	H3	13	SPET032-13X06	20	SPET032-20X06	46.98	13	SPET032-13X12	20	SPET032-20X12	-

PREMIUM (10% COBALT) MICROGRAIN
SOLID CARBIDE SPIRAL POINT TAPS

ICS USA

HEAVY DUTY

CNC GROUND

PLUG
CHAMFER

Micrograin Solid Carbide Spiral Point Taps are designed for machine tapping through holes or blind holes in difficult to machine materials and tough work hardening metals such as stainless steel, titanium alloys, Inconel, powdered metals, cast iron, plastics, and steels up to Rockwell hardness C45. Used whenever high speed steel spiral point taps cannot handle the job. Solid Carbide Spiral Point Taps have a plug chamfer and must have a rigid setup for use. Do not use for hand tapping.

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.	PRICE
6	32	2	H3	SCSPT#06-32	-
8	32	2	H3	SCSPT#08-32	-
10	24	2	H3	SCSPT#10-24	-
10	32	2	H3	SCSPT#10-32	-
12	24	2	H3	SCSPT#12-24	-
12	28	2	H3	SCSPT#12-28	CALL
1/4	20	2	H3	SCSPT016-20	FOR
1/4	28	2	H3	SCSPT016-28	PRICE
5/16	18	2	H3	SCSPT020-18	-
5/16	24	2	H3	SCSPT020-24	-
3/8	16	3	H3	SCSPT024-16	-
3/8	24	3	H3	SCSPT024-24	-
7/16	14	3	H3	SCSPT028-14	-
7/16	20	3	H3	SCSPT028-20	-

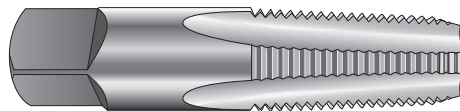
Special Thread Solid Carbide Spiral Point Taps can be made to your requirements. Consult factory for price and quick delivery.

PREMIUM (10% COBALT) MICROGRAIN
SOLID CARBIDE TAPER (NPT) PIPE TAPS

ICS USA

HEAVY DUTY

CNC GROUND



Micrograin Solid Carbide Taper Pipe Taps are designed to tap pipe fittings made of difficult to machine materials and tough work hardening metals such as stainless steel, titanium alloys, Inconel, powdered metals, cast iron, plastics, and steels up to Rockwell hardness C45. Use when high speed steel taper pipe taps (NPT) cannot handle the job. Solid Carbide Taper Pipe Taps (NPT) have a taper chamfer and must have a rigid setup for use.

SIZE	THREADS PER INCH	NO. OF FLUTES	ITEM NO.	PRICE
1/4	18	4	SCNPT016-18	-
3/8	18	4	SCNPT024-18	CALL
1/2	18	4	SCNPT032-18	FOR
3/4	14	5	SCNPT048-14	PRICE
1	11-1/2	5	SCNPT100-11.5	-

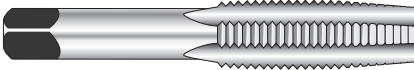
PREMIUM (10% COBALT) MICROGRAIN SOLID CARBIDE HAND TAPS

TT-24

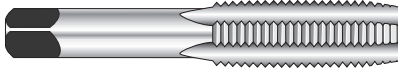
ICS USA

HEAVY DUTY

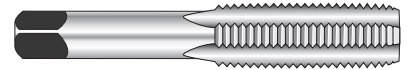
CNC GROUND



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

Micrograin Solid Carbide Hand Taps are designed for threading difficult to machine materials and tough work hardening metals such as stainless steel, titanium alloys, Inconel, powdered metals, cast iron, plastics, and steels up to Rockwell hardness C45. Used whenever high speed steel hand taps cannot handle the job. Solid Carbide Hand Taps must have a rigid setup for use.

Right Hand Thread Sizes (#6 to 5/8" Dia.)

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.		
				(TAPER)	(PLUG)	(BOTTOMING)
6	32	3	H3	SCHT#06-32T	SCHT#06-32P	SCHT#06-32B
8	32	4	H3	SCHT#08-32T	SCHT#08-32P	SCHT#08-32B
10	24	4	H3	SCHT#10-24T	SCHT#10-24P	SCHT#10-24B
10	32	4	H3	SCHT#10-32T	SCHT#10-32P	SCHT#10-32B
12	24	4	H3	SCHT#12-24T	SCHT#12-24P	SCHT#12-24B
12	28	4	H3	SCHT#12-28T	SCHT#12-28P	SCHT#12-28B
12	32	4	H3	SCHT#12-32T	SCHT#12-32P	SCHT#12-32B
1/4	20	4	H3	SCHT016-20T	SCHT016-20P	SCHT016-20B
1/4	28	4	H3	SCHT016-28T	SCHT016-28P	SCHT016-28B
1/4	32	4	H3	SCHT016-32T	SCHT016-32P	SCHT016-32B
5/16	18	4	H3	SCHT020-18T	SCHT020-18P	SCHT020-18B
5/16	24	4	H3	SCHT020-24T	SCHT020-24P	SCHT020-24B
5/16	32	4	H3	SCHT020-32T	SCHT020-32P	SCHT020-32B
3/8	16	4	H3	SCHT024-16T	SCHT024-16P	SCHT024-16B
3/8	24	4	H3	SCHT024-24T	SCHT024-24P	SCHT024-24B
3/8	32	4	H3	SCHT024-32T	SCHT024-32P	SCHT024-32B
7/16	14	4	H3	SCHT028-14T	SCHT028-14P	SCHT028-14B
7/16	20	4	H3	SCHT028-20T	SCHT028-20P	SCHT028-20B
7/16	28	4	H3	SCHT028-28T	SCHT028-28P	SCHT028-28B
1/2	13	4	H3	SCHT032-13T	SCHT032-13P	SCHT032-13B
1/2	20	4	H3	SCHT032-20T	SCHT032-20P	SCHT032-20B
1/2	28	4	H3	SCHT032-28T	SCHT032-28P	SCHT032-28B
9/16	12	4	H3	SCHT036-12T	SCHT036-12P	SCHT036-12B
9/16	18	4	H3	SCHT036-18T	SCHT036-18P	SCHT036-18B
5/8	11	4	H3	SCHT040-11T	SCHT040-11P	SCHT040-11B
5/8	18	4	H3	SCHT040-18T	SCHT040-18P	SCHT040-18B

Left Hand Thread Sizes (#6 to 5/8" Dia.)

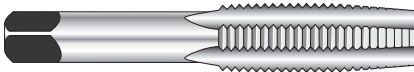
SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.		
				(TAPER)	(PLUG)	(BOTTOMING)
6	32	3	H3	SCHTL#06-32T	SCHTL#06-32P	SCHTL#06-32B
8	32	4	H3	SCHTL#08-32T	SCHTL#08-32P	SCHTL#08-32B
10	24	4	H3	SCHTL#10-24T	SCHTL#10-24P	SCHTL#10-24B
10	32	4	H3	SCHTL#10-32T	SCHTL#10-32P	SCHTL#10-32B
12	24	4	H3	SCHTL#12-24T	SCHTL#12-24P	SCHTL#12-24B
12	28	4	H3	SCHTL#12-28T	SCHTL#12-28P	SCHTL#12-28B
12	32	4	H3	SCHTL#12-32T	SCHTL#12-32P	SCHTL#12-32B
1/4	20	4	H3	SCHTL016-20T	SCHTL016-20P	SCHTL016-20B
1/4	28	4	H3	SCHTL016-28T	SCHTL016-28P	SCHTL016-28B
1/4	32	4	H3	SCHTL016-32T	SCHTL016-32P	SCHTL016-32B
5/16	18	4	H3	SCHTL020-18T	SCHTL020-18P	SCHTL020-18B
5/16	24	4	H3	SCHTL020-24T	SCHTL020-24P	SCHTL020-24B
5/16	32	4	H3	SCHTL020-32T	SCHTL020-32P	SCHTL020-32B
3/8	16	4	H3	SCHTL024-16T	SCHTL024-16P	SCHTL024-16B
3/8	24	4	H3	SCHTL024-24T	SCHTL024-24P	SCHTL024-24B
3/8	32	4	H3	SCHTL024-32T	SCHTL024-32P	SCHTL024-32B
7/16	14	4	H3	SCHTL028-14T	SCHTL028-14P	SCHTL028-14B
7/16	20	4	H3	SCHTL028-20T	SCHTL028-20P	SCHTL028-20B
7/16	28	4	H3	SCHTL028-28T	SCHTL028-28P	SCHTL028-28B
1/2	13	4	H3	SCHTL032-13T	SCHTL032-13P	SCHTL032-13B
1/2	20	4	H3	SCHTL032-20T	SCHTL032-20P	SCHTL032-20B
1/2	28	4	H3	SCHTL032-28T	SCHTL032-28P	SCHTL032-28B
9/16	12	4	H3	SCHTL036-12T	SCHTL036-12P	SCHTL036-12B
9/16	18	4	H3	SCHTL036-18T	SCHTL036-18P	SCHTL036-18B
5/8	11	4	H3	SCHTL040-11T	SCHTL040-11P	SCHTL040-11B
5/8	18	4	H3	SCHTL040-18T	SCHTL040-18P	SCHTL040-18B

PREMIUM (10% COBALT) MICROGRAIN SOLID CARBIDE METRIC HAND TAPS

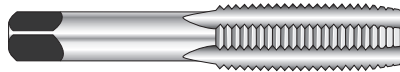
ICS USA

HEAVY DUTY

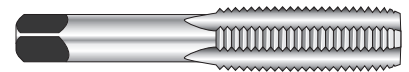
CNC GROUND



TAPER TAP
7-10 Thread Chamfer
at 5 degrees per side



PLUG TAP
3-5 Thread Chamfer
at 8 degrees per side



BOTTOMING TAP
1-2 Thread Chamfer
at 18 degrees per side

Micrograin Solid Carbide Metric Hand Taps are designed for threading difficult to machine materials and tough work hardening metals such as stainless steel, titanium alloys, Inconel, powdered metals, cast iron, plastics, and steels up to Rockwell hardness C45. Used whenever high speed steel hand taps cannot handle the job. Solid Carbide Hand Taps must have a rigid setup for use.

Right Hand Metric Thread Sizes (3.50mm to 16.00mm Dia.)

SIZE	PITCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.		
				(TAPER)	(PLUG)	(BOTTOMING)
M3.5	0.60	3	H3	SCHTM03.5X.60T	SCHTM03.5X.60P	SCHTM03.5X.60B
M4.0	0.70	4	H3	SCHTM04.0X.70T	SCHTM04.0X.70P	SCHTM04.0X.70B
M4.5	0.75	4	H3	SCHTM04.5X.75T	SCHTM04.5X.75P	SCHTM04.5X.75B
M5.0	0.80	4	H3	SCHTM05.0X.80T	SCHTM05.0X.80P	SCHTM05.0X.80B
M5.0	0.90	4	H3	SCHTM05.0X.90T	SCHTM05.0X.90P	SCHTM05.0X.90B
M6.0	1	4	H3	SCHTM06.0X1.0T	SCHTM06.0X1.0P	SCHTM06.0X1.0B
M6.3	1	4	H3	SCHTM06.3X1.0T	SCHTM06.3X1.0P	SCHTM06.3X1.0B
M7.0	1	4	H3	SCHTM07X1.00T	SCHTM07X1.00P	SCHTM07X1.00B
M8.0	1	4	H3	SCHTM08X1.00T	SCHTM08X1.00P	SCHTM08X1.00B
M8.0	1.25	4	H3	SCHTM08X1.25T	SCHTM08X1.25P	SCHTM08X1.25B
M9.0	1.25	4	H3	SCHTM09X1.25T	SCHTM09X1.25P	SCHTM09X1.25B
M10	1	4	H3	SCHTM10X1.00T	SCHTM10X1.00P	SCHTM10X1.00B
M10	1.25	4	H3	SCHTM10X1.25T	SCHTM10X1.25P	SCHTM10X1.25B
M10	1.50	4	H3	SCHTM10X1.50T	SCHTM10X1.50P	SCHTM10X1.50B
M12	1.25	4	H3	SCHTM12X1.25T	SCHTM12X1.25P	SCHTM12X1.25B
M12	1.50	4	H3	SCHTM12X1.50T	SCHTM12X1.50P	SCHTM12X1.50B
M12	1.75	4	H3	SCHTM12X1.75T	SCHTM12X1.75P	SCHTM12X1.75B
M14	1.25	4	H3	SCHTM14X1.25T	SCHTM14X1.25P	SCHTM14X1.25B
M14	1.50	4	H3	SCHTM14X1.50T	SCHTM14X1.50P	SCHTM14X1.50B
M14	2	4	H3	SCHTM14X2.00T	SCHTM14X2.00P	SCHTM14X2.00B
M16	1.50	4	H3	SCHTM16X1.50T	SCHTM16X1.50P	SCHTM16X1.50B
M16	2	4	H3	SCHTM16X2.00T	SCHTM16X2.00P	SCHTM16X2.00B

Left Hand Metric Thread Sizes (3.50mm to 16.00mm Dia.)

SIZE	PITCH	NO. OF FLUTES	LIMIT NO.	ITEM NO.		
				(TAPER)	(PLUG)	(BOTTOMING)
M3.5	0.60	3	H3	SCHTML03.5X.60T	SCHTML03.5X.60P	SCHTML03.5X.60B
M4.0	0.70	4	H3	SCHTML04.0X.70T	SCHTML04.0X.70P	SCHTML04.0X.70B
M4.5	0.75	4	H3	SCHTML04.5X.75T	SCHTML04.5X.75P	SCHTML04.5X.75B
M5.0	0.80	4	H3	SCHTML05.0X.80T	SCHTML05.0X.80P	SCHTML05.0X.80B
M5.0	0.90	4	H3	SCHTML05.0X.90T	SCHTML05.0X.90P	SCHTML05.0X.90B
M6.0	1	4	H3	SCHTML06.0X1.0T	SCHTML06.0X1.0P	SCHTML06.0X1.0B
M6.3	1	4	H3	SCHTML06.3X1.0T	SCHTML06.3X1.0P	SCHTML06.3X1.0B
M7.0	1	4	H3	SCHTML07X1.00T	SCHTML07X1.00P	SCHTML07X1.00B
M8.0	1	4	H3	SCHTML08X1.00T	SCHTML08X1.00P	SCHTML08X1.00B
M8.0	1.25	4	H3	SCHTML08X1.25T	SCHTML08X1.25P	SCHTML08X1.25B
M9.0	1.25	4	H3	SCHTML09X1.25T	SCHTML09X1.25P	SCHTML09X1.25B
M10	1	4	H3	SCHTML10X1.00T	SCHTML10X1.00P	SCHTML10X1.00B
M10	1.25	4	H3	SCHTML10X1.25T	SCHTML10X1.25P	SCHTML10X1.25B
M10	1.50	4	H3	SCHTML10X1.50T	SCHTML10X1.50P	SCHTML10X1.50B
M12	1.25	4	H3	SCHTML12X1.25T	SCHTML12X1.25P	SCHTML12X1.25B
M12	1.50	4	H3	SCHTML12X1.50T	SCHTML12X1.50P	SCHTML12X1.50B
M12	1.75	4	H3	SCHTML12X1.75T	SCHTML12X1.75P	SCHTML12X1.75B
M14	1.25	4	H3	SCHTML14X1.25T	SCHTML14X1.25P	SCHTML14X1.25B
M14	1.50	4	H3	SCHTML14X1.50T	SCHTML14X1.50P	SCHTML14X1.50B
M14	2	4	H3	SCHTML14X2.00T	SCHTML14X2.00P	SCHTML14X2.00B
M16	1.50	4	H3	SCHTML16X1.50T	SCHTML16X1.50P	SCHTML16X1.50B
M16	2	4	H3	SCHTML16X2.00T	SCHTML16X2.00P	SCHTML16X2.00B

[CALL FOR PRICING](#)

Metric pitches in **bold type** are **coarse thread** form.

- Special Thread Solid Carbide Metric Hand Taps can be made to your requirements. Consult factory for price and quick delivery.

HIGH PERFORMANCE SPIRAL POINT TAPS**ICS USA****SPECIAL PURPOSE****GROUND THREAD****STEAM OXIDE
FINISH****PLUG
CHAMFER**

Premium Vanadium High Speed High Performance Spiral Point Taps are designed for through hole tapping in heat treated steels up to 45 RC, tough alloys, and stainless steels. They are manufactured with a reduced neck design specifically for use on CNC equipment.

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO. (TAPER)	PRICE
4	40	2	2	HPSPT#04-40	15.76
6	32	2	2	HPSPT#06-32	13.12
8	32	3	3	HPSPT#08-32	13.12
10	24	3	3	HPSPT#10-24	13.12
10	32	3	3	HPSPT#10-32	13.12
1/4	20	3	3	HPSPT016-20	14.56
1/4	28	3	3	HPSPT016-28	14.56
5/16	18	3	3	HPSPT020-18	16.38
5/16	24	3	3	HPSPT020-24	16.38
3/8	16	3	3	HPSPT024-16	18.48
3/8	24	3	3	HPSPT024-24	18.48

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO. (TAPER)	PRICE
7/16	14	3	3	HPSPT028-14	24.16
7/16	20	3	3	HPSPT028-20	24.16
1/2	13	3	3	HPSPT032-13	27.82
1/2	20	3	3	HPSPT032-20	27.82
5/8	11	3	3	HPSPT040-11	50.40
5/8	18	3	3	HPSPT040-18	50.40
3/4	10	3	3	HPSPT048-10	78.76
3/4	16	3	3	HPSPT048-16	78.76
7/8	9	4	4	HPSPT056-09	117.60
7/8	14	4	4	HPSPT056-14	117.60
1	8	4	4	HPSPT100-08	156.46

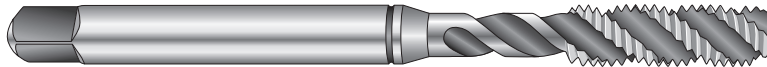
HSS - V PREMIUM VANADIUM**LONG LENGTH HIGH PERFORMANCE SPIRAL POINT TAPS****ICS USA****SPECIAL PURPOSE****GROUND THREAD****STEAM OXIDE
FINISH****PLUG
CHAMFER**

Long Length Premium Vanadium High Speed High Performance Spiral Point Taps are designed for through hole tapping in heat treated steels up to 45 RC, tough alloys, and stainless steels. They are manufactured with a reduced neck design specifically for use on CNC equipment.

SIZE	TPI	NO. OF FLUTES	LIMIT NO.	OAL	ITEM NO. (TAPER)	PRICE
4	40	2	2	6	HPSPT06L#04-40	35.70
6	32	2	2	6	HPSPT06L#06-32	33.60
8	32	3	3	6	HPSPT06L#08-32	33.60
10	24	3	3	6	HPSPT06L#10-24	33.60
10	32	3	3	6	HPSPT06L#10-32	33.60
1/4	20	3	3	6	HPSPT06L016-20	34.86
1/4	28	3	3	6	HPSPT06L016-28	34.86
5/16	18	3	3	6	HPSPT06L020-18	36.34

SIZE	TPI	NO. OF FLUTES	LIMIT NO.	OAL	ITEM NO. (TAPER)	PRICE
5/16	24	3	3	6	HPSPT06L020-24	36.34
3/8	16	3	3	6	HPSPT06L024-16	37.80
3/8	24	3	3	6	HPSPT06L024-24	37.80
7/16	14	3	3	6	HPSPT06L028-14	42.00
7/16	20	3	3	6	HPSPT06L028-20	42.00
1/2	13	3	3	6	HPSPT06L032-13	45.36
1/2	20	3	3	6	HPSPT06L032-20	45.36
5/8	11	3	3	6	HPSPT06L040-11	CALL

Special Thread Solid Carbide Spiral Point Taps can be made to your requirements. Consult factory for price and quick delivery.

HSS - V PREMIUM VANADIUM**HIGH PERFORMANCE SPIRAL FLUTE TAPS****ICS USA****SPECIAL PURPOSE****GROUND THREAD****STEAM OXIDE
FINISH****SEMI-BOTTOMING
CHAMFER**

Premium Vanadium High Speed High Performance Spiral Flute Taps are designed for through hole tapping in heat treated steels up to 45 RC, tough alloys, and stainless steels. Ideally suited for blind hole tapping. They are manufactured with a reduced neck design specifically for use on CNC equipment.

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO. (TAPER)	PRICE
4	40	2	2	HPSFT#04-40	25.30
6	32	2	2	HPSFT#06-32	20.48
8	32	3	3	HPSFT#08-32	20.48
10	24	3	3	HPSFT#10-24	20.48
10	32	3	3	HPSFT#10-32	20.48
1/4	20	3	3	HPSFT016-20	22.24
1/4	28	3	3	HPSFT016-28	22.24
5/16	18	3	3	HPSFT020-18	27.30
5/16	24	3	3	HPSFT020-24	27.30
3/8	16	3	3	HPSFT024-16	31.74
3/8	24	3	3	HPSFT024-24	31.74

SIZE	THREADS PER INCH	NO. OF FLUTES	LIMIT NO.	ITEM NO. (TAPER)	PRICE
7/16	14	3	3	HPSFT028-14	47.42
7/16	20	3	3	HPSFT028-20	47.42
1/2	13	3	3	HPSFT032-13	55.88
1/2	20	3	3	HPSFT032-20	55.88
5/8	11	4	3	HPSFT040-11	98.44
5/8	18	4	3	HPSFT040-18	98.44
3/4	10	4	3	HPSFT048-10	126.60
3/4	16	4	3	HPSFT048-16	126.60
7/8	9	4	4	HPSFT056-09	175.78
7/8	14	4	4	HPSFT056-14	184.00
1	8	4	4	HPSFT100-08	222.48

HIGH SPEED STEEL SPIRAL POINT PULLEY TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

PLUG
CHAMFER

Spiral Point Pulley Taps are used for machine tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. Thread length is the same length as a standard hand tap.

SIZE	NO. OF FLUTES	LIMIT NO	OVERALL LENGTH	NC UNC - COARSE THREAD		NF UNF - FINE THREAD		PRICE EACH
				TPI	ITEM NO.	TPI	ITEM NO.	
6	2	H3	6	32	SPPT#06-32			30.92
8	2	H3	6	32	SPPT#08-32			30.92
10	2	H3	6	24	SPPT#10-24	32	SPPT#10-32	30.92
1/4	2	H3	6	20	SPPT016-20	28	SPPT016-28	30.92
5/16	3	H3	6	18	SPPT020-18	24	SPPT020-24	39.20
3/8	3	H3	6	16	SPPT024-16	24	SPPT024-24	43.90
7/16	3	H3	6	14	SPPT028-14	20	SPPT028-20	44.46
1/2	3	H3	6	13	SPPT032-13	20	SPPT032-20	46.98

HIGH SPEED STEEL METRIC SPIRAL POINT PULLEY TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

PLUG
CHAMFER

Metric Spiral Point Pulley Taps are used for machine tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. Thread length is the same length as a standard hand tap.

SIZE (mm)	PITCH (mm)	NO. OF FLUTES	OVERALL LENGTH	ITEM NO.	PRICE
M3.5	.60	2	6	SPPTM03.5X0.60	37.28
M4	.70	2	6	SPPTM04.0X0.70	37.28
M4.5	.75	2	6	SPPTM04.5X0.75	37.28
M5	.80	2	6	SPPTM05.0X0.80	37.28
M6	1.00	2	6	SPPTM06.0X1.00	37.28
M7	1.00	2	6	SPPTM07.0X1.00	40.14
M8	1.25	2	6	SPPTM08.0X1.25	40.14
M10	1.50	3	6	SPPTM10.0X1.50	43.66
M12	1.75	3	6	SPPTM10.0X1.75	43.66

HIGH SPEED STEEL PULLEY TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

6", 8", 10" & 12"
LENGTHSPLUG
CHAMFER

Pulley Taps are used for tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. Thread length is the same length as a standard hand tap. Tap shanks will not follow through on sizes below 7/16".

ITEM NO.					THREADS PER INCH			NO	LIMIT NO	PRICE EACH			
ALPHA PREFIX	NUMERIC SUFFIX				SIZE	NC UNC	NF UNF	OF FLUTES		OVERALL LENGTH			
	SIZE	-	TPI	X LENGTH						6"	8"	10"	12"
PT	#05	-	(TPI)	x (lgth)	5	-	40	3	H3	27.60	30.70	-	-
PT	#06	-	(TPI)	x (lgth)	6	32	40	3	H3	27.60	30.70	-	-
PT	#08	-	(TPI)	x (lgth)	8	32	36	4	H3	27.60	30.70	-	-
PT	#10	-	(TPI)	x (lgth)	10	24	32	4	H3	27.60	30.70	-	-
PT	016	-	(TPI)	x (lgth)	1/4	20	28	4	H3	34.06	30.70	37.80	57.76
PT	020	-	(TPI)	x (lgth)	5/16	18	24	4	H3	38.22	40.82	47.26	59.86
PT	024	-	(TPI)	x (lgth)	3/8	16	24	4	H3	40.94	45.66	53.52	63.00
PT	028	-	(TPI)	x (lgth)	7/16	14	20	4	H3	41.68	54.20	58.52	74.26
PT	032	-	(TPI)	x (lgth)	1/2	13	20	4	H3	61.16	54.20	75.76	90.68
PT	040	-	(TPI)	x (lgth)	5/8	11	18	4	H3	89.48	75.76	94.86	111.18
PT	048	-	(TPI)	x (lgth)	3/4	10	16	4	H3	85.22	102.02	116.26	132.02

HIGH SPEED STEEL METRIC PULLEY TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

6"
LENGTHPLUG
CHAMFER

Metric Pulley Taps are used for tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. Thread length is the same length as a standard hand tap. Tap shanks will not follow through on sizes below 7/16". (Only 12mm will follow through.)

SIZE (mm)	PITCH (mm)	NO. OF FLUTES	OVERALL LENGTH	ITEM NO.	PRICE
M3.5	.60	3	6	PTM03.5X0.60	32.68
M4	.70	4	6	PTM04.0X0.70	32.68
M4.5	.75	4	6	PTM04.5X0.75	32.68
M5	.80	4	6	PTM05.0X0.80	32.68
M6	1.00	4	6	PTM06.0X1.00	32.68
M7	1.00	4	6	PTM07.0X1.00	34.92
M8	1.25	4	6	PTM08.0X1.25	34.92
M10	1.50	4	6	PTM10.0X1.50	38.46
M12	1.75	4	6	PTM12.0X1.75	49.00

HIGH SPEED STEEL NUT TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

DROP THRU
SHANKTAPER
CHAMFER

Nut taps, as the name implies, were designed for tapping nuts. Now most large production nut tapping jobs are done with bent shank nut taps. These taps are now used mainly for deep hole tapping where the work requires a tap with a long undercut shank and greater thread length.

SIZE	NO OF FLUTES	LIMIT NO	OVERALL LENGTH	NC UNC - COARSE THREAD			NF UNF - FINE THREAD			PRICE EACH
				TPI	THREAD LENGTH	ITEM NO.	TPI	THREAD LENGTH	ITEM NO.	
1/4	4	H3	5	20	1-5/8	NT016-20	28	1-5/8	NT016-28	38.50
5/16	4	H3	5-1/2	18	1-13/16	NT020-18	24	1-13/16	NT020-24	44.06
3/8	4	H3	6	16	2	NT024-16	24	2	NT024-24	51.66
7/16	4	H3	6-1/2	14	2-3/8	NT028-14	20	2-3/8	NT028-20	55.02
1/2	4	H3	7	13	2-1/2	NT032-13	20	2-1/2	NT032-20	68.78
9/16	4	H3	7-3/4	12	2-3/4	NT036-12	18	2-3/4	NT036-18	82.54
5/8	4	H3	8-1/4	11	3	NT040-11	18	3	NT040-18	90.78
3/4	4	H3	9	10	3-3/4	NT048-10	16	3-3/4	NT048-16	110.26

HIGH SPEED STEEL SPIRAL FLUTED (FAST) TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

FAST SPIRAL
(APPROX. 52°)PLUG & BOTTOMING
CHAMFER

Fast Spiral Fluted Taps have continuous spiral flutes to lift and discharge chips from deep blind holes in softer metals.

SIZE	THREADS PER INCH		NO. OF FLUTES	LIMIT NO.	PRICE
	NC	NF			HSS
	UNC	UNF			SFTF
4	40	-	2	H2	14.84
5	40	-	2	H2	14.84
6	32	-	2	H3	12.00
8	32	-	3	H3	12.00
10	24	32	3	H3	12.00
12	24	-	3	H3	12.00

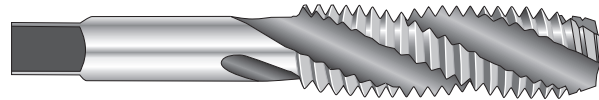
SIZE	THREADS PER INCH		NO. OF FLUTES	LIMIT NO.	PRICE
	NC	NF			HSS
	UNC	UNF			SFTF
1/4	20	28	3	H3	13.02
5/16	18	24	3	H3	16.36
3/8	16	24	3	H3	18.54
7/16	14	20	3	H3	27.70
1/2	13	20	3	H3	33.42
5/8	11	18	4	H3	51.70
3/4	10	16	4	H3	66.36

HIGH SPEED STEEL SPIRAL FLUTED (REGULAR) TAPS

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

REGULAR SPIRAL
(APPROX. 30°)PLUG & BOTTOMING
CHAMFER

Regular Spiral Fluted Taps have continuous 30° spiral flutes to lift and discharge chips from deep blind holes in steels and tough grades of aluminum.

SIZE	THREADS PER INCH		NO. OF FLUTES	LIMIT NO.	PRICE
	NC	NF			HSS
	UNC	UNF			SFTR
4	40	-	2	H2	14.84
5	40	-	2	H2	14.84
6	32	-	2	H3	12.00
8	32	-	3	H3	12.00
10	24	32	3	H3	12.00
12	24	-	3	H3	12.00

SIZE	THREADS PER INCH		NO. OF FLUTES	LIMIT NO.	PRICE
	NC	NF			HSS
	UNC	UNF			SFTR
1/4	20	28	3	H3	13.02
5/16	18	24	3	H3	16.36
3/8	16	24	3	H3	18.54
7/16	14	20	3	H3	27.70
1/2	13	20	3	H3	33.42
5/8	11	18	4	H3	51.70
3/4	10	16	4	H3	66.36

HIGH SPEED STEEL - TITANIUM NITRIDE COATED THREAD FORMING TAPS

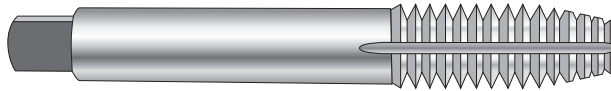
TT-30

ICS WIS

SPECIAL PURPOSE

GROUND THREAD

**CLASS 2B
FIT**



**PLUG & BOTTOMING
CHAMFER**

Thread Forming Taps are designed for cold forming threads in ductile materials such as aluminum, copper, brass, zinc, low carbon steels, and 302, 303 stainless steels. They displace metal rather than remove it, therefore, countersinking before or after tapping is recommended.

THREADS				PRICE EACH			TAP DRILL SIZE APPROX.	
PER INCH			LIMIT NO.	HSS	TIN COATED		75% THREAD	
SIZE	NC	NF		TFT	TFTT		NC	NF
* 0	-	80	H2	19.90	22.24		-	M1.35
* 1	64	72	H2	19.90	22.24		#52	M1.65
* 2	56	64	H2	19.90	22.24		M1.95	5/64
* 3	48	56	H2	19.90	22.24		M2.25	#43
4	40	48	H3	18.24	20.58		#39	#38
5	40	-	H3	18.24	20.58		#34	-
6	32	40	H3	15.12	17.48		M3.10	1/8
8	32	36	H3	15.12	19.34		M3.75	#25
10	24	32	H4	15.12	19.34		M4.30	M4.40
12	24	28	H4	14.84	19.08		#10	M5.00
1/4	20	28	H4	14.84	19.08		M5.70	M5.80
5/16	18	24	H5	17.62	24.10		M7.20	M7.40
3/8	16	24	H5	19.90	26.36		M8.70	M9.00
7/16	14	20	H5	31.12	37.60		“X”	“Z”
1/2	13	20	H5	35.18	41.64		M11.70	M12.00
9/16	12	18	H7	40.32	52.08		33/64	M13.50
5/8	11	18	H7	49.58	61.34		37/64	19/32
3/4	10	16	H7	65.40	78.34		M17.75	23/32

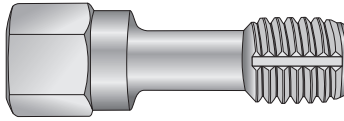
* Available in Bottoming Chamfer only.

CARBON STEEL AUTOMOTIVE RETHREADING TAPS

ICS USA

GENERAL PURPOSE

CUT THREAD

HEX
SHANK

Automotive Rethreading Taps are used to repair and clean out damaged internal threads without undercutting good threads. Good for removing nicks and burs. They are not designed for cutting new threads or renewing hardened threads.

Fractional Sizes (1/4" to 9/16" Dia.)

SIZE	THREADS PER INCH	HEX SHANK	ITEM NO.	PRICE
1/4	20	7/16	ART016-20	2.98
1/4	28	7/16	ART016-28	2.98
5/16	18	7/16	ART020-18	3.10
5/16	24	7/16	ART020-24	3.10
3/8	16	1/2	ART024-16	3.28
3/8	24	1/2	ART024-24	3.28

SIZE	THREADS PER INCH	HEX SHANK	ITEM NO.	PRICE
7/16	14	1/2	ART028-14	3.36
7/16	20	1/2	ART028-20	3.36
1/2	13	5/8	ART032-13	4.02
1/2	20	5/8	ART032-20	4.02
9/16	12	5/8	ART036-12	4.12
9/16	18	5/8	ART036-18	4.12

Metric Sizes (6.0mm To 14.0mm Dia.)

SIZE	PITCH	HEX SHANK	ITEM NO.	PRICE
M6	1.00	7/16	ARTM06.0X1.00	3.10
M8	1.25	7/16	ARTM08.0X1.25	3.18
M8	1.50	7/16	ARTM08.0X1.50	3.18
M10	1.00	1/2	ARTM10.0X1.00	3.64
M10	1.25	1/2	ARTM10.0X1.25	3.64
M10	1.50	1/2	ARTM10.0X1.50	3.64

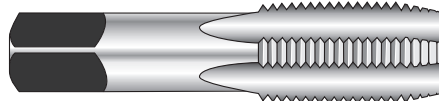
SIZE	PITCH	HEX SHANK	ITEM NO.	PRICE
M11	1.50	1/2	ARTM11.0X1.50	4.30
M12	1.25	1/2	ARTM12.0X1.25	4.30
M12	1.50	1/2	ARTM12.0X1.50	4.30
M12	1.75	1/2	ARTM12.0X1.75	4.30
M14	1.25	5/8	ARTM14.0X1.25	4.48
M14	1.50	5/8	ARTM14.0X1.50	4.48

CARBON STEEL METRIC SPARK PLUG TAPS

ICS USA

SPECIAL PURPOSE

CUT THREAD

PLUG
CHAMFER

Carbon Steel Metric Spark Plug Taps are designed to clean threads of carbon build-up, metal particles, dirt, and for rethreading damaged threads so that the spark plug can fit properly in the spark plug hole.

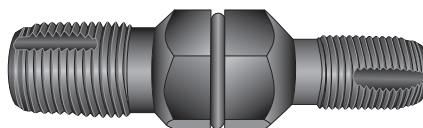
SIZE	PITCH	FLUTES	ITEM NO.	PRICE
M10	1.00	4	CSPTM10.0X1.00	4.16
M12	1.25	4	CSPTM12.0X1.25	4.50
M14	1.25	4	CSPTM14.0X1.25	6.20
M18	1.50	4	CSPTM18.0X1.50	8.10

CARBON STEEL METRIC SPARK PLUG TAP - DOUBLE END

ICS USA

SPECIAL PURPOSE

CUT THREAD

M18 x 1.50
THREAD SIZEM14 x 1.25
THREAD SIZE

Carbon Steel Double End Metric Spark Plug Taps are designed to clean threads of carbon build-up, metal particles, and dirt. Two sizes in one. Tap services most autos. Rubber ring holds tap firmly in 13/16" socket.

SPARK PLUG THREAD SIZES	SOCKET SIZE	ITEM NO.	PRICE
M14 x 1.25 • M18 x 1.50	13/16	SPRTM14X18	14.18

HIGH SPEED STEEL THREADLOCK PLUG GAUGES

TT-32

ICS WIS

SPECIAL PURPOSE

PRECISION GROUND



CLASS 2B

Taperlock Thread Plug Gauges are designed for inspecting internal threads for rejection or acceptance of the finished threaded product. The GO end (member) is longer than the NO GO (H1) end and has a chip groove to clean out debris such as chips and dirt. Taper Shank Thread Plugs are designed to lock into taper holes in the handle. Double End GO and NO GO Threadlock Plug Gauges pricing includes handle.

THREAD SIZE	PITCH DIAMETERS		ITEM NO.	PRICE
	GO min. (Basic)	NO GO (H1) (Maximum)		
	All Classes	Unified 2B		
0-80	.0519	.0542	TTPGDE2B#00-80	89.92
1-64	.0629	.0655	TTPGDE2B#01-64	77.94
1-72	.0640	.0665	TTPGDE2B#01-72	86.92
2-56	.0744	.0772	TTPGDE2B#02-56	63.00
2-64	.0759	.0786	TTPGDE2B#02-56	70.44
3-48	.0855	.0885	TTPGDE2B#03-48	60.90
3-56	.0874	.0902	TTPGDE2B#03-56	70.44
4-40	.0958	.0991	TTPGDE2B#04-40	52.42
4-48	.0985	.1016	TTPGDE2B#04-48	52.42
5-40	.1088	.1121	TTPGDE2B#05-40	52.42
5-44	.1102	.1134	TTPGDE2B#05-44	52.42
6-32	.1177	.1214	TTPGDE2B#06-32	52.42
6-40	.1218	.1252	TTPGDE2B#06-40	52.42
8-32	.1437	.1475	TTPGDE2B#08-32	52.42
8-36	.1460	.1496	TTPGDE2B#08-36	52.42
10-24	.1629	.1672	TTPGDE2B#10-24	52.42
10-32	.1697	.1736	TTPGDE2B#10-32	52.42
12-24	.1889	.1933	TTPGDE2B#12-24	52.42
12-28	.1928	.1970	TTPGDE2B#12-28	52.42
1/4-20	.2175	.2224	TTPGDE2B016-20	48.38
1/4-28	.2268	.2311	TTPGDE2B016-28	52.42
1/4-32	.2297	.2339	TTPGDE2B016-32	52.42
5/16-18	.2764	.2817	TTPGDE2B020-18	48.38
5/16-24	.2854	.2902	TTPGDE2B020-24	52.42

THREAD SIZE	PITCH DIAMETERS		ITEM NO.	PRICE
	GO min. (Basic)	NO GO (H1) (Maximum)		
	All Classes	Unified 2B		
5/16-32	.2922	.2964	TTPGDE2B020-32	63.00
3/8-16	.3344	.3401	TTPGDE2B024-16	52.42
3/8-24	.3479	.3528	TTPGDE2B024-24	52.42
3/8-32	.3547	.3591	TTPGDE2B024-32	63.00
7/16-14	.3911	.3972	TTPGDE2B028-14	52.42
7/16-20	.4050	.4104	TTPGDE2B028-20	52.42
7/16-28	.4143	.4189	TTPGDE2B028-28	63.00
1/2-13	.4500	.4565	TTPGDE2B032-13	55.90
1/2-20	.4675	.4731	TTPGDE2B032-20	55.90
1/2-28	.4768	.4816	TTPGDE2B032-28	67.10
9/16-12	.5084	.5152	TTPGDE2B036-12	67.10
9/16-18	.5264	.5323	TTPGDE2B036-18	67.10
9/16-24	.5354	.5405	TTPGDE2B036-24	79.38
5/8-11	.5660	.5732	TTPGDE2B040-11	70.88
5/8-18	.5889	.5949	TTPGDE2B040-18	70.88
5/8-24	.5979	.6031	TTPGDE2B040-24	96.40
3/4-10	.6850	.6927	TTPGDE2B048-10	77.18
3/4-16	.7094	.7159	TTPGDE2B048-16	77.18
3/4-20	.7175	.7232	TTPGDE2B048-20	96.40
7/8-9	.8028	.8110	TTPGDE2B056-09	82.96
7/8-14	.8286	.8356	TTPGDE2B056-14	82.96
7/8-20	.8425	.8482	TTPGDE2B056-20	109.00
1-8	.9188	.9276	TTPGDE2B100-08	89.26
1-12	.9459	.9535	TTPGDE2B100-12	89.26

All Taperlock Thread Gauges conform to ANSI B1.2 screw thread standards with class "X" tolerance in every respect.

ICS can also supply the following standard and special screw gauges to your specifications.

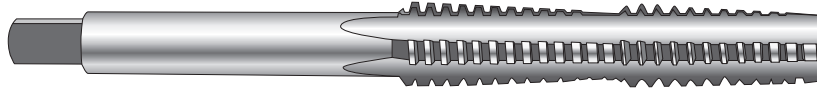
- Extra Length
- Acme
- Modified Acme
- Metric
- BSW, BSF, Whitworth
- Special Thread Forms
- Left Hand
- Double Lead
- Triple Lead
- NPSL, NPSM, NPSF, ANPT

HIGH SPEED STEEL TANDEM "ACME" THREAD TAPS

ICS USA

SPECIAL PURPOSE

GROUND THREAD

ROUGHING AND
FINISHINGCLASS
2G FIT

High Speed Steel Tandem Acme Thread Taps are designed with a roughing and finishing section to produce threads from a 10° to 30° included angle in a single pass without a leadscrew. The last few threads on the roughing section act as a guide for the finishing section, which corrects the thread angles and size. The original purpose of Acme threads was to convert rotary motion to traversing motion on machine leadscrews, valves, jack lift screws, drive gears and other mechanisms where heavy loads are encountered. They have four flutes and are to be used for through holes only. Designed to produce a class 2G thread fit.

Right Hand Thread Sizes (3/8" to 2" Dia.)

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
3/8 - 12	2-1/2	5	TAT024-12
1/2 - 10	2-9/16	5	TAT032-10
5/8 - 8	3-3/16	6-1/4	TAT040-08
3/4 - 6	4-5/16	7-15/16	TAT048-06
3/4 - 8	4-15/16	7-15/16	TAT048-08
7/8 - 6	4-3/8	8-5/8	TAT056-06

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1 - 5	5-1/4	10-1/8	TAT100-05
1-1/8 - 5	5-1/4	10-3/4	TAT108-05
1-1/4 - 5	5-1/4	11-1/8	TAT116-05
1-3/8 - 4	5-7/8	12-1/4	TAT124-04
1-1/2 - 4	5-7/8	12-5/8	TAT132-04
2 - 4	6-1/2	14-7/8	TAT200-04

CALL FOR PRICE

Left Hand Thread Sizes (3/8" to 2" Dia.)

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
3/8 - 12	2-1/2	5	TATL024-12
1/2 - 10	2-9/16	5	TATL032-10
5/8 - 8	3-3/16	6-1/4	TATL040-08
3/4 - 6	4-5/16	7-15/16	TATL048-06
3/4 - 8	4-15/16	7-15/16	TATL048-08
7/8 - 6	4-3/8	8-5/8	TATL056-06

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1 - 5	5-1/4	10-1/8	TATL100-05
1-1/8 - 5	5-1/4	10-3/4	TATL108-05
1-1/4 - 5	5-1/4	11-1/8	TATL116-05
1-3/8 - 4	5-7/8	12-1/4	TATL124-04
1-1/2 - 4	5-7/8	12-5/8	TATL132-04
2 - 4	6-1/2	14-7/8	TATL200-04

CALL FOR PRICE

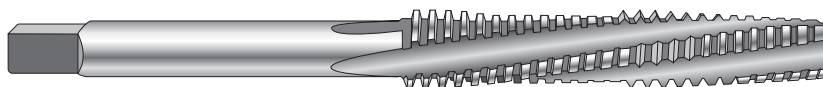
- Acme Hexagon Rethreading Dies are also available.

TANDEM "ACME" THREAD (SPIRAL FLUTE) TAPS

ICS USA

SPECIAL PURPOSE

GROUND THREAD

ROUGHING AND
FINISHINGCLASS
2G FIT

High Speed Steel Tandem Acme Thread Spiral Flute Taps are designed with a roughing and finishing section to produce threads from a 10° to 30° included angle in a single pass without a leadscrew. The last few threads on the roughing section act as a guide for the finishing section, which corrects the thread angles and size. Spiral Fluted Tandem Acme Thread Taps have continuous spiral flutes to lift and discharge chips in deep holes. They have black steam oxidized flutes to improve finish and produce a class 2G thread fit.

Right Hand Thread Sizes (1/2" to 2" Dia.)

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1/2 - 10	2-9/16	5	TATS032-10
5/8 - 8	3-3/16	6-1/4	TATS040-08
3/4 - 6	4-5/16	7-15/16	TATS048-06
3/4 - 8	4-5/16	7-15/16	TATS048-08
7/8 - 6	4-3/8	8-5/8	TATS056-06
1 - 5	5-1/4	10-1/8	TATS100-05

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1-1/8 - 5	5-1/4	10-3/4	TATS108-05
1-1/4 - 5	5-1/4	11-1/8	TATS116-05
1-3/8 - 4	5-7/8	12-1/4	TATS124-04
1-1/2 - 4	5-7/8	12-5/8	TATS132-04
2 - 4	6-1/2	14-7/8	TATS200-04
2 - 4	6-1/2	14-7/8	TAT200-04

CALL FOR PRICE

Left Hand Thread Sizes (1/2" To 2" Dia.)

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1/2 - 10	2-9/16	5	TATSL032-10
5/8 - 8	3-3/16	6-1/4	TATSL040-08
3/4 - 6	4-5/16	7-15/16	TATSL048-06
3/4 - 8	4-5/16	7-15/16	TATSL048-08
7/8 - 6	4-3/8	8-5/8	TATSL056-06
1 - 5	5-1/4	10-1/8	TATSL100-05

THREAD SIZE	THREAD LENGTH	OVERALL LENGTH	ITEM NO.
1-1/8 - 5	5-1/4	10-3/4	TATSL108-05
1-1/4 - 5	5-1/4	11-1/8	TATSL116-05
1-3/8 - 4	5-7/8	12-1/4	TATSL124-04
1-1/2 - 4	5-7/8	12-5/8	TATSL132-04
2 - 4	6-1/2	14-7/8	TATSL200-04

CALL FOR PRICE

- Special Acme Taps and other translating thread taps can be made to your requirements. Consult factory for price and and delivery.
- Acme Hexagon Rethreading Dies are also available.

TANDEM "ACME" TAP DRILL SIZES AND MAXIMUM DEPTH OF NUT

ACME TAP THREAD SIZE	ACME TAP DRILL SIZE	MAX. DEPTH OF NUT	
		BRONZE AND STEEL	BRASS AND CAST IRON
1/4 - 16	#10	1	1-1/2
5/16 - 18	17/64	1	1-1/2
3/8 - 12	N	1	1-1/2
7/16 - 12	U	1	1-1/2
1/2 - 10	Z	1	1-1/2
5/8 - 8	13.00MM	1-1/4	1-7/8
3/4 - 6	39/64	1-1/2	2-1/4
3/4 - 8	41/64	1-1/2	2-1/4

ACME TAP THREAD SIZE	ACME TAP DRILL SIZE	MAX. DEPTH OF NUT	
		BRONZE AND STEEL	BRASS AND CAST IRON
7/8 - 6	47/64	1-3/4	2-5/8
1 - 5	49/64	2	3
1-1/8 - 5	24.00MM	2-1/4	3-5/8
1-1/4 - 5	1-1/64	2-1/2	3-3/4
1-3/8 - 5	1-3/32	2-3/4	4-1/8
1-1/2 - 5	32.50MM	3	4-1/2
2 - 4	45.00MM	3	4-1/2

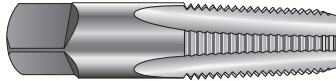
HIGH SPEED STEEL NPT & NPTF TAPER PIPE TAPS

ICS WIS

GENERAL PURPOSE

GROUND THREAD

Taper Thread

MEDIUM
HOOKRIGHT HAND
CUT

NPT (Regular) Ground • NPTF (Dryseal) Ground

High Speed Steel Taper Pipe Taps (NPT) are designed for tapping ferrous and non-ferrous fittings used to connect pipes carrying fluids or gases and other places where very tight fits are needed. NPT threads taper 3/4" per foot and all of the threads on this tap do the cutting as compared to a (NPS) straight pipe tap where only the non-chamfered threads do the cutting. They require a sealant such as Teflon tape or pipe joint compound to prevent leakage of fluids or gases. NPT pipe taps can be used to tap threads to military aeronautical thread specifications (ANPT) and for work requiring ground thread accuracy and performance. (NPTF) Taper Thread Pipe Taps do not require sealants. Dryseal is attained by metal to metal contact.

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	LENGTH OF THREADS	OVERALL LENGTH	HIGH SPEED STEEL		TiN COATED		PIPE TAP DRILL SIZES
					TAPER REGULAR	TAPER REGULAR (DRYSEAL)	TAPER REGULAR	TAPER REGULAR (DRYSEAL)	
					NPT	NPTF	NPTT	NPTFT	
1/16	27	4	11-1/16	2-1/8	18.66	18.66	33.26	33.26	"C"
*1/8	27	4	3/4	2-1/8	18.66	18.66	33.26	33.26	"Q"
1/4	18	4	1-1/16	2-7/16	20.62	20.62	36.78	36.78	7/16
3/8	18	4	1-1/16	2-9/16	29.48	26.80	45.76	45.76	9/16
1/2	14	4	1-3/8	3-1/8	47.36	43.06	62.02	62.02	45/64
3/4	14	5	1-3/8	3-1/4	66.74	66.74	94.98	94.98	29/32
1	11-1/2	5	1-3/4	3-3/4	101.26	101.26	158.08	158.08	1-9/64
1-1/4	11-1/2	5	1-3/4	4	144.10	144.10	270.28	270.28	1-31/64
1-1/2	11-1/2	7	1-3/4	4-1/4	193.40	193.40	319.58	319.58	1-23/32
2	11-1/2	7	1-3/4	4-1/2	263.36	263.36	381.28	381.28	2-3/16
2-1/2	8	8	2-9/16	5-1/2	559.58	559.58	-	-	2-39/64
3	8	8	2-5/8	6	785.22	785.22	-	-	3-15/64
3-1/2	8	8	2-11/16	6-1/2	825.16	-	-	-	3-3/4
4	8	8	2-3/4	6-3/4	1120.48	-	-	-	4-1/4

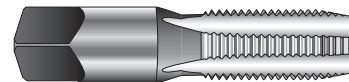
* Available in large [.4375] or small [.3125] diameter shank. If not specified, large will be shipped.

NPT & NPTF Interrupted Thread Pipe Taps

MEDIUM
HOOK

NPT (Regular) Ground • NPTF (Dryseal) Ground

NPS, NPSM & NPSC Straight Thread Pipe Taps



NPS (Regular) Ground • NPSF (Dryseal) Ground

High Speed Steel Interrupted Thread Pipe Taps (NPTI) are designed for tapping soft or tough stringy metals that tend to load threads with chips. Interrupted Thread Pipe Taps start with a few full threads and then have every other thread removed along the thread helix to provide more chip space, better lubrication, and to reduce drag. (NPTIF) Dryseal Interrupted Thread Pipe Taps do not require a sealant. Dryseal is attained by metal to metal contact. The interrupted thread design prevents tearing of material as tap threads only cut one side at a time.

High Speed Steel Straight Thread Pipe Taps (NPS) are designed for tapping holes or couplings for low pressure work that will adjust at assembly to the taper of external threads. A sealant must be used to secure a pressure tight joint. They may be used to produce NPSC and NPSM threads. (NPSF) Straight Thread Pipe Dryseal Taps do not require a sealant. Dryseal is attained by metal to metal contact. They are primarily used to tap holes that connect oil and fuel lines.

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HIGH SPEED STEEL	
			TAPER INTERRUPTED	TAPER INTERRUPTED (DRYSEAL)
			NPTI	NPTIF
1/16	27	4	25.54	25.54
*1/8	27	4	25.54	25.54
1/4	18	4	28.12	28.12
3/8	18	4	35.78	35.78
1/2	14	4	56.94	56.94
3/4	14	5	89.64	89.64
1	11-1/2	5	137.36	137.36
1-1/4	11-1/2	5	193.12	193.12
1-1/2	11-1/2	7	259.42	259.42
2	11-1/2	7	351.58	351.58

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HIGH SPEED STEEL	
			STRAIGHT	STRAIGHT (DRYSEAL)
			NPS	NPSF
1/16	27	4	18.86	26.14
*1/8	27	4	18.86	26.14
1/4	18	4	22.00	29.20
3/8	18	4	27.40	38.18
1/2	14	4	49.66	60.88
3/4	14	5	69.92	85.36
1	11-1/2	5	110.32	129.78
1-1/4	11-1/2	5	159.10	177.98
1-1/2	11-1/2	7	283.88	283.88
2	11-1/2	7	387.28	387.28

NOTE: All drilled holes should be reamed before tapping with a pipe reamer having a taper of 3/4" inch per foot – see Pipe Reamers page in Reaming Tools Catalog for correct size.

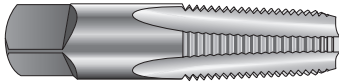
HIGH SPEED STEEL NPT & NPTF TAPER PIPE TAPS

ICS WIS

GENERAL PURPOSE

GROUND THREAD

Left Hand Thread



NPT (L.H. Regular) Ground

MEDIUM
HOOK

Long Taper Thread



NPT (Regular) Ground

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HSS	PIPE TAP DRILL SIZES
			TAPER REGULAR (LEFT HAND) NPTLH	
1/16	27	4	30.32	“C”
*1/8	27	4	30.32	“Q”
1/4	18	4	35.34	7/16
3/8	18	4	45.54	9/16
1/2	14	4	65.82	45/64
3/4	14	5	101.32	29/32
1	11-1/2	5	172.08	1-9/64
1-1/4	11-1/2	5	283.10	1-31/64
1-1/2	11-1/2	7	344.64	1-23/32
2	11-1/2	7	557.62	2-3/16

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HIGH SPEED STEEL	
			6" LENGTH NPT-06L	12" LENGTH NPT-12L
1/16	27	4	32.66	-
*1/8	27	4	32.66	-
1/4	18	4	36.90	57.82
3/8	18	4	49.30	74.58
1/2	14	4	63.50	108.46
3/4	14	5	100.62	136.90
1	11-1/2	5	128.70	185.82

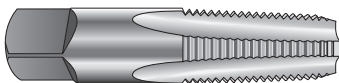
HIGH SPEED STEEL BRITISH (METRIC) STANDARD PIPE TAPS

ICS USA

GENERAL PURPOSE

GROUND THREAD

British (Taper) Standard (Rc)



BSPT (Regular) Ground

MEDIUM
HOOK

British (Parallel) Standard (G or Rp)



BSPP (Regular) Ground

High Speed Steel British Standard Pipe Taper Taps (BSPT) are the European equivalent of American Standard Taper Pipe Taps (NPT) and are sometimes referred to as Metric Taper Pipe Taps. They are designed for tapping ferrous and non-ferrous pipe fittings used to connect pipes carrying fluids or gases. They require a sealant such as Teflon tape or pipe joint compound to prevent leakage of fluids or gases. (BSPT) taps are used for work requiring ground thread accuracy and performance.

High Speed Steel British Standard Pipe Parallel Taps (BSPP) are the European equivalent of American Standard Straight Pipe Taps (NPS) and are sometimes referred to as Metric Straight or Parallel Pipe Taps. They are designed for tapping holes or couplings for low pressure work that will adjust at assembly to the taper of external threads. A sealant must be used to secure a pressure-tight joint.

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HSS	PIPE TAP DRILL SIZES
			BRITISH STANDARD (TAPER)	
			BSPT	
1/8	28	4	16.78	5/16
1/4	19	4	18.00	27/64
3/8	19	4	25.20	9/16
1/2	14	4	36.76	11/16
5/8	14	4	105.00	25/32
3/4	14	4	50.82	29/32
7/8	14	4	74.56	1-1/16
1	11	6	78.44	1-1/8
1-1/4	11	6	113.92	1-15/32
1-1/2	11	6	151.72	1-25/32
2	11	6	212.20	2-5/32

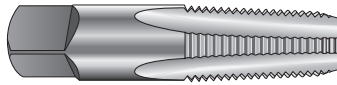
NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	HSS	PIPE TAP DRILL SIZES
			BRITISH STANDARD (PARALLEL)	
			BSPP	
1/8	28	4	16.78	“S”
1/4	19	4	18.00	15/32
3/8	19	4	25.20	19/32
1/2	14	4	36.76	3/4
5/8	14	4	46.20	53/64
3/4	14	4	50.82	31/32
7/8	14	4	74.56	1-7/64
1	11	6	78.44	1-7/32
1-1/4	11	6	113.92	1-9/16
1-1/2	11	6	151.72	1-25/32
2	11	6	212.20	2-1/4

CARBON STEEL TAPER PIPE TAPS

ICS WIS

GENERAL PURPOSE

CUT THREAD

MEDIUM
HOOK

Carbon Steel Taper Pipe Taps (NPT) are designed for tapping ferrous and non-ferrous pipe fittings used to connect pipes carrying fluids or gases. They are primarily used for maintenance work where ground thread accuracy and performance are not required. A sealant such as Teflon tape or pipe joint compound is necessary to prevent leakage of fluids or gases. All NPT Pipe Taps are furnished with a 2-1/2 to 5-1/2 thread chamfer.

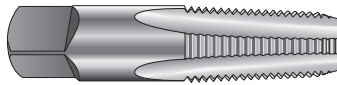
NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	PIPE TAP DRILL SIZES
1/16	27	4	11/16	2-1/8	CNPT004-27	4.36	"C"
1/8	27	4	3/4	2-1/8	CNPT008-27	4.36	"Q"
1/4	18	4	1-1/16	2-7/16	CNPT016-18	5.92	7/16
3/8	18	4	1-1/16	2-9/16	CNPT024-18	8.32	9/16
1/2	14	4	1-3/8	3-1/8	CNPT032-14	20.72	45/64
3/4	14	5	1-3/8	3-1/4	CNPT048-14	32.20	29/32
1	11-1/2	5	1-3/4	3-3/4	CNPT100-11.5	42.02	1-9/64
1-1/4	11-1/2	5	1-3/4	4	CNPT116-11.5	53.18	1-31/64
1-1/2	11-1/2	7	1-3/4	4-1/4	CNPT132-11.5	71.72	1-23/32
2	11-1/2	7	1-3/4	4-1/4	CNPT200-11.5	117.70	2-3/16
2-1/2	8	8	2-9/16	5-1/2	CNPT232-08	300.00	2-39/64
3	8	8	2-5/8	6	CNPT300-08	380.00	3-15/64
3-1/2	8	8	2-11/16	6-1/2	CNPT332-08	424.08	3-21/32
4	8	10	2-3/4	6-3/4	CNPT400-08	702.00	4-15/64
5	8	10	3	7-1/2	CNPT500-08	972.22	5-19/64
6	8	10	3-5/8	8-1/2	CNPT600-08	1438.54	6-11/32

CARBON STEEL BRITISH STANDARD (TAPER) PIPE TAPS

ICS WIS

GENERAL PURPOSE

CUT THREAD

MEDIUM
HOOK

Carbon Steel British Standard Taper Pipe Taps (BSPT) are the European equivalent of Carbon Steel American Taper Pipe Taps (NPT) and are sometimes referred to as Metric Taper Pipe Taps. They are designed for tapping ferrous and non-ferrous pipe fittings used to connect pipes carrying fluids or gases. They are primarily used for maintenance work where ground thread accuracy and performance are not required. A sealant such as Teflon tape or pipe joint compound is necessary to prevent leakage of fluids or gases. All BSPT pipe threads are tapered 3/4" per foot because tapered threads permit tighter connections than are possible with straight threads.

NOMINAL SIZE	THREADS PER INCH	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	ITEM NO.	PRICE	PIPE TAP DRILL SIZES
1/8	28	4	3/4	2-1/8	CBSPT008-28	5.26	5/16
1/4	19	4	1-1/16	2-7/16	CBSPT016-19	6.74	27/64
3/8	19	4	1-1/16	2-9/16	CBSPT024-19	8.32	9/16
1/2	14	4	1-3/8	3-1/8	CBSPT032-14	20.72	11/16
5/8	14	4	1-3/8	3-3/16	CBSPT040-14	24.70	25/32
3/4	14	4	1-3/8	3-1/4	CBSPT048-14	32.20	29/32
7/8	14	4	1-9/16	3-1/2	CBSPT056-14	34.10	1-1/16
1	11	6	1-3/4	3-3/4	CBSPT100-11	42.02	1-1/8
1-1/4	11	6	1-3/4	4	CBSPT116-11	53.18	1-15/32
1-1/2	11	6	1-3/4	4-1/4	CBSPT132-11	71.72	1-25/32
2	11	6	1-3/4	4-1/2	CBSPT200-11	117.70	2-5/32

TAP EXTENSIONS

TT-38

ICS WIS

SPECIAL PURPOSE



FOR HAND TAPPING ONLY

Tap Extensions are added to the end of a tap to reach into deep narrow locations or in close quarters where it is difficult to turn a tap wrench. More economical than buying special length hand and pipe taps.

FOR TAPS			SQUARE	ITEM		ITEM	
FRACTIONAL	METRIC	PIPE	TAP SHANK	FRACTIONAL	METRIC	NO.	PRICE
#6 (1/8)	M3	-	.118	3-9/64	80mm	TX#06	3.68
#8 (5/32)	M4	-	.134	3-3/4	95mm	TX#08	4.10
#10	M4,M5	-	.150	3-63/64	100mm	TX#10	4.52
#12 (3/16)	-	1/8	.169	4-1/8	105mm	TX#12	4.72
7/32 - 5/16	M5 - M8	-	.193	4-21/64	110mm	TX016	5.36
3/8	M9 - M10	-	.216	4-17/32	115mm	TX024	6.10
7/16	M11	-	.244	4-37/64	120mm	TX028	6.62
1/2	M12	-	.276	4-59/64	125mm	TX032	7.46
9/16 - 5/8	M13 - M16	1/4 - 3/8	.354	5-5/16	135mm	TX040	8.82
11/16 - 3/4	M18	-	.433	5-29/32	150mm	TX048	10.08
7/8 - 15/16	M22 - M26	-	.570	6-57/64	175mm	TX056	14.28
1"	M27 - M28	3/4	.630	7-9/32	185mm	TX100	16.80

CUSTOM SIZE TAP EXTENSIONS

ICS USA

SPECIAL PURPOSE

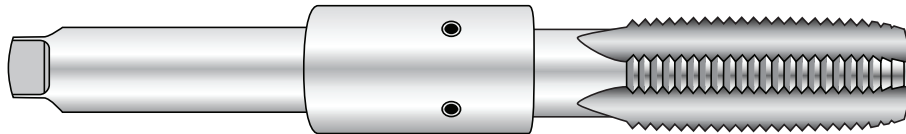


ILLUSTRATION OF 1-3/8 - 6 TAP WITH CUSTOM TAP EXTENSION

Custom Size Tap Extensions for taps over 1" can be manufactured for specific lengths. Inquire for pricing.

QUOTE INFORMATION

QTY _____ TAP SIZE _____ EXTENSION LENGTH REQUIRED _____

OTHER REQUIREMENTS _____

CARBON STEEL - HIGH SPEED STEEL TAPER PIPE TAP SETS

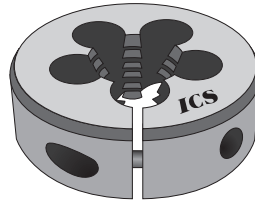
HIGH SPEED STEEL ROUND ADJUSTABLE DIES

ICS

WIS

GENERAL PURPOSE

GROUND THREAD

SCREW ADJUSTING
TYPERIGHT HAND
CUT

BLACK & GOLD OXIDE FINISH

Round Adjustable Dies are designed for cutting external screw threads, either by hand, using a die stock or by machine, using a floating die holder. They also can be used to cut smaller or larger than factory setting by turning the adjusting screw in or out. Dies are manufactured with a 2-3 thread chamfer on front face and a 1-1/2 thread chamfer on the rear. Round Adjustable Dies are also known as Button Dies.

Machine Screw and Fractional Sizes (#0 to 2-1/2" Dia.)

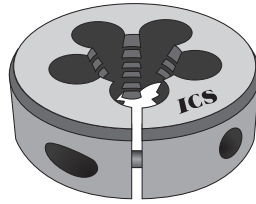
SIZE	TPI	ITEM NO.	PRICE
13/16" ROUND DIE			
#0	80	RAD#00-80X052	20.58
#1	64	RAD#01-64X052	20.58
#1	72	RAD#01-72X052	20.58
#2	56	RAD#02-56X052	17.38
#2	64	RAD#02-64X052	17.38
#3	48	RAD#03-48X052	17.38
#3	56	RAD#03-56X052	17.38
#4	36	RAD#04-36X052	17.38
#4	40	RAD#04-40X052	17.38
#5	40	RAD#05-40X052	17.38
#5	44	RAD#05-44X052	17.38
#6	32	RAD#06-32X052	17.38
#6	40	RAD#06-40X052	17.38
#8	32	RAD#08-32X052	17.38
#8	36	RAD#08-36X052	17.38
#10	24	RAD#10-24X052	17.38
#10	32	RAD#10-32X052	17.38
#12	24	RAD#12-24X052	17.38
#12	28	RAD#12-28X052	17.38
1/4	20	RAD016-20X052	17.38
1/4	28	RAD016-28X052	17.38
5/16	18	RAD020-18X052	17.38
5/16	24	RAD020-24X052	17.38
1" ROUND DIE			
#0	80	RAD#00-80X100	22.12
#1	64	RAD#01-64X100	22.12
#1	72	RAD#01-72X100	22.12
#2	56	RAD#02-56X100	22.12
#2	64	RAD#02-64X100	22.12
#3	48	RAD#03-48X100	22.12
#3	56	RAD#03-56X100	22.12
#4	36	RAD#04-36X100	22.12
#4	40	RAD#04-40X100	22.12
#5	40	RAD#05-40X100	22.12
#5	44	RAD#05-44X100	22.12
#6	32	RAD#06-32X100	22.12
#6	40	RAD#06-40X100	22.12
#8	32	RAD#08-32X100	22.12
#8	36	RAD#08-36X100	22.12
#10	24	RAD#10-24X100	22.12
#10	32	RAD#10-32X100	22.12
#12	24	RAD#12-24X100	22.12
#12	28	RAD#12-28X100	22.12
1/4	20	RAD016-20X100	22.12
1/4	28	RAD016-28X100	22.12

SIZE	TPI	ITEM NO.	PRICE
1" ROUND DIE			
5/16	18	RAD020-18X100	22.12
5/16	24	RAD020-24X100	22.12
3/8	16	RAD024-16X100	22.12
3/8	24	RAD024-24X100	22.12
7/16	14	RAD028-14X100	22.12
7/16	20	RAD028-20X100	22.12
1/2	13	RAD032-13X100	22.12
1/2	20	RAD032-20X100	22.12
1-1/2" ROUND DIE			
1/4	20	RAD016-20X132	34.70
1/4	28	RAD016-28X132	34.70
5/16	18	RAD020-18X132	34.70
5/16	24	RAD020-24X132	34.70
3/8	16	RAD024-16X132	34.70
3/8	24	RAD024-24X132	34.70
7/16	14	RAD028-14X132	34.70
7/16	20	RAD028-20X132	34.70
1/2	13	RAD032-13X132	34.70
1/2	20	RAD032-20X132	34.70
9/16	12	RAD036-12X132	34.70
9/16	18	RAD036-18X132	34.70
5/8	11	RAD040-11X132	34.70
5/8	18	RAD040-18X132	34.70
11/16	11	RAD044-11X132	34.70
11/16	16	RAD044-16X132	34.70
3/4	10	RAD048-10X132	34.70
3/4	16	RAD048-16X132	34.70
7/8	9	RAD056-09X132	34.70
7/8	14	RAD056-14X132	34.70
2" ROUND DIE			
1/4	20	RAD016-20X200	61.28
1/4	28	RAD016-28X200	61.28
5/16	18	RAD020-18X200	61.28
5/16	24	RAD020-24X200	61.28
3/8	16	RAD024-16X200	61.28
3/8	24	RAD024-24X200	61.28
7/16	14	RAD028-14X200	61.28
7/16	20	RAD028-20X200	61.28
1/2	13	RAD032-13X200	61.28
1/2	20	RAD032-20X200	61.28
9/16	12	RAD036-12X200	61.28
9/16	18	RAD036-18X200	61.28
5/8	11	RAD040-11X200	61.28
5/8	18	RAD040-18X200	61.28
11/16	11	RAD044-11X200	61.28

SIZE	TPI	ITEM NO.	PRICE
2" ROUND DIE			
11/16	16	RAD044-16X200	61.28
3/4	10	RAD048-10X200	61.28
3/4	16	RAD048-16X200	61.28
7/8	9	RAD056-09X200	61.28
7/8	14	RAD056-14X200	61.28
1	8	RAD100-08X200	61.28
1	12	RAD100-12X200	61.28
1	14	RAD100-14X200	61.28
2-1/2" ROUND DIE			
1	8	RAD100-08X232	105.52
1	12	RAD100-12X232	105.52
1	14	RAD100-14X232	105.52
1-1/8	7	RAD108-07X232	105.52
1-1/8	12	RAD108-12X232	105.52
1-1/4	7	RAD116-07X232	105.52
1-1/4	12	RAD116-12X232	105.52
1-3/8	6	RAD124-06X232	105.52
1-3/8	12	RAD124-12X232	105.52
1-1/2	6	RAD132-06X232	105.52
1-1/2	12	RAD132-12X232	105.52
3" ROUND DIE			
1	8	RAD100-08X300	200.02
1	12	RAD100-12X300	200.02
1	14	RAD100-14X300	200.02
1-1/8	7	RAD108-07X300	200.02
1-1/8	12	RAD108-12X300	200.02
1-1/4	7	RAD116-07X300	200.02
1-1/4	12	RAD116-12X300	200.02
1-3/8	6	RAD124-06X300	200.02
1-3/8	12	RAD124-12X300	200.02
1-1/2	6	RAD132-06X300	200.02
1-1/2	12	RAD132-12X300	200.02
1-3/4	5-1/2	RAD148-5.5X300	200.02
1-3/4	12	RAD148-12X300	200.02
2	4-1/2	RAD200-04X300	200.02
2	12	RAD200-12X300	200.02
4" ROUND DIE			
2-1/4	4-1/2	RAD216-4.5X400	282.24
2-1/4	12	RAD216-12X400	282.24
2-1/2	4	RAD232-04X400	282.24
2-1/2	12	RAD232-12X400	282.24

NOTE: Larger Right Hand Dies are available upon request.

Die Stocks, Holders, and Adapters are on page 80.

LEFT HAND ROUND ADJUSTABLE DIES**ICS WIS****SPECIAL PURPOSE****GROUND THREAD****SCREW ADJUSTING
TYPE****LEFT HAND
CUT**

BLACK & GOLD OXIDE FINISH

Machine Screw and Fractional Sizes (#0 to 2" Dia.)

SIZE	TPI	ITEM NO.	PRICE
13/16" ROUND DIE			
#0	80	RADL#00-80	25.88
#2	56	RADL#02-56	25.88
#2	64	RADL#02-64	25.88
1" ROUND DIE			
#4	36	RADL#04-36	30.04
#4	40	RADL#04-40	30.04
#5	40	RADL#05-40	30.04
#5	44	RADL#05-44	30.04
#6	32	RADL#06-32	30.04
#6	40	RADL#06-40	30.04
#8	32	RADL#08-32	30.04
#8	36	RADL#08-36	30.04
#10	24	RADL#10-24	30.04
#10	32	RADL#10-32	30.04
#12	24	RADL#12-24	30.04
#12	28	RADL#12-28	30.04
1/4	20	RADL016-20	30.04
1/4	28	RADL016-28	30.04
5/16	18	RADL020-18	30.04
5/16	24	RADL020-24	30.04
3/8	16	RADL024-16	30.04
3/8	24	RADL024-24	30.04
7/16	14	RADL028-14	30.04
7/16	20	RADL028-20	30.04
1/2	13	RADL032-13*	30.04
1/2	20	RADL032-20X100	30.04

SIZE	TPI	ITEM NO.	PRICE
1-1/2" ROUND DIE			
1/4	20	RADL016-20*	44.74
1/4	28	RADL016-28*	44.74
5/16	18	RADL020-18*	44.74
5/16	24	RADL020-24*	44.74
3/8	16	RADL024-16*	44.74
3/8	24	RADL024-24*	44.74
7/16	14	RADL028-14*	44.74
7/16	20	RADL028-20*	44.74
1/2	13	RADL032-13	44.74
1/2	20	RADL032-20	44.74
9/16	12	RADL036-12	44.74
9/16	18	RADL036-18	44.74
5/8	11	RADL040-11	44.74
5/8	18	RADL040-18	44.74
11/16	11	RADL044-11	44.74
11/16	16	RADL044-16	44.74
3/4	10	RADL048-10	44.74
3/4	16	RADL048-16	44.74
7/8	9	RADL056-09	44.74
7/8	14	RADL056-14	44.74

SIZE	TPI	ITEM NO.	PRICE
2" ROUND DIE			
3/4	10	RADL048-10*	82.00
3/4	16	RADL048-16*	82.00
7/8	9	RADL056-09	82.00
7/8	14	RADL056-14	82.00
1	8	RADL100-08	82.00
1	12	RADL100-12	82.00
1	14	RADL100-14	82.00
2-1/2" ROUND DIE			
1-1/8	7	RADL108-07	105.52
1-1/8	12	RADL108-12	105.52
1-1/4	7	RADL116-07	105.52
1-1/4	12	RADL116-12	105.52
1-3/8	6	RADL124-06	105.52
1-3/8	12	RADL124-12	105.52
1-1/2	6	RADL132-06	105.52
1-1/2	12	RADL132-12	105.52
3" ROUND DIE			
1-3/4	5	RADL148-05	210.32
2	4-1/2	RADL200-04.5	210.32

NOTE:

Larger Left Hand Dies and Special Thread Dies are available. Consult factory for pricing.

Metric Sizes (2.0mm to 20.0mm Dia.)

SIZE	PITCH	ITEM NO.	PRICE
1" ROUND DIE			
M2.0	M0.4	RADML02.0X0.40	32.34
M2.5	M0.45	RADML02.5X0.45	32.34
M3.0	M0.5	RADML03.0X0.50	32.34
M3.5	M0.6	RADML03.5X0.60	32.34
M4.0	M0.7	RADML04.0X0.70	32.34
M4.0	M0.75	RADML04.0X0.75	32.34
M5.0	M0.8	RADML05.0X0.80	32.34
M6.0	M0.75	RADML06.0X0.75	32.34
M6.0	M1.0	RADML06.0X1.00	32.34

SIZE	PITCH	ITEM NO.	PRICE
1" ROUND DIE			
M7.0	M0.75	RADML07.0X0.75	32.34
M7.0	M1.0	RADML07.0X1.00	32.34
M8.0	M1.0	RADML08.0X1.00	32.34
M8.0	M1.25	RADML08.0X1.25	32.34
M10	M1.0	RADML10.0X1.00	32.34
M10	M1.25	RADML10.0X1.25	32.34
M10	M1.5	RADML10.0X1.50	32.34
M12	M1.0	RADML12.0X1.00	32.34
M14	M0.75	RADML14.0X0.75	32.34

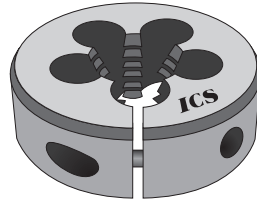
SIZE	PITCH	ITEM NO.	PRICE
1-1/2" ROUND DIE			
M14	M1.0	RADML14.0X1.0	44.74
M14	M1.5	RADML14.0X1.50	44.74
M14	M2.0	RADML14.0X2.0	44.74
M16	M1.5	RADML16.0X1.5	44.74
M16	M2.0	RADML16.0X2.0	44.74
M18	M1.5	RADML18.0X1.50	44.74
M18	M2.5	RADML18.0X2.5	44.74
M20	M1.5	RADML20.0X1.50	44.74
M20	M2.5	RADML20.0X2.50	44.74

HIGH SPEED STEEL ROUND ADJUSTABLE (METRIC) DIES

ICS WIS

GENERAL PURPOSE

GROUND THREAD

SCREW ADJUSTING
TYPERIGHT HAND
CUT

BLACK & GOLD FINISH

Standard Metric Sizes (1.0mm to 52.0mm Dia.)

SIZE	PITCH	ITEM NO.	PRICE
13/16" ROUND DIE			
M1.0	0.25	RADM01.0X0.25	25.88
M1.2	0.25	RADM01.2X0.25	25.88
M1.6	0.35	RADM01.6X0.35	25.88
M1.8	0.35	RADM01.8X0.35	25.88
M2.0	0.40	RADM02.0X0.40	23.52
M2.2	0.45	RADM02.2X0.45	23.52
M2.5	0.45	RADM02.5X0.45	23.52
M3.0	0.35	RADM03.0X0.35	23.52
M3.0	0.50	RADM03.0X0.50*	23.52
M3.5	0.35	RADM03.5X0.35	23.52
M3.5	0.60	RADM03.5X0.60*	23.52
M4.0	0.50	RADM04.0X0.50*	23.52
M4.0	0.70	RADM04.0X0.70*	23.52
M4.5	0.50	RADM04.5X0.50	23.52
M4.5	0.75	RADM04.5X0.75*	23.52
M5.0	0.50	RADM05.0X0.50*	23.52
M5.0	0.80	RADM05.0X0.80*	23.52
M6.0	0.75	RADM06.0X0.75.	23.52
M6.0	1.00	RADM06.0X0.1.	23.52
1" ROUND DIE			
M1.6	0.35	RADM01.6X0.35*	22.12
M1.8	0.35	RADM01.8X0.35*	22.12
M2.0	0.40	RADM02.0X0.40*	22.12
M2.2	0.45	RADM02.2X0.45*	22.12
M2.5	0.45	RADM02.5X0.45*	22.12
M3.0	0.35	RADM03.0X0.35*	22.12
M3.0	0.50	RADM03.0X0.50	22.12
M3.5	0.35	RADM03.5X0.35*	22.12
M3.5	0.60	RADM03.5X0.60	22.12
M4.0	0.50	RADM04.0X0.50	22.12
M4.0	0.70	RADM04.0X0.70	22.12
M4.5	0.50	RADM04.5X0.50	22.12
M4.5	0.75	RADM04.5X0.75	22.12
M5.0	0.50	RADM05.0X0.50	22.12
M5.0	0.80	RADM05.0X0.80	22.12
M6.0	0.75	RADM06.0X0.75	22.12
M6.0	1.00	RADM06.0X1.0	22.12

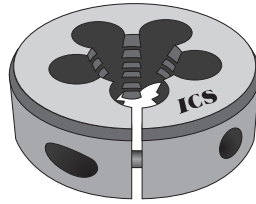
SIZE	PITCH	ITEM NO.	PRICE
1" ROUND DIE			
M6.3	1.00	RADM06.3X1.0	22.12
M7.0	0.75	RADM07.0X0.75	22.12
M7.0	1.00	RADM07.0X1.0	22.12
M8.0	1.00	RADM08.0X1.0	22.12
M8.0	1.25	RADM08.0X1.25	22.12
M9.0	1.00	RADM09.0X1.0	22.12
M9.0	1.25	RADM09.0X1.25	22.12
M10.0	1.25	RADM10.0X1.25	22.12
M10.0	1.50	RADM10.0X1.5	22.12
M11.0	1.25	RADM11.0X1.25	22.12
M11.0	1.50	RADM11.0X1.5	22.12
M12.0	1.25	RADM12.0X1.25	22.12
M12.0	1.75	RADM12.0X1.75	22.12
1-1/2" ROUND DIE			
M6.0	0.75	RADM06.0X0.75*	34.70
M6.0	1.00	RADM06.0X1.0*	34.70
M7.0	0.75	RADM07.0X0.75*	34.70
M7.0	1.00	RADM07.0X1.0*	34.70
M8.0	1.00	RADM08.0X1.0*	34.70
M8.0	1.25	RADM08.0X1.25*	34.70
M9.0	1.00	RADM09.0X1.0*	34.70
M9.0	1.25	RADM09.0X1.25*	34.70
M10.0	1.25	RADM10.0X1.25*	34.70
M10.0	1.50	RADM10.0X1.5*	34.70
M11.0	1.25	RADM11.0X1.25*	34.70
M11.0	1.50	RADM11.0X1.5*	34.70
M12.0	1.25	RADM12.0X1.25*	34.70
M12.0	1.75	RADM12.0X1.75*	34.70
M14.0	1.50	RADM14.0X1.5	41.16
M14.0	2.00	RADM14.0X2.0	41.16
M16.0	1.50	RADM16.0X1.5	34.70
M16.0	2.00	RADM16.0X2.0	34.70
M18.0	1.50	RADM18.0X1.5	41.16
M18.0	2.50	RADM18.0X2.5	34.70
M20.0	1.50	RADM20.0X1.5	34.70
M20.0	2.50	RADM20.0X2.5	34.70

SIZE	PITCH	ITEM NO.	PRICE
2" ROUND DIE			
M16.0	1.50	RADM16.0X1.5*	61.74
M16.0	2.00	RADM16.0X2.0*	61.74
M18.0	1.50	RADM18.0X1.5*	61.74
M18.0	2.50	RADM18.0X2.5*	61.74
M20.0	1.50	RADM20.0X1.5*	61.74
M20.0	2.50	RADM20.0X2.5*	61.74
M22.0	1.50	RADM22.0X1.5	61.74
M22.0	2.50	RADM22.0X2.5	61.74
M24.0	2.00	RADM24.0X2.0	61.74
M24.0	3.00	RADM24.0X3.0	61.74
M27.0	2.00	RADM27.0X2.0	61.74
M27.0	3.00	RADM27.0X3.0	61.74
M30.0	2.00	RADM30.0X2.0	61.74
M30.0	3.50	RADM30.0X3.5	61.74
2-1/2" ROUND DIE			
M24.0	2.00	RADM24.0X2.0*	105.52
M24.0	3.00	RADM24.0X3.0*	105.52
M27.0	2.00	RADM27.0X2.0*	105.52
M27.0	3.00	RADM27.0X3.0*	105.52
M30.0	2.00	RADM30.0X2.0*	105.52
M30.0	3.50	RADM30.0X3.5*	105.52
M33.0	2.00	RADM33.0X2.0	105.52
M33.0	3.50	RADM33.0X3.5	105.52
M36.0	3.00	RADM36.0X3.00	105.52
M36.0	4.00	RADM36.0X4.0	105.52
3" ROUND DIE			
M36.0	3.00	RADM36.0X3.0*	200.02
M36.0	4.00	RADM36.0X4.0*	200.02
M39.0	3.00	RADM39.0X3.0	200.02
M39.0	4.00	RADM39.0X4.0	200.02
M42.0	4.50	RADM42.0X4.5	200.02
M45.0	4.50	RADM45.0X4.5	200.02
M48.0	5.00	RADM48.0X5.0	200.02
M52.0	5.00	RADM52.0X5.0	200.02

NOTE: Fine Thread Pitches are shown in **BOLD TYPE**.

Asterisks * show they are alternate diameters. If unsure, specify diameter when ordering • Larger Metric Size Dies are available upon request.

Die Stocks, Holders, and Adapters are on page 248.

ROUND ADJUSTABLE (SPECIAL METRIC) DIES**ICS WIS****GENERAL PURPOSE****GROUND THREAD****SCREW ADJUSTING
TYPE****RIGHT HAND
CUT**

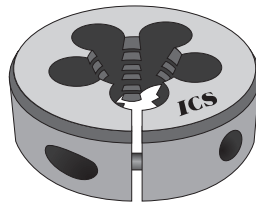
BLACK & GOLD FINISH

Special Metric Sizes (1.7mm to 52.0mm Dia.)

SIZE	PITCH	ITEM NO.	PRICE
1" ROUND DIE			
M1.7	.20	RADMS01.7X0.20	25.88
M1.7	.35	RADMS01.7X0.35	25.88
M2.0	.25	RADMS02.0X0.25	25.88
M2.3	.40	RADMS02.3X0.40	25.88
M2.5	.50	RADMS02.5X0.50	25.88
M2.6	.35	RADMS02.6X0.35	25.88
M2.6	.45	RADMS02.6X0.45	25.88
M3.0	.60	RADMS03.0X0.60	25.88
M3.0	.75	RADMS03.0X0.75	25.88
M3.5	.50	RADMS03.5X0.50	25.88
M4.0	.35	RADMS04.0X0.35	25.88
M4.0	.60	RADMS04.0X0.60	25.88
M4.0	.75	RADMS04.0X0.75	25.88
M4.0	1.00	RADMS04.0X1.00	25.88
M4.5	1.00	RADMS04.5X1.00	25.88
M5.0	.75	RADMS05.0X.75	25.88
M5.0	.90	RADMS05.0X.90	25.88
M5.0	1.00	RADMS05.0X1.00	25.88
M5.5	.50	RADMS05.5X.70	25.88
M5.5	.70	RADMS05.5X0.50	25.88
M5.5	.90	RADMS05.5X0.90	25.88
M6.0	.50	RADMS06.0X.50	25.88
M6.0	1.25	RADMS06.0X1.25	25.88
M6.0	1.50	RADMS06.0X1.50	25.88
M7.0	.50	RADMS07.0X0.50	25.88
M7.0	1.25	RADMS07.0X1.25	25.88
M8.0	.50	RADMS08.0X0.50	25.88
M8.0	.75	RADMS08.0X0.75	25.88
M8.0	1.50	RADMS08.0X1.50	25.88
M8.0	1.75	RADMS08.0X1.75	25.88
M9.0	.50	RADMS09.0X.50	25.88
M9.0	.75	RADMS09.0X.75	25.88
M9.0	1.50	RADMS09.0X1.50	25.88
M9.0	1.75	RADMS09.0X1.75	25.88
M10	.50	RADMS10.0X.50	25.88
M10	.75	RADMS10.0X.75	25.88
M10	1.00	RADMS10.0X1.0	25.88
M10	1.75	RADMS10.0X1.75	25.88
M10	2.00	RADMS10.0X2.0	25.88
M11	.50	RADMS11.0X.50	25.88
M11	.75	RADMS11.0X.75	25.88
M11	1.00	RADMS11.0X1.0	25.88
M11	1.75	RADMS11.0X1.75	25.88
M11	2.00	RADMS11.0X2.00	25.88
M12	.50	RADMS12.0X.50	25.88
M12	.75	RADMS12.0X.75	25.88
M12	1.00	RADMS12.0X1.0	25.88
M12	1.75	RADMS12.0X1.75	25.88
M12	2.00	RADMS12.0X2.0	25.88
1-1/2" ROUND DIE			
M9.0	.50	RADMS09.0X.50*	41.16
M9.0	.75	RADMS09.0X.75*	41.16
M10	.50	RADMS10.0X.50*	41.16

SIZE	PITCH	ITEM NO.	PRICE
1-1/2" ROUND DIE			
M10	.75	RADMS10.0X.75*	41.16
M10	1.00	RADMS10.0X1.0*	41.16
M11	.50	RADMS11.0X.50*	41.16
M11	.75	RADMS11.0X.75*	41.16
M11	1.00	RADMS11.0X1.0*	41.16
M12	.50	RADMS12.0X.50*	41.16
M12	.75	RADMS12.0X.75*	41.16
M12	1.00	RADMS12.0X1.0*	41.16
M12	1.75	RADMS12.0X1.75*	41.16
M12	2.00	RADMS12.0X2.0*	41.16
M13	.50	RADMS13.0X.50	41.16
M13	.75	RADMS13.0X.75	41.16
M13	1.00	RADMS13.0X1.00	41.16
M13	1.25	RADMS13.0X1.25	41.16
M13	1.50	RADMS13.0X1.50	41.16
M13	1.75	RADMS13.0X1.75	41.16
M13	2.00	RADMS13.0X2.0	41.16
M14	.50	RADMS14.0X.50	41.16
M14	.75	RADMS14.0X.75	41.16
M14	1.00	RADMS14.0X1.0	41.16
M14	1.25	RADMS14.0X1.25	41.16
M14	1.75	RADMS14.0X1.75	41.16
M15	.50	RADMS15.0X.50	41.16
M15	1.00	RADMS15.0X1.00	41.16
M15	1.50	RADMS15.0X1.5	41.16
M15	2.00	RADMS15.0X2.0	41.16
M16	.50	RADMS16.0X.50	41.16
M16	.75	RADMS16.0X.75	41.16
M16	1.00	RADMS16.0X1.0	41.16
M16	1.25	RADMS16.0X1.25	41.16
M16	1.75	RADMS16.0X1.75	41.16
M17	.50	RADMS17.0X.50	41.16
M17	1.00	RADMS17.0X1.00	41.16
M17	1.50	RADMS17.0X1.5	41.16
M17	2.00	RADMS17.0X2.0	41.16
M18	.50	RADMS18.0X.50	41.16
M18	1.00	RADMS18.0X1.0	41.16
M18	1.25	RADMS18.0X1.25	41.16
M18	1.75	RADMS18.0X1.75	41.16
M18	2.00	RADMS18.0X2.0	41.16
M19	.50	RADMS19.0X.50	41.16
M19	1.00	RADMS19.0X1.0	41.16
M19	1.50	RADMS19.0X1.5	41.16
M19	2.00	RADMS19.0X2.0	41.16
M20	1.00	RADMS20.0X1.0	41.16
M20	1.25	RADMS20.0X1.25	41.16
M20	1.75	RADMS20.0X1.75	41.16
M20	2.00	RADMS20.0X2.00	41.16
2" ROUND DIE			
M18	1.00	RADMS18.0X1.0*	72.32
M19	1.50	RADMS19.0X1.5*	72.32
M20	1.00	RADMS20.0X1.0*	72.32
M20	1.25	RADMS20.0X1.25*	72.32

SIZE	PITCH	ITEM NO.	PRICE
2" ROUND DIE			
M20	2.00	RADMS20.0X2.00*	72.32
M21	1.00	RADMS21.0X1.00	72.32
M21	1.50	RADMS21.0X1.5	72.32
M21	2.00	RADMS21.0X2.0	72.32
M21	2.50	RADMS21.0X2.5	72.32
M22	1.00	RADMS22.0X1.0	72.32
M22	2.00	RADMS22.0X2.0	72.32
M23	1.00	RADMS23.0X1.0	72.32
M23	1.50	RADMS23.0X1.5	72.32
M23	2.00	RADMS23.0X2.0	72.32
M23	2.50	RADMS23.0X2.5	72.32
M24	1.50	RADMS24.0X1.5	72.32
M25	1.00	RADMS25.0X1.0	72.32
M25	1.50	RADMS25.0X1.5	72.32
M25	2.00	RADMS25.0X2.0	72.32
M25	2.50	RADMS25.0X2.5	72.32
M26	1.50	RADMS26.0X1.5	72.32
M26	2.00	RADMS26.0X2.0	72.32
M30	1.50	RADMS30.0X1.5	72.32
2-1/2" ROUND DIE			
M24	1.50	RADMS24.0X1.5*	105.52
M25	1.00	RADMS25.0X1.0*	105.52
M25	1.50	RADMS25.0X1.5*	105.52
M25	2.00	RADMS25.0X2.0*	105.52
M26	1.50	RADMS26.0X1.5*	105.52
M27	1.00	RADMS27.0X1.0	105.52
M27	1.50	RADMS27.0X1.5	105.52
M28	1.00	RADMS28.0X1.0	105.52
M28	1.50	RADMS28.0X1.5	105.52
M28	2.00	RADMS28.0X2.0	105.52
M30	1.00	RADMS30.0X1.0	105.52
M30	1.50	RADMS30.0X1.5*	105.52
M30	3.00	RADMS30.0X3.0	105.52
M32	1.50	RADMS32.0X1.5	105.52
M33	1.50	RADMS33.0X1.5	128.04
M34	1.50	RADMS34.0X1.50	105.52
M35	1.00	RADMS35.0X1.0	105.52
M35	1.50	RADMS35.0X1.50	105.52
M36	1.50	RADMS36.0X1.5	105.52
M36	2.00	RADMS36.0X2.0	105.52
M38	1.50	RADMS38.0X1.5	105.52
3" ROUND DIE			
M38	1.50	RADMS38.0X1.5*	200.02
M39	1.50	RADMS39.0X1.5	200.02
M40	1.50	RADMS40.0X1.5	200.02
M42	1.50	RADMS42.0X1.5	200.02
M42	3.00	RADMS42.0X3.00	200.02
M45	1.50	RADMS45.0X1.5	200.02
M45	3.00	RADMS45.0X3.0	200.02
M48	1.50	RADMS48.0X1.50	200.02
M48	3.00	RADMS48.0X3.00	200.02
M50	1.50	RADMS50.0X1.50	200.02
M52	1.50	RADMS52.0X1.50	200.02
M52	3.00	RADMS52.0X3.00	200.02

ROUND ADJUSTABLE (SPECIAL THREAD) DIES**ICS WIS****GENERAL PURPOSE****GROUND THREAD****SCREW ADJUSTING
TYPE****RIGHT HAND
CUT**

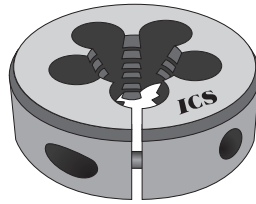
BLACK & GOLD FINISH

Special Machine Screw and Fractional Sizes (#4 to 5/8")

SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
#4	36	1	RADS#04-36X100	28.22
#4	56	1	RADS#04-56X100	28.22
#4	60	1	RADS#04-60X100	28.22
#4	64	1	RADS#04-64X100	28.22
#5	48	1	RADS#05-48X100	28.22
#5	56	1	RADS#05-56X100	28.22
#5	64	1	RADS#05-64X100	28.22
#6	30	1	RADS#06-30X100	25.88
#6	36	1	RADS#06-36X100	25.88
#6	48	1	RADS#06-48X100	25.88
#6	56	1	RADS#06-56X100	25.88
#8	24	1	RADS#08-24X100	25.88
#8	30	1	RADS#08-30X100	25.88
#8	40	1	RADS#08-40X100	25.88
#8	48	1	RADS#08-48X100	25.88
#8	56	1	RADS#08-56X100	25.88
#10	26	1	RADS#10-26X100	25.88
#10	27	1	RADS#10-27X100	25.88
#10	28	1	RADS#10-28X100	25.88
#10	30	1	RADS#10-30X100	25.88
#10	36	1	RADS#10-36X100	25.88
#10	40	1	RADS#10-40X100	25.88
#10	48	1	RADS#10-48X100	25.88
#10	56	1	RADS#10-56X100	25.88
#12	26	1	RADS#12-26X100	25.88
#12	27	1	RADS#12-27X100	25.88
#12	30	1	RADS#12-30X100	25.88
#12	32	1	RADS#12-32X100	25.88
#12	36	1	RADS#12-36X100	25.88
#12	40	1	RADS#12-40X100	25.88
#12	48	1	RADS#12-48X100	25.88
#12	56	1	RADS#12-56X100	25.88
#14	27	1	RADS#14-27X100	25.88
#14	28	1	RADS#14-28X100	25.88
#14	30	1	RADS#14-30X100	25.88
#14	32	1	RADS#14-32X100	25.88
#14	48	1	RADS#14-48X100	25.88
1/4	14	1	RADS016-14X100	25.88
1/4	16	1	RADS016-16X100	25.88
1/4	18	1	RADS016-18X100	25.88
1/4	22	1	RADS016-22X100	25.88
1/4	24	1	RADS016-24X100	25.88
1/4	26	1	RADS016-26X100	25.88
1/4	27	1	RADS016-27X100	25.88
1/4	30	1	RADS016-30X100	25.88
1/4	32	1	RADS016-32X100	25.88
1/4	36	1	RADS016-36X100	25.88
1/4	40	1	RADS016-40X100	25.88
1/4	48	1	RADS016-48X100	25.88
1/4	56	1	RADS016-56X100	25.88
1/4	64	1	RADS016-64X100	25.88
5/16	16	1	RADS020-16X100	25.88
5/16	20	1	RADS020-20X100	25.88
5/16	22	1	RADS020-22X100	25.88
5/16	27	1	RADS020-27X100	25.88
5/16	28	1	RADS020-28X100	25.88
5/16	30	1	RADS020-30X100	25.88

SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
5/16	32	1	RADS020-32X100	25.88
5/16	36	1	RADS020-36X100	25.88
5/16	40	1	RADS020-40X100	25.88
5/16	48	1	RADS020-48X100	25.88
5/16	56	1	RADS020-56X100	25.88
3/8	14	1	RADS024-14X100	25.88
3/8	18	1	RADS024-18X100	25.88
3/8	20	1	RADS024-20X100	25.88
3/8	22	1	RADS024-22X100	25.88
3/8	26	1	RADS024-26X100	25.88
3/8	27	1	RADS024-27X100	25.88
3/8	28	1	RADS024-28X100	25.88
3/8	30	1	RADS024-30X100	25.88
3/8	32	1	RADS024-32X100	25.88
3/8	36	1	RADS024-36X100	25.88
3/8	40	1	RADS024-40X100	25.88
3/8	48	1	RADS024-48X100	25.88
7/16	16	1	RADS028-16X100	25.88
7/16	18	1	RADS028-18X100	25.88
7/16	24	1	RADS028-24X100	25.88
7/16	27	1	RADS028-27X100	25.88
7/16	28	1	RADS028-28X100	25.88
7/16	30	1	RADS028-30X100	25.88
7/16	32	1	RADS028-32X100	25.88
7/16	36	1	RADS028-36X100	25.88
7/16	40	1	RADS028-40X100	25.88
1/2	12	1	RADS032-12X100	25.88
1/2	14	1	RADS032-14X100	25.88
1/2	16	1	RADS032-16X100	25.88
1/2	18	1	RADS032-18X100	25.88
1/2	22	1	RADS032-22X100	25.88
1/2	24	1	RADS032-24X100	25.88
1/2	27	1	RADS032-27X100	25.88
1/2	28	1	RADS032-28X100	25.88
1/2	30	1	RADS032-30X100	25.88
1/2	32	1	RADS032-32X100	25.88
1/2	36	1	RADS032-36X100	25.88
1/2	40	1	RADS032-40X100	25.88
1/2	48	1	RADS032-48X100	25.88
1-1/2" ROUND DIE				
1/4	22	1-1/2	RADS016-22X132	41.16
1/4	24	1-1/2	RADS016-24X132	41.16
1/4	27	1-1/2	RADS016-27X132	41.16
1/4	30	1-1/2	RADS016-30X132	41.16
1/4	32	1-1/2	RADS016-32X132	41.16
1/4	36	1-1/2	RADS016-36X132	41.16
1/4	40	1-1/2	RADS016-40X132	41.16
1/4	48	1-1/2	RADS016-48X132	41.16
5/16	16	1-1/2	RADS020-16X132	41.16
5/16	20	1-1/2	RADS020-20X132	41.16
5/16	22	1-1/2	RADS020-22X132	41.16
5/16	27	1-1/2	RADS020-27X132	41.16
5/16	28	1-1/2	RADS020-28X132	41.16
5/16	30	1-1/2	RADS020-30X132	41.16
5/16	32	1-1/2	RADS020-32X132	41.16
5/16	36	1-1/2	RADS020-36X132	41.16
5/16	40	1-1/2	RADS020-40X132	41.16

SIZE	TPI	DIA	ITEM NO.	PRICE
1-1/2" ROUND DIE				
5/16	48	1-1/2	RADS020-48X132	41.16
3/8	14	1-1/2	RADS024-14X132	41.16
3/8	18	1-1/2	RADS024-18X132	41.16
3/8	20	1-1/2	RADS024-20X132	41.16
3/8	22	1-1/2	RADS024-22X132	41.16
3/8	26	1-1/2	RADS024-26X132	41.16
3/8	27	1-1/2	RADS024-27X132	41.16
3/8	28	1-1/2	RADS024-28X132	41.16
3/8	30	1-1/2	RADS024-30X132	41.16
3/8	32	1-1/2	RADS024-32X132	41.16
3/8	36	1-1/2	RADS024-36X132	41.16
3/8	40	1-1/2	RADS024-40X132	41.16
3/8	48	1-1/2	RADS024-48X132	41.16
7/16	12	1-1/2	RADS028-12X132	41.16
7/16	16	1-1/2	RADS028-16X132	41.16
7/16	18	1-1/2	RADS028-18X132	41.16
7/16	22	1-1/2	RADS028-22X132	41.16
7/16	24	1-1/2	RADS028-24X132	41.16
7/16	27	1-1/2	RADS028-27X132	41.16
7/16	28	1-1/2	RADS028-28X132	41.16
7/16	30	1-1/2	RADS028-30X132	41.16
7/16	32	1-1/2	RADS028-32X132	41.16
7/16	36	1-1/2	RADS028-36X132	41.16
7/16	40	1-1/2	RADS028-40X132	41.16
7/16	48	1-1/2	RADS028-48X132	41.16
15/32	32	1-1/2	RADS030-32X132	41.16
1/2	12	1-1/2	RADS032-12X132	41.16
1/2	14	1-1/2	RADS032-14X132	41.16
1/2	16	1-1/2	RADS032-16X132	41.16
1/2	18	1-1/2	RADS032-18X132	41.16
1/2	22	1-1/2	RADS032-22X132	41.16
1/2	24	1-1/2	RADS032-24X132	41.16
1/2	27	1-1/2	RADS032-27X132	41.16
1/2	28	1-1/2	RADS032-28X132	41.16
1/2	30	1-1/2	RADS032-30X132	41.16
1/2	32	1-1/2	RADS032-32X132	41.16
1/2	36	1-1/2	RADS032-36X132	41.16
1/2	40	1-1/2	RADS032-40X132	41.16
1/2	48	1-1/2	RADS032-48X132	41.16
1/2	56	1-1/2	RADS032-56X132	41.16
9/16	14	1-1/2	RADS036-14X132	41.16
9/16	16	1-1/2	RADS036-16X132	41.16
9/16	20	1-1/2	RADS036-20X132	41.16
9/16	22	1-1/2	RADS036-22X132	41.16
9/16	24	1-1/2	RADS036-24X132	41.16
9/16	27	1-1/2	RADS036-27X132	41.16
9/16	28	1-1/2	RADS036-28X132	41.16
9/16	30	1-1/2	RADS036-30X132	41.16
9/16	32	1-1/2	RADS036-32X132	41.16
9/16	36	1-1/2	RADS036-36X132	41.16
9/16	40	1-1/2	RADS036-40X132	41.16
5/8	10	1-1/2	RADS040-10X132	41.16
5/8	12	1-1/2	RADS040-12X132	41.16
5/8	14	1-1/2	RADS040-14X132	41.16
5/8	16	1-1/2	RADS040-16X132	41.16
5/8	20	1-1/2	RADS040-20X132	41.16
5/8	22	1-1/2	RADS040-22X132	41.16

ROUND ADJUSTABLE (SPECIAL THREAD) DIES**ICS WIS****GENERAL PURPOSE****GROUND THREAD****SCREW ADJUSTING
TYPE****RIGHT HAND
CUT**

BLACK & GOLD FINISH

Special Fractional Sizes (5/8" to 1-3/16")

SIZE	TPI	DIA	ITEM NO.	PRICE
1-1/2" ROUND DIE				
5/8	24	1-1/2	RADS040-24X132	41.16
5/8	26	1-1/2	RADS040-26X132	41.16
5/8	27	1-1/2	RADS040-27X132	41.16
5/8	28	1-1/2	RADS040-28X132	41.16
5/8	30	1-1/2	RADS040-30X132	41.16
5/8	32	1-1/2	RADS040-32X132	41.16
5/8	36	1-1/2	RADS040-36X132	41.16
5/8	40	1-1/2	RADS040-40X132	41.16
5/8	48	1-1/2	RADS040-48X132	41.16
11/16	12	1-1/2	RADS044-12X132	41.16
11/16	14	1-1/2	RADS044-14X132	41.16
11/16	18	1-1/2	RADS044-18X132	41.16
11/16	20	1-1/2	RADS044-20X132	41.16
11/16	24	1-1/2	RADS044-24X132	41.16
11/16	27	1-1/2	RADS044-27X132	41.16
11/16	30	1-1/2	RADS044-30X132	41.16
11/16	32	1-1/2	RADS044-32X132	41.16
3/4	12	1-1/2	RADS048-12X132	41.16
3/4	14	1-1/2	RADS048-14X132	41.16
3/4	18	1-1/2	RADS048-18X132	41.16
3/4	20	1-1/2	RADS048-20X132	41.16
3/4	24	1-1/2	RADS048-24X132	41.16
3/4	27	1-1/2	RADS048-27X132	41.16
3/4	28	1-1/2	RADS048-28X132	41.16
3/4	30	1-1/2	RADS048-30X132	41.16
3/4	32	1-1/2	RADS048-32X132	41.16
3/4	36	1-1/2	RADS048-36X132	41.16
3/4	40	1-1/2	RADS048-40X132	41.16
3/4	48	1-1/2	RADS048-48X132	41.16
13/16	10	1-1/2	RADS052-10X132	41.16
13/16	12	1-1/2	RADS052-12X132	41.16
13/16	16	1-1/2	RADS052-16X132	41.16
13/16	20	1-1/2	RADS052-20X132	41.16
13/16	24	1-1/2	RADS052-24X132	41.16
13/16	28	1-1/2	RADS052-28X132	41.16
13/16	32	1-1/2	RADS052-32X132	41.16
2" ROUND DIE				
7/16	18	2	RADS028-18X200	72.32
7/16	24	2	RADS028-24X200	72.32
1/2	12	2	RADS032-12X200	72.32
1/2	16	2	RADS032-16X200	72.32
1/2	18	2	RADS032-18X200	72.32
1/2	24	2	RADS032-24X200	72.32
1/2	27	2	RADS032-27X200	72.32
1/2	28	2	RADS032-28X200	72.32
1/2	30	2	RADS032-30X200	72.32
1/2	32	2	RADS032-32X200	72.32
9/16	14	2	RADS036-14X200	72.32
9/16	20	2	RADS036-20X200	72.32
9/16	24	2	RADS036-24X200	72.32
9/16	27	2	RADS036-27X200	72.32
9/16	28	2	RADS036-28X200	72.32
9/16	30	2	RADS036-30X200	72.32
9/16	32	2	RADS036-32X200	72.32
9/16	36	2	RADS036-36X200	72.32
5/8	10	2	RADS040-10X200	72.32
5/8	12	2	RADS040-12X200	72.32
5/8	14	2	RADS040-14X200	72.32

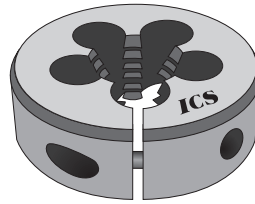
SIZE	TPI	DIA	ITEM NO.	PRICE
2" ROUND DIE				
5/8	16	2	RADS040-16X200	72.32
5/8	20	2	RADS040-20X200	72.32
5/8	24	2	RADS040-24X200	72.32
5/8	27	2	RADS040-27X200	72.32
5/8	28	2	RADS040-28X200	72.32
5/8	30	2	RADS040-30X200	72.32
5/8	32	2	RADS040-32X200	72.32
5/8	40	2	RADS040-40X200	72.32
11/16	12	2	RADS044-12X200	72.32
11/16	14	2	RADS044-14X200	72.32
11/16	18	2	RADS044-18X200	72.32
11/16	20	2	RADS044-20X200	72.32
11/16	24	2	RADS044-24X200	72.32
11/16	27	2	RADS044-27X200	72.32
11/16	32	2	RADS044-32X200	72.32
11/16	36	2	RADS044-36X200	72.32
11/16	40	2	RADS044-40X200	72.32
3/4	12	2	RADS048-12X200	72.32
3/4	14	2	RADS048-14X200	72.32
3/4	18	2	RADS048-18X200	72.32
3/4	20	2	RADS048-20X200	72.32
3/4	24	2	RADS048-24X200	72.32
3/4	27	2	RADS048-27X200	72.32
3/4	28	2	RADS048-28X200	72.32
3/4	32	2	RADS048-32X200	72.32
3/4	36	2	RADS048-36X200	72.32
3/4	40	2	RADS048-40X200	72.32
13/16	10	2	RADS052-10X200	72.32
13/16	12	2	RADS052-12X200	72.32
13/16	14	2	RADS052-14X200	72.32
13/16	16	2	RADS052-16X200	72.32
13/16	18	2	RADS052-18X200	72.32
13/16	20	2	RADS052-20X200	72.32
13/16	24	2	RADS052-24X200	72.32
13/16	27	2	RADS052-27X200	72.32
13/16	30	2	RADS052-30X200	72.32
13/16	32	2	RADS052-32X200	72.32
13/16	36	2	RADS052-36X200	72.32
13/16	40	2	RADS052-40X200	72.32
7/8	10	2	RADS056-10X200	72.32
7/8	12	2	RADS056-12X200	72.32
7/8	16	2	RADS056-16X200	72.32
7/8	18	2	RADS056-18X200	72.32
7/8	20	2	RADS056-20X200	72.32
7/8	24	2	RADS056-24X200	72.32
7/8	27	2	RADS056-27X200	72.32
7/8	28	2	RADS056-28X200	72.32
7/8	30	2	RADS056-30X200	72.32
7/8	32	2	RADS056-32X200	72.32
7/8	36	2	RADS056-36X200	72.32
7/8	40	2	RADS056-40X200	72.32
15/16	10	2	RADS060-10X200	72.32
15/16	12	2	RADS060-12X200	72.32
15/16	14	2	RADS060-14X200	72.32
15/16	16	2	RADS060-16X200	72.32
15/16	18	2	RADS060-18X200	72.32
15/16	20	2	RADS060-20X200	72.32
15/16	24	2	RADS060-24X200	72.32

SIZE	TPI	DIA	ITEM NO.	PRICE
2" ROUND DIE				
15/16	27	2	RADS060-27X200	72.32
15/16	30	2	RADS060-30X200	72.32
15/16	32	2	RADS060-32X200	72.32
1	10	2	RADS100-10X200	72.32
1	16	2	RADS100-16X200	72.32
1	18	2	RADS100-18X200	72.32
1	20	2	RADS100-20X200	72.32
1	24	2	RADS100-24X200	72.32
1	27	2	RADS100-27X200	72.32
1	28	2	RADS100-28X200	72.32
1	30	2	RADS100-30X200	72.32
1	32	2	RADS100-32X200	72.32
1	36	2	RADS100-36X200	72.32
1	40	2	RADS100-40X200	72.32
1	48	2	RADS100-48X200	72.32
1	56	2	RADS100-56X200	72.32
1-1/16	12	2	RADS104-12X200	72.32
1-1/16	14	2	RADS104-14X200	72.32
1-1/16	16	2	RADS104-16X200	72.32
1-1/16	18	2	RADS104-18X200	72.32
2-1/2" ROUND DIE				
1	10	2-1/2	RADS100-10X232	105.52
1	16	2-1/2	RADS100-16X232	105.52
1	18	2-1/2	RADS100-18X232	105.52
1	20	2-1/2	RADS100-20X232	105.52
1	24	2-1/2	RADS100-24X232	105.52
1	26	2-1/2	RADS100-26X232	105.52
1	27	2-1/2	RADS100-27X232	105.52
1	28	2-1/2	RADS100-28X232	105.52
1	32	2-1/2	RADS100-32X232	105.52
1-1/16	7	2-1/2	RADS104-07X232	105.52
1-1/16	8	2-1/2	RADS104-08X232	105.52
1-1/16	10	2-1/2	RADS104-10X232	105.52
1-1/16	12	2-1/2	RADS104-12X232	105.52
1-1/16	14	2-1/2	RADS104-14X232	105.52
1-1/16	16	2-1/2	RADS104-16X232	105.52
1-1/16	18	2-1/2	RADS104-18X232	105.52
1-1/16	20	2-1/2	RADS104-20X232	105.52
1-1/16	24	2-1/2	RADS104-24X232	105.52
1-1/16	28	2-1/2	RADS104-28X232	105.52
1-1/8	8	2-1/2	RADS108-08X232	105.52
1-1/8	10	2-1/2	RADS108-10X232	105.52
1-1/8	14	2-1/2	RADS108-14X232	105.52
1-1/8	16	2-1/2	RADS108-16X232	105.52
1-1/8	18	2-1/2	RADS108-18X232	105.52
1-1/8	20	2-1/2	RADS108-20X232	105.52
1-1/8	24	2-1/2	RADS108-24X232	105.52
1-1/8	27	2-1/2	RADS108-27X232	105.52
1-1/8	28	2-1/2	RADS108-28X232	105.52
1-1/8	30	2-1/2	RADS108-30X232	105.52
1-1/8	32	2-1/2	RADS108-32X232	105.52
1-3/16	7	2-1/2	RADS112-07X232	105.52
1-3/16	8	2-1/2	RADS112-08X232	105.52
1-3/16	12	2-1/2	RADS112-12X232	105.52
1-3/16	14	2-1/2	RADS112-14X232	105.52
1-3/16	16	2-1/2	RADS112-16X232	105.52
1-3/16	18	2-1/2	RADS112-18X232	105.52
1-3/16	20	2-1/2	RADS112-20X232	105.52

ROUND ADJUSTABLE (SPECIAL THREAD) DIES

ICS

WIS

GENERAL PURPOSE**GROUND THREAD****SCREW
ADJUSTING TYPE****RIGHT HAND
CUT**

BLACK & GOLD FINISH

Special Fractional Sizes (1-3/16" to 3-1/2")

SIZE	TPI	DIA	ITEM NO.	PRICE
2-1/2" ROUND DIE				
1-3/16	24	2-1/2	RADS112-24X232	105.52
1-3/16	27	2-1/2	RADS112-27X232	105.52
1-3/16	28	2-1/2	RADS112-28X232	105.52
1-3/16	32	2-1/2	RADS112-32X232	105.52
1-1/4	8	2-1/2	RADS116-08X232	105.52
1-1/4	10	2-1/2	RADS116-10X232	105.52
1-1/4	14	2-1/2	RADS116-14X232	105.52
1-1/4	16	2-1/2	RADS116-16X232	105.52
1-1/4	18	2-1/2	RADS116-18X232	105.52
1-1/4	20	2-1/2	RADS116-20X232	105.52
1-1/4	24	2-1/2	RADS116-24X232	105.52
1-1/4	27	2-1/2	RADS116-27X232	105.52
1-1/4	28	2-1/2	RADS116-28X232	105.52
1-1/4	30	2-1/2	RADS116-30X232	105.52
1-1/4	32	2-1/2	RADS116-32X232	105.52
1-1/4	36	2-1/2	RADS116-36X232	105.52
1-1/4	40	2-1/2	RADS116-40X232	105.52
1-5/16	8	2-1/2	RADS120-08X232	105.52
1-5/16	12	2-1/2	RADS120-12X232	105.52
1-5/16	14	2-1/2	RADS120-14X232	105.52
1-5/16	16	2-1/2	RADS120-16X232	105.52
1-5/16	18	2-1/2	RADS120-18X232	105.52
1-5/16	20	2-1/2	RADS120-20X232	105.52
1-5/16	24	2-1/2	RADS120-24X232	105.52
1-5/16	27	2-1/2	RADS120-27X232	105.52
1-5/16	32	2-1/2	RADS120-32X232	105.52
1-3/8	7	2-1/2	RADS124-07X232	105.52
1-3/8	8	2-1/2	RADS124-08X232	105.52
1-3/8	10	2-1/2	RADS124-10X232	105.52
1-3/8	14	2-1/2	RADS124-14X232	105.52
1-3/8	16	2-1/2	RADS124-16X232	105.52
1-3/8	18	2-1/2	RADS124-18X232	105.52
1-3/8	20	2-1/2	RADS124-20X232	105.52
1-3/8	24	2-1/2	RADS124-24X232	105.52
1-3/8	27	2-1/2	RADS124-27X232	105.52
1-3/8	32	2-1/2	RADS124-32X232	105.52
1-7/16	6	2-1/2	RADS128-06X232	105.52
1-7/16	8	2-1/2	RADS128-08X232	105.52
1-7/16	12	2-1/2	RADS128-12X232	105.52
1-7/16	16	2-1/2	RADS128-16X232	105.52
1-7/16	18	2-1/2	RADS128-18X232	105.52
1-1/2	7	2-1/2	RADS132-07X232	105.52
1-1/2	8	2-1/2	RADS132-08X232	105.52
1-1/2	10	2-1/2	RADS132-10X232	105.52
1-1/2	14	2-1/2	RADS132-14X232	105.52
1-1/2	16	2-1/2	RADS132-16X232	105.52
1-1/2	18	2-1/2	RADS132-18X232	105.52
1-1/2	20	2-1/2	RADS132-20X232	105.52
1-1/2	24	2-1/2	RADS132-24X232	105.52
1-1/2	27	2-1/2	RADS132-27X232	105.52
1-1/2	30	2-1/2	RADS132-30X232	105.52
1-1/2	32	2-1/2	RADS132-32X232	105.52
3" ROUND DIE				
1	10	3	RADS100-10X300	200.02
1	16	3	RADS100-16X300	200.02
1	18	3	RADS100-18X300	200.02
1	20	3	RADS100-20X300	200.02
1	24	3	RADS100-24X300	200.02

SIZE	TPI	DIA	ITEM NO.	PRICE
3" ROUND DIE				
1-1/16	8	3	RADS104-08X300	200.02
1-1/16	10	3	RADS104-10X300	200.02
1-1/16	12	3	RADS104-12X300	200.02
1-1/16	14	3	RADS104-14X300	200.02
1-1/16	16	3	RADS104-16X300	200.02
1-1/16	18	3	RADS104-18X300	200.02
1-1/16	20	3	RADS104-20X300	200.02
1-1/16	24	3	RADS104-24X300	200.02
1-1/8	8	3	RADS108-08X300	200.02
1-1/8	10	3	RADS108-10X300	200.02
1-1/8	14	3	RADS108-14X300	200.02
1-1/8	16	3	RADS108-16X300	200.02
1-1/8	18	3	RADS108-18X300	200.02
1-1/8	20	3	RADS108-20X300	200.02
1-1/8	24	3	RADS108-24X300	200.02
1-3/16	8	3	RADS112-08X300	200.02
1-3/16	12	3	RADS112-12X300	200.02
1-3/16	16	3	RADS112-16X300	200.02
1-1/4	6	3	RADS116-06X300	200.02
1-1/4	8	3	RADS116-08X300	200.02
1-1/4	10	3	RADS116-10X300	200.02
1-1/4	14	3	RADS116-14X300	200.02
1-1/4	16	3	RADS116-16X300	200.02
1-1/4	18	3	RADS116-18X300	200.02
1-1/4	20	3	RADS116-20X300	200.02
1-1/4	24	3	RADS116-24X300	200.02
1-5/16	8	3	RADS120-08X300	200.02
1-5/16	10	3	RADS120-10X300	200.02
1-5/16	12	3	RADS120-12X300	200.02
1-5/16	14	3	RADS120-14X300	200.02
1-5/16	16	3	RADS120-16X300	200.02
1-5/16	18	3	RADS120-18X300	200.02
1-5/16	20	3	RADS120-20X300	200.02
1-3/8	8	3	RADS124-08X300	200.02
1-3/8	10	3	RADS124-10X300	200.02
1-3/8	14	3	RADS124-14X300	200.02
1-3/8	16	3	RADS124-16X300	200.02
1-3/8	18	3	RADS124-18X300	200.02
1-3/8	20	3	RADS124-20X300	200.02
1-3/8	24	3	RADS124-24X300	200.02
1-7/16	6	3	RADS128-06X300	200.02
1-7/16	8	3	RADS128-08X300	200.02
1-7/16	12	3	RADS128-12X300	200.02
1-7/16	16	3	RADS128-16X300	200.02
1-7/16	18	3	RADS128-18X300	200.02
1-1/2	8	3	RADS132-08X300	200.02
1-1/2	10	3	RADS132-10X300	200.02
1-1/2	14	3	RADS132-14X300	200.02
1-1/2	16	3	RADS132-16X300	200.02
1-1/2	18	3	RADS132-18X300	200.02
1-1/2	20	3	RADS132-20X300	200.02
1-1/2	24	3	RADS132-24X300	200.02
1-9/16	6	3	RADS136-06X300	200.02
1-9/16	8	3	RADS136-08X300	200.02
1-9/16	12	3	RADS136-12X300	200.02
1-9/16	16	3	RADS136-16X300	200.02
1-9/16	18	3	RADS136-18X300	200.02
1-5/8	5	3	RADS140-05X300	200.02

SIZE	TPI	DIA	ITEM NO.	PRICE
3" ROUND DIE				
1-5/8	5-1/2	3	RADS140-5.5X300	200.02
1-5/8	6	3	RADS140-06X300	200.02
1-5/8	8	3	RADS140-08X300	200.02
1-5/8	10	3	RADS140-10X300	200.02
1-5/8	12	3	RADS140-12X300	200.02
1-5/8	14	3	RADS140-14X300	200.02
1-5/8	18	3	RADS140-18X300	200.02
1-5/8	20	3	RADS140-20X300	200.02
1-11/16	6	3	RADS144-06X300	200.02
1-11/16	8	3	RADS144-08X300	200.02
1-11/16	12	3	RADS144-12X300	200.02
1-11/16	18	3	RADS144-18X300	200.02
1-3/4	5-1/2	3	RADS148-5.5X300	200.02
1-3/4	6	3	RADS148-06X300	200.02
1-3/4	8	3	RADS148-08X300	200.02
1-3/4	10	3	RADS148-10X300	200.02
1-3/4	14	3	RADS148-14X300	200.02
1-3/4	16	3	RADS148-16X300	200.02
1-3/4	20	3	RADS148-20X300	200.02
1-3/4	24	3	RADS148-24X300	200.02
1-7/8	5	3	RADS156-05X300	200.02
1-7/8	5-1/2	3	RADS156-5.5X300	200.02
1-7/8	6	3	RADS156-06X300	200.02
1-7/8	8	3	RADS156-08X300	200.02
1-7/8	10	3	RADS156-10X300	200.02
1-7/8	12	3	RADS156-12X300	200.02
1-7/8	14	3	RADS156-14X300	200.02
1-7/8	16	3	RADS156-16X300	200.02
1-7/8	18	3	RADS156-18X300	200.02
1-7/8	20	3	RADS156-20X300	200.02
2	4	3	RADS200-04X300	200.02
2	6	3	RADS200-06X300	200.02
2	8	3	RADS200-08X300	200.02
2	10	3	RADS200-10X300	200.02
2	12	3	RADS200-12X300	200.02
2	14	3	RADS200-14X300	200.02
2	16	3	RADS200-16X300	200.02
2	18	3	RADS200-18X300	200.02
2	20	3	RADS200-20X300	200.02
2	24	3	RADS200-24X300	200.02
4" ROUND DIE				
2-1/8	18	4	RADS208-18X400	-
2-1/4	8	4	RADS216-08X400	-
2-1/4	16	4	RADS216-16X400	CALL FOR PRICE
2-3/8	16	4	RADS224-16X400	CALL FOR PRICE
2-1/2	8	4	RADS232-08X400	-
2-3/4	12	4	RADS248-12X400	-
3	8	4	RADS300-08X400	-
5" ROUND DIE				
2-5/8	12	5	RADS240-12X500	-
2-5/8	16	5	RADS240-16X500	-
2-3/4	8	5	RADS248-08X500	CALL FOR PRICE
2-3/4	12	5	RADS248-12X500	CALL FOR PRICE
3-1/4	12	5	RADS316-12X500	-
3-1/2	12	5	RADS332-12X500	-

HIGH SPEED STEEL

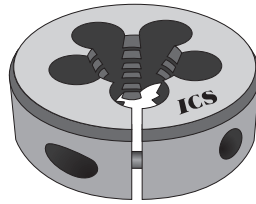
TT-47

ROUND ADJUSTABLE (TAPER PIPE) DIES

ICS WIS

GENERAL PURPOSE

GROUND THREAD

SCREW
ADJUSTING TYPERIGHT HAND
CUT

BLACK & GOLD FINISH

Fractional Sizes (1/16" To 3" Dia.)

SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
1/16	27	1	RADP004X27	25.88
1/8	27	1	RADP008X27	25.88
1/4	18	1	RADP016X18X100	27.46
1-1/2" ROUND DIE				
1/8	27	1-1/2	RADP008X27X1.5	41.16
1/4	18	1-1/2	RADP016X18	41.16
3/8	18	1-1/2	RADP024X18	41.16
1/2	14	1-1/2	RADP032X14X1.5	41.16
2" ROUND DIE				
1/4	18	2	RADP016X18X200	72.32
3/8	18	2	RADP024X18X200	72.32
1/2	14	2	RADP032X14	72.32
3/4	14	2	RADP048X14	72.32

SIZE	TPI	DIA	ITEM NO.	PRICE
2-1/2" ROUND DIE				
1	11-1/2	2-1/2	RADP100X11.5	100.56
3" ROUND DIE				
1-1/4	11-1/2	3	RADP116X11.5	179.94
1-1/2	11-1/2	3	RADP132X11.5	179.94
4" ROUND DIE				
1-1/2	11-1/2	4	RADP132X11.5X4	313.30
2	11-1/2	4	RADP200X11.5	313.30
5" ROUND DIE				
2-1/2	8	4	RADP232X08	421.26
3	8	4	RADP300X08	421.26

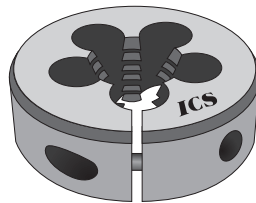
HIGH SPEED STEEL

ROUND ADJUSTABLE (STRAIGHT PIPE) DIES

ICS WIS

GENERAL PURPOSE

GROUND THREAD

SCREW
ADJUSTING TYPERIGHT HAND
CUT

BLACK & GOLD FINISH

Fractional Sizes (1/16" To 2" Dia.)

SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
1/16	27	1	RADPS004-27	25.88
1/8	27	1	RADPS008-27	25.88
1-1/2" ROUND DIE				
1/8	27	1-1/2	RADPS008-27*	41.16
1/4	18	1-1/2	RADPS016-18	41.16
3/8	18	1-1/2	RADPS024-18	41.16
1/2	14	1-1/2	RADPS032-14*	41.16
2" ROUND DIE				
1/8	27	2	RADPS008-27X2	72.32
1/4	18	2	RADPS016-18X2	72.32
3/8	18	2	RADPS024-18X2	72.32
1/2	14	2	RADPS032-14	72.32
3/4	14	2	RADPS048-14	72.32

SIZE	TPI	DIA	ITEM NO.	PRICE
2-1/2" ROUND DIE				
1	11-1/2	2-1/2	RADPS100-11.5	103.60
3" ROUND DIE				
1-1/4	11-1/2	3	RADPS116-11.5	190.12
1-1/2	11-1/2	3	RADPS132-11.5	190.12
4" ROUND DIE				
2	11-1/2	4	RADPS200-11.5	408.98

NOTE: Larger Pipe Dies are available. Consult factory for pricing.

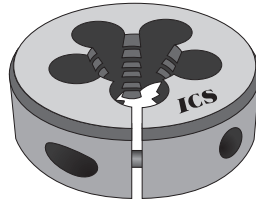
BRITISH ROUND ADJUSTABLE (TAPER PIPE) DIES

ICS WIS

GENERAL PURPOSE

GROUND THREAD

British (BSPT) Standard Pipe Taper Thread Dies are the metric/European equivalent of American (NPT) Standard Pipe Taper Threads. **Note:** American and British Standards are not interchangeable.

SCREW
ADJUSTING TYPERIGHT HAND
CUT

BLACK & GOLD FINISH

Fractional Sizes (1/8" To 2" Dia.)

SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
1/8	28	1	BSPTRAD008-28A	39.48
1/4	19	1	BSPTRAD016-19A	39.48
1-1/2" ROUND DIE				
1/4	19	1-1/2	BSPTRAD016-19B	62.16
3/8	19	1-1/2	BSPTRAD024-19B	62.16
2" ROUND DIE				
1/2	14	2	BSPTRAD032-14C	88.20
5/8	14	2	BSPTRAD040-14C	88.20
3/4	14	2	BSPTRAD048-14C	108.20

SIZE	TPI	DIA	ITEM NO.	PRICE
2-1/2" ROUND DIE				
7/8	14	2-1/2	BSPTRAD056-14D	109.20
1	11	2-1/2	BSPTRAD100-11D	109.20
3" ROUND DIE				
1-1/4	11	3	BSPTRAD116-11E	CALL
1-1/2	11	3	BSPTRAD132-11E	217.56
4" ROUND DIE				
2	11	4	BSPTRAD200-11F	367.50

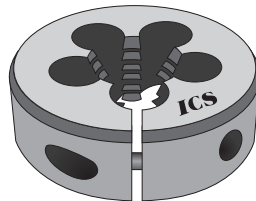
BRITISH ROUND ADJUSTABLE (PARALLEL PIPE) DIES

ICS WIS

GENERAL PURPOSE

GROUND THREAD

British (BSPP) Standard Pipe Parallel Thread Dies are the metric/European equivalent of American (NPS) Standard Pipe Straight Threads. **Note:** American and British Standards are not interchangeable.

SCREW
ADJUSTING TYPERIGHT HAND
CUT

BLACK & GOLD FINISH

Fractional Sizes (1/8" To 2" Dia.)

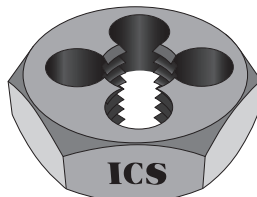
SIZE	TPI	DIA	ITEM NO.	PRICE
1" ROUND DIE				
1/8	28	1	BSPPRAD008-28A	39.48
1-1/2" ROUND DIE				
1/4	19	1-1/2	BSPPRAD016-19B	62.16
3/8	19	1-1/2	BSPPRAD024-19B	62.16
2" ROUND DIE				
1/2	14	2	BSPPRAD032-14C	88.20
5/8	14	2	BSPPRAD040-14C	88.20
3/4	14	2	BSPPRAD048-14C	88.20

SIZE	TPI	DIA	ITEM NO.	PRICE
2-1/2" ROUND DIE				
7/8	14	2-1/2	BSPPRAD056-14D	109.20
1	11	2-1/2	BSPPRAD100-11D	109.20
3" ROUND DIE				
1-1/4	11	3	BSPPRAD116-11E	217.56
1-1/2	11	3	BSPPRAD132-11E	217.56
4" ROUND DIE				
2	11	4	BSPPRAD200-11F	367.50

NOTE: Larger Pipe Dies are available. Consult factory for pricing.

BEARING LOCKNUT HEXAGON RETHREADING DIES**ICS USA****HEAVY DUTY****GROUND THREAD**

High Speed Steel Bearing Locknut Hexagon Rethreading Dies are designed for rethreading damaged threads on bearing locknut spindles and to clean out built up locking compound on threads. All dies conform to ABMA (American Bearing Manufacturer's Association) standards.

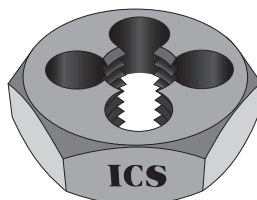


ABMA LOCKNUT NO.	THREAD SIZE	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
#00	.391 - 32	7/8	BLHTD#00	-
#01	.469 - 32	1-1/16	BLHTD#01	-
#02	.586 - 32	1-1/4	BLHTD#02	-
#03	.664 - 32	1-7/16	BLHTD#03	-
#04	.781 - 32	1-5/8	BLHTD#04	-
#05	.969 - 32	1-13/16	BLHTD#05	CALL FOR PRICE
#06	1.173 - 18	2-3/16	BLHTD#06	-
#07	1.376 - 18	2-3/8	BLHTD#07	-
#08	1.563 - 18	3-1/8	BLHTD#08	-
#09	1.767 - 18	3-1/8	BLHTD#09	-
#10	1.967 - 18	3-1/2	BLHTD#10	-
#11	2.157 - 18	3-1/2	BLHTD#11	-
#12	2.360 - 18	4-1/2	BLHTD#12	-
#13	2.548 - 18	4-1/2	BLHTD#13	-

ABMA LOCKNUT NO.	THREAD SIZE	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
#14	2.751 - 18	4-1/2	BLHTD#14	-
#15	2.933 - 12	5	BLHTD#15	-
#16	3.137 - 12	5	BLHTD#16	-
#17	3.340 - 12	5	BLHTD#17	-
#18	3.527 - 12	6	BLHTD#18	-
#19	3.730 - 12	6	BLHTD#19	CALL FOR PRICE
#20	3.918 - 12	6	BLHTD#20	-
#21	4.122 - 12	7	BLHTD#21	-
#22	4.325 - 12	7	BLHTD#22	-
#24	4.716 - 12	7	BLHTD#24	-
#26	5.106 - 12	8	BLHTD#26	-
#28	5.497 - 12	8	BLHTD#28	-
#30	5.888 - 12	8	BLHTD#30	-

CARBON STEEL**BEARING LOCKNUT HEXAGON RETHREADING DIES****ICS USA****GENERAL PURPOSE****CUT THREAD**

Carbon Steel Bearing Locknut Hexagon Rethreading Dies are designed for rethreading damaged threads on bearing locknut spindles and to clean out built up locking compound on threads. All dies conform to ABMA (American Bearing Manufacturer's Association) standards.

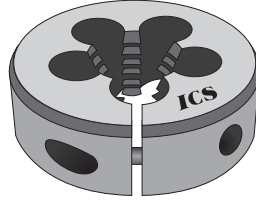


ABMA LOCKNUT NO.	THREAD SIZE	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
#00	.391 - 32	7/8	BLHRD#00	-
#01	.469 - 32	1-1/16	BLHRD#01	-
#02	.586 - 32	1-1/4	BLHRD#02	-
#03	.664 - 32	1-7/16	BLHRD#03	-
#04	.781 - 32	1-5/8	BLHRD#04	-
#05	.969 - 32	1-13/16	BLHRD#05	CALL FOR PRICE
#06	1.173 - 18	2-3/16	BLHRD#06	-
#07	1.376 - 18	2-3/8	BLHRD#07	-
#08	1.563 - 18	3-1/8	BLHRD#08	-
#09	1.767 - 18	3-1/8	BLHRD#09	-
#10	1.967 - 18	3-1/2	BLHRD#10	-
#11	2.157 - 18	3-1/2	BLHRD#11	-
#12	2.360 - 18	4-1/2	BLHRD#12	-
#13	2.548 - 18	4-1/2	BLHRD#13	-

ABMA LOCKNUT NO.	THREAD SIZE	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
#14	2.751 - 18	4-1/2	BLHRD#14	-
#15	2.933 - 12	5	BLHRD#15	-
#16	3.137 - 12	5	BLHRD#16	-
#17	3.340 - 12	5	BLHRD#17	-
#18	3.527 - 12	6	BLHRD#18	-
#19	3.730 - 12	6	BLHRD#19	-
#20	3.918 - 12	6	BLHRD#20	CALL FOR PRICE
#21	4.122 - 12	7	BLHRD#21	-
#22	4.325 - 12	7	BLHRD#22	-
#24	4.716 - 12	7	BLHRD#24	-
#26	5.106 - 12	8	BLHRD#26	-
#28	5.497 - 12	8	BLHRD#28	-
#30	5.888 - 12	8	BLHRD#30	-
#30	5.888 - 12	8	BLHTD#30	-

BEARING LOCKNUT ROUND ADJUSTABLE DIES**ICS USA****HEAVY DUTY****GROUND THREAD**

High Speed Steel Bearing Locknut Round Adjustable Dies are designed for cutting external threads and rethreading damaged threads on bearing locknut spindles and to clean out built up locking compound on threads. They can also be used to cut smaller or larger than factory setting by turning the adjusting screw in or out. All dies conform to ABMA (American Bearing Manufacturer's Association) standards.



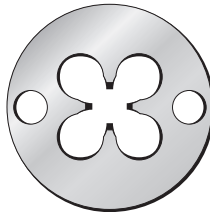
ABMA LOCKNUT NO.	DIAMETER THREAD SIZE	OF DIE	ITEM NO.	PRICE
#00	.391 - 32	1	BLRAD#00	-
#01	.469 - 32	1-1/2	BLRAD#01	-
#02	.586 - 32	1-1/2	BLRAD#02	-
#03	.664 - 32	1-1/2	BLRAD#03	-
#04	.781 - 32	1-1/2	BLRAD#04	-
#05	.969 - 32	2	BLRAD#05	CALL
#06	1.173 - 18	2-1/2	BLRAD#06	FOR
#07	1.376 - 18	2-1/2	BLRAD#07	PRICE
#08	1.563 - 18	3	BLRAD#08	-
#09	1.767 - 18	3	BLRAD#09	-
#10	1.967 - 18	3	BLRAD#10	-
#11	2.157 - 18	4	BLRAD#11	-
#12	2.360 - 18	4	BLRAD#12	-
#13	2.548 - 18	4	BLRAD#13	-

ABMA LOCKNUT NO.	DIAMETER THREAD SIZE	OF DIE	ITEM NO.	PRICE
#14	2.751 - 18	4	BLRAD#14	-
#15	2.933 - 12	5	BLRAD#15	-
#16	3.137 - 12	5	BLRAD#16	-
#17	3.340 - 12	5	BLRAD#17	-
#18	3.527 - 12	6	BLRAD#18	-
#19	3.730 - 12	6	BLRAD#19	CALL
#20	3.918 - 12	6	BLRAD#20	FOR
#21	4.122 - 12	7	BLRAD#21	PRICE
#22	4.325 - 12	7	BLRAD#22	-
#24	4.716 - 12	7	BLRAD#24	-
#26	5.106 - 12	8	BLRAD#26	-
#28	5.497 - 12	8	BLRAD#28	-
#30	5.888 - 12	8	BLRAD#30	-
				-

COBALT

AUTOMATIC THREAD DIES**ICS WIS****SPECIAL PURPOSE****GROUND THREAD**

Cobalt Automatic Thread Dies are designed for automatic thread cutting machines and lathes with 2 holding holes. Their solid cobalt construction design guarantees a precise repetitive accuracy and longer tool life than regular HSS dies.

**2.60MM DIAMETER
HOLDING HOLES****RIGHT HAND
CUT**

GOLD COBALT FINISH

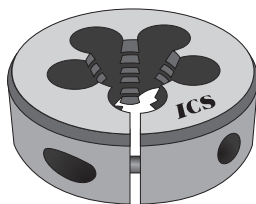
THREAD SIZE	DIAMETER OF DIE	THICKNESS OF DIE	ITEM NO.	PRICE
#0-80	16.00mm	3.75mm	ATDC#00-80	37.80
#2-56	16.00mm	3.75mm	ATDC#02-56	37.80
#4-40	16.00mm	3.75mm	ATDC#04-40	37.80
#6-32	16.00mm	3.75mm	ATDC#06-32	37.80
#8-32	16.00mm	3.75mm	ATDC#08-32	37.80
#10-32	16.00mm	3.75mm	ATDC#10-32	37.80
#12-28	16.00mm	3.75mm	ATDC#12-28	37.80

BRITISH ROUND ADJUSTABLE DIES

ICS USA

GENERAL PURPOSE

GROUND THREAD

PLAIN
ADJUSTABLERIGHT HAND
CUT

SIZE	TPI	ITEM NO.	PRICE
1" ROUND DIE			
0	25.4	BRAD#00-25.4X1	38.82
1	28.4	BRAD#01-28.4X1	38.82
2	31.4	BRAD#02-31.4X1	38.82
3	34.8	BRAD#03-34.8X1	38.82
4	38.5	BRAD#04-38.5X1	38.82
5	43.0	BRAD#05-43.0X1	39.22
6	47.9	BRAD#06-47.9X1	38.82
7	52.9	BRAD#07-52.9X1	38.82
8	59.1	BRAD#08-59.1X1	38.82
9	65.1	BRAD#09-65.1X1	38.82
10	72.6	BRAD#10-72.6X1	38.82
12	90.7	BRAD#12-90.7X1	38.82
13/16" ROUND DIE			
1/8	40	BRAD008-40X052	31.16
3/16	24	BRAD012-24X052	31.16
3/16	32	BRAD012-32X052	CALL
1" ROUND DIE			
1/4	20	BRAD016-20X1	38.82
1/4	26	BRAD016-26X1	38.82
5/16	18	BRAD020-18X1	38.82
5/16	22	BRAD020-22X1	38.82

SIZE	TPI	ITEM NO.	PRICE
1" ROUND DIE			
3/8	16	BRAD024-16X1	38.82
3/8	20	BRAD024-20X1	38.82
1-1/2" ROUND DIE			
3/8	16	BRAD024-16X1.5	61.16
3/8	20	BRAD024-20X1.5	61.16
7/16	14	BRAD028-14X1.5	61.16
7/16	18	BRAD028-18X1.5	61.16
1/2	12	BRAD032-12X1.5	CALL
1/2	16	BRAD032-16X1.5	61.16
9/16	12	BRAD036-12X1.5	61.16
9/16	16	BRAD036-16X1.5	61.16
5/8	11	BRAD040-11X1.5	61.16
5/8	14	BRAD040-14X1.5	61.16
2" ROUND DIE			
1/2	12	BRAD032-12X2	108.20
1/2	16	BRAD032-16X2	108.20
9/16	12	BRAD036-12X2	108.20
9/16	16	BRAD036-16X2	108.20
5/8	11	BRAD040-11X2	108.20
5/8	14	BRAD040-14X2	108.20
3/4	10	BRAD048-10X2	108.20
3/4	12	BRAD048-12X2	108.20

SIZE	TPI	ITEM NO.	PRICE
2" ROUND DIE			
7/8	9	BRAD056-9X2	108.20
7/8	11	BRAD056-11X2	108.20
1	8	BRAD100-8X2	108.20
1	10	BRAD100-10X2	108.20
2-1/2" ROUND DIE			
3/4	10	BRAD048-10X2.5	165.82
3/4	12	BRAD048-12X2.5	165.82
7/8	9	BRAD056-9X2.5	165.82
7/8	11	BRAD056-11X2.5	165.82
1	8	BRAD100-8X2.5	165.82
1	10	BRAD100-10X2.5	165.82
1-1/8	7	BRAD108-7X2.5	165.82
1-1/8	9	BRAD108-9X2.5	165.82
3" ROUND DIE			
1-1/8	7	BRAD108-7X3	217.56
1-1/8	9	BRAD108-9X3	217.56
1-1/4	7	BRAD116-7X3	217.56
1-1/4	9	BRAD116-9X3	217.56
1-3/8	6	BRAD124-6X3	217.56
1-3/8	8	BRAD124-8X3	217.56
1-1/2	6	BRAD132-6X3	217.56
1-1/2	8	BRAD132-8X3	217.56

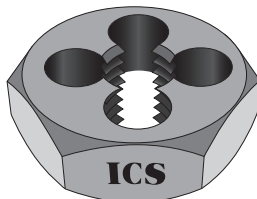
CARBON STEEL

BRITISH HEXAGON RETHREADING DIES

ICS USA

GENERAL PURPOSE

CUT THREAD

HEX NUT DIA.
ACROSS FLATSRIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
3/16	24	.710	BHRD012-24	18.82
1/4	20	.710	BHRD016-20	19.08
1/4	26	.710	BHRD016-26	19.08
5/16	18	.820	BHRD020-18	21.00
5/16	22	.820	BHRD020-22	21.00
3/8	16	.920	BHRD024-16	22.34
3/8	20	.920	BHRD024-20	22.34
7/16	14	1.010	BHRD028-14	25.14
7/16	18	1.010	BHRD028-18	25.14
1/2	12	1.100	BHRD032-12	27.24
1/2	16	1.100	BHRD032-16	27.24

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
9/16	12	1.300	BHRD036-12	28.98
9/16	16	1.300	BHRD036-16	28.98
5/8	11	1.300	BHRD040-11	33.16
5/8	14	1.300	BHRD040-14	33.16
3/4	10	1.480	BHRD048-10	44.18
3/4	12	1.480	BHRD048-12	44.18
7/8	9	1.670	BHRD056-09	49.56
7/8	11	1.670	BHRD056-11	49.56
1	8	2.050	BHRD100-08	56.56
1	10	2.050	BHRD100-10	56.56

HEXAGON (STANDARD SIZES) RETHREADING DIES

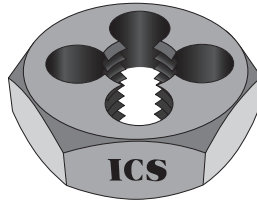
ICS

WIS

GENERAL PURPOSE

CUT THREAD

Hexagon (Hex Nut Diameter) Rethreading Dies are designed extra thick for rethreading damaged or jammed threads and can be used to work in places where round die stocks cannot be used. They are not intended for producing new threads on unthreaded bars, bolts, or pipes. Available in almost any threading size. All sizes are manufactured to be the same size as a Hex Nut of equal thread size.



HEX NUT DIA.
ACROSS FLATS

RIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
2	56	19/32	HRD#02-56	7.98
2	64	19/32	HRD#02-64	7.98
3	48	19/32	HRD#03-48	7.98
3	56	19/32	HRD#03-56	7.98
4	36	19/32	HRD#04-36	7.98
4	40	19/32	HRD#04-40	7.98
4	48	19/32	HRD#04-48	7.98
5	40	19/32	HRD#05-40	7.98
5	44	19/32	HRD#05-44	7.98
6	32	19/32	HRD#06-32	7.98
6	40	19/32	HRD#06-40	7.98
8	32	19/32	HRD#08-32	7.98
8	36	19/32	HRD#08-36	7.98
10	24	19/32	HRD#10-24	7.98
10	32	19/32	HRD#10-32	7.98
12	24	19/32	HRD#12-24	7.98
12	28	19/32	HRD#12-28	7.98
1/4	20	19/32	HRD016-20	7.98
1/4	28	19/32	HRD016-28	7.98
5/16	18	11/16	HRD020-18	8.96
5/16	24	11/16	HRD020-24	8.96

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
3/8	16	25/32	HRD024-16	10.00
3/8	24	25/32	HRD024-24	10.00
7/16	14	7/8	HRD028-14	11.54
7/16	20	7/8	HRD028-20	11.54
1/2	13	1-1/16	HRD032-13	13.52
1/2	20	1-1/16	HRD032-20	13.52
9/16	12	1-1/16	HRD036-12	15.94
9/16	18	1-1/16	HRD036-18	15.94
5/8	11	1-1/4	HRD040-11	18.54
5/8	18	1-1/4	HRD040-18	18.54
11/16	11	1-7/16	HRD044-11	23.52
11/16	16	1-7/16	HRD044-16	23.52
3/4	10	1-7/16	HRD048-10	23.52
3/4	16	1-7/16	HRD048-16	23.52
7/8	9	1-5/8	HRD056-09	27.28
7/8	14	1-5/8	HRD056-14	27.28
1	8	1-13/16	HRD100-08	34.58
1	12	1-13/16	HRD100-12	34.58
1	14	1-13/16	HRD100-14	34.58
1-1/8	7	2	HRD108-07	47.36
1-1/8	12	2	HRD108-12	47.36

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1-1/4	7	2-3/16	HRD116-07	54.52
1-1/4	12	2-3/16	HRD116-12	54.52
1-3/8	6	2-3/8	HRD124-06	70.46
1-3/8	12	2-3/8	HRD124-12	70.46
1-1/2	6	2-9/16	HRD132-06	78.40
1-1/2	12	2-9/16	HRD132-12	78.40
1-5/8	5-1/2	3-1/8	HRD140-05.5	110.20
1-3/4	5	3-1/8	HRD148-05	128.08
1-7/8	5	3-1/8	HRD156-05	178.28
2	4-1/2	3-1/2	HRD200-04.5	178.28
2-1/4	4-1/2	3-1/2	HRD216-04.5	193.12
2-1/2	4	4-1/2	HRD232-04	278.56
2-3/4	4	4-1/2	HRD248-04	337.56
3	4	5	HRD300-04	416.02
3-1/4	4	5	HRD316-04	484.64
3-1/2	4	5	HRD332-04	484.64
3-3/4	4	6	HRD348-04	566.24
4	4	6	HRD400-04	623.54

TOOL STEEL

LEFT HAND HEXAGON RETHREADING DIES

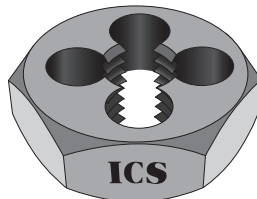
ICS

WIS

SPECIAL PURPOSE

CUT THREAD

Left Hand Hexagon (Hex Nut Diameter) Rethreading Dies are designed extra thick for rethreading damaged or jammed threads and can be used to work in places where round die stocks cannot be used. They are not intended for producing new threads on unthreaded bars, bolts, or pipes. All sizes are manufactured to be the same size as a Hex Nut of equal thread size. They are available in almost any threading size. If size needed is not listed, contact us for price and availability.



HEX NUT DIA.
ACROSS FLATS

RIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/4	20	19/32	HRDL016-20	11.50
1/4	28	19/32	HRDL016-28	11.50
5/16	18	11/16	HRDL020-18	12.74
5/16	24	11/16	HRDL020-24	12.74
3/8	16	25/32	HRDL024-16	14.20
3/8	24	25/32	HRDL024-24	14.20
7/16	14	7/8	HRDL028-14	16.60
7/16	20	7/8	HRDL028-20	16.60
1/2	13	1-1/16	HRDL032-13	19.46
1/2	20	1-1/16	HRDL032-20	19.46
9/16	12	1-1/16	HRDL036-12	22.88

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
9/16	18	1-1/16	HRDL036-18	22.88
5/8	11	1-1/4	HRDL040-11	26.60
5/8	18	1-1/4	HRDL040-18	26.60
11/16	11	1-7/16	HRDL044-11	31.50
11/16	16	1-7/16	HRDL044-16	31.50
3/4	10	1-7/16	HRDL048-10	33.70
3/4	16	1-7/16	HRDL048-16	33.70
7/8	9	1-5/8	HRDL056-09	39.10
7/8	14	1-5/8	HRDL056-14	39.10
1	8	1-13/16	HRDL100-08	49.54
1	12	1-13/16	HRDL100-12	49.54

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1	14	1-13/16	HRDL100-14	49.54
1-1/8	7	2	HRDL108-07	67.72
1-1/8	12	2	HRDL108-12	67.72
1-1/4	7	2-3/16	HRDL116-07	77.72
1-1/4	12	2-3/16	HRDL116-12	77.72
1-3/8	6	2-3/8	HRDL124-06	102.48
1-3/8	12	2-3/8	HRDL124-12	102.48
1-1/2	6	2-9/16	HRDL132-06	111.46
1-1/2	12	2-9/16	HRDL132-12	111.46
1-3/4	5	3-1/2	HRDL148-05	207.40
2	4-1/2	3-1/2	HRDL200-04.5	254.44

HEXAGON RETHREADING PIPE (NPT) DIES

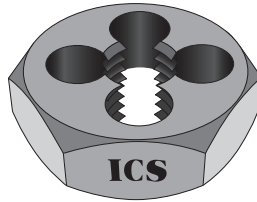
ICS

WIS

GENERAL PURPOSE

CUT THREAD

Hexagon (Hex Nut Diameter) NPT Rethreading Pipe Dies are designed extra thick for rethreading damaged or jammed taper pipe threads. NPT die threads taper 3/4" per foot and all of the threads on these dies do the rethreading as compared to NPS straight threads where only non-chamfered do the rethreading.



HEX NUT DIA.
ACROSS FLATS

RIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/16	27	25/32	HRDP004-27	14.90
1/8	27	25/32	HRDP008-27	14.90
1/4	18	1-1/16	HRDP016-18	19.90
3/8	18	1-1/4	HRDP024-18	26.90
1/2	14	1-5/8	HRDP032-14	28.54
3/4	14	1-13/16	HRDP048-14	43.74

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1	11-1/2	2-3/16	HRDP100-11.5	73.94
1-1/4	11-1/2	3-1/8	HRDP116-11.5	111.44
1-1/2	11-1/2	3-1/8	HRDP132-11.5	184.54
2	11-1/2	3-3/4	HRDP200-11.5	241.50
2-1/2	8	5	HRDP232-08	338.48
3	8	6	HRDP300-08	CALL

HEXAGON RETHREADING PIPE (NPS) DIES

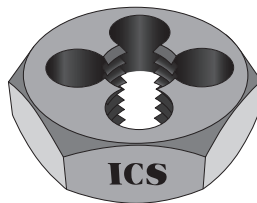
ICS

WIS

GENERAL PURPOSE

CUT THREAD

Hexagon (Hex Nut Diameter) NPS Rethreading Pipe Dies are designed extra thick for rethreading damaged or jammed external straight pipe threads. They are not intended for producing new threads.



HEX NUT DIA.
ACROSS FLATS

RIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/16	27	25/32	HRDPS004-27	CALL FOR PRICE
1/8	27	25/32	HRDPS008-27	
1/4	18	1-1/16	HRDPS016-18	
3/8	18	1-1/4	HRDPS024-18	
1/2	14	1-5/8	HRDPS032-14	
3/4	14	1-13/16	HRDPS048-14	

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1	11-1/2	2-3/16	HRDPS100-11.5	CALL FOR PRICE
1-1/4	11-1/2	3-1/8	HRDPS116-11.5	
1-1/2	11-1/2	3-1/8	HRDPS132-11.5	
2	11-1/2	3-3/4	HRDPS200-11.5	
2-1/2	8	5	HRDPS232-08	
3	8	6	HRDPS300-08	

HEXAGON (SPECIAL THREAD) RETHREADING DIES

ICS

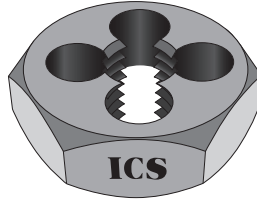
WIS

SPECIAL PURPOSE

CUT THREAD

Tool Steel Special Thread Hexagon Rethreading Dies are designed for rethreading damaged or jammed non-standard threaded studs, bolts or rod. They are extra thick for more strength and are more durable than carbon steel hex rethreading dies and can be used to work in places where round die stocks cannot be used. They are not intended to cut new threads. All sizes are manufactured to be the same as a hex nut of equal thread size and can be used with any socket, open end, box, monkey, or adjustable wrench.

HEX NUT DIA.
ACROSS FLATS



RIGHT HAND
CUT

DIA.		ACROSS		ITEM NO.	PRICE
SIZE	TPI	FLATS			
1/4	24	19/32		HRDS016-24	9.74
1/4	27	19/32		HRDS016-27	9.74
1/4	32	19/32		HRDS016-32	9.74
1/4	36	19/32		HRDS016-36	11.90
1/4	40	19/32		HRDS016-40	11.90
1/4	48	19/32		HRDS016-48	11.90
5/16	16	11/16		HRDS020-16	10.90
5/16	20	11/16		HRDS020-20	10.90
5/16	27	11/16		HRDS020-27	10.90
5/16	32	11/16		HRDS020-32	10.90
5/16	40	11/16		HRDS020-40	11.90
3/8	18	25/32		HRDS024-18	12.46
3/8	20	25/32		HRDS024-20	12.46
3/8	27	25/32		HRDS024-27	12.46
3/8	32	25/32		HRDS024-32	12.46
3/8	40	25/32		HRDS024-40	15.80
7/16	24	7/8		HRDS028-24	14.10
7/16	28	7/8		HRDS028-28	14.10
7/16	32	7/8		HRDS028-32	14.10
7/16	40	7/8		HRDS028-40	17.22
1/2	16	1-1/16		HRDS032-16	18.24
1/2	18	1-1/16		HRDS032-18	18.24
1/2	40	1-1/16		HRDS032-40	18.24
1/2	24	1-1/16		HRDS032-24	16.60
1/2	28	1-1/16		HRDS032-28	16.60
1/2	32	1-1/16		HRDS032-32	16.60
9/16	16	1-1/16		HRDS032-16	21.46
9/16	32	1-1/16		HRDS036-32	21.46
9/16	20	1-1/16		HRDS036-20	19.40
9/16	24	1-1/16		HRDS036-24	19.40
5/8	16	1-1/4		HRDS040-16	22.68
5/8	32	1-1/4		HRDS040-32	22.68
5/8	20	1-1/4		HRDS040-20	20.58
5/8	24	1-1/4		HRDS040-24	20.58
11/16	18	1-7/16		HRDS044-18	28.78
11/16	20	1-7/16		HRDS044-20	28.78
11/16	24	1-7/16		HRDS044-24	28.78
3/4	18	1-7/16		HRDS048-18	28.78
3/4	32	1-7/16		HRDS048-32	28.78
3/4	20	1-7/16		HRDS048-20	26.24
3/4	24	1-7/16		HRDS048-24	26.24
13/16	16	1-5/8		HRDS052-16	33.38
13/16	20	1-5/8		HRDS052-20	33.38
13/16	24	1-5/8		HRDS052-24	33.38
13/16	32	1-5/8		HRDS052-32	33.38
7/8	16	1-5/8		HRDS056-16	33.38
7/8	32	1-5/8		HRDS056-32	33.38
7/8	40	1-5/8		HRDS056-40	33.38
7/8	18	1-5/8		HRDS056-18	30.32
7/8	20	1-5/8		HRDS056-20	30.32
7/8	24	1-5/8		HRDS056-24	30.32
15/16	14	1-13/16		HRDS060-14	42.22
15/16	16	1-13/16		HRDS060-16	42.22
15/16	18	1-13/16		HRDS060-18	42.22
15/16	20	1-13/16		HRDS060-20	42.22
1	10	1-13/16		HRDS100-10	38.36
1	16	1-13/16		HRDS100-16	38.36
1	18	1-13/16		HRDS100-18	38.36
1	20	1-13/16		HRDS100-20	38.36
1	24	1-13/16		HRDS100-24	38.36
1	32	1-13/16		HRDS100-32	42.22
1-1/16	8	2		HRDS104-08	57.88
1-1/16	16	2		HRDS104-16	57.88
1-1/16	18	2		HRDS104-18	57.88
1-1/16	12	2		HRDS104-12	52.66
1-1/8	8	2		HRDS108-08	52.66
1-1/8	16	2		HRDS108-16	57.88

DIA.		ACROSS		ITEM NO.	PRICE
SIZE	TPI	FLATS			
1-1/8	8	2		HRDS108-08	57.88
1-1/8	10	2		HRDS108-10	57.88
1-3/16	8	2-3/16		HRDS112-08	60.70
1-3/16	10	2-3/16		HRDS112-10	60.70
1-3/16	18	2-3/16		HRDS112-18	60.70
1-3/16	12	2-3/16		HRDS112-12	66.74
1-1/4	5	2-3/16		HRDS116-05	60.70
1-1/4	10	2-3/16		HRDS116-10	60.70
1-1/4	8	2-3/16		HRDS116-08	66.74
1-1/4	16	2-3/16		HRDS116-16	66.74
1-1/4	18	2-3/16		HRDS116-18	66.74
1-1/4	20	2-3/16		HRDS116-20	66.74
1-5/16	8	2-3/8		HRDS120-08	78.28
1-5/16	12	2-3/8		HRDS120-12	78.28
1-5/16	18	2-3/8		HRDS120-18	86.10
1-3/8	7	2-3/8		HRDS124-07	86.10
1-3/8	10	2-3/8		HRDS124-10	86.10
1-3/8	16	2-3/8		HRDS124-16	86.10
1-3/8	18	2-3/8		HRDS124-18	86.10
1-3/8	20	2-3/8		HRDS124-20	86.10
1-3/8	8	2-3/8		HRDS124-08	78.28
1-7/16	6	2-9/16		HRDS128-06	95.80
1-7/16	8	2-9/16		HRDS128-08	95.80
1-7/16	12	2-9/16		HRDS128-12	95.80
1-7/16	16	2-9/16		HRDS128-16	95.80
1-7/16	18	2-9/16		HRDS128-18	95.80
1-1/2	8	2-9/16		HRDS132-08	87.10
1-1/2	14	2-9/16		HRDS132-14	95.80
1-1/2	16	2-9/16		HRDS132-16	95.80
1-1/2	18	2-9/16		HRDS132-18	95.80
1-1/2	20	2-9/16		HRDS132-20	95.80
1-9/16	12	3-1/8		HRDS136-12	132.26
1-9/16	16	3-1/8		HRDS136-16	132.26
1-9/16	18	3-1/8		HRDS136-18	132.26
1-5/8	4	3-1/8		HRDS140-04	132.26
1-5/8	14	3-1/8		HRDS140-14	132.26
1-5/8	16	3-1/8		HRDS140-16	132.26
1-5/8	18	3-1/8		HRDS140-18	132.26
1-5/8	5	3-1/8		HRDS140-05	120.22
1-5/8	6	3-1/8		HRDS140-06	120.22
1-5/8	8	3-1/8		HRDS140-08	120.22
1-5/8	10	3-1/8		HRDS140-10	120.22
1-11/16	18	3-1/8		HRDS144-18	182.94
1-3/4	5-1/2	3-1/8		HRDS148-05.5	165.36
1-3/4	6	3-1/8		HRDS148-06	165.36
1-3/4	10	3-1/8		HRDS148-10	165.36
1-3/4	12	3-1/8		HRDS148-12	165.36
1-3/4	14	3-1/8		HRDS148-14	165.36
1-3/4	16	3-1/8		HRDS148-16	165.36
1-3/4	18	3-1/8		HRDS148-18	165.36
1-3/4	20	3-1/8		HRDS148-20	165.36
1-3/4	8	3-1/8		HRDS148-08	150.30
1-13/16	12	3-1/8		HRDS152-12	210.44
1-13/16	18	3-1/8		HRDS152-18	210.44
1-7/8	8	3-1/8		HRDS156-08	176.84
1-7/8	12	3-1/8		HRDS156-12	176.84
1-7/8	16	3-1/8		HRDS156-16	194.52
1-7/8	18	3-1/8		HRDS156-18	194.52
2	4	3-1/2		HRDS200-04	218.16
2	8	3-1/2		HRDS200-08	218.16
2	10	3-1/2		HRDS200-10	218.16
2	12	3-1/2		HRDS200-12	218.16
2	14	3-1/2		HRDS200-14	234.38
2	16	3-1/2		HRDS200-16	234.38
2	18	3-1/2		HRDS200-18	234.38
2	20	3-1/2		HRDS200-20	234.38
2	24	3-1/2		HRDS200-24	234.38

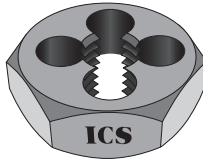
DIA.		ACROSS		ITEM NO.	PRICE
SIZE	TPI	FLATS			
2-1/8	6	3-1/2		HRDS208-06	219.68
2-1/8	14	3-1/2		HRDS208-14	219.68
2-1/8	16	3-1/2		HRDS208-16	219.68
2-1/8	18	3-1/2		HRDS208-18	219.68
2-1/8	8	3-1/2		HRDS208-08	223.70
2-1/8	12	3-1/2		HRDS208-12	223.70
2-1/4	6	3-1/2		HRDS208-06	246.06
2-1/4	10	3-1/2		HRDS216-10	246.06
2-1/4	14	3-1/2		HRDS216-14	246.06
2-1/4	16	3-1/2		HRDS216-16	246.06
2-1/4	18	3-1/2		HRDS216-18	246.06
2-1/4	4	3-1/2		HRDS216-04	223.70
2-1/4	8	3-1/2		HRDS216-08	223.70
2-1/4	12	3-1/2		HRDS216-12	223.70
2-3/8	4	4-1/2		HRDS224-04	309.56
2-3/8	8	4-1/2		HRDS224-08	309.56
2-3/8	12	4-1/2		HRDS224-12	309.56
2-3/8	10	4-1/2		HRDS224-10	340.52
2-3/8	14	4-1/2		HRDS224-14	340.52
2-3/8	18	4-1/2		HRDS224-18	340.52
2-1/2	4-1/2	4-1/2		HRDS232-04.5	340.52
2-1/2	5	4-1/2		HRDS232-05	340.52
2-1/2	6	4-1/2		HRDS232-06	340.52
2-1/2	10	4-1/2		HRDS232-10	340.52
2-1/2	16	4-1/2		HRDS232-16	340.52
2-1/2	18	4-1/2		HRDS232-18	340.52
2-1/2	8	4-1/2		HRDS232-08	309.56
2-1/2	12	4-1/2		HRDS232-12	309.56
2-5/8	6	4-1/2		HRDS240-06	403.80
2-5/8	14	4-1/2		HRDS240-14	403.80
2-5/8	16	4-1/2		HRDS240-16	403.80
2-5/8	8	4-1/2		HRDS240-08	367.16
2-5/8	12	4-1/2		HRDS240-12	367.16
2-3/4	6	4-1/2		HRDS248-06	403.80
2-3/4	10	4-1/2		HRDS248-10	403.80
2-3/4	14	4-1/2		HRDS248-14	403.80
2-3/4	18	4-1/2		HRDS248-18	403.80
2-3/4	8	4-1/2		HRDS248-08	367.16
2-3/4	12	4-1/2		HRDS248-12	367.16
2-7/8	6	5		HRDS256-06	507.98
2-7/8	8	5		HRDS256-08	507.98
2-7/8	12	5		HRDS256-12	461.88
3	8	5		HRDS300-08	461.88
3	12	5		HRDS300-12	461.88
3-1/8	4	5		HRDS308-04	528.30
3-1/8	8	5		HRDS308-08	528.30
3-1/8	12	5		HRDS308-12	528.30
3-1/4	5	5		HRDS316-05	528.30
3-1/4	12	5		HRDS316-12	528.30
3-1/4	8	5		HRDS316-08	581.18
3-3/8	4	5		HRDS324-04	528.30
3-3/8	8	5		HRDS324-08	528.30
3-3/8	12	5		HRDS324-12	528.30
3-1/2	8	5		HRDS332-08	528.30
3-1/2	12	5		HRDS332-12	528.30
3-5/8	4	5		HRDS340-04	608.00
3-5/8	8	5		HRDS340-08	608.00
3-5/8	12	5		HRDS340-12	608.00
3-3/4	8	5		HRDS348-08	608.00
3-3/4	12	5		HRDS348-12	608.00
3-7/8	4	6		HRDS356-04	692.82
3-7/8	8	6		HRDS356-08	692.82
3-7/8	12	6		HRDS356-12	765.76
4	8	6		HRDS400-08	692.82
4	12	6		HRDS400-12	694.00

METRIC HEXAGON RETHREADING DIES

ICS WIS

GENERAL PURPOSE

CUT THREAD

HEX NUT DIA.
ACROSS FLATSRIGHT HAND
CUT

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M3	.50	19/32	HRDM03.0X.50	9.78
M3	.60	19/32	HRDM03.0X.60	9.78
M3.5	.60	19/32	HRDM03.5X.60	9.78
M4	.70	19/32	HRDM04.0X.70	9.78
M4	.75	19/32	HRDM04.0X.75	9.78
M4.5	.75	19/32	HRDM04.5X.75	9.78
M5	.80	19/32	HRDM05.0X.80	9.78
M5	.90	19/32	HRDM05.0X.90	9.78
M6	1.00	19/32	HRDM06.0X1.0	9.78
M6.3	1.00	19/32	HRDM06.3X1.0	10.00
M7	1.00	11/16	HRDM07.0X1.0	10.48
M8	1.00	11/16	HRDM08.0X1.0	10.48
M8	1.25	11/16	HRDM08.0X1.25	10.48
M9	1.00	25/32	HRDM09.0X1.0	15.28

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M9	1.25	25/32	HRDM08.0X1.25	15.28
M10	1.25	7/8	HRDM10.0X1.25	14.84
M10	1.50	7/8	HRDM10.0X1.5	14.84
M11	1.50	7/8	HRDM11.0X1.5	17.84
M12	1.25	1-1/16	HRDM12.0X1.25	17.06
M12	1.75	1-1/16	HRDM12.0X1.75	17.06
M14	1.50	1-1/16	HRDM14.0X1.5	20.48
M14	2.00	1-1/16	HRDM14.0X2.0	20.48
M16	1.50	1-1/4	HRDM16.0X1.5	22.48
M16	2.00	1-1/4	HRDM16.0X2.0	22.48
M18	1.50	1-7/16	HRDM18.0X1.5	26.24
M18	2.50	1-7/16	HRDM18.0X2.5	26.24
M20	1.50	1-5/8	HRDM20.0X1.5	28.86
M20	2.50	1-5/8	HRDM20.0X2.5	28.86

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M22	1.50	1-5/8	HRDM22.0X1.5	33.48
M22	2.50	1-5/8	HRDM22.0X2.5	33.48
M24	2.00	1-13/16	HRDM24.0X2.0	34.78
M24	3.00	1-13/16	HRDM24.0X3.0	34.78
M27	2.00	2	HRDM27.0X2.0	53.56
M27	3.00	2	HRDM27.0X3.0	53.56
M30	2.00	2-3/16	HRDM30.0X2.0	53.56
M30	3.50	2-3/16	HRDM30.0X3.5	53.56
M33	2.00	2-3/8	HRDM33.0X2.0	61.46
M33	3.50	2-3/8	HRDM33.0X3.5	61.46
M36	3.00	2-9/16	HRDM36.0X3.0	98.02
M36	4.00	2-9/16	HRDM36.0X4.0	87.28
M39	3.00	3-1/8	HRDM39.0X3.0	92.26
M39	4.00	3-1/8	HRDM39.0X4.0	92.26

SPECIAL THREAD SIZES

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M3	.35	19/32	HRDM03.0X.35	11.24
M3.5	.50	19/32	HRDM03.5X.50	11.24
M4	.50	19/32	HRDM04.0X.50	11.24
M4.5	.50	19/32	HRDM04.5X.50	11.24
M5	.50	19/32	HRDM05.0X.50	11.24
M5	.75	19/32	HRDM05.0X.75	11.24
M5.5	.80	19/32	HRDM05.5X.80	11.24
M5.5	.90	19/32	HRDM05.5X.90	11.24
M6	.50	19/32	HRDM06.0X.50	11.24
M6	.75	19/32	HRDM06.0X.75	11.24
M7	.50	11/16	HRDM07.0X.50	12.60
M7	.75	11/16	HRDM07.0X.75	12.60
M8	.50	11/16	HRDM08.0X.50	12.60
M8	.75	11/16	HRDM08.0X.75	12.60
M9	.50	25/32	HRDM09.0X.50	13.86
M9	.75	25/32	HRDM09.0X.75	13.86
M10	.50	7/8	HRDM10.0X.50	16.24
M10	.75	7/8	HRDM10.0X.75	16.24
M10	1.00	7/8	HRDM10.0X1.0	16.24
M11	.50	7/8	HRDM11.0X.50	16.24
M11	.75	7/8	HRDM11.0X.75	16.24
M11	1.00	7/8	HRDM11.0X1.0	16.24
M11	1.25	7/8	HRDM11.0X1.25	16.24
M12	.50	1-1/16	HRDM12.0X.50	17.06
M12	.75	1-1/16	HRDM12.0X.75	17.06
M12	1.00	1-1/16	HRDM12.0X1.0	17.06
M12	1.50	1-1/16	HRDM12.0X1.5	17.06
M13	.50	1-1/16	HRDM13.0X.50	18.82
M13	.75	1-1/16	HRDM13.0X.75	18.82
M13	1.00	1-1/16	HRDM13.0X1.0	18.82
M13	1.25	1-1/16	HRDM13.0X1.25	18.82
M13	1.50	1-1/16	HRDM13.0X1.5	18.82
M13	2.00	1-1/16	HRDM13.0X2.0	18.82
M14	.50	1-1/16	HRDM14.0X.50	20.48
M14	.75	1-1/16	HRDM14.0X.75	20.48
M14	1.00	1-1/16	HRDM14.0X1.0	20.48

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M14	1.25	1-1/16	HRDM14.0X1.25	20.48
M15	.50	1-1/4	HRDM15.0X.50	22.02
M15	1.00	1-1/4	HRDM15.0X1.0	22.02
M15	1.50	1-1/4	HRDM15.0X1.5	22.02
M15	2.00	1-1/4	HRDM15.0X2.0	22.02
M16	.50	1-1/4	HRDM16.0X.50	23.24
M16	.75	1-1/4	HRDM16.0X.75	23.24
M16	1.00	1-1/4	HRDM16.0X1.0	23.24
M16	1.25	1-1/4	HRDM16.0X1.25	23.24
M17	.50	1-7/16	HRDM17.0X.50	28.92
M17	1.00	1-7/16	HRDM17.0X1.0	28.92
M17	1.50	1-7/16	HRDM17.0X1.5	28.92
M17	2.00	1-7/16	HRDM17.0X2.0	28.92
M18	.50	1-7/16	HRDM18.0X.50	32.38
M18	1.00	1-7/16	HRDM18.0X1.0	32.38
M18	2.00	1-7/16	HRDM18.0X2.0	32.38
M19	.50	1-7/16	HRDM19.0X.50	33.06
M19	1.00	1-7/16	HRDM19.0X1.0	33.06
M19	1.50	1-7/16	HRDM19.0X1.5	33.06
M19	2.00	1-7/16	HRDM19.0X2.0	33.06
M20	1.00	1-5/8	HRDM20.0X1.0	33.06
M20	1.25	1-5/8	HRDM20.0X1.25	33.06
M20	2.00	1-5/8	HRDM20.0X2.0	33.06
M21	1.00	1-5/8	HRDM21.0X1.0	33.06
M21	1.50	1-5/8	HRDM21.0X1.5	33.06
M21	2.00	1-5/8	HRDM21.0X2.0	33.06
M21	2.50	1-5/8	HRDM21.0X2.5	33.06
M22	1.00	1-5/8	HRDM22.0X1.0	35.14
M22	2.00	1-5/8	HRDM22.0X2.0	35.14
M22	3.00	1-5/8	HRDM22.0X3.0	35.14
M23	1.00	1-13/16	HRDM23.0X1.0	35.14
M23	1.50	1-13/16	HRDM23.0X1.5	35.14
M23	2.00	1-13/16	HRDM23.0X2.0	35.14
M23	2.50	1-13/16	HRDM23.0X2.5	35.14
M24	1.00	1-13/16	HRDM24.0X1.0	43.90

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M24	1.50	1-13/16	HRDM24.0X1.5	43.90
M24	2.50	1-13/16	HRDM24.0X2.5	43.90
M25	1.00	1-13/16	HRDM25.0X1.0	43.90
M25	1.50	1-13/16	HRDM25.0X1.5	43.90
M25	2.00	1-13/16	HRDM25.0X2.0	43.90
M26	1.50	2	HRDM26.0X1.5	43.90
M26	2.00	2	HRDM26.0X2.0	43.90
M27	1.00	2	HRDM27.0X1.0	58.32
M27	1.50	2	HRDM27.0X1.5	58.32
M28	1.50	2	HRDM28.0X1.5	62.48
M28	2.00	2	HRDM28.0X2.0	62.48
M30	1.00	2-3/16	HRDM30.0X1.0	66.16
M30	1.50	2-3/16	HRDM30.0X1.5	66.16
M30	3.00	2-3/16	HRDM30.0X3.0	82.70
M32	1.50	2-3/16	HRDM32.0X1.5	75.12
M33	1.50	2-3/8	HRDM33.0X1.5	69.54
M34	1.50	2-3/8	HRDM34.0X1.5	82.78
M35	1.50	2-3/8	HRDM35.0X1.5	92.64
M36	1.50	2-9/16	HRDM36.0X1.5	92.26
M38	1.50	2-9/16	HRDM38.0X1.5	92.26
M39	1.50	3-1/8	HRDM39.0X1.5	92.26
M40	1.50	3-1/8	HRDM40.0X1.5	156.32
M42	1.50	3-1/8	HRDM42.0X1.5	177.08
M42	3.00	3-1/8	HRDM42.0X3.0	177.08
M42	4.50	3-1/8	HRDM42.0X4.5	177.08
M45	1.50	3-1/8	HRDM45.0X1.5	177.08
M45	3.00	3-1/8	HRDM45.0X3.0	177.08
M45	4.50	3-1/8	HRDM45.0X4.5	177.08
M48	1.50	3-1/8	HRDM48.0X1.5	220.68
M48	3.00	3-1/8	HRDM48.0X3.0	220.68
M48	5.00	3-1/8	HRDM48.0X5.0	220.68
M50	1.50	3-1/2	HRDM50.0X1.5	220.68
M52	1.50	3-1/2	HRDM52.0X1.5	239.70
M52	3.00	3-1/2	HRDM52.0X3.0	239.70
M52	5.00	3-1/2	HRDM52.0X5.0	239.70

LEFT HAND SIZES

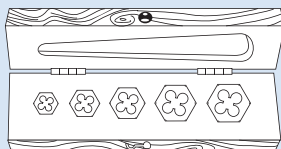
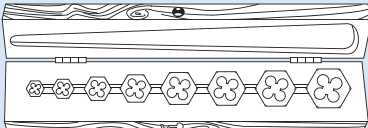
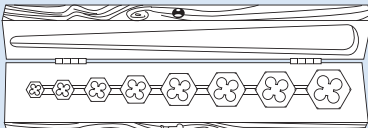
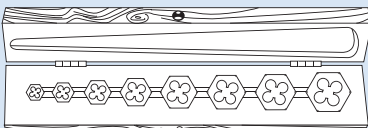
SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M5	.80	19/32	HRDML05.0X0.80	12.38
M6	1.00	19/32	HRDML0.60X1.00	12.38
M7	1.00	11/16	HRDML0.70X1.00	13.94
M8	1.25	11/16	HRDML0.80X1.25	13.94
M10	1.25	7/8	HRDML10.0X1.25	15.34
M10	1.50	7/8	HRDML10.0X1.50	15.34

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M12	1.25	1-1/16	HRDML12.0X1.25	17.24
M12	1.75	1-1/16	HRDML12.0X1.75	17.24
M16	1.50	1-1/4	HRDML16.0X1.50	23.46
M16	2.00	1-1/4	HRDML16.0X2.00	23.46
M18	1.50	1-7/16	HRDML18.0X1.50	26.84
M18	2.50	1-7/16	HRDML18.0X2.50	26.84

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M20	1.50	1-5/8	HRDML20.0X1.50	33.00
M20	2.50	1-5/8	HRDML20.0X2.50	33.00
M24	1.50	1-13/16	HRDML24.0X1.50	48.84
M24	2.00	1-13/16	HRDML24.0X2.00	49.14
M24	3.00	1-13/16	HRDML24.0X3.00	49.14

HEXAGON RETHREADING DIE SETS

WOODEN CASES

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE	
5 PC HEX DIE SET  SIZES: 1/4 to 1/2 or M6 to M14	5 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.)	Right Hand	Coarse	DS-HRD-5C	84.80	
		Right Hand	Fine	DS-HRD-5F	84.80	
		Left Hand	Coarse	DS-HRDL-5C	103.16	
		Left Hand	Fine	DS-HRDL-5F	103.16	
		Right Hand	Metric	DS-HRDM-5C	106.66	
	SIZES OF DIES IN 5 PC SET					
	NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13					
	NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20					
	M (Metric) M6.0 x 1.0, M8.0 x 1.25, M10.0 x 1.5, M12.0 x 1.75, M14.0 x 2.0					
	8 PC HEX DIE SET  SIZES: 1/4 to 3/4 or M6 to M20	8 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.)	Right Hand	Coarse	DS-HRD-8C	127.74
Right Hand			Fine	DS-HRD-8F	127.74	
Left Hand			Coarse	DS-HRDL-8C	163.20	
Left Hand			Fine	DS-HRDL-8F	163.20	
Right Hand			Metric	DS-HRDM-8C	172.08	
SIZES OF DIES IN 8 PC SET						
NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10						
NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16						
M (Metric) M6.0 x 1.0, M8.0 x 1.25, M10.0 x 1.5, M12.0 x 1.75, M14.0 x 2.0, M16.0 x 2.0, M18.0 x 2.5, M20.0 x 2.5						
10 PC HEX DIE SET  SIZES: 1/4 to 1 or M6 to M24		10 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.)	Right Hand	Coarse	DS-HRD-10C	121.12
	Right Hand		Fine	DS-HRD-10F	121.12	
	Left Hand		Coarse	DS-HRDL-10C	243.74	
	Left Hand		Fine	DS-HRDL-10F	243.74	
	Right Hand		Metric	DS-HRDM-10C	241.42	
	SIZES OF DIES IN 10 PC SET					
	NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8					
	NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14, 1-14					
	M (Metric) M6.0 x 1.0, M8.0 x 1.25, M10.0 x 1.5, M12.0 x 1.75, M14.0 x 2.0, M16.0 x 2.0, M18.0 x 2.5, M20.0 x 2.5, M22.0 x 2.5, M24.0 x 3.0					
	4 PC HEX DIE SET  SIZES: 1-1/8 to 1-1/2 or M27 to M36	4 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.)	Right Hand	Coarse	DS-HRD-4C	140.70
Right Hand			Fine	DS-HRD-4F	140.70	
Left Hand			Coarse	DS-HRDL-4C	319.48	
Left Hand			Fine	DS-HRDL-4F	319.48	
Right Hand			Metric	DS-HRDM-4C	233.76	
SIZES OF DIES IN 4 PC SET						
NC (Coarse) 1-1/8-7, 1-1/4-7, 1-3/8-6, 1-1/2-6						
NF (Fine) 1-1/8-12, 1-1/4-12, 1-3/8-12, 1-1/2-12						
M (Metric) M27.0 x 3.0, M30.0 x 3.5, M33.0 x 3.5, M36.0 x 4.0						

HEXAGON RETHREADING PIPE DIE SET

PLASTIC CASE

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
	6 PC Hex Pipe NPT Dies in a hinged wooden case. Contents of NPT set is listed below. wt. 5lbs.	Taper	Regular	DS-HRDP-6	168.00
	SIZES OF DIES IN 6 PC SET				
	NPT (Regular Taper) 1/8-27, 1/4-18, 3/8-18, 1/2-14, 3/4-14, 1-11-1/2				

12 PC PIPE TAP AND HEXAGON DIE SETS**PLASTIC CASE**

12 Piece High Speed/Carbon Steel NPT Pipe Tap & Hex Die Sets are designed to repair damaged NPT pipe threads. Sets come in a deluxe black plastic carrying case. Each 12 piece set contains one NPT Pipe Tap and NPT Hex Die in the following sizes: 1/8 - 27, 1/4 - 18, 3/8 - 18, 1/2 - 14, 3/4 - 14, and 1 - 11-1/2.

ILLUSTRATION	DESCRIPTION	CUT	ITEM NO.	PRICE
 12 PC NPT PIPE TAP & HEX DIE SET Sizes: 1/8" - 1"	Each set contains one each NPT Pipe Tap & Hex Die in your choice of either carbon steel, high speed steel or a combination of high speed steel taps and carbon steel hex dies.	Right Hand	THDS-CS-12NPT Carbon Steel Taps/Dies	207.90
		Right Hand	THDS-HS-12NPT HSS Taps/Dies	563.80
		Right Hand	THDS-HSC-12NPT HSS Taps Carbon Steel Dies	380.10
	SIZES OF NPT PIPE TAPS & HEX DIES			
1/8 - 27, 1/4 - 18, 3/8 - 18, 1/2 - 14, 3/4 - 14, 1 - 11-1/2				

Note: Carbon Steel Taps are for rethreading only. HSS taps and dies can be used for rethreading and cutting new threads with taps.

CARBON STEEL HEXAGON RETHREADING DIES

ICS USA

GENERAL PURPOSE

CUT THREAD

Hexagon (Standard Diameter) Rethreading Dies are designed for rethreading damaged or jammed threads and can be used to work in places where round die stocks can not be used. They are not intended for producing new threads on unthreaded bars, bolts, or pipes. They will perform all of the same tasks as (HRD) Hex Rethreading Dies. All sizes are manufactured using three standard hex stock diameters to reduce costs and simplify die stock or wrench requirements.

MACHINE SCREW AND FRACTIONAL SIZES

METRIC SIZES

STANDARD DIA.
ACROSS FLATSRIGHT HAND
CUTSTANDARD DIA.
ACROSS FLATSRIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
4	40	1	HXD#04-40	3.36
6	32	1	HXD#06-32	3.36
8	32	1	HXD#08-32	3.36
10	24	1	HXD#10-24	3.36
10	32	1	HXD#10-32	3.36
12	24	1	HXD#12-24	3.36
14	20	1	HXD016-20	3.36
3/16	24	1	HXD012-24	3.36
3/16	32	1	HXD012-32	3.36
1/4	20	1	HXD016-20	3.36
1/4	28	1	HXD016-28	3.36
5/16	18	1	HXD020-18	3.36
5/16	24	1	HXD020-24	3.36
3/8	16	1	HXD024-16	3.36
3/8	24	1	HXD024-24	3.36
7/16	14	1	HXD028-14	3.36
7/16	20	1	HXD028-20	3.36
1/2	13	1	HXD032-13	3.36
1/2	20	1	HXD032-20	3.36
9/16	12	1-7/16	HXD036-12	8.46
9/16	18	1-7/16	HXD036-18	8.46
5/8	11	1-7/16	HXD040-11	8.46
5/8	18	1-7/16	HXD040-18	8.46
3/4	10	1-7/16	HXD048-10	8.46
3/4	16	1-7/16	HXD048-16	8.46
7/8	9	1-7/8	HXD056-09	17.16
7/8	14	1-7/8	HXD056-14	17.16
1	8	1-7/8	HXD100-08	17.16
1	12	1-7/8	HXD100-12	17.16
1	14	1-7/8	HXD100-14	17.16

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
M3	.50	1	HXDM03.0X.50	3.84
M3	.60	1	HXDM03.0X.60	3.84
M4	.70	1	HXDM04.0X.70	3.84
M4	.75	1	HXDM04.0X.75	3.84
M5	.80	1	HXDM05.0X.80	3.84
M5	.90	1	HXDM05.0X.90	3.84
M6	1.00	1	HXDM06.0X1.00	3.84
M7	1.00	1	HXDM07.0X1.00	3.84
M8	1.25	1	HXDM08.0X1.25	3.84
M9	1.00	1	HXDM09.0X1.00	3.84
M9	1.25	1	HXDM09.0X1.25	3.84
M10	1.25	1	HXDM10.0X1.25	3.84
M10	1.50	1	HXDM10.0X1.50	3.84
M11	1.50	1	HXDM11.0X1.55	3.84
M12	1.50	1	HXDM12.0X1.50	3.84
M12	1.75	1	HXDM12.0X1.75	3.84
M14	1.25	1-7/16	HXDM14.0X1.25	9.54
M16	2.00	1-7/16	HXDM16.0X2.00	9.54
M18	1.50	1-7/16	HXDM18.0X1.50	9.54
M18	2.50	1-7/16	HXDM18.0X2.50	9.54

Metric sizes in bold type are coarse thread form.

CARBON STEEL HEXAGON (BSPT) PIPE DIES

GENERAL PURPOSE

STANDARD DIA.
ACROSS FLATSRIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/8	28	1	HXDBP008-28	3.96
1/4	19	1	HXDBP016-19	3.96

CARBON STEEL HEXAGON (NPT) PIPE DIES

GENERAL PURPOSE

STANDARD DIA.
ACROSS FLATSRIGHT HAND
CUT

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/8	27	1	HXDP008-27	3.54
1/4	18	1	HXDP016-18	11.86
3/8	18	1-7/8	HXDP024-18	17.04
1/2	14	1-7/8	HXDP032-14	17.04

HIGH SPEED STEEL HEXAGON THREADING DIES

TT-59

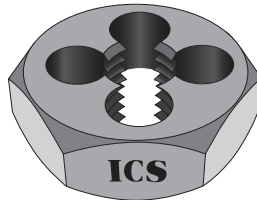
ICS USA

HEAVY DUTY

GROUND THREAD

HSS Hex Threading Dies are designed for tough cutting applications of all types of external threads. They are used for threading rods, bolts, and studs. Two standard diameters of Hex Dies simplify die stock handle requirements. ICS Hex Threading Dies have polished gold face and black surface treated threads for maximum performance.

**STANDARD DIA.
ACROSS FLATS**



**RIGHT HAND
CUT**

BLACK & GOLD FINISH

Machine Screw and Fractional Sizes (#4 To 3/4" Dia.)

THREADS		DIAMETER		ITEM	
SIZE	PER INCH	ACROSS FLATS	NO.	PRICE	
4	40	1	HXTD#04-40	10.58	
6	32	1	HXTD#06-32	10.58	
8	32	1	HXTD#08-32	10.58	
10	24	1	HXTD#10-24	10.58	
10	32	1	HXTD#10-32	10.58	
12	24	1	HXTD#12-24	10.58	
1/4	20	1	HXTD016-20	10.58	
1/4	28	1	HXTD016-28	10.58	
5/16	18	1	HXTD020-18	10.58	
5/16	24	1	HXTD020-24	10.58	
3/8	16	1	HXTD024-16	10.58	
3/8	24	1	HXTD024-24	10.58	

THREADS		DIAMETER		ITEM	
SIZE	PER INCH	ACROSS FLATS	NO.	PRICE	
7/16	14	1	HXTD028-14	10.58	
7/16	20	1	HXTD028-20	10.58	
1/2	13	1	HXTD032-13	10.58	
1/2	20	1	HXTD032-20	10.58	
1/2	13	1-7/16	HXTD032-13A	23.66	
1/2	20	1-7/16	HXTD032-20A	23.66	
9/16	12	1-7/16	HXTD036-12	23.66	
9/16	18	1-7/16	HXTD036-18	23.66	
5/8	11	1-7/16	HXTD040-11	23.66	
5/8	18	1-7/16	HXTD040-18	23.66	
3/4	10	1-7/16	HXTD048-10	23.66	
3/4	16	1-7/16	HXTD048-16	23.66	

HIGH SPEED STEEL HEXAGON THREADING (NPT) PIPE DIES

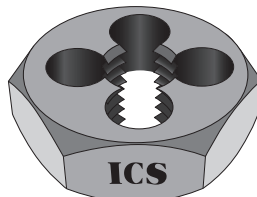
ICS USA

HEAVY DUTY

GROUND THREAD

HSS Hexagon (Hex Nut Dia.) NPT Threading Pipe Dies are designed for external threading or rethreading of taper pipe threads. They are used where a threaded connection will not be required to withstand high fluid or gas pressures and the use of a sealer is acceptable.

**STANDARD DIA.
ACROSS FLATS**



**RIGHT HAND
CUT**

BLACK & GOLD FINISH

THREADS		DIAMETER		ITEM	
SIZE	PER INCH	ACROSS FLATS	NO.	PRICE	
1/8	27	1	HXTDP008-27	10.58	

THREADS		DIAMETER		ITEM	
SIZE	PER INCH	ACROSS FLATS	NO.	PRICE	
1/4	18	1-7/16	HXTDP016-18A	23.66	

HIGH SPEED STEEL HEXAGON THREADING DIES

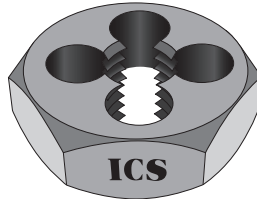
ICS WIS

HEAVY DUTY

GROUND THREAD

HSS Hexagon (Hex Nut Diameter) Threading Dies are designed for tough cutting applications of all types of external threads. They are used for threading rods, bolts, and studs. All sizes are manufactured to be the same size as a Hex Nut of equal thread size. ICS Hex Threading Dies have polished gold face and black surface treated threads for maximum performance.

HEX NUT DIA.
ACROSS FLATS



RIGHT HAND
CUT

BLACK & GOLD FINISH

SIZE	THREADS PER INCH	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
4	40	19/32	HTD#04-40	15.76
6	32	19/32	HTD#06-32	15.76
8	32	19/32	HTD#08-32	15.76
10	24	19/32	HTD#10-24	15.76
10	32	19/32	HTD#10-32	15.76
12	24	19/32	HTD#12-24	15.76
1/4	20	19/32	HTD016-20	15.76
1/4	28	19/32	HTD016-28	15.76
5/16	18	11/16	HTD020-18	18.38
5/16	24	11/16	HTD020-24	18.38
3/8	16	25/32	HTD024-16	20.06
3/8	24	25/32	HTD024-24	20.06
7/16	14	7/8	HTD028-14	22.36
7/16	20	7/8	HTD028-20	22.36
1/2	13	1-1/16	HTD032-13	26.26
1/2	20	1-1/16	HTD032-20	26.26
9/16	12	1-1/16	HTD036-12	31.04
9/16	18	1-1/16	HTD036-18	31.04

SIZE	THREADS PER INCH	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
5/8	11	1-1/4	HTD040-11	34.66
5/8	18	1-1/4	HTD040-18	34.66
11/16	11	1-7/16	HTD044-11	43.68
11/16	16	1-7/16	HTD044-16	43.68
3/4	10	1-7/16	HTD048-10	43.68
3/4	16	1-7/16	HTD048-16	43.68
7/8	9	1-5/8	HTD056-09	58.80
7/8	14	1-5/8	HTD056-14	58.80
1	8	1-13/16	HTD100-08	75.70
1	12	1-13/16	HTD100-12	75.70
1	14	1-13-16	HTD100-14	75.70
1-1/8	7	2	HTD108-07	93.76
1-1/8	12	2	HTD108-12	93.76
1-1/4	7	2-3/16	HTD116-07	109.20
1-1/4	12	2-3/16	HTD116-12	109.20
1-3/8	6	2-3/8	HTD124-06	127.58
1-3/8	12	2-3/8	HTD124-12	127.58
1-1/2	6	2-9/16	HTD132-06	165.38
1-1/2	12	2-9/16	HTD132-12	165.38

HIGH SPEED STEEL HEXAGON THREADING (NPT) PIPE DIES

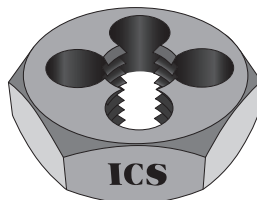
ICS WIS

HEAVY DUTY

GROUND THREAD

HSS Hexagon (Hex Nut Dia.) NPT Threading Pipe Dies are designed for external threading or rethreading of taper pipe threads. They are used where a threaded connection will not be required to withstand high fluid or gas pressures and the use of a sealer is acceptable.

HEX NUT DIA.
ACROSS FLATS



RIGHT HAND
CUT

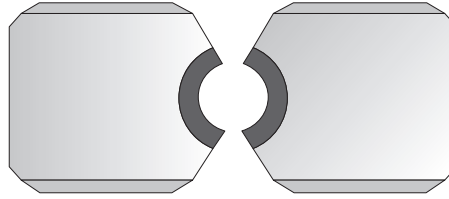
BLACK & GOLD FINISH

SIZE	THREADS PER INCH	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
1/8	27	25/32	HTDP008-27	18.90
1/4	18	1-1/16	HTDP016-18	42.00
3/8	18	1-1/4	HTDP024-18	49.88
1/2	14	1-5/8	HTDP032-14	65.62
3/4	14	1-13/16	HTDP048-14	94.50

SIZE	THREADS PER INCH	DIAMETER ACROSS FLATS	ITEM NO.	PRICE
1	11-1/2	2-3/16	HTDP100-11.5	133.46
1-1/4	11-1/2	3-1/8	HTDP116-11.5	179.02
1-1/2	11-1/2	3-1/8	HTDP132-11.5	260.50
2	11-1/2	3-3/4	HTDP200-11.5	693.52

2 PIECE ADJUSTABLE DIES**ICS WIS****GENERAL PURPOSE****CUT THREAD**

Two Piece Adjustable Dies have a wide range of threading adjustments compared to a round adjustable die. Each half has two cutting edges and are easy to sharpen. They have chamfered threads on both sides. One side has 2 to 3 chamfered threads for regular work and the other side has 1-1/2 chamfered threads for threading close to shoulder. Ideal for threading or thread repair work.

**RIGHT HAND
CUT**

SIZE	THREADS PER INCH	FOR USE WITH COLLET NO.	ITEM NO.
1/4	20	1 or 5	TPAD016-20
1/4	28	1 or 5	TPAD016-28
5/16	18	1 or 5	TPAD020-28
5/16	24	1 or 5	TPAD020-24
3/8	16	1 or 5	TPAD024-16
3/8	24	1 or 5	TPAD024-24
7/16	14	1 or 5	TPAD028-14
7/16	20	1 or 5	TPAD028-20
1/2	13	1 or 5	TPAD032-13
1/2	20	1 or 5	TPAD032-20
9/16	12	5	TPAD036-12
9/16	18	5	TPAD036-18
5/8	11	5 or 20	TPAD040-11
5/8	18	5 or 20	TPAD040-18
11/16	11	5 or 20	TPAD044-11
3/4	10	5 or 20	TPAD048-10
3/4	16	5 or 20	TPAD048-16
7/8	9	5, 20 or 25	TPAD056-09
7/8	14	5, 20 or 25	TPAD056-14
1	8	5, 20 or 25	TPAD100-08
1	12	5, 20 or 25	TPAD100-12
1	14	5, 20 or 25	TPAD100-14
1-1/8	14	20 or 25	TPAD108-14
1-1/4	14	20 or 25	TPAD116-14
1-3/8	14	25	TPAD124-14
1-1/2	14	25	TPAD132-14

Please specify collet no. when ordering.

HEXAGON AUTOMOTIVE RETHREADING DIES

ICS

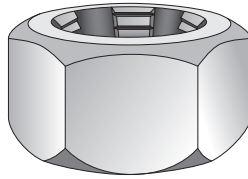
USA

GENERAL PURPOSE

CUT THREAD

Hexagon Automotive Rethreading Dies were designed to have a much smaller width across the flats than other hex dies to allow mechanics to repair damaged threads in tight spots. They are not designed for cutting new threads or to renew hardened threads. They are also known as "Tight Spot" Hex Repair Dies.

**SMALL DIA.
ACROSS FLATS**



Fractional Right Hand Sizes (1/4" to 1-3/8")

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/4	20	7/16	HARD016-20	1.88
1/4	28	7/16	HARD016-28	1.88
5/16	18	1/2	HARD020-18	2.02
5/16	24	1/2	HARD020-24	2.02
3/8	16	9/16	HARD024-16	2.10
3/8	24	9/16	HARD024-24	2.10
7/16	14	11/16	HARD028-14	2.20
7/16	20	11/16	HARD028-20	2.20
1/2	13	3/4	HARD032-13	2.52
1/2	20	3/4	HARD032-20	2.52
9/16	12	7/8	HARD036-12	3.28
9/16	18	7/8	HARD036-18	3.28
5/8	11	15/16	HARD040-11	3.44
5/8	18	15/16	HARD040-18	3.44

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
11/16	11	1	HARD044-11	4.20
11/16	16	1	HARD044-16	4.20
3/4	10	1-1/16	HARD048-10	4.66
3/4	16	1-1/16	HARD048-16	4.66
7/8	9	1-1/4	HARD056-09	8.40
7/8	14	1-1/4	HARD056-14	8.40
1	8	1-1/2	HARD100-08	8.40
1	14	1-1/2	HARD100-14	8.40
1-1/8	7	1-5/8	HARD108-07	10.30
1-1/8	12	1-5/8	HARD108-12	10.30
1-1/4	7	1-3/4	HARD116-07	10.96
1-1/4	12	1-3/4	HARD116-12	10.96
1-3/8	12	2-1/16	HARD124-12	10.96

Fractional Left Hand Sizes (1/4" to 3/4")

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/4	20	7/16	HARDL016-20	3.04
1/4	28	7/16	HARDL016-28	3.04
5/16	18	1/2	HARDL020-18	3.16
5/16	24	1/2	HARDL020-24	3.16
3/8	16	9/16	HARDL024-16	3.36
3/8	24	9/16	HARDL024-24	3.36
7/16	14	11/16	HARDL028-14	3.78
7/16	20	11/16	HARDL028-20	3.78

SIZE	TPI	DIA. ACROSS FLATS	ITEM NO.	PRICE
1/2	13	3/4	HARDL032-13	4.20
1/2	20	3/4	HARDL032-20	4.20
9/16	12	7/8	HARDL036-12	4.62
9/16	18	7/8	HARDL036-18	4.62
5/8	11	15/16	HARDL040-11	5.26
5/8	18	15/16	HARDL040-18	5.26
3/4	10	1-1/16	HARDL048-10	8.20
3/4	16	1-1/16	HARDL048-16	10.92

Metric Right Hand Sizes (6.0mm to 24.0mm)

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M6	1.00	M10	HARDM06.0X1.00	2.14
M6	1.25	M12	HARDM06.0X1.25	3.98
M7	1.00	M11	HARDM07.0X1.00	2.26
M8	1.00	M13	HARDM08.0X1.00	2.52
M8	1.25	M13	HARDM08.0X1.25	2.30
M8	1.50	M14	HARDM08.0X1.50	4.58
M10	1.00	M17	HARDM10.0X1.00	2.82
M10	1.25	M17	HARDM10.0X1.25	2.72
M10	1.50	M17	HARDM10.0X1.50	2.52
M11	1.50	M19	HARDM11.0X1.50	4.78
M12	1.25	M19	HARDM12.0X1.25	2.90
M12	1.50	M19	HARDM12.0X1.50	2.82
M12	1.75	M19	HARDM12.0X1.75	2.72

SIZE	PITCH	DIA. ACROSS FLATS	ITEM NO.	PRICE
M14	1.25	M22	HARDM14.0X1.25	5.32
M14	1.50	M22	HARDM14.0X1.50	4.40
M14	2.00	M22	HARDM14.0X2.00	9.32
M16	1.50	M24	HARDM16.0X1.50	10.28
M16	2.00	M24	HARDM16.0X2.00	11.20
M18	1.50	M27	HARDM18.0X1.50	13.06
M18	2.50	M27	HARDM18.0X2.50	12.14
M20	1.25	M32	HARDM20.0X1.25	8.98
M20	1.50	M32	HARDM20.0X1.50	8.98
M22	1.00	M32	HARDM20.0X1.00	8.98
M22	1.50	M32	HARDM22.0X1.50	8.98
M24	1.50	M32	HARDM24.0X1.50	8.98
M24	2.00	M32	HARDM24.0X2.00	8.98

HIGH SPEED STEEL CONE DIES

TT-63

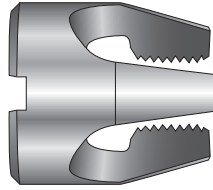
ICS USA

SPECIAL PURPOSE

GROUND THREAD

Acorn Cone Dies are designed with a straight hook angle for production threading work on steel parts using screw machine or other threading equipment. They are designed to project from the die holder with a short die chamfer for close to the shoulder threading. They are also known as Spring Dies, Taper Nose Dies, Acorn Dies, and Cap Adjusting Dies.

(Advise if threading stainless or non-ferrous metals when ordering as they require a different hook angle.)



**RIGHT HAND
CUT**

SIZE	TPI	ITEM NO.
#1 BLANK (5/8") DIA.		
#0	80	CD#1X#00-80
#1	64	CD#1X#01-64
#1	72	CD#1X#01-72
#2	56	CD#1X#02-56
#2	64	CD#1X#02-64
#3	48	CD#1X#03-48
#3	56	CD#1X#03-56
#4	40	CD#1X#04-40
#4	48	CD#1X#04-48
#5	40	CD#1X#05-40
#5	44	CD#1X#05-44
#6	32	CD#1X#06-32
#6	40	CD#1X#06-40
#8	32	CD#1X#08-32
#8	36	CD#1X#08-36
#10	24	CD#1X#10-24
#10	32	CD#1X#10-32
#12	24	CD#1X#12-24
#12	28	CD#1X#12-28
1/4	20	CD#1X016-20
1/4	28	CD#1X016-28

SIZE	TPI	ITEM NO.
#2 BLANK (7/8") DIA.		
#6	32	CD#2X#06-32
#6	40	CD#2X#06-40
#8	32	CD#2X#08-32
#8	36	CD#2X#08-36
#10	24	CD#2X#10-24
#10	32	CD#2X#10-32
#12	24	CD#2X#12-24
#12	32	CD#2X#12-32
1/4	20	CD#2X016-20
1/4	28	CD#2X016-28
5/16	18	CD#2X020-18
5/16	24	CD#2X020-24
3/8	16	CD#2X024-16
3/8	24	CD#2X024-24
1/8	NPT	CDPT#2X008-27
1/8	NPS	CDPS#2X008-27

SIZE	TPI	ITEM NO.
#3 BLANK (1-1/4") DIA.		
3/8	16	CD#3X024-16
3/8	24	CD#3X024-24
7/16	14	CD#3X028-14
7/16	20	CD#3X028-20
1/2	13	CD#3X032-13
1/2	20	CD#3X032-20
9/16	12	CD#3X036-12
9/16	18	CD#3X036-18
5/8	11	CD#3X040-11
5/8	18	CD#3X040-18
1/4	NPT	CDPT#3X016-18
3/8	NPT	CDPT#3X024-18
1/4	NPS	CDPS#3X016-18
3/8	NPS	CDPS#3X024-18

SIZE	TPI	ITEM NO.
#4 BLANK (1-3/4") DIA.		
5/8	11	CD#4X040-11
5/8	18	CD#4X040-18
3/4	10	CD#4X048-10
3/4	16	CD#4X048-16
7/8	9	CD#4X056-09
7/8	14	CD#4X056-14
1	8	CD#4X100-08
1	12	CD#4X100-12
1	14	CD#4X100-14
1/2	NPT	CDPT#4X032-14
3/4	NPT	CDPT#4X048-14
1/2	NPS	CDPS#4X032-14
3/4	NPS	CDPS#4X048-14
#5 BLANK (2-5/32") DIA.		
1-1/8	7	CD#5X108-07
1-1/8	12	CD#5X108-12
1-1/4	7	CD#5X116-07
1-1/4	12	CD#5X116-12
1-3/8	12	CD#5X124-12
1-1/2	12	CD#5X132-12

NOTE: We also have left hand and special thread sizes. Inquire for pricing.

CALL FOR PRICE

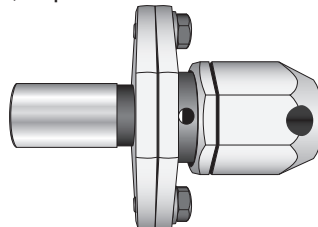
CONE DIE HOLDER

ICS USA

SPECIAL PURPOSE

PRECISION THREAD

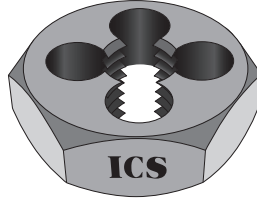
Cone Die Holders are designed for use on automatic bar machines or any machine that can be set to reverse once the correct thread length has been cut. This holder is used for external threading with cone dies. Cone die holders are also known as Spring Die Holders, Acorn Die Holders, Taper Nose Die Holders and Cap Adjusting Die Holders.



HOLDER SIZE	SHANK DIA.	HOLDS CONE DIE O.D.	CONE DIE CAPACITY	MAXIMUM LENGTH OF THREADS	ITEM NO.	PRICE
#1	5/8	5/8 (#1)	#0 - 1/4	1-1/2	CDH#1	-
#2	3/4	7/8 (#2)	#6 - 3/8	2-3/4	CDH#2X048	-
#2	1	7/8 (#2)	#6 - 3/8	3	CDH#2X100	CALL FOR PRICE
#3	3/4	1-1/4 (#3)	3/8 - 5/8	2-3/4	CDH#3X048	FOR PRICE
#3	1	1-1/4 (#3)	3/8 - 5/8	3-3/4	CDH#3X100	-
#4	1	1-3/4 (#4)	5/8 - 1	2-1/2	CDH#4X100	-
#5	2	2-5/32 (#5)	1-1/8 - 1-1/2	3-3/4	CDH#5X200	-

ACME THREAD HEXAGON RETHREADING DIES**ICS USA****HEAVY DUTY****GROUND THREAD**

Acme Thread Hexagon Rethreading Dies are of heavy duty construction for rethreading the broad, square threads on acme threaded rods and studs. They are used for general purpose acme threads with a class 2C thread fit. This is a looser fit than the class 2G precision acme thread.



HEX NUT DIAMETER ACROSS FLATS

Right Hand Sizes 1/2" to 1-1/2"

SIZE	TPI	DIAMETER ACROSS FLATS	ITEM NO.
1/2	10	1-1/16	AHRD032-10
5/8	8	1-1/4	AHRD040-08
5/8	10	1-1/4	AHRD040-10
3/4	5	1-7/16	AHRD048-05
3/4	6	1-7/16	AHRD048-06
3/4	8	1-7/16	AHRD048-08
3/4	10	1-7/16	AHRD048-10
7/8	6	1-5/8	AHRD056-06

SIZE	TPI	DIAMETER ACROSS FLATS	ITEM NO.
1	4	1-13/16	AHRD100-04
1	5	1-13/16	AHRD100-05
1	10	1-13/16	AHRD100-10
1-1/8	5	2	AHRD108-05
1-1/4	4	2-3/16	AHRD116-04
1-1/4	5	2-3/16	AHRD116-05
1-1/2	4	2-9/16	AHRD132-04

Left Hand Sizes 1/2" to 1-1/2"

SIZE	TPI	DIAMETER ACROSS FLATS	ITEM NO.
1/2	10	1-1/16	AHRDL032-10
5/8	8	1-1/4	AHRDL040-08
5/8	10	1-1/4	AHRDL040-10
3/4	5	1-7/16	AHRDL048-05
3/4	6	1-7/16	AHRDL048-06
3/4	8	1-7/16	AHRDL048-08
3/4	10	1-7/16	AHRDL048-10
7/8	6	1-5/8	AHRDL056-06

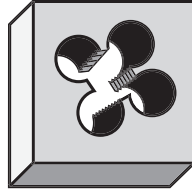
SIZE	TPI	DIAMETER ACROSS FLATS	ITEM NO.
1	4	1-13/16	AHRDL100-04
1	5	1-13/16	AHRDL100-05
1	10	1-13/16	AHRDL100-10
1-1/8	5	2	AHRDL108-05
1-1/4	4	2-3/16	AHRDL116-04
1-1/4	5	2-3/16	AHRDL116-05
1-1/2	4	2-9/16	AHRDL132-04

NOTE: Acme Thread Hexagon Rethreading Dies are manufactured to order.

CALL FOR PRICE

SOLID SQUARE BOLT DIES**ICS WIS****GENERAL PURPOSE****CUT THREAD**

Solid Square Bolt Dies are designed for rethreading damaged or jammed bolt threads and studs.

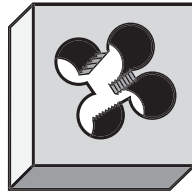
**RIGHT HAND
CUT**

SIZE	TPI	SIZE OF SQUARE		ITEM NO.
		SQUARE	THICKNESS	
1/4	20	2-1/2	1/2	SSBD016-20X232
1/4	28	2-1/2	1/2	SSBD016-28X232
5/16	18	2-1/2	1/2	SSBD020-18X232
5/16	24	2-1/2	1/2	SSBD020-24X232
3/8	16	2-1/2	1/2	SSBD024-16X232
3/8	24	2-1/2	1/2	SSBD024-24X232
7/16	14	2-1/2	1/2	SSBD028-14X232
7/16	20	2-1/2	1/2	SSBD028-20X232
1/2	13	2-1/2	3/4	SSBD032-13X232
1/2	20	2-1/2	3/4	SSBD032-20X232
5/8	11	2-1/2	3/4	SSBD040-11X232
5/8	18	2-1/2	3/4	SSBD040-18X232
3/4	10	2-1/2	3/4	SSBD048-10X232
3/4	16	2-1/2	3/4	SSBD048-16X232
7/8	9	2-1/2	3/4	SSBD056-09X232
7/8	14	2-1/2	3/4	SSBD016-20X232

SIZE	TPI	SIZE OF SQUARE		ITEM NO.
		SQUARE	THICKNESS	
1	8	2-1/2	1	SSBD100-08X232
1	14	2-1/2	1	SSBD100-14X232
1-1/8	7	2-1/2	1	SSBD108-07X232
1-1/8	12	2-1/2	1	SSBD108-12X232
1-1/4	7	2-1/2	1	SSBD116-07X232
1-1/4	12	2-1/2	1	SSBD116-12X232
1-3/8	6	2-1/2	1	SSBD124-06X232
1-3/8	12	2-1/2	1	SSBD124-12X232
1-1/2	6	3	1	SSBD132-06X300
1-1/2	12	3	1	SSBD132-12X300
1-3/4	5	3	1-1/4	SSBD148-05X300
1-3/4	12	3	1-1/4	SSBD148-12X300
2	4-1/2	4	2	SSBD200-4.5X400
2	12	4	2	SSBD200-12X400

SQUARE TAPER (NPT) PIPE DIES**ICS USA****SPECIAL PURPOSE****CUT THREAD**

Solid Square Taper Pipe Dies are designed for rethreading damaged or jammed taper pipe threads and are used mainly by oil related industries, utilities, and general construction.

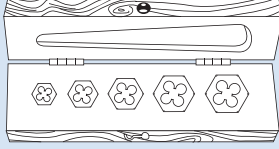
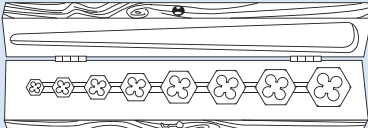
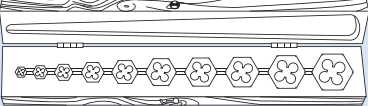
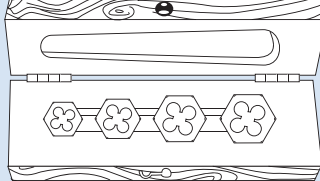
**RIGHT HAND
CUT**

SIZE	THREADS PER INCH	SIZE OF SQUARE		ITEM NO.
		SQUARE	THICKNESS	
1/8	27	2	1/2	STPD008-27X200
1/4	18	2	1/2	STPD016-18X200
3/8	18	2	1/2	STPD024-18X200
1/2	14	2	1/2	STPD032-14X200
1/8	27	2-1/2	3/4	STPD008-27X232
1/4	18	2-1/2	3/4	STPD016-18X232
3/8	18	2-1/2	3/4	STPD024-18X232
1/2	14	2-1/2	3/4	STPD032-14X232
3/4	14	2-1/2	3/4	STPD048-14X232
3/4	14	3	3/4	STPD-048-14X300
1	11-1/2	3	3/4	STPD100-11.5X300
1-1/4	11-1/2	3	3/4	STPD116-11.5X300
1	11-1/2	4	1	STPD100-11.5X4
1-1/4	11-1/2	4	1	STPD116-11.5X4
1-1/2	11-1/2	4	1	STPD132-11.5X4
2	11-1/2	4	1	STPD200-11.5X4

CALL FOR PRICE

HEXAGON THREADING DIE SETS

WOODEN CASES

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
5 PC HSS HEX DIE SET  SIZES: 1/4 to 1/2	5 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.) Black & Gold finish.	Right Hand Right Hand	Coarse Fine	DS-HTD-5C DS-HTD-5F	131.28 131.28
	SIZES OF HIGH SPEED STEEL DIES IN 5 PC SET				
	NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20				
8 PC HSS HEX DIE SET  SIZES: 1/4 to 3/4	8 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.) Black & Gold finish.	Right Hand Right Hand	Coarse Fine	DS-HTD-8C DS-HTD-8F	223.54 223.54
	SIZES OF HIGH SPEED STEEL DIES IN 8 PC SET				
	NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10 NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16				
10 PC HSS HEX DIE SET  SIZES: 1/4 to 1	10 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.) Black & Gold finish.	Right Hand Right Hand	Coarse Fine	DS-HTD-10C DS-HTD-10F	328.24 328.24
	SIZES OF HIGH SPEED STEEL DIES IN 10 PC SET				
	NC (Coarse) 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 NF (Fine) 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-11, 3/4-16, 7/8-14, 1-14				
4 PC HSS HEX DIE SET  SIZES: 1-1/8 to 1-1/2	4 PC Hex Die Set in a hinged wooden case. Contents of NC, NF, and Metric sets are listed below. (Specify style required.) Black & Gold finish.	Right Hand Right Hand	Coarse Fine	DS-HTD-4C DS-HTD-4F	465.26 465.26
	SIZES OF HIGH SPEED STEEL DIES IN 4 PC SET				
	NC (Coarse) 1-1/8-7, 1-1/4-7, 1-3/8-6, 1-1/2-6 NF (Fine) 1-1/8-12, 1-1/4-12, 1-3/8-12, 1-1/2-12				

NOTE: Special boxed sets can be made to your requirements.

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ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	40 PC Tap and Hex Die Set in plastic case. Each set contains one each NC and NF Plug Tap and Hexagon Die. Sizes are listed below. Set also includes 1/8-28 BSPT Pipe Tap and 6 threading tools.	CS	Right Hand	NC, NF BSPT	THDS-CS-40M	189.24
	SIZES OF TAPS AND HEX DIES IN SET					
	NC (Coarse) M3.0 x .50, M4.0 x .70, M5.0 x .80, M6.0 x 1.0, M7.0 x 1.0, M8.0 x 1.25 M9.0 x 1.25, M10.0 x 1.50, M11.0 x 1.50, M12.0 x 1.75 NF (Fine) M3.0 x .60, M4.0 x .75, M5.0 x .90, M9.0 x 1.00, M10.0 x 1.25, M12.0 x 1.50 BSPT (British Standard) 1/8-28					
THREADING TOOLS IN SET						
Adjustable Die Stock - 1" round or hex			T-Handle Tap Wrench - M3 to M6			
Adjustable Tap Wrench - M3 to M12			T-Handle Tap Wrench - M6 to M12			
Screw Pitch Gauge - Metric			#5 Screwdriver			

58 PC TAP AND HEX DIE SETS

PLASTIC CASES

58 Piece Tap and Die Sets were originally designed to be a more advanced general purpose tap and die set for mechanics and DIY'ers for maintenance on domestic cars, motorcycles, and machinery that were manufactured using the unified inch thread standard. Each set contains the most popular sizes (#6-32 to 3/4-16) sizes that mechanics commonly use. Plastic case has individual compartments for tap and die storage and easy access.

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	Each set contains one each NC and NF Plug Tap and Hexagon Die in your choice of either Carbon Steel, High Speed Steel, or a combination (High Speed Steel Taps and Carbon Steel Hexagon Dies).	CS	Right Hand	NC, NF NPT	THDS-CS-58	381.02
		HSS	Right Hand	NC, NF NPT	THDS-HS-58	778.52
		HSS & CS	Right Hand	NC, NF NPT	THDS-HS/C-58	558.60
	SIZES OF TAPS AND HEX DIES IN SET					
NC (Coarse) #6-32, #8-32, #10-24, #12-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10						
NF (Fine) #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16						
NPT (Regular Taper) 1/8-27, 1/4-18						
THREADING TOOLS IN SET						
Adjustable Tap Wrench - #4 to 1/2"			T-Handle Tap Wrench - #0 - 1/4"			
Adjustable Tap Wrench - 1/4 to 3/4"			Screw Pitch Gauge - Fractional			
Die Stock - 1" Round or Hex			Screwdriver - 1/8" x 2-1/4" Pocket Clip			
Die Stock - 1-1/2" Round or 1-7/16" Hex			Screw Extractors - Spiral Flute -#1 to 5			

Standard Packaging - 1 Ea. Box (Wt. 15.0 lbs.)

65 PC TAP AND HEX DIE SETS

PLASTIC CASES

65 Piece Tap and Die Sets were originally designed to be a professional general purpose tap and die set for mechanics and DIY'ers for maintenance on domestic cars, motorcycles, and machinery that were manufactured using the unified inch thread standard. Each set contains the most popular sizes (#4-40 to 1-14) sizes that mechanics commonly use. Plastic case has individual compartments for tap and die storage and easy access.

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	Each set contains one each NC and NF Plug Tap and Hexagon Die in your choice of either Carbon Steel, High Speed Steel, or a combination (High Speed Steel Taps and Carbon Steel Hexagon Dies).	CS	Right Hand	NC, NF NPT	THDS-CS-65	651.50
		HSS	Right Hand	NC, NF NPT	THDS-HS-65	1131.32
		HSS & CS	Right Hand	NC, NF NPT	THDS-HS/C-65	970.20
	SIZES OF TAPS AND HEX DIES IN SET					
SIZES #4 TO 1"	NC (Coarse) #4-40, #6-32, #8-32, #10-24, #12-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, *7/8-9, *1-8					
	NF (Fine) #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, *7/8-14, *1-14					
	NPT (Regular Taper) 1/8-27, 1/4-18					
	THREADING TOOLS IN SET					
SIZES #4 TO 1"	Adjustable Tap Wrench - #4 to 1/2"			Die Stock - 1-7/8" Hex		
	Adjustable Tap Wrench - 1/4 to 3/4"			T-Handle Tap Wrench - #0 - 1/4"		
	Adjustable Tap Wrench - 1/2 to 1-1/8"			Screw Pitch Gauge - Fractional		
	Die Stock - 1" Round or Hex			Screwdriver - 1/8" x 2-1/4" Pocket Clip		
	Die Stock - 1-1/2" Round or 1-7/16" Hex					

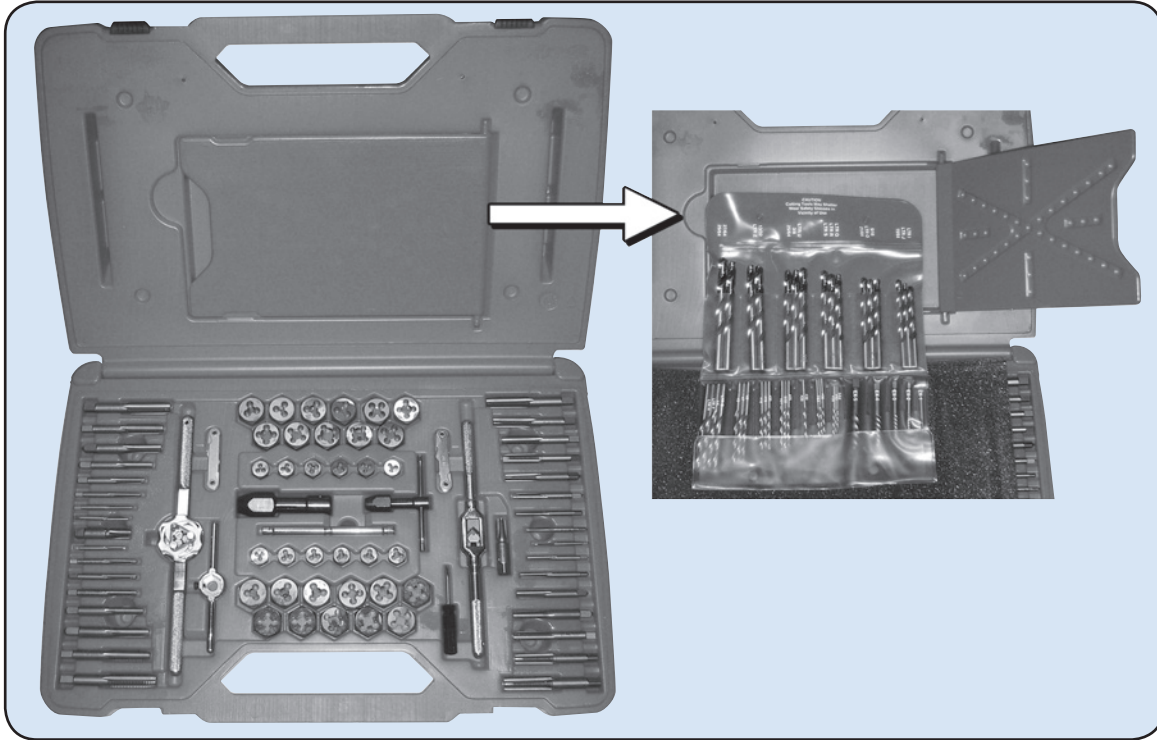
Standard Packaging - 1 Ea. Box (Wt. 23.0 lbs.) • *7/8 & 1" NC & NF Hex Dies only available in High Carbon Steel.

117 PC TAP AND HEX DIE SET

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PLASTIC CASES

117 Piece Titanium Nitride Coated Tap and Hexagon Die Sets are designed to be a professional tap and die set for mechanics and DIY'ers for maintenance on domestic cars, motorcycles, and machinery that were manufactured using the unified inch thread standard. Each set contains the most popular fractional size (1/4 to 1/2 NF/NC) and metric size (3mm to 12mm) taps and dies as well as five spiral screw extractors with corresponding tap drill sizes. The plastic case has individual compartments for all taps, dies, screw extractors and drills for easy access.

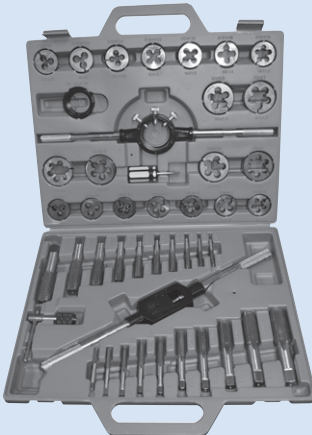


DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
Each set contains one each NC and NF fractional and metric plug taps and dies sizes. Sizes listed below. Set also includes 5 screw extractors and tap drills. All tools are titanium nitride coated.	Right Hand	NC, NF, NPT	THDS-CS-117	315.00
SIZES OF TAPS AND HEX DIES IN SET				
NC (Coarse)	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, M3.0x0.50, M4.0x0.75, M5.0x0.90, M7.0x1.0, M8.0x1.25, M9.0x1.25, M10.0x1.50, M12.0x1.75			
NF (Fine)	1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, M4.0x0.70, M5.0x0.80, M6.0x1.00, M8.0x1.00, M9.0x1.00, M10.0x1.25, M11x1.50, M12.0x1.50			
NPT (Regular Taper)	1/8-27			
BSPT (British Standard)	1/8-28			
SIZES OF DRILLS IN SET				
Fractional Sizes	5/64, 7/64, 5/32, 1/4, 19/64, 5/16, 21/64, 3/8, 25/64, 13/32, 27/64, 29/64			
Wire Gauge Sizes	#3, #7, #9, #16, #19, #20, #21, #25, #29, #30, #36, #39, #43			
Letter Drill Sizes	B, F, H, I, J, O, Q, R, S, U, Z			
SIZES OF SCREW EXTRACTORS				
Screw Extractor Sizes	#1, #2, #3, #4, #5			
THREADING TOOLS IN SET				
Adjustable Tap Wrench - #4 to 1/2"	T-Handle Tap Wrench - #0 - 1/4"			
Die Stock - 5/8" Hex	T-Handle Tap Wrench - 1/4" - 1/2"			
Die Stock - 1" Hex	Screw Pitch Gauge - Fractional			
Screwdriver - 1/8"	Screw Pitch Gauge - Metric			

45 PC CARBON TAP AND ROUND ADJUSTABLE DIE SET

PLASTIC CASES

45 Piece Carbon Steel Fractional Tap and Die Sets were originally designed to be a basic general purpose tap and die set for mechanics and DIY'ers for maintenance on domestic cars, motorcycles, and machines that were manufactured using the unified inch thread standard. Each set contains the most popular sizes (1/4-20 to 1-14) that mechanics commonly use. Plastic case has individual compartments for tap and die storage and easy access.

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
	Each set contains one each NC and NF Plug Tap and Round Adjustable Die. SIZES: 1/4" to 1"	Right Hand	NC, NF	TRDS-CS-45	581.70
	SIZES OF TAPS AND ROUND ADJUSTABLE DIES IN SET				
	NC (Coarse) #6-32, #8-32, #10-24, #12-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 1-8 NF (Fine) #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 1-14				
	DIE DIMENSIONS AND DIE SIZES				
	1-1/2" Round Adjustable Dies 1/4" to 5/8" 2" Round Adjustable Dies 3/4" to 1"				
	THREADING TOOLS IN SET				
Adjustable Tap Wrench - #4 to 1/2"		T-Handle Tap Wrench - #0 - 1/4"			
Adjustable Tap Wrench - 1/4 to 3/4"		Screw Pitch Gauge - Fractional			
Die Stock - 1" Round or Hex		Screwdriver - 1/8" x 2-1/4" Pocket Clip			

Standard Packaging - 1 Ea. Box (Wt. 23.0 lbs.)

45 PC METRIC CARBON TAP AND ROUND ADJUSTABLE DIE SET

PLASTIC CASES

45 Piece Carbon Steel Metric Tap and Die Sets were originally designed to be a basic general purpose tap and die set for mechanics and DIY'ers for maintenance on foreign cars, motorcycles, and machines that were manufactured using the unified inch thread standard. Each set contains the most popular metric sizes (M6 to M24) that mechanics commonly use. Plastic case has individual compartments for tap and die storage and easy access. With the advent of world trade, this set is now a staple in every tool box and workshop.

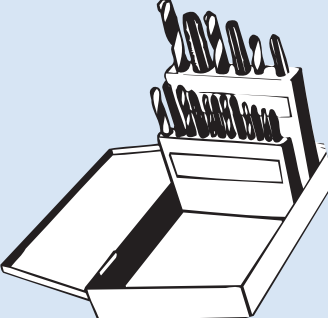
ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
	Each set contains one each NC and NF Plug Tap and Round Adjustable Die. SIZES: M6 to M24	Right Hand	NC, NF	TRDS-CS-45M	581.70
	SIZES OF TAPS AND ROUND ADJUSTABLE DIES IN SET				
	NC (Coarse) M6x1.00, M8x1.25, M10x1.50, M12x1.75, M14x2.00 M16x2.00, M18x2.50, M20x2.50, M22x2.50, 24x3.00 NF (Fine) M6x0.75, M8x1.00, M10x1.25, M12x1.50, M14x1.50 M16x1.50, M18x1.50, M20x1.50, M22.0x1.50, M24x1.50				
	DIE DIMENSIONS AND DIE SIZES				
	1-1/2" Round Adjustable Dies M6 to M18 2" Round Adjustable Dies M20 to M24				
	THREADING TOOLS IN SET				
Adjustable Tap Wrench - M6 to M18		T-Handle Tap Wrench - M6 to M12			
Die Stock Adapter - 1-1/2"		Screwdriver			
Die Stock - 2" Round					

Standard Packaging - 1 Ea. Box (Wt. 23.0 lbs.)

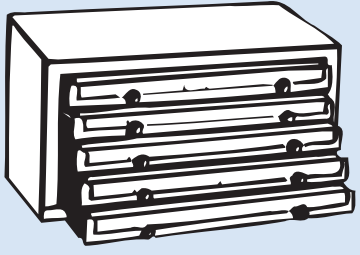
18 PC TAP AND DRILL SETS

TT-71

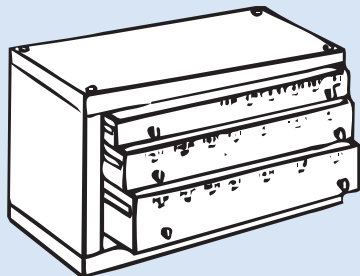
METAL INDEXES

ILLUSTRATION	THREAD FORM	STYLE OF TAPS	CHAMFER	ITEM NO.	PRICE EACH
	Coarse	HSS Spiral Point Tap	Plug	TDS-SPT-18C	100.72
	Fine	HSS Spiral Point Tap	Plug	TDS-SPT-18F	102.62
	Metric	HSS Spiral Point Tap	Plug	TDS-SPTM-18M	134.24
	Coarse	TiN Coated Spiral Point Tap	Plug	TDS-SPTT-18C	202.36
	Coarse	HSS Standard Hand Tap	Plug	TDS-SHT-18C	93.66
	Fine	HSS Standard Hand Tap	Plug	TDS-SHT-18F	95.56
	Metric	HSS Standard Hand Tap	Plug	TDS-SHTM-18M	110.90
	Coarse	TiN Coated Std. Hand Tap	Plug	TDS-SHTT-18C	189.10
	SIZES OF COARSE TAPS AND DRILLS IN 18 PC SETS				
	TAPS - #6-32, #8-32, #10-24, #10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 (COARSE) DRILLS - #36, #29, #25, #21, #7, "F", 5/16, "U", 27/64				
	SIZES OF FINE TAPS AND DRILLS IN 18 PC SETS				
	TAPS - #6-40, #8-36, #10-24, #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 (FINE) DRILLS - #33, #29, #25, #21, #3, "I", "Q", 25/64, 29/64				
	SIZES OF METRIC TAPS AND DRILLS IN 18 PC SETS				
	TAPS - M2.5x.45, M3.0x.50, M3.5x.60, M4.0x.70, M5.0x.80, M6.0x1.00, M8.0x1.25, M10.0x1.50, M12.0x1.75 DRILLS - M2.05, M2.50, M2.90, M3.30, M4.20, M5.00, M6.70, M8.50, M10.20 (METRIC)				

TAP AND DRILL DISPENSER

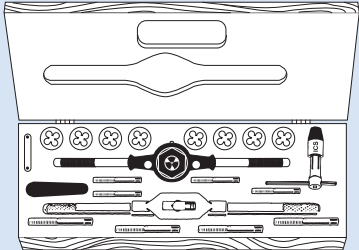
ILLUSTRATION	ITEM TYPE	ITEM NO.	EACH
 Size: 7-3/8 x 7-3/4 x 14-5/8	Dispenser Only (Wt. 10-1/2 lbs.)	D-TD-336	102.90
	DISPENSER WILL HOLD 12 EACH OF FOLLOWING		
	TAPS - #6-32, #8-32, #10-24, #10-32, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 DRILLS - #36, #29, #25, #21, #7, #3, "F", "I", 5/16, "Q", "U", 25/64, 27/64, 29/64		

TAP DISPENSERS

ILLUSTRATION	CAPACITY	ITEM NO.	EACH
 Size: 7-3/8 x 7-3/4 x 14-5/8	Holds fractional sizes 1/4-20 to 1-14 (Wt. 10-1/2 lbs.)	TD-FRACT	106.42
	Holds machine screw sizes 2-56 to 12-28 (Wt. 13 lbs.)	TD-MACH	131.62
	Holds metric sizes M3 to M24 (Wt. 10-1/2 lbs.)	TD-MM	106.42
	Note: Dispenser will hold up to 12 each of every size.		

21 PC TAP AND ROUND ADJUSTABLE DIE SETS

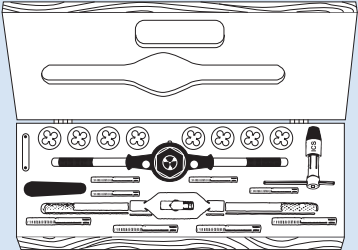
WOODEN CASES

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	21 PC Tap and 1-1/2" Round Adjustable Die Set. Each set contains one Plug Tap and Round Adjustable Die in NC or NF Thread Form. Sizes are listed below. Set also includes 5 threading tools.	HSS	Right Hand	Coarse	TRDS-SHT-21C	530.32
		HSS	Right Hand	Fine	TRDS-SHT-21F	530.32
		HSS	Left Hand	Coarse	TRDS-SHTL-21C	558.14
		HSS	Left Hand	Fine	TRDS-SHTL-21F	558.14
		TiN *	Right Hand	Coarse	TRDS-SHTT-21C	606.32
		TiN *	Right Hand	Fine	TRDS-SHTT-21F	606.32
SIZES OF TAPS AND ROUND DIES IN SET						
NC (Coarse) - 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10						
NF (Fine) - 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16						
* Only taps are TiN Coated in set.						
THREADING TOOLS IN SET						
Adjustable Die Stock - 1-1/2" round			T-Handle Tap Wrench - 1/4 to 1/2			
Adjustable Tap Wrench - 1/4 to 1			#5 Screwdriver			
Screw Pitch Gauge - Fractional						

Sizes
1/4 to 3/4

21 PC METRIC TAP AND ROUND ADJUSTABLE DIE SET

WOODEN CASES

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	21 PC Tap and 1-1/2" Metric Round Adjustable Die Set. Each set contains one Plug Tap and Round Adjustable Die. Sizes are listed below. Set also includes 5 threading tools.	HSS	Right Hand	Metric Coarse	TRDS-SHTM-21C	582.10
	SIZES OF TAPS AND ROUND DIES IN SET					
	NC (Coarse) - M6.0 x 1.0, M8.0 x 1.25, M10.0 x 1.5, M12.0 x 1.75, M14.0 x 2.0, M16.0 x 2.0, M18.0 x 2.5, M20.0 x 2.50					
	THREADING TOOLS IN SET					
	Adjustable Die Stock - 1-1/2" round Adjustable Tap Wrench - M6 to M24 Screw Pitch Gauge - Metric			T-Handle Tap Wrench - M6 to M12 #5 Screwdriver		
Sizes M6 to M20						

NOTE: Special boxed sets can be made to your requirements.

THREAD RESTORING FILES

ICS USA

SPECIAL PURPOSE

PRECISION CUT



Thread Restoring Files are designed to restore damaged external and internal threads of any diameter with one tool. They can be used on right or left hand threads or even be used as a thread gauge.

THREAD TYPE	LENGTH x SIZE	THREADS	ITEM NO.	PRICE
Regular	9-1/4 x 3/8	11, 12, 13, 14, 16, 18, 20, 24	TRF-R	50.86
Extra Fine/Coarse	9-1/4 x 3/8	9, 10, 12, 16, 20, 27, 28, 32	TRF-X	50.86
Metric	9-1/4 x 3/8	.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00	TRF-M	50.86
Pipe	9-1/4 x 3/8	8, 10, 11-1/2, 14, 16, 18, 24, 27	TRF-P	50.86

54 PC AUTOMOTIVE RETHREADING TAP & DIE SET

TT-73

PLASTIC CASES

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
 54 PC AUTOMOTIVE RETHREADING TAP & DIE SET 1/4 to 5/8 M6 to M14	Each set contains one each NC & NF fractional & metric automotive rethreading taps and hex dies. Set also includes 3 thread restoring files.	Right Hand	NC & NF	ARTDS-54	123.90
	SIZES OF AUTOMOTIVE RETHREADING TAPS IN SET				
	NC-USS (Coarse) - 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12				
	NF-SAE (Fine) - 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18				
	METRIC - 6x1.0, 8x1.25, 8x1.50, 10x1.00, 10x1.25, 10x1.50, 11x1.50, 12x1.25, 12x1.50, 12x1.75, 14x1.50				
	SIZES OF AUTOMOTIVE RETHREADING DIES IN SET				
	NC-USS (Coarse) - 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11				
	NF-SAE (Fine) - 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/3-20, 9/16-18, 5/8-18				
	METRIC - 6x1.00, 6x1.25, 7x1.00, 8x1.00, 8x1.25, 8x1.50, 10x1.00, 10x1.25, 10x1.50, 11x1.50, 12x1.25, 12x1.50, 12x1.75, 14x1.50				
	THREAD RESTORING FILES IN SET				
	Regular File for - 11, 12, 13, 14, 16, 18, 20, 24 threads per inch				
	Metric File for - .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00 threads per inch				
	Fine/Pipe File for - 8, 9, 10, 11-1/2, 20, 27, 28, 32 threads per inch				

18 PC THREAD RESTORING FILE & AUTOMOTIVE DIE SETS

PLASTIC CASES

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
 18 PC AUTOMOTIVE FILE & AUTOMOTIVE DIE SET	Each set contains one each NC & NF fractional automotive hexagon rethreading dies. Set also includes 2 thread restoring files.	Right Hand Left Hand	NC & NF NC & NF	TRFADS-18 TRFADS-18L	50.40 80.14
	SIZES OF AUTOMOTIVE RETHREADING DIES IN SET				
	NC-USS (Coarse) - 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10				
	NF-SAE (Fine) - 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/3-20, 9/16-18, 5/8-18, 3/4-16				
	THREAD RESTORING FILES IN SET				
	Regular File for - 11, 12, 13, 14, 16, 18, 20, 24 threads per inch				
	Extra Fine/Coarse File for - 9, 10, 12, 16, 20, 27, 28, 32 threads per inch				
	AVAILABLE IN RIGHT OR LEFT HAND THREAD				

13 PC METRIC THREAD RESTORING FILE & AUTOMOTIVE DIE SET

PLASTIC CASES

ILLUSTRATION	DESCRIPTION	CUT	THREAD TYPE	ITEM NO.	PRICE
 13 PC AUTOMOTIVE FILE & AUTOMOTIVE DIE SET	Each set contains one each metric automotive hexagon rethreading dies and one each thread restoring file.	Right Hand	Metric	TRFADS-13M	37.28
	SIZES OF AUTOMOTIVE RETHREADING DIES IN SET				
	METRIC - 6x1.0, 6x1.25, 8x1.00, 8x1.25, 8x1.50, 10x1.00, 10x1.25, 10x1.50, 12x1.25, 12x1.50, 14x1.25, 14x1.50				
	THREAD RESTORING FILES IN SET				
	Metric File for - .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00 threads per inch				

30 PC MINIATURE TAP AND ROUND DIE SET**PLASTIC CASE**

30 piece High Speed Steel Machine Screw Size Miniature Tap and Die Sets are designed to be a professional general purpose tap and die set with all the most popular tap and die machine screw sizes (#0 to #4-40) for use by camera repair shops, clock repair shops, model builders, jewelry manufacturers, business machine repair, electronic equipment, mold and die makers, medical equipment repair, fishing lure manufacturers, and tongue and body piercing. Plastic case has individual compartments for tap and die storage and easy access.

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
30 PC MINIATURE MACHINE SCREW SIZE TAP AND ROUND DIE SET 	Each set contains 2 plug taps and 1 round die for every size. Set also includes multi-size tap and die holder.	HSS	Right Hand	NC, NF UM	MTRDS-30	40.96
	SIZES OF TAPS AND ROUND DIES IN SET					
	NC (Coarse)	#0-80, #1-64, #2-56, #3-48, #4-40				
	NF (Fine)	#0-90, #1-72, #2-64, #3-56				
	TAP AND ROUND DIE HOLDER IN SET					
	Multi-Size Tap and Die Holder holds 5/8 or 7/16 round dies and has two collet guides for holding taps. Both taps and dies lock into position with one screw.					

HIGH SPEED STEEL

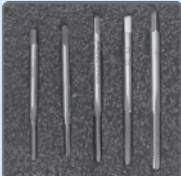
30 PC METRIC MINIATURE TAP AND ROUND DIE SET**PLASTIC CASE**

30 piece High Speed Steel Metric Size Miniature Tap and Die Sets are designed to be a professional general purpose tap and die set with all the most popular tap and die metric sizes (M1.00 to M2.50) for use by camera repair shops, clock repair shops, model builders, jewelry manufacturers, business machine repair, electronic equipment, mold and die makers, medical equipment repair, fishing lure manufacturers, and tongue and body piercing. Plastic case has individual compartments for tap and die storage and easy access.

ILLUSTRATION	DESCRIPTION	STEEL SPEC	CUT	THREAD TYPE	ITEM NO.	PRICE
	30 PC MINIATURE METRIC TAP AND ROUND DIE SET	Each set contains 2 plug taps and 1 round die for every size. Set also includes multi-size tap and die holder.	HSS	Right Hand	NC, NF UM	MTRDS-30M 40.96
	SIZES OF TAPS AND ROUND DIES IN SET					
	METRIC SIZES	M1.0x0.25, M1.1x0.25, M1.2x0.25, M1.4x0.30, M1.6x0.35 M1.8x0.35, M2.0x0.40, M2.2x0.45, M2.5x0.45				
	TAP AND ROUND DIE HOLDER IN SET					
	Multi-Size Tap and Die Holder holds 5/8 or 7/16 round dies and has two collet guides for holding taps. Both taps and dies lock into position with one screw.					

5 PC MODEL AIRPLANE TAP SETS**PLASTIC CASE**

Model Airplane Tap Sets were designed for the model airplane enthusiast. Available in High Speed Steel or Carbon Steel, each set contains the most popular tap sizes (#2-56 to #8-32) that model airplane builders use. Plastic case has individual compartments for tap storage and easy access.

ILLUSTRATION	DESCRIPTION	STEEL SPEC	THREAD TYPE	ITEM NO.	PRICE
	Each set contains one each of listed NC (Coarse) tap sizes.	Carbon Steel High Speed Steel	NC NC	MATS-CS-5 MATS-HS-5	22.06 30.46
	SIZES OF TAPS IN SET				
	NC (Coarse) #2-56, #3-48, #4-40, #6-32, #8-32				

8 PC RATCHETING PIPE THREADER SET

PLASTIC CASE

The 8 Piece Ratcheting Pipe Threader Set was designed to cut precision NPT pipe threads measuring 3/8", 1/2", 3/4", 1", or 1-1/4". It is a compact and sturdy set complete with unscrewable ratchet handle and extension. Die heads snap in and can be removed by pulling the ratchet knob out to position. Ratchet knob can be set for forward or reverse direction. Tools in set are made of alloy steel and malleable iron to withstand severe usage. Set comes complete with heavy duty plastic case with carrying handle for easy transportation and storage.

ILLUSTRATION	THREADING TOOLS IN SET	THREAD FORM	ITEM NO.	PRICE
8 PC RATCHETING PIPE THREADER SET 	Die Heads 3/8, 1/2, 3/4, 1, & 1-1/4 Ratchet Head (Exposed Style) Ratchet Handle Ratchet Handle Extension	NPT	RPTS-8	96.92

7 PC RATCHETING PIPE THREADER SET

PLASTIC CASE

The 7 Piece Ratcheting Pipe Threader Set was designed to cut large precision NPT pipe threads measuring 1-1/4", 1-1/2" and 2". It is a compact and sturdy set complete with unscrewable ratchet handle and extension. Die heads snap in and can be removed by pulling the ratchet knob out to position. Ratchet knob can be set for forward or reverse direction. Tools in set are made of alloy steel and malleable iron to withstand severe usage. Set comes complete with heavy duty plastic case with carrying handle for easy transportation and storage.

ILLUSTRATION	THREADING TOOLS IN SET	THREAD FORM	ITEM NO.	PRICE
7 PC RATCHETING PIPE THREADER SET 	Die Heads 1-1/4, 1-1/2, & 2 Ratchet Head (Exposed Style) Ratchet Handle Ratchet Handle Extensions (2)	NPT	RPTS-7	101.80

5 PC RATCHETING TAP AND DIE TOOL SET

STEEL CASE

The 5 Piece Ratcheting Tap and Die Tool Sets are designed to be a professional general purpose tap and die tool set for mechanics and DIYers for maintenance on domestic cars and motorcycles. Each set contains the most popular tap sockets (#6 to 1/2") and 1" hex die adapter with ratcheting handle. Steel case has individual compartments for ratcheting tap and die tools storage and easy access.

ILLUSTRATION	RATCHETING TOOLS IN SET	ITEM NO.	PRICE
5 PC RATCHETING TAP AND DIE TOOL SET 	Adjustable Tap Socket #6 - 1/4 Adjustable Tap Socket 1/4 - 1/2 1" Hex Die Socket Adapter Ratcheting Handle Sliding Handle for Tap Sockets	RTDTS-5	52.48

ADJUSTABLE TAP AND REAMER WRENCHES

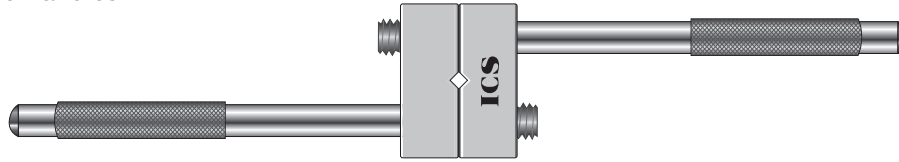
TT-77

ICS USA

GENERAL PURPOSE

OFFSET HANDLE

Offset Handle Adjustable Tap and Reamer Wrenches are made for general purpose work. They adjust by evenly turning two knurled handles.



OVERALL LENGTH	CAPACITY					ITEM NO.	PRICE
	SCREW EXTRACTOR	HAND TAPS	MACHINE TAPS	PIPE TAPS	HAND REAMERS		
7	#1 - 5	1/16 - 1/2	0 - 14	1/8	11/64 - 7/16	TWOH5	11.32

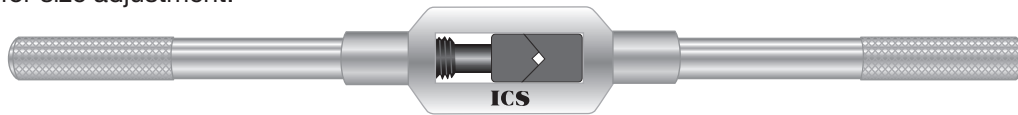
ADJUSTABLE TAP AND REAMER WRENCHES

ICS USA

GENERAL PURPOSE

STRAIGHT TYPE

Solid Die Cast Adjustable Tap and Reamer Wrenches are solidly built for a lifetime of industrial service under normal conditions. Size 0 to 7 wrenches have solid handles, one of which is forged integral with the body. The other handles turn for size adjustment. Size 7-1/2 to 8 wrenches have solid handles which are removable. One handle turns for size adjustment.



OVERALL LENGTH	CAPACITY						ITEM NO.	PRICE
	SCREW EXTRACTOR	HAND TAPS	MACHINE TAPS	PIPE TAPS	HAND REAMERS	ADJUSTABLE HAND REAMERS		
6-1/2	#1-3	1/16 - 1/4	0 - 14	-	1/8 - 21/64	8A - A	TW-0	9.18
9	#4	1/16 - 3/8	0 - 14	-	1/8 - 25/64	8A - C	TW-4	12.84
10	#5	5/32 - 1/2	7 - 14	1/8 - 1/4	11/64 - 7/16	8A - F	TW-5	15.52
13-1/2	#6	5/32 - 3/4	7 - 14	1/8 - 1/4	11/64 - 41/64	8A - G	TW-6	20.00
17-1/4	#7	1/4 - 1	-	1/8 - 1/2	9/32 - 23/32	3A - J	TW-6.5	28.36
19	#7	1/4 - 1-1/8	-	1/8 - 3/4	9/32 - 29/32	3A - K	TW-7	35.18
31	#8	1/2 - 1-3/8	-	1/8 - 1	3/4 - 1-5/32	B - L	TW-7.5	96.44
40	#10	3/4 - 1-5/8	-	3/8 - 1-1/4	37/64 - 1-11/32	C - M	TW-8	147.00
54	#11-12	1 - 2-1/2	-	3/4 - 2	7/8 - 2-1/8	J - O	TW-9.5	177.94

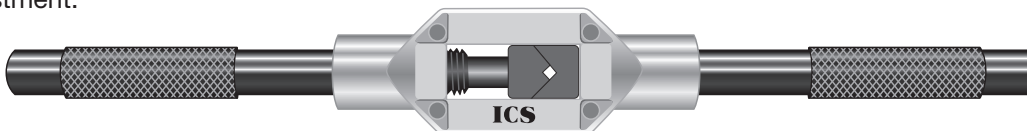
ADJUSTABLE TAP AND REAMER WRENCHES

ICS USA

HEAVY DUTY

STRAIGHT TYPE

Heavy Duty Solid Die Cast Adjustable Tap and Reamer Wrenches are built for a lifetime of industrial service even under hard use. All sizes have solid handles, one of which is forged integral with the body. The other handle turns for size adjustment.



OVERALL LENGTH	CAPACITY					ITEM NO.	PRICE
	SCREW EXTRACTOR	HAND TAPS	MACHINE TAPS	PIPE TAPS	HAND REAMERS		
9	#5	5/32 - 1/2	4 - 14	1/8	11/64 - 7/16	TWHD5	17.16
15	#6	1/4 - 3/4	-	1/8 - 1/4	11/16 - 41/64	TWHD6	29.40
19	#7	1/2 - 1-1/8	-	1/8 - 3/4	3/4 - 29/32	TWHD7	52.30

T-HANDLE TAP WRENCHES

ICS

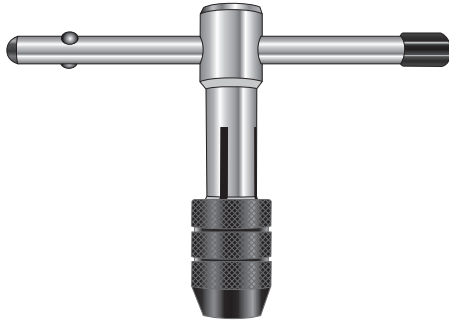
USA

GENERAL PURPOSE

FIXED JAWS

Plain Type

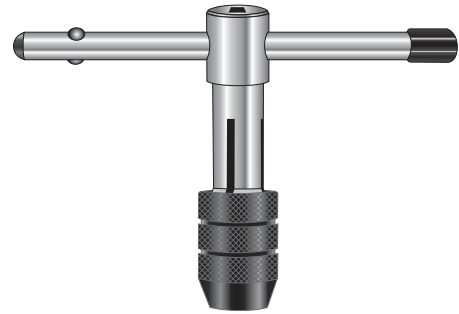
T-Handle Tap Wrenches are designed for hand tapping. They also can be used with reamers, drills, and screw extractors. T-Handle may be slipped from side to side for complete turns in close quarters or be extended full length in either direction for more leverage.



TAP CAPACITY	ITEM NO.	PRICE
#0 - 1/4	TTW-1	5.22
#12 - 5/16	TTW-2	-
1/4 - 1/2	TTW-3	9.14

3/8" Square Drive Type

T-Handle Tap Wrenches with 3/8" square drive are designed with a removable handle to insert a 3/8" ratchet or extension when desired. All other features are same as regular T-Handle Tap Wrenches.



TAP CAPACITY	ITEM NO.	PRICE
1/4 - 1/2	TTWSD3	13.58

T-HANDLE TAP WRENCHES

ICS

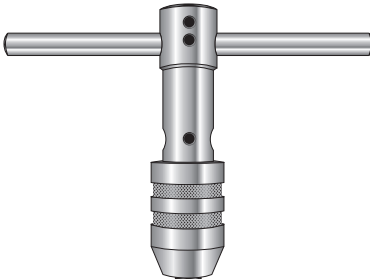
USA

HEAVY DUTY

FIXED JAWS

Piloted Spindle

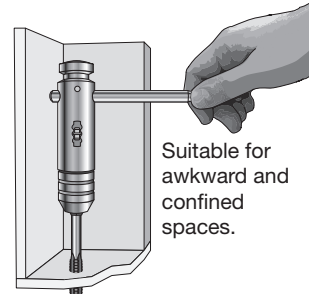
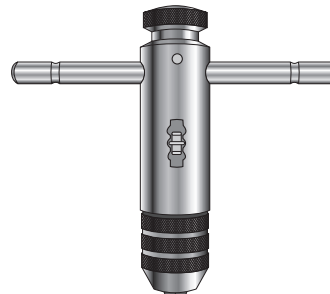
T-Handle Tap Wrenches with a piloted spindle are designed for threading a drilled hole manually on a drill press or lathe, without moving the work piece from set-up.



TAP CAPACITY	ITEM NO.	PRICE
#0 - 1/4	TTWP-1	16.24
1/4 - 1/2	TTWP-2	23.72
1/2 - 3/4	TTWP-3	54.66

Ratchet Type

T-Handle Tap Wrenches with a ratchet and slip handle are designed with a selector switch for left, right, or rigid operation.



Suitable for awkward and confined spaces.

TAP CAPACITY	ITEM NO.	PRICE
#0 - #8	TTWR-1	18.32
#8 - 1/4	TTWR-2	19.98
1/4 - 1/2	TTWR-3	24.28

DIE STOCKS

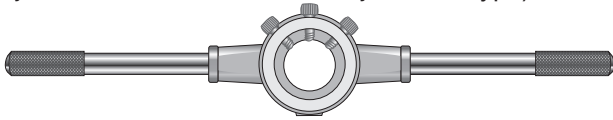
TT-79

ICS USA

HEAVY DUTY

THREE SCREW TYPE

'Die Cast Steel' and 'Heavy Duty Steel' Three-Screw Type Solid Die Stocks are designed to hold round adjustable dies of any construction. (Open style adjustment or internal screw adjustment type).



SIZE OF DIE	LENGTH	ITEM NO.	PRICE
DIE CAST STEEL			
13/16	7	DSH052	7.88
1	8	DSH100	7.88
1-1/2	12-1/2	DSH132	14.56
2	15	DSH200	26.82
2-1/2	20	DSH232	48.20
3	22	DSH300	87.68
HEAVY DUTY STEEL			
4	29	DSH400	152.26
5	33	DSH500	288.76

GENERAL PURPOSE

Solid Die Cast Stocks are designed to hold 1" hexagon dies or 1" round dies. Dies easily lock in position with one set screw. Precision molded for accurate threading.



SIZE AND TYPE OF DIE	LENGTH	ITEM NO.	PRICE
5/8" Hex	5	DSE040	8.40
1" Hex or 1" Round	9	DSE100	9.50

Combination Adjustable Guide Solid Die Cast Stocks are designed to hold hexagon or round dies. Three jaw, self-centering adjustable guides provide easy starting and accurate threading.

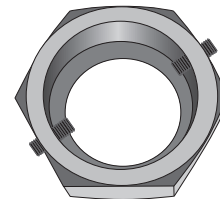


SIZE AND TYPE OF DIE	LENGTH	ITEM NO.	PRICE
1" Hex or 1" Rd	9-7/8	DSAG100	17.20
1-1/2" Hex or 1-7/16" Rd	14-1/8	DSAG132	31.12
1-7/8" Hex	23	DSAG156	54.84

HEXAGON DIE ADAPTERS

SPECIAL PURPOSE

Hexagon Die Adapters convert round dies to hexagon dies when space limitations rule out use of die stocks. Round dies easily lock in position with two set screws.

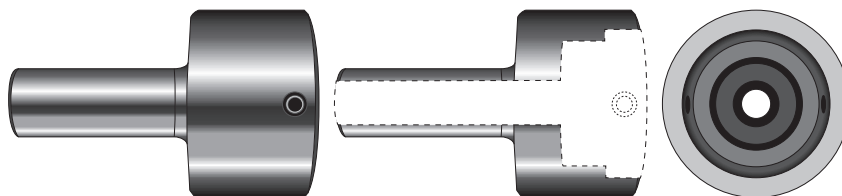


SIZE OF DIE	LENGTH	ITEM NO.	PRICE
13/16	1-1/2	HDA052	11.00
1	1-1/2	HDA100	11.06
1-1/2	2	HDA132	13.52
2	2-1/2	HDA200	19.82

FLOATING ROUND DIE HOLDERS

SPECIAL PURPOSE

Floating Round Die Holders are designed for short or medium run threading of shafts on lathes, milling machines, and tapping heads. Main body is counterbored for chip clearance. Through hole design can be used to rethread studs. Die holders must be indicated in that they do not self center and are not designed for CNC. They are also known as Round Die Holders.

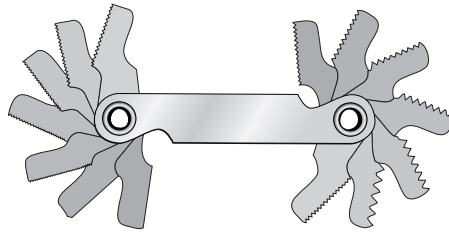


SIZE OF DIE	SHANK DIE	OVERALL LENGTH	THREAD RANGE	THROUGH HOLE IN SHANK	ITEM NO.	PRICE
13/16	1/2	3	#0 to 3/8	25/64	FDH052	28.52
1	1/2	3	#0 to 3/8	25/64	FDH100	28.52
1-1/2	3/4	3	1/4 to 3/4	37/64	FDH132	39.60

SCREW PITCH GAUGES

ICS **USA**
SPECIAL PURPOSE

Screw Pitch Gauges quickly identify and measure V, Unified, American National 60° threads and Metric threads. Blades are clearly marked with thread size.

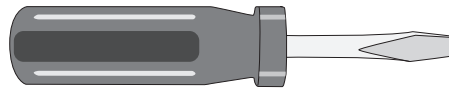


GAUGE RANGE	ITEM NO.	PRICE
9 to 40 Fractional	SPG-F	7.92
.45 to 2.5M Metric	SPG-M	7.92

DIE STOCK SCREWDRIVER

ICS **USA**
SPECIAL PURPOSE
PRECISION GROUND

Die Stock Screwdriver is designed for adjusting set screws on Die Stocks and Round Adjustable Dies. They have a plastic handle with a high carbon blade and are used in ICS tap and drill sets.



BLADE SIZE	ITEM NO.	PRICE
9 to 40 Fractional	S-DS-008X216	2.10

TAP GUIDE

ICS **USA**
SPECIAL PURPOSE
PRECISION GROUND

A Tap Guide is designed to start every tap straight in the hole. It has a 3/16" diameter reversible tension pin for male or female hole centering of tap. 1/2" diameter shank is hardened and knurled for easy handling. Tension spring is adjustable.

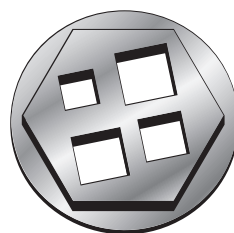


SHANK	TENSION PIN	ITEM NO.	PRICE
1/2	3/16	TG032	9.66

HEX DIE STOCK TAP ADAPTER

ICS **USA**
SPECIAL PURPOSE
PRECISION GROUND

Hex Die Stock Tap Adapter is designed to drive 1/4" - 1/2" hand taps with 1" hex die stocks. Adapter has 4 square size holes to accept end of 1/4" to 1/2" taps.



TOP VIEW



SIDE VIEW

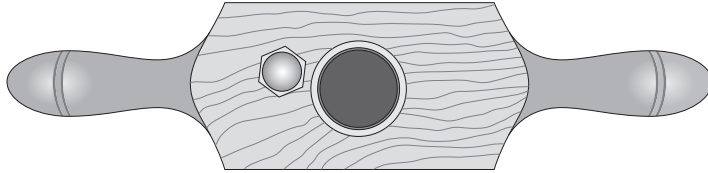
ITEM NO.	HEX DIAMETER ACROSS FLATS	TAP CAPACITY	PRICE
HDSTA032	1"	1/4 - 1/2	5.78

THREAD BOX AND TAP SET

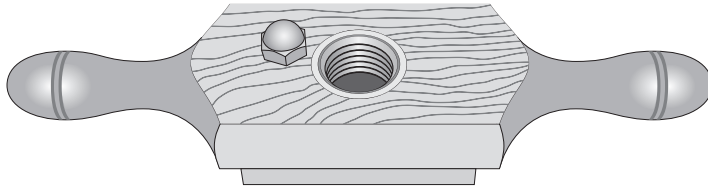
ICS USA
SPECIAL PURPOSE

Thread Box and Tap Sets are designed to make sure-holding threads on wood dowels and matching thread hole in wood. Handy set for woodworking and maintenance departments. Each wood threading set contains thread box and matching tap. Handy for threading, rethreading or tapping many wood furnishings. Perfect for the DIYer.

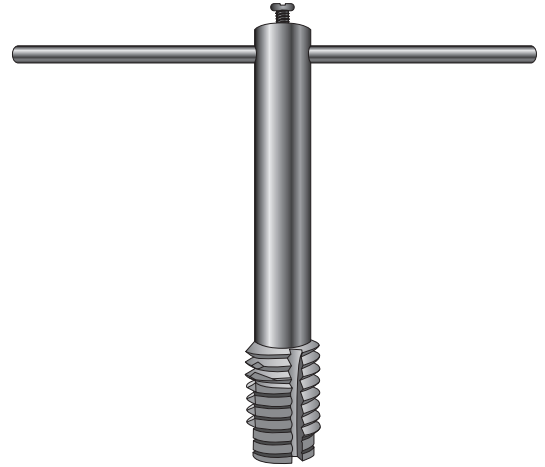
Thread Box - Top View



Thread Box - 3/4 Profile View

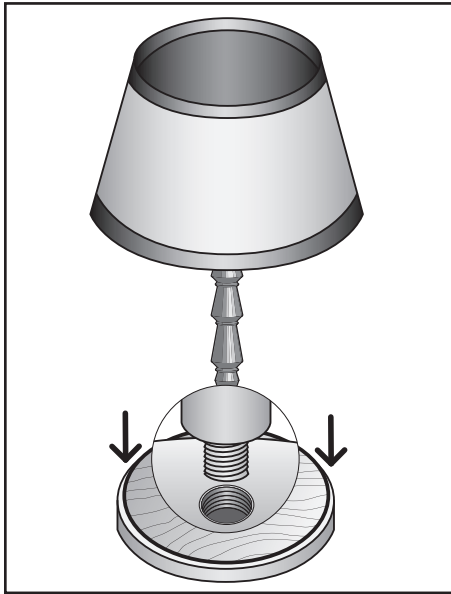


Top

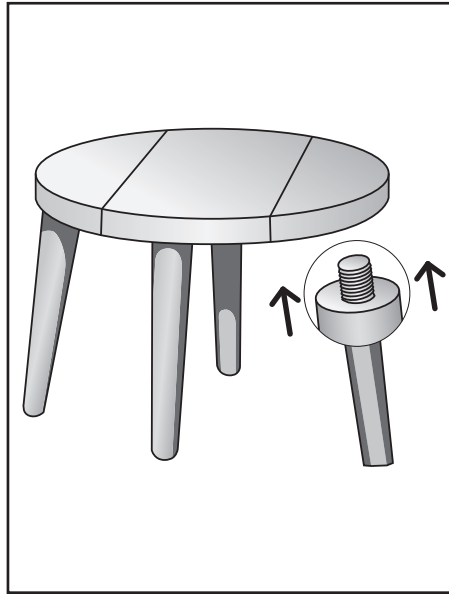


FOR USE WITH	SET CONTAINS	ITEM NO.	PRICE
1/2" Dowel Rod	1 each: tap and thread box	WTS032	48.30
3/4" Dowel Rod	1 each: tap and thread box	WTS048	51.82
1" Dowel Rod	1 each: tap and thread box	WTS100	55.24

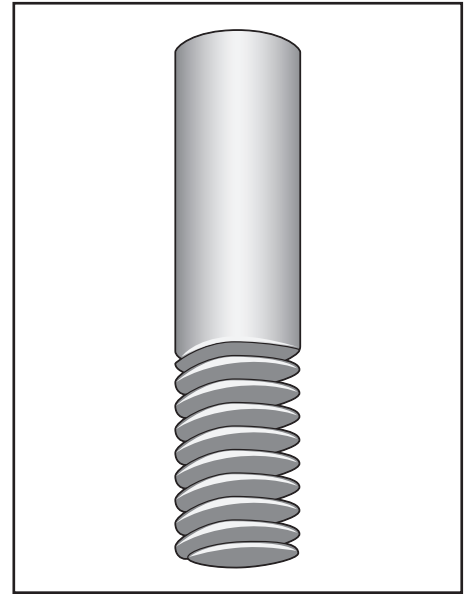
EXAMPLES OF USE



1. Threading and/or tapping wooden lamps.



2. Threading and/or tapping stools and chairs.



3. Threading or rethreading broomstick/mop handles.

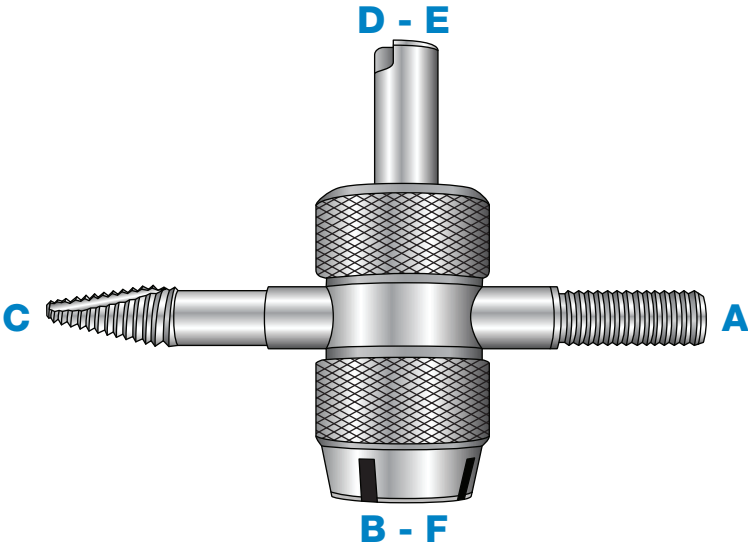
TOOL STEEL

COMBINATION VALVE CORE TOOL

ICS

WIS

SPECIAL PURPOSE



The Combination Valve Core Tool was designed to be a 6 in 1 valve tool.

- USES
- (A) Rethreading inside of a valve stem
 - (B) Rethreading outside of a valve stem
 - (C) A screw extractor to remove valve cores even if shoulders are broken
 - (D) Removal of valve cores
 - (E) Insertion of valve cores
 - (F) For use as a T-handle to pull tire valve into rim hole

A handy tool for any mechanic. It is made of tool steel for long life and durability.

ITEM NO.	DESCRIPTION	PRICE
CVCT	6 in 1 Combination Valve Core Tool	3.14

MILLING TOOLS

ADAPTERS

Nmtb To Morse Taper Milling Machine Adapters	38
Nmtb To R-8 Milling Machine Adapters	38
R-8 To Morse Taper Milling Machine Adapters	38

CUTTERS

Concave & Convex (Shank)	31
T-Slot	
Cobalt	32
Cobalt (Roughing)	32
High Speed Steel	32
Woodruff Key Seat (Shank)	
Staggered Teeth	33
Straight Teeth	34
Single Angle (Shank)	35
Double Angle (Shank)	35
Dovetail (Shank)	
Cobalt	36
High Speed Steel	36

DRILL MILLS

Solid Carbide 60° & 90°	
2 Flute	39
4 Flute	39

END MILLS - DOUBLE END

High Speed Steel

2 Flute	2
2 Flute Ball Nose	3
2 Flute - Metric	4
4 Flute	8
4 Flute - Metric (Non-Center Cutting)	12
4 Flute - Metric (Center Cutting)	13

Miniature

2 Flute - Regular Length	16
2 Flute - Long Length	16
4 Flute Ball Nose - Regular Length	15

Super Cobalt

2 Flute	17
4 Flute	18

Solid Carbide

2 Flute	21
2 Flute Ball Nose	21
2 Flute (Stub)	22
4 Flute	23
4 Flute Ball Nose	23
4 Flute (Stub)	24
4 Flute Ball Nose (Stub)	24
2 Flute (Stub) - Metric	25
2 Flute Ball Nose (Stub) - Metric	25
4 Flute (Stub) - Metric	26
4 Flute Ball Nose (Stub) - Metric	26
2 Flute (Mini-Stub)	29
4 Flute (Mini-Stub)	29

END MILLS - SINGLE END

High Speed Steel

2 Flute	1
2 Flute - Keyway Tolerance	1
2 Long Flute	2
2 Long Flute - for Aluminum	10
2 Extra Long Flute - for Aluminum	10
2 Flute (Extended Length)	2

2 Flute Ball Nose	3
2 Flute Ball Nose (Extended Length)	3
2 Flute Ball Nose - for Aluminum	10
2 Flute Ball Nose - Long Length - for Aluminum	10
2 Flute - Metric	4
3 Flute - Regular Length	14
3 Flute - Long Length	14
3 Flute - Regular Length - for Aluminum	11
3 Flute - Extra Long Length - for Aluminum	11
4, 6, & 8 Flute	5
4, 6, & 8 Long Flute	6
4 & 6 Extra Long Flute	6
4 Flute	7
4 Long Flute	7
4 Extra Long Flute	7
4 Flute Ball Nose	8
4 Long Flute Ball Nose	8
4 Flute - Metric (Non-Center Cutting)	11
4 Flute - Metric (Center Cutting)	12
Corner Rounding	31

Miniature

2 Flute - Regular Length	15
4 Flute - Regular Length	15

Super Cobalt

2 Flute	17
2 Flute Ball Nose	17
4 Flute Ball Nose	18
4 & 6 Flute	18
4 & 6 Long Flute	18
Roughing	19

Solid Carbide

2 Flute	21
2 Flute Ball Nose	21
2 Flute (Long)	22
2 Flute (Extra Long)	22
4 Flute	23
4 Flute Ball Nose	23
4 Flute (Long)	24
4 Flute (Extra Long)	24
2 Flute - Metric	25
2 Flute Ball Nose - Metric	25
4 Flute - Metric	26
4 Flute Ball Nose - Metric	26
3 Flute	27
3 Flute Ball Nose	27

Corner Radius

2 Flute	30
4 Flute	30

Mini-Decimal Size

2 Flute	29

Mini-Stub Length

4 Flute	29

Roughing	20

Tapered Flute

3 Flute	28
3 Flute Ball Nose	28

HOLDERS

End Mill (NMTB) Holders	37
End Mill (R-8) Holders	37

HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2R	EM-2T
1/8	3/8	3/8	2-5/16	10.88	-
5/32	3/8	3/8	2-5/16	10.88	-
11/64	3/8	7/16	2-5/16	-	-
3/16	3/8	7/16	2-5/16	10.88	-
13/64	3/8	7/16	2-5/16	-	-
7/32	3/8	1/2	2-5/16	10.88	-
15/64	3/8	1/2	2-5/16	-	-
1/4	3/8	1/2	2-5/16	10.88	-
17/64	3/8	9/16	2-5/16	-	-
9/32	3/8	1/2	2-5/16	12.10	-
5/16	3/8	9/16	2-5/16	12.10	-
21/64	3/8	9/16	2-5/16	19.36	-
11/32	3/8	9/16	2-5/16	12.10	-
3/8	3/8	9/16	2-5/16	12.10	-
25/64	3/8	13/16	2-1/2	-	-
13/32	3/8	13/16	2-1/2	15.30	CALL FOR PRICE
7/16	3/8	13/16	2-1/2	15.30	-
29/64	3/8	13/16	2-1/2	30.10	-
15/32	3/8	13/16	2-1/2	15.30	-
31/64	3/8	13/16	2-1/2	30.10	-
1/2	3/8	13/16	2-1/2	15.30	-
1/2	1/2	1	3	15.30	-
33/64	1/2	1	3	28.50	-
17/32	1/2	1-1/8	3-1/8	26.98	-
35/64	1/2	1-1/8	3-1/8	36.84	-
9/16	1/2	1-1/8	3-1/8	20.72	-
37/64	1/2	1-1/8	3-1/8	36.60	-
19/32	1/2	1-1/8	3-1/8	24.88	-
5/8	1/2	1-1/8	3-1/8	22.70	-
5/8	5/8	1-5/16	3-7/16	22.70	-
21/32	5/8	1-5/16	3-7/16	31.92	-
11/16	1/2	1-5/16	3-5/16	24.88	-
11/16	5/8	1-5/16	3-7/16	24.88	-
3/4	1/2	1-5/16	3-5/16	26.10	-
3/4	5/8	1-5/16	3-7/16	26.10	-
3/4	3/4	1-5/16	3-9/16	26.10	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2R	EM-2T
25/32	3/4	1-1/2	3-3/4	41.96	-
13/16	1/2	1-1/2	3-1/2	32.56	-
13/16	5/8	1-1/2	3-5/8	32.56	-
7/8	1/2	1-1/2	3-1/2	34.72	-
7/8	5/8	1-1/2	3-5/8	34.72	-
7/8	3/4	1-1/2	3-3/4	34.72	-
7/8	7/8	1-1/2	3-3/4	34.72	-
15/16	1/2	1-1/2	3-1/2	40.18	-
15/16	5/8	1-1/2	3-5/8	40.18	-
15/16	3/4	1-1/2	3-3/4	40.18	-
1	1/2	1-1/2	3-1/2	41.18	-
1	5/8	1-1/2	3-5/8	41.18	-
1	3/4	1-1/2	3-3/4	41.18	-
1	7/8	1-1/2	3-1/2	41.18	-
1	1	1-5/8	4-1/8	41.18	-
1-1/16	3/4	1-1/2	3-3/4	71.60	CALL FOR PRICE
1-1/8	3/4	1-5/8	3-7/8	60.60	-
1-1/8	7/8	1-5/8	3-7/8	60.60	-
1-1/8	1	1-5/8	4-1/8	60.60	-
1-3/16	1	1-5/8	4-1/8	70.00	-
1-1/4	3/4	1-5/8	3-7/8	67.06	-
1-1/4	7/8	1-5/8	3-7/8	67.06	-
1-1/4	1	1-5/8	4-1/8	67.06	-
1-1/4	1-1/4	1-5/8	3-7/8	67.06	-
1-3/8	3/4	1-5/8	3-7/8	72.48	-
1-3/8	1	1-5/8	4-1/8	72.48	-
1-1/2	3/4	1-5/8	3-7/8	82.06	-
1-1/2	1	1-5/8	4-1/8	82.06	-
1-1/2	1-1/4	1-5/8	4-1/8	82.06	-
1-5/8	3/4	1-5/8	3-7/8	92.92	-
1-5/8	1-1/4	1-5/8	4-1/8	92.92	-
1-3/4	3/4	1-5/8	3-7/8	105.96	-
1-3/4	1-1/4	1-5/8	4-1/8	105.96	-
1-7/8	3/4	1-5/8	3-7/8	113.36	-
1-7/8	1-1/4	1-5/8	4-1/8	113.36	-
2	1-1/4	1-5/8	4-1/8	124.22	-

HIGH SPEED STEEL 2 FLUTE KEYWAY TOLERANCE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

Commonly used to make keyways in rotary shafts, these end mills have a -0.0015" to 0.0000" mill diameter tolerance for creating a precise fit.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE
				HSS
				EM-2K
1/8	3/8	3/8	2-5/16	17.00
3/16	3/8	7/16	2-5/16	18.34
1/4	3/8	1/2	2-5/16	18.34
5/16	3/8	9/16	2-5/16	18.34
11/32	3/8	9/16	2-5/16	18.34
3/8	3/8	9/16	2-5/16	18.34
7/16	3/8	13/16	2-1/2	25.00

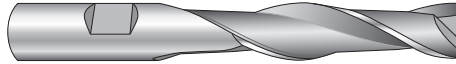
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE
				HSS
				EM-2K
1/2	1/2	1	3	23.88
9/16	1/2	1-1/8	3-1/8	32.00
5/8	5/8	1-5/16	3-7/16	34.00
3/4	3/4	1-5/16	3-9/16	40.00
7/8	7/8	1-1/2	3-3/4	50.00
1	1	1-5/8	4-1/8	62.00

HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG FLUTE

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2L	EM-2LT
5/16	3/8	3/4	3-5/16	23.84	-
3/8	3/8	1-1/2	3-1/4	12.56	-
1/2	1/2	2	4	19.22	CALL FOR PRICE
5/8	5/8	2	4-1/8	28.34	
3/4	3/4	2-1/4	4-1/2	44.14	
7/8	7/8	2-1/2	4-3/4	79.08	
1	1	3	5-1/2	90.46	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2L	EM-2LT
1-1/4	1-1/4	3	5-1/2	90.46	-
1-3/8	1	3	5-1/2	90.46	-
1-1/2	1-1/4	3	5-1/2	112.86	CALL FOR PRICE
1-5/8	1-1/4	3	5-1/2	135.52	
1-3/4	1-1/4	3	5-1/2	141.12	
1-7/8	1-1/4	3	5-1/2	163.86	
2	1-1/4	3	5-1/2	169.30	-



EXTENDED FLUTE

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2XF	EM-2XFT
5/16	3/8	1-3/8	3-1/8	20.54	CALL FOR PRICE
7/8	7/8	3-1/2	6-1/2	53.94	

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2XF	EM-2XFT
1	1	4	6-1/2	79.20	CALL FOR PRICE



EXTENDED LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2X	EM-2XT
1/8	3/8	3/8	2-3/8	23.36	-
3/16	3/8	3/4	2-5/8	20.40	-
1/4	3/8	5/8	3-1/16	14.08	CALL FOR PRICE
9/32	3/8	1-3/8	3-1/8	24.30	
5/16	3/8	3/4	3-5/16	14.08	
11/32	3/8	1-1/2	3-1/4	20.50	
3/8	3/8	3/4	3-5/16	14.08	-

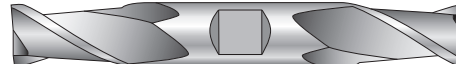
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2X	EM-2XT
1/2	1/2	1	4	21.70	-
9/16	1/2	2-1/2	4-1/2	36.00	-
5/8	5/8	1-3/8	4-5/8	29.36	CALL FOR PRICE
3/4	3/4	1-5/8	5-3/8	37.98	
7/8	7/8	2	6	53.94	
1	1	2-1/2	7-1/4	67.06	-
1-1/4	1-1/4	3	7-1/4	91.92	-

HIGH SPEED STEEL 2 FLUTE DOUBLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2R	DEM-2T
7/64	3/8	3/8	3-1/16	17.48	-
1/8	3/8	3/8	3-1/16	17.48	-
5/32	3/8	7/16	3-1/8	17.48	-
3/16	3/8	7/16	3-1/8	17.48	-
13/64	3/8	1/2	3-1/8	17.48	-
7/32	3/8	1/2	3-1/8	17.48	-
15/64	3/8	1/2	3-1/8	17.48	CALL FOR PRICE
1/4	3/8	1/2	3-1/8	17.48	
17/64	3/8	9/16	3-1/8	20.78	
9/32	3/8	9/16	3-1/8	18.48	
19/64	3/8	9/16	3-1/8	20.78	-
5/16	3/8	9/16	3-1/8	18.48	-
21/64	3/8	9/16	3-1/8	20.78	-
11/32	3/8	9/16	3-1/8	18.48	-
3/8	3/8	9/16	3-1/8	18.48	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2R	DEM-2T
25/64	1/2	13/16	3-3/4	31.76	-
13/32	1/2	13/16	3-3/4	26.10	-
27/64	1/2	13/16	3-3/4	31.76	-
7/16	1/2	13/16	3-3/4	26.10	-
15/32	1/2	13/16	3-3/4	26.10	-
1/2	1/2	13/16	3-3/4	26.10	-
17/32	5/8	1-1/8	4-1/2	44.68	CALL FOR PRICE
9/16	5/8	1-1/8	4-1/2	34.72	
5/8	5/8	1-1/8	4-1/2	34.72	
11/16	3/4	1-5/16	5	43.36	
3/4	3/4	1-5/16	5	43.36	-
13/16	7/8	1-9/16	5-1/2	54.00	-
7/8	7/8	1-9/16	5-1/2	54.00	-
15/16	1	1-5/8	5-7/8	66.04	-
1	1	1-5/8	5-7/8	68.00	-

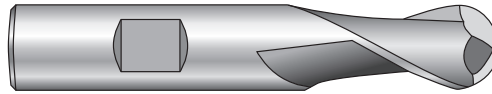
TO ORDER END MILLS: Specify item no., size, & shank dia. Example: EM-2R 1/8 x 3/8

HIGH SPEED STEEL 2 FLUTE BALL NOSE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2B	EM-2BT
1/8	3/8	3/8	2-5/16	17.78	24.12
3/16	3/8	1/2	2-3/8	17.78	24.12
1/4	3/8	5/8	2-7/16	17.78	24.12
5/16	3/8	3/4	2-1/2	19.72	26.06
3/8	3/8	3/4	2-1/2	19.72	26.06
7/16	1/2	1	3	27.86	35.70
1/2	1/2	1	3	27.86	35.70
9/16	1/2	1	3	34.28	42.12

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2B	EM-2BT
5/8	5/8	1-3/8	3-1/2	40.92	52.12
3/4	3/4	1-3/8	3-3/8	44.48	57.74
7/8	7/8	2	4-1/4	51.76	75.10
1	1	2-1/4	4-3/4	68.78	91.72
1-1/8	1	2-1/4	4-3/4	82.18	105.52
1-1/4	1-1/4	2-1/2	5	92.02	121.14
1-1/2	1-1/4	2-1/2	5	103.12	149.78

HIGH SPEED STEEL 2 FLUTE BALL NOSE SINGLE END MILLS (EXTENDED LENGTH)

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2BX	EM-2BXT
1/4	3/8	5/8	3-1/16	28.00	36.24
5/16	3/8	3/4	3-5/16	29.42	37.64
3/8	3/8	3/4	3-5/16	30.46	38.68
1/2	1/2	1	4	40.96	50.86

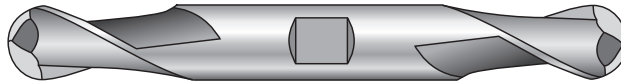
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2BX	EM-2BXT
5/8	5/8	1-3/8	4-5/8	53.20	66.64
3/4	3/4	1-5/8	5-3/8	73.50	85.82
1	1	2-1/2	7-1/4	113.40	146.06
1-1/4	1-1/4	3	7-1/4	208.60	245.94

HIGH SPEED STEEL 2 FLUTE BALL NOSE DOUBLE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2B	DEM-2BT
1/8	3/8	3/8	3-1/16	20.84	32.48
3/16	3/8	7/16	3-1/8	20.84	32.48
1/4	3/8	1/2	3-3/16	20.84	32.48
5/16	3/8	9/16	3-3/16	20.84	32.48
3/8	3/8	9/16	3-3/16	20.84	32.48
7/16	1/2	13/16	3-7/8	31.10	47.90

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2B	DEM-2BT
1/2	1/2	13/16	3-7/8	31.10	47.90
5/8	5/8	1-1/8	4-9/16	52.34	71.76
3/4	3/4	1-5/16	5	65.88	89.22
7/8	7/8	1-9/16	5-1/2	83.24	109.38
1	1	1-5/8	5-7/8	101.58	143.58

TOLERANCES
Flute Dia.: + .000 - .0015"
Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS - METRIC

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EMM-2R	TIN COATED EMM-2T
2.00	3/8	5/16	2-5/16	16.00	21.08
2.50	3/8	5/16	2-5/16	16.00	21.08
3.00	3/8	5/16	2-5/16	16.00	21.08
3.50	3/8	7/16	2-5/16	16.00	21.08
4.00	3/8	7/16	2-5/16	16.00	21.08
4.50	3/8	1/2	2-5/16	16.00	21.08
5.00	3/8	1/2	2-5/16	16.00	21.08
5.50	3/8	1/2	2-5/16	16.00	21.08
6.00	3/8	1/2	2-5/16	16.00	21.08
6.50	3/8	9/16	2-5/16	16.00	21.08
7.00	3/8	9/16	2-5/16	16.00	21.08
7.50	3/8	9/16	2-5/16	16.00	21.08
8.00	3/8	9/16	2-5/16	16.00	21.08
8.50	3/8	9/16	2-5/16	16.00	21.08
9.00	3/8	9/16	2-5/16	16.00	21.08
9.50	3/8	13/16	2-1/2	16.00	21.08
10.00	3/8	13/16	2-1/2	24.04	29.12
10.50	3/8	13/16	2-1/2	24.04	29.12
11.00	3/8	13/16	2-1/2	24.04	29.12
11.50	3/8	13/16	2-1/2	24.04	29.12
12.00	3/8	13/16	2-1/2	24.04	29.12
12.50	1/2	1	3	30.02	39.82
13.00	1/2	1	3	30.02	39.82
13.50	1/2	1-1/8	3-1/8	30.02	39.82
14.00	1/2	1-1/8	3-1/8	30.02	39.82

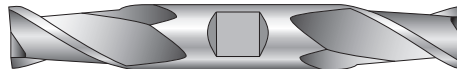
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EMM-2R	TIN COATED EMM-2T
14.50	1/2	1-1/8	3-1/8	33.02	42.82
15.00	1/2	1-1/8	3-1/8	33.02	42.82
16.00	1/2	1-5/16	3-5/16	34.86	44.66
16.00	5/8	1-5/16	3-7/16	34.86	46.64
17.00	5/8	1-5/16	3-7/16	40.64	52.32
18.00	1/2	1-5/16	3-5/16	40.64	52.32
18.00	5/8	1-5/16	3-7/16	40.64	52.32
19.00	3/4	1-1/2	3-3/4	45.32	60.18
20.00	5/8	1-1/2	3-3/4	45.32	57.00
20.00	3/4	1-1/2	3-3/4	52.24	67.10
21.00	7/8	1-1/2	3-3/4	52.24	70.96
22.00	3/4	1-1/2	3-3/4	52.24	67.10
22.00	7/8	1-1/2	3-3/4	52.24	70.96
23.00	7/8	1-1/2	3-3/4	62.64	81.36
24.00	3/4	2	4-1/2	62.64	78.92
24.00	1	2	4-1/2	62.64	84.74
25.00	3/4	1-5/8	3-7/8	62.64	77.50
25.00	1	1-5/8	4-1/8	62.64	84.74
26.00	3/4	2	4-1/2	86.68	108.78
30.00	1	2	4-1/2	98.08	120.18
32.00	1	2	4-1/2	98.08	120.18
36.00	1	2	4-1/2	121.60	159.58
40.00	1-1/4	2	4-1/2	143.48	181.48
45.00	1-1/4	2	4-1/2	173.50	224.72

HIGH SPEED STEEL 2 FLUTE DOUBLE END MILLS - METRIC

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEM-2R	TIN COATED DEM-2T
3.00	3/8	3/8	3-1/16	22.64	32.20
4.00	3/8	7/16	3-1/8	22.64	32.20
5.00	3/8	1/2	3-1/8	22.64	32.20
6.00	3/8	1/2	3-1/8	22.64	32.20
7.00	3/8	9/16	3-1/8	24.26	33.84
8.00	3/8	9/16	3-1/2	22.64	32.20
10.00	1/2	13/16	3-1/2	33.60	49.42
11.00	1/2	13/16	3-3/4	41.24	55.94
12.00	1/2	13/16	3-3/4	41.24	55.94

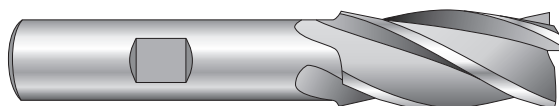
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEM-2R	TIN COATED DEM-2T
13.00	5/8	1-1/8	4-1/2	52.74	70.64
14.00	5/8	1-1/8	4-1/2	52.74	70.64
15.00	5/8	1-1/8	4-1/2	58.00	75.90
16.00	3/4	1-5/16	5	58.00	82.44
18.00	3/4	1-5/16	5	72.12	96.56
20.00	7/8	1-9/16	5-1/2	72.12	107.98
22.00	1	1-5/8	5-7/8	81.72	117.58
24.00	1	1-5/8	5-7/8	99.36	135.22

4, 6, & 8 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

NON-CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

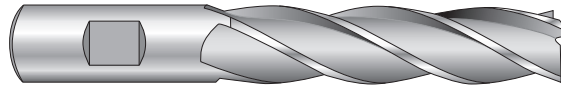
4, 6, & 8 FLUTE - REGULAR LENGTH

ITEM NO.	DESCRIPTION
EM-4R	HSS Single End Mill - 4 Flute - Regular Length
EM-6R	HSS Single End Mill - 6 Flute - Regular Length
EM-8R	HSS Single End Mill - 8 Flute - Regular Length
EM-4T	TiN Coated Single End Mill - 4 Flute - Regular Length
EM-6T	TiN Coated Single End Mill - 6 Flute - Regular Length
EM-8T	TiN Coated Single End Mill - 8 Flute - Regular Length

TO ORDER
SPECIFY ITEM NO., SIZE, AND SHANK DIA.
EXAMPLE: EM-4R 5/8 x 1/2

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TiN COATED
1/8	3/8	3/8	2-5/16	4	10.38	16.72
5/32	3/8	3/8	2-5/16	4	10.38	16.72
3/16	3/8	1/2	2-3/8	4	10.38	16.72
7/32	3/8	5/8	2-7/16	4	10.38	16.72
1/4	3/8	5/8	2-7/16	4	10.38	16.72
9/32	3/8	3/4	2-1/2	4	10.38	16.72
5/16	3/8	3/4	2-1/2	4	11.32	17.66
11/32	3/8	3/4	2-1/2	4	11.32	17.66
3/8	3/8	3/4	2-1/2	4	11.32	17.66
13/32	3/8	1	2-11/16	4	13.06	19.40
7/16	3/8	1	2-11/16	4	13.06	19.40
15/32	3/8	1	2-11/16	4	13.06	19.40
1/2	3/8	1	2-11/16	4	13.06	19.40
1/2	1/2	1-1/4	3-1/4	4	13.06	22.96
9/16	1/2	1-3/8	3-3/8	4	19.58	29.48
5/8	1/2	1-3/8	3-3/8	4	21.70	31.60
5/8	5/8	1-5/8	3-3/4	4	21.70	32.90
11/16	1/2	1-5/8	3-5/8	4	23.94	33.84
11/16	5/8	1-5/8	3-3/4	4	23.94	35.14
3/4	1/2	1-5/8	3-5/8	4	24.88	34.78
3/4	5/8	1-5/8	3-3/4	4	24.88	36.08
3/4	3/4	1-5/8	3-3/4	4	24.88	38.14
3/4	3/4	1-5/8	3-3/4	6	24.88	38.14
13/16	1/2	1-7/8	4	4	30.80	42.00
13/16	5/8	1-7/8	4	4	30.80	42.00
13/16	5/8	1-7/8	4	6	30.80	42.00
13/16	3/4	1-7/8	4-1/8	4	30.80	44.08
7/8	1/2	1-7/8	4	4	33.04	44.24
7/8	1/2	1-7/8	4	6	33.04	44.24
7/8	5/8	1-7/8	4	6	33.04	44.24
7/8	3/4	1-7/8	4-1/8	4	33.04	48.72
7/8	3/4	1-7/8	4-1/8	6	33.04	48.72
7/8	7/8	1-7/8	4-1/8	4	34.02	57.36
15/16	1/2	1-7/8	4	6	36.74	53.66
15/16	5/8	1-7/8	4	6	36.74	53.66
15/16	3/4	1-7/8	4-1/8	4	37.98	53.66
15/16	7/8	1-7/8	4-1/8	4	37.98	61.32

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TiN COATED
1	1/2	1-7/8	4	4	38.94	55.56
1	1/2	1-7/8	4	6	38.94	55.56
1	5/8	1-7/8	4	4	38.94	55.56
1	5/8	1-7/8	4	6	38.94	55.56
1	3/4	1-7/8	4-1/8	4	38.94	54.62
1	3/4	1-7/8	4-1/8	6	38.94	54.62
1	7/8	1-7/8	4-1/8	4	41.18	64.52
1	1	2	4-1/2	4	42.12	65.46
1-1/8	3/4	2	4-1/4	6	61.60	73.58
1-1/8	7/8	2	4-1/4	6	61.60	81.24
1-1/8	1	2	4-1/2	6	61.60	84.96
1-1/4	3/4	2	4-1/4	6	63.84	87.20
1-1/4	7/8	2	4-1/4	4	63.84	87.20
1-1/4	7/8	2	4-1/4	6	63.84	87.20
1-1/4	1	2	4-1/2	6	66.04	89.38
1-1/4	1-1/4	2	4-1/2	4	66.04	95.16
1-1/4	1-1/4	2	4-1/2	6	66.04	95.16
1-3/8	3/4	2	4-1/4	6	69.00	92.33
1-3/8	1	2	4-1/2	6	72.92	96.26
1-3/8	1-1/4	2	4-1/2	6	72.92	119.58
1-1/2	3/4	2	4-1/4	6	77.84	101.18
1-1/2	1	2	4-1/2	4	80.08	103.44
1-1/2	1	2	4-1/2	6	80.08	103.44
1-1/2	1-1/4	2	4-1/2	4	80.08	126.74
1-1/2	1-1/4	2	4-1/2	6	80.08	126.74
1-5/8	3/4	2	4-1/4	6	88.72	135.38
1-5/8	1-1/4	2	4-1/2	4	88.72	135.38
1-5/8	1-1/4	2	4-1/2	6	88.72	135.38
1-3/4	3/4	2	4-1/4	6	100.54	147.20
1-3/4	1-1/4	2	4-1/2	4	100.54	147.20
1-3/4	1-1/4	2	4-1/2	6	100.54	147.20
1-7/8	1-1/4	2	4-1/2	6	107.92	154.58
1-7/8	1-1/4	2	4-1/2	8	107.92	154.58
2	3/4	2	4-1/4	8	117.78	164.44
2	1-1/4	2	4-1/2	4	117.78	164.44
2	1-1/4	2	4-1/2	6	117.78	164.44
2	1-1/4	2	4-1/2	8	117.78	164.44

4, 6, & 8 LONG FLUTE SINGLE END MILLS**ICS USA****GENERAL PURPOSE****NON-CENTER CUTTING****WELDON
SHANK**

4, 6, & 8 FLUTE - LONG FLUTE

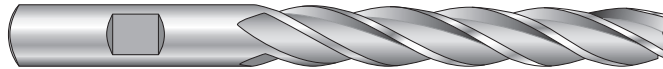
**RIGHT HAND CUT
RIGHT HAND HELIX**

ITEM NO.	DESCRIPTION
EM-4L	HSS Single End Mill - 4 Flute - Long Flute
EM-6L	HSS Single End Mill - 6 Flute - Long Flute
EM-8L	HSS Single End Mill - 8 Flute - Long Flute
EM-4LT	TiN Coated HSS Single End Mill - 4 Flute - Long Flute
EM-6LT	TiN Coated HSS Single End Mill - 6 Flute - Long Flute
EM-8LT	TiN Coated HSS Single End Mill - 8 Flute - Long Flute

TO ORDER
SPECIFY ITEM NO., SIZE, AND SHANK DIA.
EXAMPLE: EM-4L 5/8 x 1/2

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TIN COATED
1/4	3/8	1-1/4	3-1/16	4	12.74	-
5/16	3/8	1-3/8	3-1/8	4	12.74	-
3/8	3/8	1-1/2	3-1/4	4	12.74	-
7/16	1/2	1-3/4	3-3/4	4	18.40	-
1/2	1/2	2	4	4	19.46	CALL FOR PRICE
5/8	1/2	2-1/2	4-5/8	4	28.54	
5/8	5/8	2-1/2	4-5/8	4	35.26	
3/4	1/2	3	5-1/4	4	35.26	
3/4	3/4	3	5-1/4	4	35.26	-
7/8	7/8	3-1/2	5-3/4	4	44.34	-
1	3/4	4	6-1/2	4	56.84	-
1	1	4	6-1/2	4	56.84	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TIN COATED
1-1/8	3/4	4	6-1/2	6	79.64	-
1-1/8	1	4	6-1/2	6	79.64	-
1-1/4	3/4	4	6-1/2	4	91.02	-
1-1/4	1	4	6-1/2	6	91.02	-
1-1/4	1-1/4	4	6-1/2	4	91.02	CALL FOR PRICE
1-1/4	1-1/4	4	6-1/2	6	91.02	
1-3/8	1	4	6-1/2	6	91.02	
1-1/2	1	4	6-1/2	6	108.18	
1-1/2	1-1/4	4	6-1/2	6	113.60	-
1-3/4	1-1/4	4	6-1/2	6	142.14	-
2	1-1/4	4	6-1/2	4	170.42	-
2	1-1/4	4	6-1/2	6	170.42	-
2	1-1/4	4	6-1/2	8	170.42	-

4 & 6 EXTRA LONG FLUTE SINGLE END MILLS**ICS USA****GENERAL PURPOSE****NON-CENTER CUTTING****WELDON
SHANK**

4 & 6 FLUTE - EXTRA LONG FLUTE

**RIGHT HAND CUT
RIGHT HAND HELIX**

ITEM NO.	DESCRIPTION
EM-4XL	HSS Single End Mill - 4 Flute - Extra Long Flute
EM-6XL	HSS Single End Mill - 6 Flute - Extra Long Flute

ITEM NO.	DESCRIPTION
EM-4XLT	HSS Single End Mill - 4 Flute - Extra Long Flute
EM-6XLT	HSS Single End Mill - 6 Flute - Extra Long Flute

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TIN COATED
1/4	3/8	1-3/4	3-9/16	4	16.24	-
5/16	3/8	2	3-3/4	4	18.00	-
3/8	3/8	2-1/2	4-1/4	4	18.48	CALL FOR PRICE
1/2	1/2	3	5	4	25.16	
5/8	1/2	4	6-1/8	4	35.18	
5/8	5/8	4	6-1/8	4	35.18	
3/4	1/2	4	6-1/4	4	44.60	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					HSS	TIN COATED
3/4	3/4	4	6-1/4	4	44.60	-
7/8	7/8	5	7-1/4	4	56.46	-
1	1	6	8-1/2	4	68.78	CALL FOR PRICE
1-1/4	1-1/4	6	8-1/2	4	115.20	
1-1/4	1-1/4	6	8-1/2	6	115.20	
1-1/2	1-1/4	8	10-9/16	6	174.24	
2	2	8	11-3/4	6	246.40	-

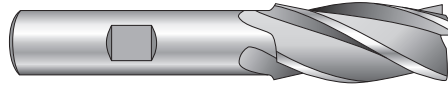
TOLERANCES
 Flute Dia.: + .003 - .000"
 Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 4 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4C	TIN COATED EM-4CT
1/8	3/8	3/8	2-5/16	10.38	-
3/16	3/8	1/2	2-3/8	10.38	-
7/32	3/8	5/8	2-7/16	15.00	-
1/4	3/8	5/8	2-7/16	10.38	-
9/32	3/8	5/8	2-7/16	16.00	-
5/16	3/8	3/4	2-1/2	11.32	-
11/32	3/8	3/4	2-1/2	15.00	-
3/8	3/8	3/4	2-1/2	11.32	CALL FOR PRICE
13/32	3/8	1	2-11/16	22.40	-
7/16	3/8	1	2-11/16	13.06	-
7/16	1/2	1-3/4	3-3/4	-	-
15/32	3/8	1	2-11/16	15.50	-
1/2	3/8	1	2-11/16	13.06	-
1/2	1/2	1-1/4	3-1/4	13.06	-
9/16	1/2	1-3/8	3-3/8	19.58	-
5/8	1/2	1-3/8	3-3/8	21.70	-
5/8	5/8	1-5/8	3-3/4	21.70	-
11/16	1/2	1-5/8	3-3/4	23.94	-

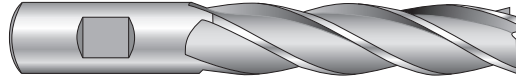
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4C	TIN COATED EM-4CT
11/16	5/8	1-5/8	3-5/8	23.94	-
3/4	1/2	1-5/8	3-5/8	24.88	-
3/4	5/8	1-5/8	3-3/4	24.88	-
3/4	3/4	1-5/8	3-3/4	24.88	-
13/16	5/8	1-7/8	4	30.80	-
13/16	3/4	1-7/8	4-1/8	30.80	-
7/8	1/2	1-7/8	4	33.04	-
7/8	3/4	1-7/8	4-1/8	33.04	CALL FOR PRICE
7/8	7/8	1-7/8	4-1/8	34.02	-
15/16	3/4	1-7/8	4-1/8	37.98	-
15/16	7/8	1-7/8	4-1/8	37.98	-
1	1/2	1-7/8	4	38.94	-
1	5/8	1-7/8	4	38.94	-
1	3/4	1-7/8	4-1/8	38.94	-
1	1	2	4-1/2	42.12	-
1-1/8	1	2	4-1/2	73.92	-
1-1/4	1-1/4	2	4-1/2	81.00	-
1-1/2	1-1/4	2	4-1/2	102.00	-

HIGH SPEED STEEL 4 LONG FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4CL	TIN COATED EM-4CLT
3/16	3/8	3/4	2-5/8	21.50	-
1/4	3/8	1-1/4	3-1/16	12.74	-
9/32	3/8	1-3/8	3-1/8	21.50	CALL FOR PRICE
5/16	3/8	1-3/8	3-1/8	12.74	-
11/32	3/8	1-1/2	3-1/4	-	-
3/8	3/8	1-1/2	3-1/4	12.74	-
13/32	3/8	2-5/8	4-5/16	34.34	-
7/16	1/2	1-3/4	3-3/4	18.40	-

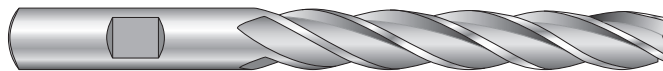
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4CL	TIN COATED EM-4CLT
1/2	1/2	2	4	19.46	-
17/32	1/2	2-1/2	4-1/2	39.00	-
5/8	5/8	2-1/2	4-5/8	35.26	CALL FOR PRICE
3/4	1/2	3	5-1/4	35.26	-
3/4	3/4	3	5-1/4	35.26	-
7/8	3/4	3-1/2	5-3/4	44.56	-
7/8	7/8	3-1/2	5-3/4	44.56	-
1	1	4	6-1/2	56.84	-

HIGH SPEED STEEL 4 EXTRA LONG FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

EXTRA LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4CX	TIN COATED EM-4CXT
1/4	3/8	1-3/4	3-9/16	16.24	-
9/32	3/8	2	3-3/4	27.36	-
5/16	3/8	2	3-3/4	18.00	CALL FOR PRICE
11/32	3/8	1-1/2	3-1/4	21.50	-
3/8	3/8	2-1/2	4-1/4	18.48	-
7/16	3/8	2-5/8	4-5/16	-	-
1/2	1/2	3	5	25.16	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-4CX	TIN COATED EM-4CXT
9/16	1/2	4	6	46.14	-
5/8	1/2	4	6-1/8	35.18	-
5/8	5/8	4	6-1/8	35.18	CALL FOR PRICE
3/4	3/4	4	6-1/4	44.60	-
7/8	7/8	5	7-1/4	56.46	-
1	1	6	8-1/2	68.78	-

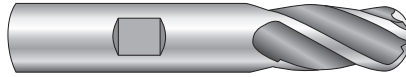
TOLERANCES • Flute Dia.: + .003 - .000" • Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 4 FLUTE BALL NOSE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				EM-4B	EM-4BT
1/4	3/8	5/8	2-7/16	22.92	29.26
5/16	3/8	3/4	2-1/2	22.92	29.26
3/8	3/8	3/4	2-1/2	22.92	29.26
7/16	1/2	1	3	29.98	36.32
1/2	1/2	1-1/4	3-1/4	29.98	36.32
9/16	1/2	1-1/4	3-1/4	49.26	59.16

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				EM-4B	EM-4BT
5/8	5/8	1-5/8	3-3/4	49.26	60.46
3/4	3/4	1-5/8	3-7/8	62.24	75.50
7/8	7/8	1-7/8	4-1/8	79.92	103.26
1	1	2	4-1/2	98.32	121.66
1-1/4	1-1/4	2	4-1/2	114.60	143.72
1-1/2	1-1/4	2	4-1/2	149.80	196.46

HIGH SPEED STEEL 4 FLUTE BALL NOSE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				EM-4BL	EM-4BLT
1/4	3/8	1-1/4	3-1/16	22.92	31.14
5/16	3/8	1-3/8	3-1/8	22.92	31.14
3/8	3/8	1-1/2	3-1/4	28.26	36.48
1/2	1/2	2	4	44.50	54.40

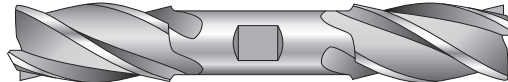
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				EM-4BL	EM-4BLT
5/8	5/8	2-1/2	4-5/8	65.98	77.92
3/4	3/4	3	5-1/4	85.24	100.92
1	1	4	6-1/2	124.22	152.22

HIGH SPEED STEEL 4 FLUTE DOUBLE END MILLS

ICS USA

GENERAL PURPOSE

NON-CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				DEM-4R	DEM-4T
1/8	3/8	3/8	3-1/16	17.48	29.12
5/32	3/8	7/16	3-1/8	17.48	29.12
3/16	3/8	1/2	3-1/4	17.48	29.12
13/64	3/8	9/16	3-1/4	17.48	29.12
7/32	3/8	9/16	3-1/4	17.48	29.12
15/64	3/8	9/16	3-1/4	17.48	29.12
1/4	3/8	5/8	3-3/8	17.48	29.12
9/32	3/8	11/16	3-3/8	18.48	30.14
5/16	3/8	3/4	3-1/2	18.48	30.14
11/32	3/8	3/4	3-1/2	18.48	30.14
3/8	3/8	3/4	3-1/2	18.48	30.14
13/32	1/2	1	4-1/8	26.10	42.90

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiN COATED
				DEM-4R	DEM-4T
7/16	1/2	1	4-1/8	26.10	42.90
15/32	1/2	1	4-1/8	26.10	42.90
1/2	1/2	1	4-1/8	26.10	42.90
9/16	5/8	1-3/8	5	34.72	54.16
5/8	5/8	1-3/8	5	34.72	54.16
11/16	3/4	1-5/8	5-5/8	43.36	66.70
3/4	3/4	1-5/8	5-5/8	43.36	66.70
13/16	7/8	1-7/8	6-1/8	54.00	80.14
7/8	7/8	1-7/8	6-1/8	54.00	80.14
15/16	1	1-7/8	6-3/8	66.04	108.04
1	1	1-7/8	6-3/8	68.00	110.00

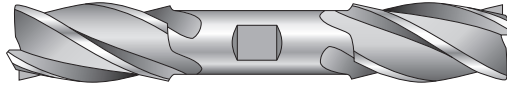
TOLERANCES • Flute Dia.: + .003 - .000" • Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 4 FLUTE DOUBLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEM-4C	TiN COATED DEM-4CT
1/8	3/8	3/8	3-1/16	17.48	26.00
5/32	3/16	15/64	3-1/8	14.80	26.50
3/16	3/8	1/2	3-1/4	17.48	26.00
13/64	3/8	9/16	3-1/4	24.40	-
7/32	3/8	9/16	3-1/4	24.40	26.50
15/64	3/8	5/8	3-3/8	24.40	26.50
1/4	3/8	5/8	3-3/8	17.48	26.00
17/64	3/8	11/16	3-3/8	24.40	26.50
9/32	3/8	11/16	3-3/8	24.40	26.50
5/16	3/8	3/4	3-1/2	18.48	30.14
21/64	3/8	3/4	3-1/2	24.40	-
11/32	3/8	3/4	3-1/2	24.40	26.50

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEM-4C	TiN COATED DEM-4CT
3/8	3/8	3/4	3-1/2	18.48	26.00
13/32	1/2	1	4-1/8	41.64	43.72
7/16	1/2	1	4-1/8	34.00	38.30
1/2	1/2	1	4-1/8	26.10	38.30
17/32	5/8	1-3/8	5	42.00	-
9/16	5/8	1-3/8	5	31.00	48.34
5/8	5/8	1-3/8	5	31.00	48.34
11/16	3/4	1-5/8	5-5/8	56.08	-
3/4	3/4	1-5/8	5-5/8	43.36	59.64
7/8	7/8	1-7/8	6-1/8	54.00	71.54
1	1	1-7/8	6-3/8	68.00	98.20

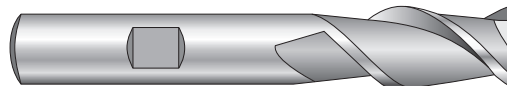
TOLERANCES
Flute Dia.: + .003 - .000"
Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

These Two Flute High Speed Steel End Mills are designed for milling aluminum, aluminum alloys, "aviation aluminum", copper, copper alloys, soft steels, and thermoplastics. Special high helix angle for maximum chip removal. Order zirconium nitride coated end mills to minimize packing of chips in the flutes and for very fast removal of material. Zirconium nitride is harder than titanium nitride and can be subjected to higher operating temperatures. Performance reports show a 200%-500% improvement over titanium nitride when machining the aforementioned materials.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-2A	ZrN COATED EM-2AZ
1/8	3/8	3/8	2-5/16	14.04	-
3/16	3/8	1/2	2-3/8	14.04	-
1/4	3/8	5/8	2-1/2	16.40	CALL FOR PRICE
5/16	3/8	3/4	2-1/2	16.40	
3/8	3/8	3/4	2-1/2	16.40	
7/16	3/8	1	2-11/16	18.48	
1/2	1/2	1-1/4	3-1/4	20.04	
5/8	1/2	1-3/8	3-3/8	30.50	-

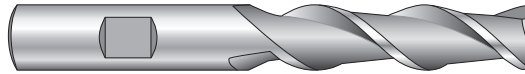
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-2A	ZrN COATED EM-2AZ
5/8	5/8	1-5/8	3-3/4	26.12	-
3/4	1/2	1-5/8	3-5/8	34.50	-
3/4	3/4	1-5/8	3-7/8	30.54	CALL FOR PRICE
13/16	3/4	1-7/8	4-1/8	44.00	
7/8	3/4	1-7/8	4-1/8	45.04	
7/8	7/8	1-7/8	4-1/8	45.04	-
1	3/4	1-7/8	4-1/8	55.74	-
1	1	2	4-1/2	55.74	-

2 LONG FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG FLUTE LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	ZrN COATED
				EM-2AL	EM-2ALZ
1/4	3/8	1-1/4	3-1/8	17.30	-
5/16	3/8	1-3/8	3-1/8	17.30	CALL
3/8	3/8	1-1/2	3-1/4	17.30	FOR
7/16	1/2	1-3/4	3-1/4	23.40	PRICE
1/2	1/2	2	4	24.72	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	ZrN COATED
				EM-2AL	EM-2ALZ
5/8	5/8	2-1/2	4-5/8	33.28	-
3/4	3/4	3	5-1/4	47.60	CALL
7/8	7/8	3-1/2	5-3/4	59.92	FOR
1	1	4	6-1/2	81.84	PRICE
					-

TOLERANCES
Flute Dia.: +.001 -.000"
Shank Dia.: +.0005 -.0005"

EXTRA LONG 2 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

EXTRA LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	
				EM-2AX	
1/4	3/8	1-3/4	3-9/16	21.00	
5/16	3/8	2	3-3/4	21.00	
3/8	3/8	2-1/2	4-1/4	22.50	
1/2	1/2	3	5	30.50	

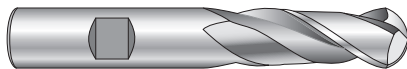
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	
				EM-2AX	
5/8	5/8	4	6-1/8	42.00	
3/4	3/4	4	6-1/4	57.00	
1	1	6	8-1/2	103.00	

2 FLUTE BALL NOSE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	
				EM-2AB	
1/4	3/8	5/8	2-7/16	27.48	
3/8	3/8	3/4	2-1/2	29.48	
1/2	1/2	1-1/4	3-1/4	40.82	

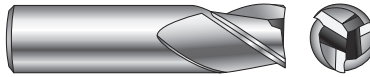
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	
				EM-2ABX	
1/4	3/8	1-3/4	3-9/16	39.46	
3/8	3/8	2-1/2	4-1/4	41.90	
1/2	1/2	3	5	57.56	
3/4	3/4	1-5/8	3-7/8	62.98	

3 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HIGH HELIX

Three Flute High Speed Steel End Mills are designed especially for milling aluminum, aluminum alloys, "aviation aluminum", copper, copper alloys, soft steels, and thermoplastics. Special high helix angle for maximum chip removal. Three flute design removes more material per revolution, tracks straighter, mills at very high feed rates, and creates a smoother finish than 2 flute end mills.

Titanium-carbonitride (TiCN) coated end mills work well in harder material and for longer production runs. The hard, smooth finish resists chipping and wear and prevents material from accumulating on the cutting edge. Titanium-carbonitride coating works especially well for cutting aluminum.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3A	TiCN COATED EM-3ATC
1/4	3/8	5/8	2-7/16	20.50	-
5/16	3/8	3/4	2-1/2	20.50	CALL FOR PRICE
3/8	3/8	3/4	2-1/2	20.50	
7/16	1/2	1-1/4	3-1/4	26.00	

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3A	TiCN COATED EM-3ATC
1/2	1/2	1/2	2-1/2	24.50	-
5/8	5/8	5/8	2-3/4	32.50	CALL FOR PRICE
3/4	3/4	3/4	3	35.00	
1	1	1	3-1/2	54.00	-

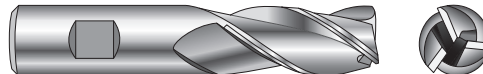
HIGH SPEED STEEL

3 FLUTE LONG LENGTH SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HIGH HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3AL	TiCN COATED EM-3ALTC
1/4	3/8	1-1/4	3-1/16	22.40	-
5/16	3/8	1-3/8	3-1/8	22.40	CALL FOR PRICE
3/8	3/8	1-1/2	3-1/4	22.40	
1/2	1/2	1-1/4	3-1/4	26.82	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3AL	TiCN COATED EM-3ALTC
5/8	5/8	1-5/8	3-3/4	33.70	-
3/4	3/4	1-5/8	3-7/8	35.40	CALL FOR PRICE
1	1	2	4-1/2	57.72	
					-

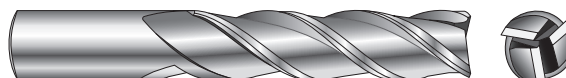
HIGH SPEED STEEL

EXTRA LONG 3 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

EXTRA LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HIGH HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3AX	TiCN COATED EM-3AXTC
1/4	3/8	1-3/4	3-9/16	26.42	CALL FOR PRICE
5/16	3/8	2	3-3/4	26.42	
3/8	3/8	2-1/2	4-1/4	26.42	

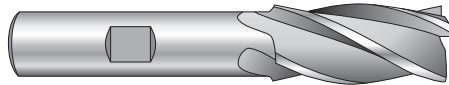
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EM-3AX	TiCN COATED EM-3AXTC
1/2	1/2	2	4	30.44	CALL FOR PRICE
5/8	5/8	2	4-1/8	36.42	
1	1	4	6-1/2	83.52	

HIGH SPEED STEEL METRIC 4 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

NON-CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EMM-4R	TiN COATED EMM-4T
2.00	3/8	3/8	2-5/16	16.00	21.08
2.50	3/8	3/8	2-5/16	16.00	21.08
3.00	3/8	3/8	2-5/16	16.00	21.08
3.50	3/8	1/2	2-3/8	16.00	21.08
4.00	3/8	1/2	2-3/8	16.00	21.08
4.50	3/8	1/2	2-3/8	16.00	21.08
5.00	3/8	1/2	2-3/8	16.00	21.08
5.50	3/8	5/8	2-1/2	16.00	21.08
6.00	3/8	5/8	2-1/2	16.00	21.08
6.50	3/8	11/16	2-1/2	16.00	21.08
7.00	3/8	11/16	2-1/2	16.00	21.08
7.50	3/8	3/4	2-1/2	16.00	21.08
8.00	3/8	3/4	2-1/2	16.00	21.08
8.50	3/8	3/4	2-1/2	16.00	21.08
9.00	3/8	3/4	2-1/2	16.00	21.08
9.50	3/8	1	2-11/16	16.00	21.08
10.00	3/8	1	2-11/16	24.04	29.12
10.50	3/8	1	2-11/16	24.04	29.12
11.00	3/8	1	2-11/16	24.04	29.12
11.50	3/8	1	2-11/16	24.04	29.12
12.00	3/8	1	2-11/16	24.04	29.12
12.50	1/2	1-1/4	3-1/4	30.02	39.82
13.00	1/2	1-1/4	3-1/4	30.02	39.82
13.50	1/2	1-1/4	3-1/4	30.02	39.82
14.00	1/2	1-3/8	3-3/8	30.02	39.82

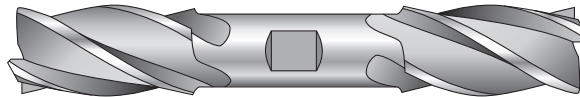
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS EMM-4R	TiN COATED EMM-4T
14.50	1/2	1-3/8	3-3/8	33.02	42.82
15.00	1/2	1-3/8	3-3/8	33.02	42.82
16.00	1/2	1-5/8	3-3/4	34.86	44.66
16.00	5/8	1-5/8	3-3/4	34.86	46.54
17.00	5/8	1-5/8	3-3/4	40.64	52.32
18.00	1/2	1-5/8	3-3/4	40.64	52.32
18.00	5/8	1-5/8	3-3/4	40.64	52.32
19.00	3/4	1-7/8	4-1/8	45.32	61.60
20.00	5/8	1-7/8	4-1/8	45.32	57.26
20.00	3/4	1-7/8	4-1/8	52.24	68.54
21.00	7/8	1-7/8	4-1/8	52.24	74.36
22.00	3/4	1-7/8	4-1/8	52.24	68.54
22.00	7/8	1-7/8	4-1/8	52.24	74.36
23.00	7/8	1-7/8	4-1/8	62.64	84.74
24.00	3/4	2	4-1/2	62.64	78.92
24.00	1	2	4-1/2	62.64	84.74
25.00	3/4	1-7/8	4-1/8	62.64	78.92
25.00	1	2	4-1/2	62.64	84.74
26.00	3/4	2	4-1/2	86.68	108.78
30.00	1	2	4-1/2	98.08	120.18
32.00	1	2	4-1/2	98.08	120.18
36.00	1	2	4-1/2	121.60	159.58
40.00	1-1/4	2	4-1/2	143.48	181.48
45.00	1-1/4	2	4-1/2	173.50	224.72

HIGH SPEED STEEL METRIC 4 FLUTE DOUBLE END MILLS

ICS USA

GENERAL PURPOSE

NON-CENTER CUTTING

WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

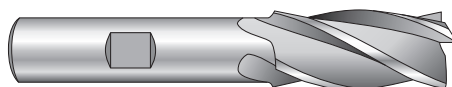
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEMM-4R	TiN COATED DEMM-4T
3.00	3/8	3/8	3-1/16	23.82	33.28
4.00	3/8	7/16	3-1/8	23.82	33.28
5.00	3/8	9/16	3-1/4	23.82	33.28
6.00	3/8	5/8	3-3/8	23.82	33.28
7.00	3/8	11/16	3-3/8	25.44	35.00
8.00	3/8	3/4	3-1/2	23.82	33.28
10.00	1/2	1	4-1/8	35.24	50.94
11.00	1/2	1	4-1/8	41.24	56.96
12.00	1/2	1	4-1/8	41.24	56.96

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS DEMM-4R	TiN COATED DEMM-4T
13.00	5/8	1-3/8	5	52.74	70.64
14.00	5/8	1-3/8	5	52.74	70.64
15.00	5/8	1-3/8	5	58.00	75.90
16.00	3/4	1-5/8	5-5/8	58.00	83.52
18.00	3/4	1-5/8	5-5/8	73.98	99.48
20.00	7/8	1-7/8	6-1/8	73.98	116.62
22.00	1	1-7/8	6-3/8	84.24	126.88
24.00	1	1-7/8	6-3/8	102.52	145.16

TOLERANCES
Flute Dia.: + .003 - .000"
Shank Dia.: + .0005 - .0005"

METRIC 4 FLUTE SINGLE END MILLS

ICS USA

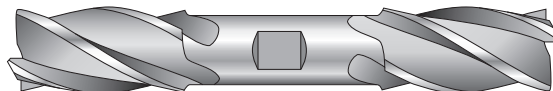
GENERAL PURPOSE**CENTER CUTTING**WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EMM-4C	EMM-4CT
2.00	3/8	3/8	2-5/16	16.00	21.08
2.50	3/8	3/8	2-5/16	16.00	21.08
3.00	3/8	3/8	2-5/16	16.00	21.08
3.50	3/8	1/2	2-3/8	16.00	21.08
4.00	3/8	1/2	2-3/8	16.00	21.08
4.50	3/8	1/2	2-3/8	16.00	21.08
5.00	3/8	1/2	2-3/8	16.00	21.08
5.50	3/8	5/8	2-1/2	16.00	21.08
6.00	3/8	5/8	2-1/2	16.00	21.08
6.50	3/8	11/16	2-1/2	16.00	21.08
7.00	3/8	11/16	2-1/2	16.00	21.08
7.50	3/8	3/4	2-1/2	16.00	21.08
8.00	3/8	3/4	2-1/2	16.00	21.08
8.50	3/8	3/4	2-1/2	16.00	21.08
9.00	3/8	3/4	2-1/2	16.00	21.08
9.50	3/8	1	2-11/16	16.00	21.08
10.00	3/8	1	2-11/16	24.04	29.12
10.50	3/8	1	2-11/16	24.04	29.12
11.00	3/8	1	2-11/16	24.04	29.12
11.50	3/8	1	2-11/16	24.04	29.12
12.00	3/8	1	2-11/16	24.04	29.12
12.50	1/2	1-1/4	3-1/4	30.02	39.82
13.00	1/2	1-1/4	3-1/4	30.02	39.82
13.50	1/2	1-1/4	3-1/4	30.02	39.82
14.00	1/2	1-3/8	3-3/8	30.02	39.82

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EMM-4C	EMM-4CT
14.50	1/2	1-3/8	3-3/8	33.02	42.82
15.00	1/2	1-3/8	3-3/8	33.02	42.82
16.00	1/2	1-5/8	3-3/4	34.86	44.66
16.00	5/8	1-5/8	3-3/4	34.86	46.54
17.00	5/8	1-5/8	3-3/4	40.64	52.32
18.00	1/2	1-5/8	3-3/4	40.64	52.32
18.00	5/8	1-5/8	3-3/4	40.64	52.32
19.00	3/4	1-7/8	4-1/8	45.32	61.60
20.00	5/8	1-7/8	4-1/8	45.32	57.26
20.00	3/4	1-7/8	4-1/8	52.24	68.54
21.00	7/8	1-7/8	4-1/8	52.24	74.36
22.00	3/4	1-7/8	4-1/8	52.24	68.54
22.00	7/8	1-7/8	4-1/8	52.24	74.36
23.00	7/8	1-7/8	4-1/8	62.64	84.74
24.00	3/4	2	4-1/2	62.64	78.92
24.00	1	2	4-1/2	62.64	84.74
25.00	3/4	1-7/8	4-1/8	62.64	78.92
25.00	1	2	4-1/2	62.64	84.74
26.00	3/4	2	4-1/2	86.68	108.78
30.00	1	2	4-1/2	98.08	120.18
32.00	1	2	4-1/2	98.08	120.18
36.00	1	2	4-1/2	121.60	159.58
40.00	1-1/4	2	4-1/2	143.48	181.48
45.00	1-1/4	2	4-1/2	173.50	224.72

METRIC 4 FLUTE DOUBLE END MILLS

ICS USA

GENERAL PURPOSE**CENTER CUTTING**WELDON
SHANKRIGHT HAND CUT
RIGHT HAND HELIX

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEMM-4C	DEMM-4CT
3.00	3/8	3/8	3-1/16	23.82	33.28
4.00	3/8	7/16	3-1/8	23.82	33.28
5.00	3/8	9/16	3-1/4	23.82	33.28
6.00	3/8	5/8	3-3/8	23.82	33.28
7.00	3/8	11/16	3-3/8	25.44	35.00
8.00	3/8	3/4	3-1/2	23.82	33.28
10.00	1/2	1	4-1/8	35.24	50.94
11.00	1/2	1	4-1/8	41.24	56.96
12.00	1/2	1	4-1/8	41.24	56.96

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEMM-4C	DEMM-4CT
13.00	5/8	1-3/8	5	52.74	70.64
14.00	5/8	1-3/8	5	52.74	70.64
15.00	5/8	1-3/8	5	58.00	75.90
16.00	3/4	1-5/8	5-5/8	58.00	83.52
18.00	3/4	1-5/8	5-5/8	73.98	99.48
20.00	7/8	1-7/8	6-1/8	73.98	116.62
22.00	1	1-7/8	6-3/8	84.24	126.88
24.00	1	1-7/8	6-3/8	102.52	145.16

TOLERANCES

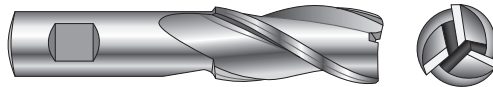
 Flute Dia.: + .003 - .000"
 Shank Dia.: + .0005 - .0005"

HIGH SPEED STEEL 3 FLUTE SINGLE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

Three Flute High Speed Steel End Mills are designed to remove more material per revolution than two flute end mills. They track straighter, mill at very high feed rates, and create a smoother finish than 2 flute end mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-3C	EM-3CT
1/8	3/8	3/8	2-5/16	17.74	-
3/16	3/8	1/2	2-3/8	17.74	CALL
1/4	3/8	5/8	2-7/16	17.74	FOR
5/16	3/8	3/4	2-1/2	17.74	PRICE
3/8	3/8	3/4	2-1/2	21.04	-
7/16	3/8	1	2-11/16	26.00	-

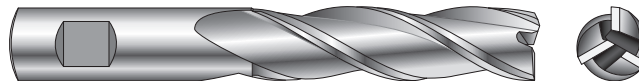
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-3C	EM-3CT
1/2	1/2	1-1/4	3-1/4	26.00	-
9/16	1/2	1-3/8	3-3/8	34.00	CALL
5/8	5/8	1-5/8	3-3/4	34.00	FOR
3/4	3/4	1-5/8	3-7/8	43.00	PRICE
7/8	3/4	1-7/8	4-1/8	53.50	-
1	1	2	4-1/2	58.18	-

HIGH SPEED STEEL 3 FLUTE LONG LENGTH SINGLE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON
SHANK

LONG LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

Three Flute Long Length High Speed Steel End Mills are designed to remove more material per revolution than two flute end mills. They track straighter, mill at very high feed rates, and create a smoother finish than 2 flute end mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-3CL	EM-3CLT
1/4	3/8	1-1/4	3-1/8	27.40	CALL
5/16	3/8	1-3/8	3-1/8	27.40	FOR
3/8	3/8	1-1/2	3-1/4	28.00	PRICE
1/2	1/2	2	4	33.00	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-3CL	EM-3CLT
5/8	5/8	2-1/2	4-5/8	42.00	CALL
3/4	3/4	3	5-1/4	52.00	FOR
1	1	4	6-1/2	86.00	PRICE
					-

MINIATURE 2 & 4 FLUTE SINGLE END MILLS**ICS USA****GENERAL PURPOSE****CENTER CUTTING**

Miniature Single End Mills are small diameter (5/64" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

2 Flute - Regular Length**RIGHT HAND CUT
RIGHT HAND HELIX****4 Flute - Regular Length**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MEM-2R	MEM-2T
5/64	3/16	1/4	1-1/8	7.98	11.34
3/32	3/16	5/16	1-1/8	7.98	11.34
7/64	3/16	11/32	1-5/16	7.98	11.34
1/8	3/16	3/8	1-5/16	7.98	11.34
9/64	3/16	13/32	1-7/16	7.98	11.34
5/32	3/16	7/16	1-7/16	7.98	11.34
11/64	3/16	15/32	1-11/16	7.98	11.34
3/16	3/16	1/2	1-11/16	7.98	11.34

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MEM-4R	MEM-4T
5/64	3/16	1/4	1-1/8	8.40	11.76
3/32	3/16	5/16	1-1/8	8.40	11.76
7/64	3/16	11/32	1-5/16	8.40	11.76
1/8	3/16	3/8	1-5/16	8.40	11.76
9/64	3/16	13/32	1-7/16	8.40	11.76
5/32	3/16	7/16	1-7/16	8.40	11.76
11/64	3/16	15/32	1-11/16	8.40	11.76
3/16	3/16	1/2	1-11/16	8.40	11.76

TOLERANCES
 Flute Dia.: +.000 - .0015"
 Shank Dia.: +.0005 - .0005"

TOLERANCES
 Flute Dia.: +.0003 - .000"
 Shank Dia.: +.0005 - .0005"

MINIATURE 2 FLUTE BALL NOSE END MILLS**ICS USA****GENERAL PURPOSE****CENTER CUTTING**

Miniature Single End Mills are small diameter (5/64" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

**2 Flute - Regular Length
(Single End)****RIGHT HAND CUT
RIGHT HAND HELIX****4 Flute - Regular Length
(Double End)**

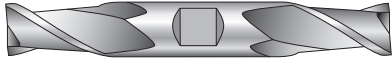
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MEM-2B	MEM-2BT
5/64	3/16	1/4	1-1/8	15.56	18.92
3/32	3/16	5/16	1-1/8	15.56	18.92
7/64	3/16	11/32	1-5/16	15.56	18.92
1/8	3/16	3/8	1-5/16	15.56	18.92
9/64	3/16	13/32	1-7/16	15.56	18.92
5/32	3/16	7/16	1-7/16	15.56	18.92
11/64	3/16	15/32	1-11/16	15.56	18.92
3/16	3/16	1/2	1-11/16	15.56	18.92

TOLERANCES
 Flute Dia.: +.0003 - .000"
 Shank Dia.: +.0005 - .0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MDEM-4B	MDEM-4BT
1/32	3/16	3/32	2-1/4	27.98	32.64
3/64	3/16	9/64	2-1/4	26.76	31.42
1/16	3/16	3/16	2-1/4	24.34	29.00
5/64	3/16	15/64	2-1/4	25.54	30.20
3/32	3/16	9/32	2-1/4	24.34	29.00
7/64	3/16	21/64	2-1/4	25.54	30.20
1/8	3/16	3/8	2-1/4	24.34	29.00
9/64	3/16	13/32	2-1/4	25.54	30.20
5/32	3/16	7/16	2-1/4	24.34	29.00
11/64	3/16	1/2	2-1/4	25.54	30.20
3/16	3/16	1/2	2-1/4	24.34	29.00

MINIATURE 2 FLUTE DOUBLE END MILLS**ICS USA****GENERAL PURPOSE****CENTER CUTTING**

Miniature Double End Mills are small diameter (1/32" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

2 Flute - Regular Length
**RIGHT HAND CUT
RIGHT HAND HELIX**
2 Flute - Long Length

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MDEM-2R	MDEM-2T
1/32	3/16	3/32	2-1/4	15.12	19.78
1/16	3/16	7/32	2-1/4	15.12	19.78
5/64	3/16	1/4	2-1/4	15.12	19.78
3/32	3/16	5/16	2-1/4	15.12	19.78
7/64	3/16	11/32	2-1/4	15.12	19.78
1/8	3/16	3/8	2-1/4	15.12	19.78
9/64	3/16	13/32	2-1/4	15.12	19.78
5/32	3/16	7/16	2-1/4	15.12	19.78
11/64	3/16	15/32	2-1/4	15.12	19.78
3/16	3/16	1/2	2-1/4	15.12	19.78

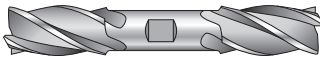
TOLERANCES
Flute Dia.: +.000 - .0015"
Shank Dia.: +.0005 - .0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MDEM-2L	MDEM-2LT
1/16	3/16	7/32	2-1/2	17.92	22.58
5/64	3/16	1/4	2-1/2	17.92	22.58
3/32	3/16	9/32	2-5/8	17.92	22.58
7/64	3/16	9/32	2-5/8	17.92	22.58
1/8	3/16	3/4	3-1/8	17.92	23.38
9/64	3/16	3/4	3-1/8	17.92	23.38
5/32	3/16	7/8	3-1/4	17.92	23.38
11/64	3/16	7/8	3-1/4	17.92	23.38
3/16	3/16	1	3-3/8	17.92	23.38

TOLERANCES
Flute Dia.: +.0003 - .000"
Shank Dia.: +.0005 - .0005"

MINIATURE 4 FLUTE DOUBLE END MILLS**ICS USA****GENERAL PURPOSE****NON-CENTER CUTTING**

Miniature Double End Mills are small diameter (1/32" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

4 Flute - Regular Length
**RIGHT HAND CUT
RIGHT HAND HELIX**
4 Flute - Long Length

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MDEM-4R	MDEM-4T
1/16	3/16	5/16	2-1/4	15.12	19.78
5/64	3/16	5/16	2-1/4	15.12	19.78
3/32	3/16	5/16	2-1/4	15.12	19.78
7/64	3/16	5/16	2-1/4	15.12	19.78
1/8	3/16	3/8	2-1/4	15.12	19.78
9/64	3/16	3/8	2-1/4	15.12	19.78
5/32	3/16	7/16	2-1/4	15.12	19.78
11/64	3/16	7/16	2-1/4	15.12	19.78
3/16	3/16	1/2	2-1/4	15.12	19.78

TOLERANCES
Flute Dia.: +.0003 - .000"
Shank Dia.: +.0005 - .0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				MDEM-4L	MDEM-4LT
1/16	3/16	7/32	2-5/8	17.92	22.58
5/64	3/16	1/4	2-5/8	17.92	22.58
3/32	3/16	9/32	2-5/8	17.92	22.58
7/64	3/16	9/32	2-5/8	17.92	22.58
1/8	3/16	3/4	3-1/8	17.92	22.58
9/64	3/16	3/4	3-1/8	17.92	22.58
5/32	3/16	7/8	3-1/4	17.92	22.58
11/64	3/16	7/8	3-1/4	17.92	22.58
3/16	3/16	1	3-3/8	17.92	22.58

TOLERANCES
Flute Dia.: +.0003 - .000"
Shank Dia.: +.0005 - .0005"

SUPER COBALT END MILLS

MT-17

ICS USA

HEAVY DUTY

CENTER CUTTING

Super Cobalt End Mills have a high resistance to abrasion and will stay sharp even when the cutting edge is subjected to extreme temperatures. Ideal for stainless steels and other work hardening alloys.

TiN Coated Super Cobalt End Mills combine the best features of cobalt and TiN coating. While many dramatic improvements in tool life have been claimed for TiN coating, only when a very hard material such as super cobalt is used, can the full potential of TiN coating be realized. This is because the very high RC 80 hardness of the TiN coating cannot be effective under machining stresses which can deform or degrade the structure of the much less hard material which it overlays.

2 Flute - Single End



REGULAR LENGTH

RIGHT HAND CUT
RIGHT HAND HELIX

2 Flute Ball Nose Single End



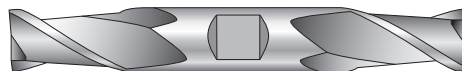
REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
				EMC-2R	EMC-2T
1/8	3/8	3/8	2-5/16	15.42	20.98
3/16	3/8	7/16	2-5/16	15.42	20.98
1/4	3/8	1/2	2-5/16	15.42	20.98
5/16	3/8	9/16	2-5/16	16.42	21.98
3/8	3/8	9/16	2-5/16	16.42	21.98
1/2	1/2	13/16	2-1/2	23.70	33.58
5/8	5/8	1-1/8	3-1/8	35.46	47.94
3/4	3/4	1-5/16	3-9/16	47.28	63.52
1	3/4	1-1/2	3-3/4	71.28	89.26
1	1	1-1/2	4-1/8	71.28	92.62
1-1/4	1-1/4	1-5/8	4-1/8	120.86	150.70
1-1/2	1-1/4	1-5/8	4-1/8	147.24	188.80

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
				EMC-2B	EMC-2BT
1/8	3/8	3/8	2-5/16	27.00	32.56
3/16	3/8	1/2	2-3/8	27.00	32.56
1/4	3/8	5/8	2-7/16	27.00	32.56
5/16	3/8	3/4	2-1/2	29.80	35.36
3/8	3/8	3/4	2-1/2	29.80	35.36
1/2	1/2	1	3	45.32	55.20
5/8	5/8	1-3/8	3-1/2	62.84	75.32
3/4	3/4	1-5/8	3-7/8	73.84	90.08
1	1	2-1/4	4-3/4	117.88	139.20
1-1/4	1-1/4	2-1/2	5	143.58	173.40
1-1/2	1-1/4	2-1/2	5	159.76	201.32

TOLERANCES
Flute Dia.: + .003 - .000"
Shank Dia.: + .0005 - .0005"

2 Flute - Double End



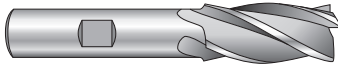
REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
				DEM-2R	DEM-2T
1/8	3/8	3/8	3-1/16	24.04	33.60
5/32	3/8	7/16	3-1/8	24.04	33.60
3/16	3/8	7/16	3-1/8	24.04	33.60
7/32	3/8	1/2	3-1/8	24.04	33.60
1/4	3/8	1/2	3-1/8	24.04	33.60
9/32	3/8	9/16	3-1/8	25.44	35.00
5/16	3/8	9/16	3-1/8	25.44	35.00
11/32	3/8	9/16	3-1/8	25.44	35.00
3/8	3/8	9/16	3-1/8	25.44	35.00
13/32	1/2	13/16	3-3/4	34.50	50.54

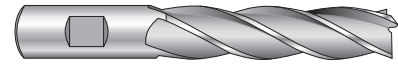
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
				DEM-2R	DEM-2T
7/16	1/2	13/16	3-3/4	34.50	50.54
15/32	1/2	13/16	3-3/4	34.50	50.54
1/2	1/2	13/16	3-3/4	34.50	50.54
9/16	5/8	1-1/8	4-1/2	50.52	69.72
5/8	5/8	1-1/8	4-1/2	50.52	69.72
11/16	3/4	1-5/16	5	63.14	89.74
3/4	3/4	1-5/16	5	63.14	89.74
7/8	7/8	1-9/16	5-1/2	79.20	116.56
1	1	1-5/8	5-7/8	99.20	136.38

TOLERANCES
Flute Dia.: +.0000 - .0015"
Shank Dia.: +.0005 - .0005"

NOTE: All Cobalt End Mills are furnished with a Weldon flat on the shank.

SUPER COBALT END MILLS**ICS USA****HEAVY DUTY****CENTER CUTTING****4 & 6 Flute - Single End**

REGULAR LENGTH

**RIGHT HAND CUT
RIGHT HAND HELIX****4 & 6 Long Flute Single End**

LONG LENGTH

ITEM NO.	DESCRIPTION
EMC-4R	Cobalt Single End Mill - 4 Flute - Center Cut
EMC-6R	Cobalt Single End Mill - 6 Flute - Center Cut
EMC-4T	TiN Coated Cobalt Single End Mill - 4 Flute - Center Cut
EMC-6T	TiN Coated Cobalt Single End Mill - 6 Flute - Center Cut

ITEM NO.	DESCRIPTION
EMC-4L	Cobalt Single End Mill - 4 Flute - Long - Center Cut
EMC-6L	Cobalt Single End Mill - 6 Flute - Long - Center Cut
EMC-4LT	TiN Coated Cobalt S. E. Mill - 4 Flute - Long - Center Cut
EMC-6LT	TiN Coated Cobalt S. E. Mill - 6 Flute - Long - Center Cut

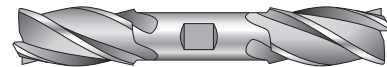
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					SUPER COBALT	TIN COATED
1/8	3/8	3/8	2-5/16	4	15.92	21.46
3/16	3/8	7/16	2-3/8	4	15.92	21.46
1/4	3/8	5/8	2-7/16	4	15.92	21.46
5/16	3/8	3/4	2-1/2	4	16.98	22.54
3/8	3/8	3/4	2-1/2	4	16.98	22.54
1/2	1/2	1-1/4	3-1/4	4	23.66	34.34
5/8	5/8	1-5/8	3-3/4	4	37.52	50.00
3/4	3/4	1-5/8	3-3/4	4	51.60	67.84
7/8	3/4	1-7/8	4-1/8	4	63.62	81.44
7/8	3/4	1-7/8	4-1/8	6	63.62	81.44
1	3/4	1-7/8	4-1/8	4	84.00	101.82
1	1	2	4-1/2	4	84.00	105.34
1	1	2	4-1/2	6	84.00	105.34
1-1/4	1-1/4	2	4-1/2	4	133.84	163.68
1-1/4	1-1/4	2	4-1/2	6	133.84	163.68
1-1/2	1-1/4	2	4-1/2	4	161.92	203.46
1-1/2	1-1/4	2	4-1/2	6	161.92	203.46

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH	
					SUPER COBALT	TIN COATED
1/4	3/8	1-1/4	3-1/16	4	17.14	23.50
5/16	3/8	1-3/8	3-1/8	4	17.14	23.50
3/8	3/8	1-1/2	3-1/4	4	17.92	24.30
1/2	1/2	2	4	4	26.10	36.80
5/8	5/8	2-1/2	4-5/8	4	39.20	51.98
3/4	3/4	3	5-1/4	4	54.32	76.48
7/8	7/8	3-1/2	5-3/4	4	75.04	99.94
1	1	4	6-1/2	4	106.40	132.88
1-1/4	1-1/4	4	6-1/2	6	180.48	222.88
1-1/2	1-1/4	4	6-1/2	6	221.76	274.96

TOLERANCES
 Flute Dia.: + .003 - .000"
 Shank Dia.: + .0005 - .0005"

4 Flute Ball Nose Single End

REGULAR LENGTH

**RIGHT HAND CUT
RIGHT HAND HELIX****4 Flute Double End**

REGULAR LENGTH

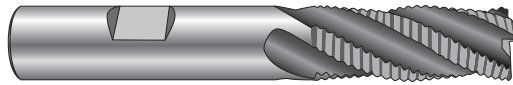
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TIN COATED
3/8	3/8	3/4	2-1/2	38.76	44.32
1/2	1/2	1-1/4	3-1/4	60.24	70.92
5/8	5/8	1-5/8	3-3/4	78.36	90.84
3/4	3/4	1-5/8	3-7/8	87.22	103.46
1	1	2	4-1/2	120.76	142.10

TOLERANCES
 Flute Dia.: +.003 - .000"
 Shank Dia.: +.0005 - .0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TIN COATED
1/8	3/8	3/8	3-1/16	26.22	35.78
3/16	3/8	1/2	3-1/4	26.22	35.78
1/4	3/8	5/8	3-3/8	26.22	35.78
5/16	3/8	3/4	3-1/2	26.22	35.78
3/8	3/8	3/4	3-1/2	26.22	35.78
1/2	1/2	1	4-1/8	38.64	55.86
5/8	5/8	1-3/8	5	57.36	76.56
3/4	3/4	1-5/8	5-5/8	74.42	107.66
1	1	1-7/8	6-3/8	108.98	148.70

End Mill Holders and Milling Machine Adapters are on pages 288 & 289.

NOTE: All Cobalt End Mills are furnished with a Weldon flat on the shank.

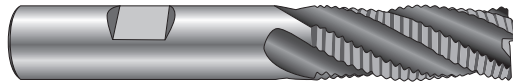
SUPER (M2-AL) ROUGHING END MILLS**ICS USA****HEAVY DUTY****NON-CENTER CUTTING****WELDON
SHANK****RIGHT HAND CUT
RIGHT HAND HELIX**

COARSE TOOTH

Super (M2-AL) High Speed Steel Roughing End Mills are designed for roughing or “hogging” large amounts of metal prior to a finish milling operation. M2-AL High Speed Steel is a premium alloy formed by adding aluminum to the base chemical composition of M2 HSS to extend tool life and to dissipate heat. It is often referred to as “Super Steel”. Roughing End Mills are also known as Hogging End Mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE REMA
1/4	3/8	5/8	2-7/16	4	16.98
5/16	3/8	3/4	2-1/2	4	17.54
3/8	3/8	3/4	2-1/2	4	19.44
1/2	1/2	1-1/4	3-1/4	4	20.90
1/2	1/2	2	4	4	27.28
5/8	5/8	1-5/8	3-3/4	4	26.72
3/4	5/8	1-5/8	3-3/4	4	33.78
3/4	5/8	3	5-1/8	4	41.84
3/4	3/4	1-5/8	3-3/4	4	33.78
3/4	3/4	3	5-1/4	4	41.84
7/8	3/4	1-7/8	4-1/8	5	39.94
7/8	3/4	3-1/2	5-5/8	5	48.56
1	3/4	2	4	5	46.32
1	1	2	4-1/2	4	46.32
1	1	3	5-1/2	5	59.76
1	1	4	6-1/2	5	61.22

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE REMA
1-1/8	1	2	4-1/2	6	61.04
1-1/4	1-1/4	2	4-1/2	5	61.22
1-1/4	1-1/4	3	5-1/2	6	70.96
1-1/4	1-1/4	4	6-1/2	6	85.12
1-1/2	1-1/4	2	4-1/2	6	118.72
1-1/2	1-1/4	3	5-1/2	6	111.62
1-1/2	1-1/4	4	6-1/2	6	134.02
1-3/4	1-1/4	2	4-1/2	6	148.96
1-3/4	1-1/4	4	6-1/2	6	152.72
2	1-1/4	2	5-3/4	8	164.26
2	1-1/4	4	6-1/2	8	176.40
2	2	4	7-3/4	8	231.84
2	2	6	9-3/4	8	251.06
2	2	8	11-3/4	8	313.60
2	2	10	13-3/4	8	369.60
2	2	12	15-1/2	8	436.80

COBALT (M42) ROUGHING END MILLS**ICS USA****HEAVY DUTY****NON-CENTER CUTTING****WELDON
SHANK****RIGHT HAND CUT
RIGHT HAND HELIX**

COARSE TOOTH

Cobalt Roughing End Mills are designed for roughing or “hogging” large amounts of metal prior to a finish milling operation. They are used for deep slotting or heavy side cuts and require less power than conventional end mills. Ideal for machining high alloyed steels, titanium alloys, and cast alloys. Form-relieved edges stay constant and can be resharpened by grinding the faces. Roughing End Mills are also known as Hogging End Mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE REMC
1/4	3/8	5/8	2-7/16	4	26.48
5/16	3/8	3/4	2-1/2	4	26.48
3/8	3/8	3/4	2-1/2	4	26.48
1/2	1/2	1-1/4	3-1/4	4	40.96
1/2	1/2	2	4	4	53.38
5/8	5/8	1-5/8	3-3/4	4	55.04
3/4	5/8	1-5/8	3-3/4	4	62.62
3/4	5/8	3	5-1/8	4	71.92
3/4	3/4	1-5/8	3-3/4	4	62.62
3/4	3/4	3	5-1/4	4	71.92
7/8	3/4	1-7/8	4-1/8	5	83.74
7/8	3/4	3-1/2	5-5/8	5	87.30
1	3/4	2	4	5	92.96
1	1	2	4-1/2	4	92.96
1	1	3	5-1/2	5	102.66
1	1	4	6-1/2	5	111.94

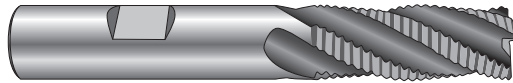
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE REMC
1-1/8	1	2	4-1/2	6	114.24
1-1/4	1-1/4	2	4-1/2	5	148.40
1-1/4	1-1/4	3	5-1/2	6	165.88
1-1/4	1-1/4	4	6-1/2	6	178.38
1-1/2	1-1/4	2	4-1/2	6	177.12
1-1/2	1-1/4	3	5-1/2	6	200.44
1-1/2	1-1/4	4	6-1/2	6	211.76
1-3/4	1-1/4	2	4-1/2	6	237.38
1-3/4	1-1/4	4	6-1/2	6	269.10
2	1-1/4	2	5-3/4	8	270.90
2	1-1/4	4	6-1/2	8	327.54
2	2	4	7-3/4	8	453.00
2	2	6	9-3/4	8	505.64
2	2	8	11-3/4	8	691.64
2	2	10	13-3/4	8	831.60
2	2	12	15-1/2	8	970.22

NOTE:
All 2" Shank Roughing End Mills have combination “Shur-Lock” shanks.

TOLERANCES
Flute Dia.: +.005 - .005”
Shank Dia.: +.0005 - .0005”

PREMIUM (10% COBALT) MICROGRAIN CARBIDE SOLID CARBIDE ROUGHING END MILLS

ICS USA

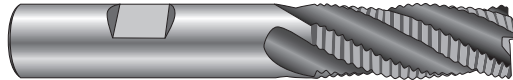
HEAVY DUTY**NON-CENTER CUTTING**
WELDON SHANKS
3/8" TO 1" DIA.


Type "N" for Nickel Alloys

RIGHT HAND CUT
RIGHT HAND HELIX

Type "A" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling aluminum, brass, and copper alloys. Corner radius design eliminates corner chipping.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH		
					TiN COATED	TiCN COATED	TiAN COATED
					SCREMAT	SCREMATC	SCREMATA
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

WELDON SHANKS
3/8" TO 1" DIA.


Type "A" for Aluminum Alloys

RIGHT HAND CUT
RIGHT HAND HELIX

Type "N" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling Titanium, Inconel, Rene, Waspaloy and high temperature nickel base alloys. Corner radius design eliminates corner chipping.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH		
					TiN COATED	TiCN COATED	TiAN COATED
					SCREMNT	SCREMNTC	SCREMNTA
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

WELDON SHANKS
3/8" TO 1" DIA.


Type "S" for Steel Alloys

RIGHT HAND CUT
RIGHT HAND HELIX

Type "S" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling mild steel, steel alloys, stainless steel, and cast iron. Corner radius design eliminates corner chipping.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE EACH		
					TiN COATED	TiCN COATED	TiAN COATED
					SCREMST	SCREMSTC	SCREMSTA
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

TOLERANCES
 Flute Dia.: + .000 - .004"
 Shank Dia.: + .0001 - .0004"

CORNER RADIUS
 1/4 to 5/16 = .045
 3/8 to 1 = .060

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE 2 FLUTE END MILLS

MT-21

ICS USA

HEAVY DUTY

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

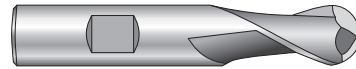
2 Flute - Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-2R	TiN COATED SCEM-2T
1/16	1/8	3/16	1-1/2	14.46	17.26
3/32	1/8	3/8	1-1/2	14.46	17.26
1/8	1/8	1/2	1-1/2	13.78	16.58
5/32	3/16	9/16	2	18.82	21.62
3/16	3/16	5/8	2	18.82	21.62
7/32	1/4	5/8	2-1/2	24.54	29.64
1/4	1/4	3/4	2-1/2	24.34	29.44
9/32	5/16	3/4	2-1/2	31.82	38.60
5/16	5/16	13/16	2-1/2	31.82	38.60
11/32	3/8	1	2-1/2	42.06	48.84
3/8	3/8	1	2-1/2	42.06	48.84
7/16	7/16	1	2-3/4	61.76	72.64
1/2	1/2	1	3	71.76	82.62
9/16	9/16	1-1/4	3-1/2	125.00	138.74
5/8	5/8	1-1/4	3-1/2	130.02	143.76
11/16	3/4	1-1/2	4	212.80	230.68
3/4	3/4	1-1/2	4	212.80	230.68
7/8	7/8	1-1/2	4	315.84	335.74
1	1	1-1/2	4	350.00	369.78

2 Flute Ball Nose Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-2B	TiN COATED SCEM-2BT
1/16	1/8	3/16	1-1/2	17.62	20.42
3/32	1/8	3/8	1-1/2	17.62	20.42
1/8	1/8	1/2	1-1/2	17.62	20.42
5/32	3/16	9/16	2	23.78	26.58
3/16	3/16	5/8	2	23.78	26.58
7/32	1/4	5/8	2-1/2	28.36	33.48
1/4	1/4	3/4	2-1/2	31.58	36.68
9/32	5/16	3/4	2-1/2	39.82	46.60
5/16	5/16	13/16	2-1/2	39.82	46.60
3/8	3/8	1	2-1/2	51.06	57.84
7/16	7/16	1	2-1/2	66.42	77.28
1/2	1/2	1	2-3/4	86.12	96.98
9/16	9/16	1-1/4	3	142.02	155.76
5/8	5/8	1-1/4	3-1/2	158.54	172.26
11/16	3/4	1-1/2	3-1/2	263.06	280.92
3/4	3/4	1-1/2	4	228.64	246.52
7/8	7/8	1-1/2	4	377.30	397.08
1	1	1-1/2	4	406.42	426.20

2 Flute - Double End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SDCEM-2R	TiN COATED SDCEM-2T
1/8	3/8	3/8	3-1/16	31.00	40.38
5/32	3/8	7/16	3-1/8	44.18	53.56
3/16	3/8	1/2	3-1/4	44.18	53.56
7/32	3/8	9/16	3-3/8	48.50	57.88
1/4	3/8	5/8	3-3/8	49.00	58.38
9/32	3/8	11/16	3-1/2	65.94	75.32
5/16	3/8	3/4	3-1/2	58.50	67.88
3/8	3/8	3/4	3-1/2	75.68	85.06
7/16	1/2	7/8	4	107.20	122.96
1/2	1/2	1	4	120.84	136.60

2 Flute Ball Nose Double End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCDEM-2B	TiN COATED SCDEM-2BT
1/8	3/8	3/8	3-1/16	37.72	47.10
5/32	3/8	7/16	3-1/8	53.70	63.08
3/16	3/8	1/2	3-1/4	53.70	63.08
7/32	3/8	9/16	3-3/8	58.96	68.34
1/4	3/8	5/8	3-3/8	59.60	68.98
9/32	3/8	11/16	3-1/2	83.10	92.48
5/16	3/8	3/4	3-1/2	67.68	77.06
3/8	3/8	3/4	3-1/2	87.60	96.98
7/16	1/2	7/8	4	124.40	140.16
1/2	1/2	1	4	139.82	155.58

TOLERANCES

1/32" - 1/4" Flute Dia.: + .000 - .002"
 17/64" - 1" Flute Dia.: + .000 - .003"
 All Sizes Shank Dia.: + .000 - .005"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE SOLID CARBIDE 2 FLUTE END MILLS

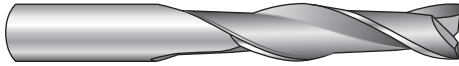
ICS USA

HEAVY DUTY

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

2 Flute - Single End (Long)



LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCSEM-2L	SCSEM-2LT
1/8	1/8	3/4	2-1/4	18.60	21.06
3/16	3/16	3/4	2-1/2	22.00	25.10
1/4	1/4	1-1/8	3	28.22	31.92
5/16	5/16	1-1/8	3	37.82	42.74
3/8	3/8	1-1/8	3	44.40	49.34
1/2	1/2	2	4-1/2	85.02	95.20
5/8	5/8	2-1/4	5	159.00	170.36
3/4	3/4	2-1/4	5	211.22	227.06
1	1	2-1/4	5	380.40	399.44

2 Flute - Single End (Extra Long)



EXTRA LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCSEM-2XL	SCSEM-2XLT
1/8	1/8	1	3	21.60	24.06
3/16	3/16	1-1/8	3	25.42	28.54
1/4	1/4	1-1/2	4	35.60	40.64
5/16	5/16	1-5/8	4	45.02	50.66
3/8	3/8	1-3/4	4	55.80	61.46
1/2	1/2	3	6	138.02	153.48
5/8	5/8	3	6	223.80	241.62
3/4	3/4	3	6	278.02	297.68
1	1	3	6	480.02	502.20

2 Flute - Double End (Stub)



STUB LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEM-2S	SCDEM-2ST
1/16	1/8	1/8	1-1/2	16.60	19.40
3/32	1/8	3/16	1-1/2	16.60	19.40
1/8	1/8	1/4	1-1/2	15.80	18.60
5/32	3/16	5/16	2	21.02	24.02
3/16	3/16	3/8	2	22.62	25.60
7/32	1/4	1/2	2-1/2	27.80	33.40
1/4	1/4	1/2	2-1/2	27.80	33.40
5/16	5/16	1/2	2-1/2	31.82	39.20
3/8	3/8	9/16	2-1/2	39.00	46.40
7/16	7/16	5/8	2-3/4	65.02	78.18
1/2	1/2	5/8	3	77.02	90.20

2 Flute Ball Nose Double End (Stub)



STUB LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEM-2SB	SCDEM-2SBT
1/16	1/8	1/8	1-1/2	22.62	25.42
3/32	1/8	3/16	1-1/2	22.62	25.42
1/8	1/8	1/4	1-1/2	21.80	24.60
5/32	3/16	5/16	2	26.62	29.60
3/16	3/16	3/8	2	27.40	30.38
7/32	1/4	1/2	2-1/2	35.02	40.62
1/4	1/4	1/2	2-1/2	35.02	40.62
5/16	5/16	1/2	2-1/2	47.82	55.20
3/8	3/8	9/16	2-1/2	57.42	64.82
7/16	7/16	5/8	2-3/4	79.02	92.18
1/2	1/2	5/8	3	90.22	103.60

TOLERANCES

Flute Dia.: + .000 - .002"
Shank Dia.: - .0001 - .0004"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE 4 FLUTE END MILLS

MT-23

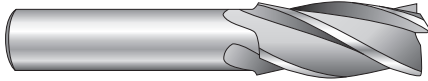
ICS USA

HEAVY DUTY

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

4 Flute - Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCEM-4R	SCEM-4T
1/16	1/8	3/16	1-1/2	14.46	17.26
3/32	1/8	3/8	1-1/2	14.46	17.26
1/8	1/8	1/2	1-1/2	13.78	16.58
5/32	3/16	9/16	2	18.82	21.62
3/16	3/16	5/8	2	18.82	21.62
7/32	1/4	5/8	2-1/2	24.54	29.64
1/4	1/4	3/4	2-1/2	24.34	29.44
9/32	5/16	3/4	2-1/2	31.82	38.60
5/16	5/16	13/16	2-1/2	31.82	38.60
11/32	3/8	1	2-1/2	42.06	48.84
3/8	3/8	1	2-1/2	42.06	48.84
7/16	7/16	1	2-3/4	61.76	72.64
1/2	1/2	1	3	71.76	82.62
9/16	9/16	1-1/4	3-1/2	125.00	138.74
5/8	5/8	1-1/4	3-1/2	130.02	143.76
11/16	3/4	1-1/2	4	212.80	230.68
3/4	3/4	1-1/2	4	212.80	230.68
7/8	7/8	1-1/2	4	315.84	335.74
1	1	1-1/2	4	350.00	369.78

4 Flute Ball Nose Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCEM-4B	SCEM-4BT
1/16	1/8	3/16	1-1/2	17.62	20.42
3/32	1/8	3/8	1-1/2	17.62	20.42
1/8	1/8	1/2	1-1/2	17.62	20.42
5/32	3/16	9/16	2	23.78	26.58
3/16	3/16	5/8	2	23.78	26.58
7/32	1/4	5/8	2-1/2	28.36	33.48
1/4	1/4	3/4	2-1/2	31.58	36.68
9/32	5/16	3/4	2-1/2	39.82	46.60
5/16	5/16	13/16	2-1/2	39.82	46.60
3/8	3/8	1	2-1/2	51.06	57.84
7/16	7/16	1	2-1/2	66.42	77.28
1/2	1/2	1	2-3/4	86.12	96.98
9/16	9/16	1-1/4	3	142.02	155.76
5/8	5/8	1-1/4	3-1/2	158.54	172.26
11/16	3/4	1-1/2	3-1/2	263.06	280.92
3/4	3/4	1-1/2	4	228.64	246.52
7/8	7/8	1-1/2	4	377.30	397.08
1	1	1-1/2	4	406.42	426.20

4 Flute - Double End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SDCEM-4R	SCDEM-4T
1/8	3/8	3/8	3-1/16	34.72	45.24
5/32	3/8	7/16	3-1/8	49.50	60.00
3/16	3/8	1/2	3-1/4	49.50	60.00
7/32	3/8	9/16	3-3/8	54.32	64.84
1/4	3/8	5/8	3-3/8	54.88	65.40
9/32	3/8	11/16	3-1/2	73.86	84.36
5/16	3/8	3/4	3-1/2	65.52	76.04
3/8	3/8	3/4	3-1/2	84.78	95.28
7/16	1/2	7/8	4	120.08	137.22
1/2	1/2	1	4	135.36	153.00

4 Flute Ball Nose Double End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCDEM-4B	SCDEM-4BT
1/8	3/8	3/8	3-1/16	42.26	52.76
5/32	3/8	7/16	3-1/8	60.16	70.66
3/16	3/8	1/2	3-1/4	60.16	70.66
7/32	3/8	9/16	3-3/8	66.04	76.56
1/4	3/8	5/8	3-3/8	66.76	77.26
9/32	3/8	11/16	3-1/2	93.08	103.58
5/16	3/8	3/4	3-1/2	75.82	86.32
3/8	3/8	3/4	3-1/2	98.12	108.62
7/16	1/2	7/8	4	139.34	156.98
1/2	1/2	1	4	156.60	174.26

TOLERANCES

1/32" - 1/4" Flute Dia.: + .000 - .002"
 17/64" - 1" Flute Dia.: + .000 - .003"
 All Sizes Shank Dia.: + .000 - .005"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE 4 FLUTE END MILLS

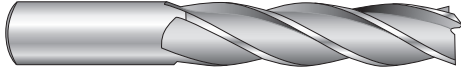
ICS USA

HEAVY DUTY

CENTER CUTTING

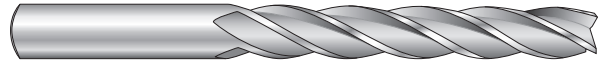
Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

4 Flute - Single End (Long)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEM-4L	SCEM-4LT
1/8	1/8	3/4	2-1/4	18.60	21.06
3/16	3/16	3/4	2-1/2	22.00	25.10
1/4	1/4	1-1/8	3	28.22	31.92
5/16	5/16	1-1/8	3	37.82	42.74
3/8	3/8	1-1/8	3	44.40	49.34
1/2	1/2	2	4-1/2	85.02	95.20
5/8	5/8	2-1/4	5	159.00	170.36
3/4	3/4	2-1/4	5	211.22	227.06
1	1	2-1/4	5	380.40	399.44

4 Flute - Single End (Extra Long)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEM-4XL	SCEM-4XLT
1/8	1/8	1	3	21.60	24.06
3/16	3/16	1-1/8	3	25.42	28.54
1/4	1/4	1-1/2	4	35.60	40.64
5/16	5/16	1-5/8	4	45.02	50.66
3/8	3/8	1-3/4	4	55.80	61.46
1/2	1/2	3	6	138.02	153.48
5/8	5/8	3	6	223.80	241.62
3/4	3/4	3	6	278.02	297.68
1	1	3	6	480.02	502.20

4 Flute - Double End (Stub)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEM-4S	SCDEM-4ST
1/16	1/8	1/8	1-1/2	16.60	17.32
3/32	1/8	3/16	1-1/2	16.60	17.32
1/8	1/8	1/4	1-1/2	15.80	16.60
5/32	3/16	5/16	2	21.02	21.42
3/16	3/16	3/8	2	22.62	22.84
7/32	1/4	1/2	2-1/2	27.80	29.82
1/4	1/4	1/2	2-1/2	27.80	29.82
5/16	5/16	1/2	2-1/2	31.82	35.00
3/8	3/8	9/16	2-1/2	39.00	41.42
7/16	7/16	5/8	2-3/4	65.02	69.80
1/2	1/2	5/8	3	77.02	80.52

4 Flute Ball Nose Double End (Stub)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEM-4SB	SCDEM-4SBT
1/16	1/8	1/8	1-1/2	22.62	25.42
3/32	1/8	3/16	1-1/2	22.62	25.42
1/8	1/8	1/4	1-1/2	21.80	24.60
5/32	3/16	5/16	2	26.62	29.60
3/16	3/16	3/8	2	27.40	30.38
7/32	1/4	1/2	2-1/2	35.02	40.62
1/4	1/4	1/2	2-1/2	35.02	40.62
5/16	5/16	1/2	2-1/2	47.82	55.20
3/8	3/8	9/16	2-1/2	57.42	64.82
7/16	7/16	5/8	2-3/4	79.02	92.18
1/2	1/2	5/8	3	90.22	103.60

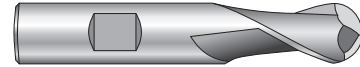
TOLERANCES
 Flute Dia.: + .000 - .002"
 Shank Dia.: - .0001 - .0004"

SOLID CARBIDE 2 FLUTE END MILLS - METRIC**ICS USA****HEAVY DUTY****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

2 Flute Single End

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCEMM-2R	SCEMM-2T
1.0	3.0	4.0	38.0	16.58	18.82
1.5	3.0	4.5	38.0	16.58	18.82
2.0	3.0	6.3	38.0	16.58	18.82
2.5	3.0	9.5	38.0	16.58	18.82
3.0	3.0	12.0	38.0	15.80	18.04
3.5	4.0	12.0	50.0	21.76	24.00
4.0	4.0	14.0	50.0	21.76	24.00
4.5	6.0	16.0	50.0	27.36	30.50
5.0	6.0	16.0	50.0	27.36	30.50
6.0	6.0	19.0	50.0	28.66	31.80
7.0	8.0	19.0	63.0	31.10	36.02
8.0	8.0	20.0	63.0	32.36	37.28
9.0	10.0	22.0	75.0	48.32	57.28
10.0	10.0	22.0	75.0	60.18	69.14
11.0	12.0	25.0	75.0	66.26	75.22
12.0	12.0	25.0	75.0	69.88	78.84
14.0	14.0	32.0	89.0	118.56	129.76
16.0	16.0	32.0	89.0	132.66	147.22
18.0	18.0	38.0	100.0	195.80	210.36
20.0	20.0	38.0	100.0	282.10	298.10
25.0	25.0	38.0	100.0	369.32	385.34

2 Flute Ball Nose Single End

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCEMM-2B	SCEMM-2BT
1.0	3.0	4.0	38.0	20.88	23.12
1.5	3.0	4.5	38.0	20.88	23.12
2.0	3.0	6.3	38.0	20.88	23.12
2.5	3.0	9.5	38.0	20.88	23.12
3.0	3.0	12.0	38.0	18.98	21.22
3.5	4.0	12.0	50.0	26.10	28.34
4.0	4.0	14.0	50.0	26.10	28.34
4.5	6.0	16.0	50.0	32.90	36.02
5.0	6.0	16.0	50.0	32.90	36.02
6.0	6.0	19.0	50.0	34.42	37.56
7.0	8.0	19.0	63.0	37.32	42.26
8.0	8.0	20.0	63.0	38.78	43.72
9.0	10.0	22.0	75.0	57.96	66.92
10.0	10.0	22.0	75.0	72.22	81.18
11.0	12.0	25.0	75.0	79.88	88.54
12.0	12.0	25.0	75.0	83.92	92.88
14.0	14.0	32.0	89.0	142.22	153.42
16.0	16.0	32.0	89.0	159.18	173.74
18.0	18.0	38.0	100.0	235.00	249.56
20.0	20.0	38.0	100.0	338.52	354.54
25.0	25.0	38.0	100.0	443.22	459.24

**2 Flute - Double End
(Stub)**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCDEMM-2S	SCDEMM-2ST
1.0	3.0	2.0	38.0	24.54	27.34
1.5	3.0	3.0	38.0	24.54	27.34
2.0	3.0	4.0	38.0	20.58	23.38
2.5	3.0	5.0	38.0	20.58	23.38
3.0	3.0	6.0	38.0	19.20	22.00
3.5	4.0	7.0	50.0	27.36	30.38
4.0	4.0	8.0	50.0	27.36	30.38
4.5	4.5	9.5	63.0	31.62	36.32
5.0	5.0	10.0	63.0	31.62	37.22
6.0	6.0	12.0	63.0	35.88	41.48
7.0	8.0	12.0	63.0	42.60	49.98
8.0	8.0	12.0	63.0	49.58	56.68
9.0	9.0	14.0	75.0	61.92	69.32
10.0	10.0	14.0	75.0	74.58	88.02
11.0	12.0	14.0	75.0	82.12	95.56
12.0	12.0	16.0	75.0	89.58	103.02

**2 Flute Ball Nose Double End
(Stub)**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCDEMM-2SB	SCDEMM-2SBT
1.0	3.0	2.0	38.0	29.48	-
1.5	3.0	3.0	38.0	29.48	-
2.0	3.0	4.0	38.0	24.76	-
2.5	3.0	5.0	38.0	24.76	-
3.0	3.0	6.0	38.0	23.08	-
3.5	4.0	7.0	50.0	32.92	-
4.0	4.0	8.0	50.0	32.92	-
4.5	4.5	9.5	63.0	37.94	CALL FOR PRICE
5.0	5.0	10.0	63.0	37.94	
6.0	6.0	12.0	63.0	43.04	
7.0	8.0	12.0	63.0	51.10	
8.0	8.0	12.0	63.0	59.20	
9.0	9.0	14.0	75.0	74.36	
10.0	10.0	14.0	75.0	89.50	
11.0	12.0	14.0	75.0	98.56	
12.0	12.0	16.0	75.0	107.56	

TOLERANCES

Flute Dia.: + .000 - .005"
Shank Dia.: + .000 - .001"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE SOLID CARBIDE 4 FLUTE END MILLS - METRIC

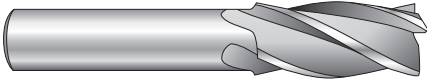
ICS USA

HEAVY DUTY

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

4 Flute Single End



SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEMM-4R	SCEMM-4T
1.0	3.0	4.0	38.0	16.58	18.82
1.5	3.0	4.5	38.0	16.58	18.82
2.0	3.0	6.3	38.0	16.58	18.82
2.5	3.0	9.5	38.0	16.58	18.82
3.0	3.0	12.0	38.0	15.80	18.04
3.5	4.0	12.0	50.0	21.76	24.00
4.0	4.0	14.0	50.0	21.76	24.00
4.5	6.0	16.0	50.0	27.36	30.50
5.0	6.0	16.0	50.0	27.36	30.50
6.0	6.0	19.0	50.0	28.66	31.80
7.0	8.0	19.0	63.0	31.10	36.02
8.0	8.0	20.0	63.0	32.36	37.28
9.0	10.0	22.0	75.0	48.32	57.28
10.0	10.0	22.0	75.0	60.18	69.14
11.0	12.0	25.0	75.0	66.26	75.22
12.0	12.0	25.0	75.0	69.88	78.84
14.0	14.0	32.0	89.0	118.56	129.76
16.0	16.0	32.0	89.0	132.66	147.22
18.0	18.0	38.0	100.0	195.80	210.36
20.0	20.0	38.0	100.0	282.10	298.10
25.0	25.0	38.0	100.0	369.32	385.34

4 Flute Ball Nose Single End



SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEMM-4B	SCEMM-4BT
1.0	3.0	4.0	38.0	20.88	23.12
1.5	3.0	4.5	38.0	20.88	23.12
2.0	3.0	6.3	38.0	20.88	23.12
2.5	3.0	9.5	38.0	20.88	23.12
3.0	3.0	12.0	38.0	18.98	21.22
3.5	4.0	12.0	50.0	26.10	28.34
4.0	4.0	14.0	50.0	26.10	28.34
4.5	6.0	16.0	50.0	32.90	36.02
5.0	6.0	16.0	50.0	32.90	36.02
6.0	6.0	19.0	50.0	34.42	37.56
7.0	8.0	19.0	63.0	37.32	42.26
8.0	8.0	20.0	63.0	38.78	43.72
9.0	10.0	22.0	75.0	57.96	66.92
10.0	10.0	22.0	75.0	72.22	81.18
11.0	12.0	25.0	75.0	79.88	88.54
12.0	12.0	25.0	75.0	83.92	92.88
14.0	14.0	32.0	89.0	142.22	153.42
16.0	16.0	32.0	89.0	159.18	173.74
18.0	18.0	38.0	100.0	235.00	249.56
20.0	20.0	38.0	100.0	338.52	354.54
25.0	25.0	38.0	100.0	443.22	459.24

4 Flute - Double End (Stub)



SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEMM-4S	SCDEMM-4ST
1.0	3.0	2.0	38.0	24.54	27.34
1.5	3.0	3.0	38.0	24.54	27.34
2.0	3.0	4.0	38.0	20.58	23.38
2.5	3.0	5.0	38.0	20.58	23.38
3.0	3.0	6.0	38.0	19.20	22.00
3.5	4.0	7.0	50.0	27.36	30.38
4.0	4.0	8.0	50.0	27.36	30.38
4.5	4.5	9.5	63.0	31.62	36.32
5.0	5.0	10.0	63.0	31.62	37.22
6.0	6.0	12.0	63.0	35.88	41.48
7.0	8.0	12.0	63.0	42.60	49.98
8.0	8.0	12.0	63.0	49.58	56.68
9.0	9.0	14.0	75.0	61.92	69.32
10.0	10.0	14.0	75.0	74.58	88.02
11.0	12.0	14.0	75.0	82.12	95.56
12.0	12.0	16.0	75.0	89.58	103.02

4 Flute Ball Nose Double End (Stub)



SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDEMM-4SB	SCDEMM-4SBT
1.0	3.0	2.0	38.0	29.48	-
1.5	3.0	3.0	38.0	29.48	-
2.0	3.0	4.0	38.0	24.76	-
2.5	3.0	5.0	38.0	24.76	-
3.0	3.0	6.0	38.0	23.08	-
3.5	4.0	7.0	50.0	32.92	-
4.0	4.0	8.0	50.0	32.92	-
4.5	4.5	9.5	63.0	37.94	-
5.0	5.0	10.0	63.0	37.94	-
6.0	6.0	12.0	63.0	43.04	-
7.0	8.0	12.0	63.0	51.10	-
8.0	8.0	12.0	63.0	59.20	-
9.0	9.0	14.0	75.0	74.36	-
10.0	10.0	14.0	75.0	89.50	-
11.0	12.0	14.0	75.0	98.56	-
12.0	12.0	16.0	75.0	107.56	-

TOLERANCES

Flute Dia.: + .000 - .005"
Shank Dia.: + .000 - .001"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE 3 FLUTE END MILLS

MT-27

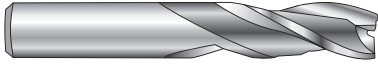
ICS USA

HEAVY DUTY

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

3 Flute Single End



REGULAR LENGTH

3 Flute Ball Nose Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEM-3R	SCEM-3T
1/64	1/8	1/32	1-1/2	34.90	37.92
1/32	1/8	5/64	1-1/2	20.32	23.30
3/64	1/8	7/64	1-1/2	20.32	23.30
1/16	1/8	3/16	1-1/2	16.56	19.56
5/64	1/8	3/16	1-1/2	16.56	19.56
3/32	1/8	9/32	1-1/2	16.56	19.56
7/64	1/8	3/8	1-1/2	16.56	19.56
1/8	1/8	1/2	1-1/2	15.80	18.78
9/64	3/16	1/2	2	21.70	25.70
5/32	3/16	1/2	2	21.70	25.70
11/64	3/16	5/8	2	22.28	26.28
3/16	3/16	5/8	2	22.28	26.28
13/64	1/4	5/8	2-1/2	27.32	34.88
7/32	1/4	5/8	2-1/2	27.32	34.88
15/64	1/4	3/4	2-1/2	28.60	36.16
1/4	1/4	3/4	2-1/2	28.60	36.16
17/64	5/16	3/4	2-1/2	30.92	38.92
9/32	5/16	3/4	2-1/2	30.92	38.92
19/64	5/16	13/16	2-1/2	32.18	40.18
5/16	5/16	13/16	2-1/2	32.18	40.18
21/64	3/8	1	2-1/2	40.76	52.34
11/32	3/8	1	2-1/2	40.76	52.34
23/64	3/8	1	2-1/2	40.76	52.34
3/8	3/8	1	2-1/2	40.76	52.34
25/64	7/16	1	2-3/4	59.88	73.86
13/32	7/16	1	2-3/4	59.88	73.86
27/64	7/16	1	2-3/4	59.88	73.86
7/16	7/16	1	2-3/4	59.88	73.86
29/64	1/2	1	3	59.88	83.56
15/32	1/2	1	3	69.58	83.56
31/64	1/2	1	3	69.58	83.56
1/2	1/2	1	3	69.58	83.56
9/16	9/16	1-1/8	3-1/2	117.92	137.84
5/8	5/8	1-1/4	3-1/2	117.92	155.90
11/16	3/4	1-3/8	4	132.00	218.76
3/4	3/4	1-1/2	4	194.86	218.76
7/8	7/8	1-1/2	4	337.40	372.36
1	1	1-1/2	4	345.14	380.10

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCEM-3B	SCEM-3BT
1/64	1/8	1/32	1-1/2	43.94	46.92
1/32	1/8	5/64	1-1/2	25.54	28.54
3/64	1/8	7/64	1-1/2	25.54	28.54
1/16	1/8	3/16	1-1/2	20.84	23.84
5/64	1/8	3/16	1-1/2	20.84	23.84
3/32	1/8	9/32	1-1/2	20.84	23.84
7/64	1/8	3/8	1-1/2	20.84	23.84
1/8	1/8	1/2	1-1/2	18.94	21.92
9/64	3/16	1/2	2	26.02	30.02
5/32	3/16	1/2	2	26.02	30.02
11/64	3/16	5/8	2	26.82	30.84
3/16	3/16	5/8	2	26.82	30.84
13/64	1/4	5/8	2-1/2	32.64	40.24
7/32	1/4	5/8	2-1/2	32.64	40.24
15/64	1/4	3/4	2-1/2	34.32	41.92
1/4	1/4	3/4	2-1/2	34.32	41.92
17/64	5/16	3/4	2-1/2	37.12	45.14
9/32	5/16	3/4	2-1/2	37.12	45.14
19/64	5/16	13/16	2-1/2	37.12	46.66
5/16	5/16	13/16	2-1/2	39.80	46.66
21/64	3/8	1	2-1/2	48.90	60.48
11/32	3/8	1	2-1/2	48.90	60.48
23/64	3/8	1	2-1/2	48.90	60.48
3/8	3/8	1	2-1/2	48.90	60.48
25/64	7/16	1	2-3/4	71.92	85.90
13/32	7/16	1	2-3/4	71.92	85.90
27/64	7/16	1	2-3/4	71.92	85.90
7/16	7/16	1	2-3/4	71.92	85.90
29/64	1/2	1	3	83.48	97.44
15/32	1/2	1	3	83.48	97.44
31/64	1/2	1	3	83.48	97.44
1/2	1/2	1	3	83.48	97.44
9/16	9/16	1-1/8	3-1/2	141.56	161.44
5/8	5/8	1-1/4	3-1/2	158.40	182.30
11/16	3/4	1-3/8	4	233.86	257.76
3/4	3/4	1-1/2	4	233.86	257.76
7/8	7/8	1-1/2	4	404.94	439.90
1	1	1-1/2	4	414.16	449.12

TOLERANCES
 All Sizes Cut Dia.: + .000 - .002"
 All Sizes Shank Dia.: - .0001 - .0004"

SOLID CARBIDE 3 TAPERED FLUTE END MILLS**ICS USA****SPECIAL PURPOSE****NON-CENTER CUTTING**

Solid Carbide Tapered End Mills are designed with a constant spiral to prevent chatter during use and to resist side thrusts and deflection. They are used primarily for milling die and mold cavities and are sometimes referred to as Taper Degree End Mills or Tapered Milling Cutters.

3 Flute Single End**RIGHT HAND
CUTTING****3 Flute Ball Nose Single End**

SHANK DIA.	TAPER ANGLE	RADIUS	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
					SOLID CARBIDE	TiN COATED
					SCTEM	SCTEMT
1/4	1°	1/8	1-1/2	3	56.62	60.20
	1-1/2°	1/8	1-1/2	3	50.90	54.48
	2°	1/8	1-1/4	3	56.62	60.20
	3°	1/8	1	3	50.90	54.48
	5°	1/8	3/4	3	50.90	54.48
	7°	1/8	1/2	3	50.90	54.48
	10°	3/32	1/2	3	56.62	60.20
3/8	1°	3/16	1-3/4	3-1/2	77.76	83.36
	1-1/2°	3/16	1-3/4	3-1/2	77.76	83.36
	2°	3/16	1-3/4	3-1/2	77.76	83.36
	3°	5/32	1-3/4	3-1/2	77.76	83.36
	5°	1/8	1-1/2	3-1/2	77.76	83.36
	7°	1/8	1	3-1/2	77.76	83.36
	10°	1/8	3/4	3-1/2	77.76	83.36
1/2	1°	1/4	2	4	118.14	127.22
	2°	1/4	2	4	118.14	127.22
	3°	1/4	2	4	118.14	127.22
	5°	1/4	1-1/4	4	118.14	127.22
	7°	3/16	1-1/4	4	118.14	127.22
	10°	1/8	1	4	118.14	127.22

SHANK DIA.	TAPER ANGLE	RADIUS	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
					SOLID CARBIDE	TiN COATED
					SCTEMB	SCTEMBT
1/4	1°	.062	1-1/2	3	62.90	66.50
	1-1/2°	.062	1-1/2	3	56.54	60.14
	2°	.062	1-1/4	3	60.20	66.50
	3°	.062	1	3	56.40	60.14
	5°	.062	3/4	3	56.40	60.14
	7°	.062	1/2	3	56.40	60.14
	10°	.047	1/2	3	62.90	66.50
3/8	1°	.093	1-3/4	3-1/2	86.42	92.02
	1-1/2°	.093	1-3/4	3-1/2	86.42	92.02
	2°	.093	1-3/4	3-1/2	86.42	92.02
	3°	.078	1-3/4	3-1/2	86.42	92.02
	5°	.062	1-1/2	3-1/2	86.42	92.02
	7°	.062	1	3-1/2	86.42	92.02
	10°	.062	3/4	3-1/2	86.42	92.02
1/2	1°	.125	2	4	131.28	140.34
	2°	.125	2	4	131.28	140.34
	3°	.125	2	4	131.28	140.34
	5°	.125	1-1/4	4	131.28	140.34
	7°	.093	1-1/4	4	131.28	140.34
	10°	.062	1	4	131.28	140.34

TOLERANCES
 Flute Dia.: - .001 - .002"
 Shank Dia.: - .0001 - .0004"

SOLID CARBIDE MINI-DECIMAL SIZE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

2 Flute Single End



SIZE (dec.)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDSEM-2R	SCDSEM-2T
.010	1/8	.030	1-1/2	21.02	23.26
.015	1/8	.045	1-1/2	21.02	23.26
.020	1/8	.060	1-1/2	21.02	23.26
.025	1/8	.075	1-1/2	21.02	23.26
.030	1/8	.090	1-1/2	21.02	23.26
.035	1/8	.105	1-1/2	21.02	23.26
.040	1/8	.120	1-1/2	21.02	23.26
.045	1/8	.135	1-1/2	15.98	18.22
.050	1/8	.150	1-1/2	15.98	18.22
.055	1/8	.165	1-1/2	15.98	18.22
.060	1/8	.180	1-1/2	15.98	18.22
.065	1/8	.195	1-1/2	15.98	18.22
.070	1/8	.210	1-1/2	15.98	18.22
.075	1/8	.225	1-1/2	15.98	18.22
.080	1/8	.240	1-1/2	15.98	18.22
.085	1/8	.255	1-1/2	15.98	18.22
.090	1/8	.270	1-1/2	15.98	18.22
.095	1/8	.285	1-1/2	15.98	18.22
.100	1/8	.300	1-1/2	15.98	18.22
.105	1/8	.315	1-1/2	15.98	18.22
.110	1/8	.330	1-1/2	15.98	18.22
.115	1/8	.345	1-1/2	15.98	18.22
.120	1/8	.360	1-1/2	15.98	18.22

4 Flute Single End



SIZE (dec.)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCDSEM-4R	SCDSEM-4T
.010	1/8	.030	1-1/2	21.02	23.26
.015	1/8	.045	1-1/2	21.02	23.26
.020	1/8	.060	1-1/2	21.02	23.26
.025	1/8	.075	1-1/2	21.02	23.26
.030	1/8	.090	1-1/2	21.02	23.26
.035	1/8	.105	1-1/2	21.02	23.26
.040	1/8	.120	1-1/2	21.02	23.26
.045	1/8	.135	1-1/2	15.98	18.22
.050	1/8	.150	1-1/2	15.98	18.22
.055	1/8	.165	1-1/2	15.98	18.22
.060	1/8	.180	1-1/2	15.98	18.22
.065	1/8	.195	1-1/2	15.98	18.22
.070	1/8	.210	1-1/2	15.98	18.22
.075	1/8	.225	1-1/2	15.98	18.22
.080	1/8	.240	1-1/2	15.98	18.22
.085	1/8	.255	1-1/2	15.98	18.22
.090	1/8	.270	1-1/2	15.98	18.22
.095	1/8	.285	1-1/2	15.98	18.22
.100	1/8	.300	1-1/2	15.98	18.22
.105	1/8	.315	1-1/2	15.98	18.22
.110	1/8	.330	1-1/2	15.98	18.22
.115	1/8	.345	1-1/2	15.98	18.22
.120	1/8	.360	1-1/2	15.98	18.22

PREMIUM (10% COBALT) MICROGRAIN CARBIDE

SOLID CARBIDE MINI-STUB LENGTH SIZE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

2 Flute Double End (Stub)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCMDEM-2S	SCMDEM-2T
1/32	1/8	3/64	1-1/2	-	-
3/64	1/8	1/16	1-1/2	-	-
1/16	1/8	1/8	1-1/2	-	-
5/64	1/8	1/8	1-1/2	-	-
3/32	1/8	3/16	1-1/2	CALL FOR PRICE	CALL FOR PRICE
7/64	1/8	11/64	1-1/2	CALL FOR PRICE	CALL FOR PRICE
1/8	1/8	1/4	1-1/2	CALL FOR PRICE	CALL FOR PRICE
9/64	3/16	7/32	2	-	-
5/32	3/16	5/16	2	-	-
11/64	3/16	17/64	2	-	-
3/16	3/16	3/8	2	-	-

4 Flute Double End (Stub)



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE	TIN COATED
				SCMDEM-4S	SCMDEM-4T
1/32	1/8	3/64	1-1/2	-	-
3/64	1/8	1/16	1-1/2	-	-
1/16	1/8	1/8	1-1/2	-	-
5/64	1/8	1/8	1-1/2	-	-
3/32	1/8	3/16	1-1/2	CALL FOR PRICE	CALL FOR PRICE
7/64	1/8	11/64	1-1/2	CALL FOR PRICE	CALL FOR PRICE
1/8	1/8	1/4	1-1/2	CALL FOR PRICE	CALL FOR PRICE
9/64	3/16	7/32	2	-	-
5/32	3/16	5/16	2	-	-
11/64	3/16	17/64	2	-	-
3/16	3/16	3/8	2	-	-

TOLERANCES

Flute Dia.: + .000 - .002"
Shank Dia.: - .0001 - .0004"

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE CORNER RADIUS END MILLS

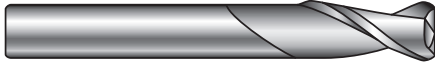
ICS USA

SPECIAL PURPOSE

CENTER CUTTING

Micro-Grain Solid Carbide Corner Radius End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

2 Flute Single End



**RIGHT HAND
CUTTING**

4 Flute Single End



						PRICE EACH			
NOMINAL DIAMETER	RADIUS	ACTUAL DIAMETER	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	SOLID CARBIDE 2 FLUTE	TIN COATED 2 FLUTE	SOLID CARBIDE 4 FLUTE	TIN COATED 4 FLUTE
						SCCEM2R	SCCEM2T	SCCEM4R	SCCEM4T
1/8	.015 .020	.1240/.1230	1/8	1/2	1-1/2	20.24	22.48	20.24	22.48
3/16	.015 .020 .030	.1865/.1855	3/16	5/8	2	28.66	30.90	28.66	30.90
1/4	.015 .020 .030 .045	.2490/.2480	1/4	3/4	2-1/2	36.88	40.40	36.68	40.40
5/16	.015 .020 .030 .045	.3115/.3105	5/16	13/16	2-1/2	41.32	46.24	41.32	46.24
3/8	.015 .020 .030 .045	.3740/.3730	3/8	1	2-1/2	52.24	57.18	52.24	57.18
1/2	.015 .020 .030 .045 .060	.4990/.4980	1/2	1	3	89.18	98.14	89.18	98.14
5/8	.015 .020 .030 .045 .060 .090	.6240/.6230	5/8	1-1/4	3-1/2	169.24	180.44	169.24	180.44
3/4	.015 .020 .030 .045 .060 .090 .125	.7490/.7480	3/4	1-1/2	4	249.86	264.42	249.86	264.42
1	.015 .020 .030 .045 .060 .090 .125	.9990/.9980	1	1-1/2	4	442.52	458.76	442.52	458.76

TOLERANCES
 Flute Dia.: - .001 - .002"
 Shank Dia.: - .0001 - .0004"

HIGH SPEED STEEL CORNER ROUNDING END MILLS

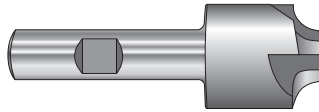
MT-31

ICS USA

GENERAL PURPOSE

FORM RELIEVED

WELDON
SHANK



RIGHT HAND
CUT

Corner Rounding End Mills are designed for milling convex (male) quarter round edges on most metals. Form relieved cutters have side and radial clearance and can be sharpened by grinding the face of the teeth without changing their form.

RADIUS DIA.	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/16	3/8	7/16	2-1/2	4	CREM004X024	44.90
3/32	3/8	1/2	2-1/2	4	CREM006X032	48.04
1/8	1/2	5/8	3	4	CREM008X032	61.16
5/32	1/2	3/4	3	4	CREM010X032	63.32
3/16	1/2	7/8	3	4	CREM012X032	74.70
3/16	3/4	7/8	3-1/8	4	CREM012X048	74.70
1/4	1/2	1	3	4	CREM016X032	82.74
1/4	3/4	1	3-1/4	4	CREM016X048	82.74
9/32	5/8	1	3	4	CREM018X040	100.36
5/16	1/2	1-1/8	3-1/4	4	CREM020X032	101.72
5/16	5/8	1-1/8	3-1/2	4	CREM020X040	101.72
5/16	3/4	1-1/8	3-1/4	4	CREM020X048	101.72
5/16	7/8	1-1/8	3-1/2	4	CREM020X056	117.22
3/8	1/2	1-1/4	3-1/2	4	CREM024X032	117.22
3/8	3/4	1-1/4	3-1/2	4	CREM024X048	117.22
3/8	7/8	1-1/4	3-3/4	4	CREM024X056	117.22
7/16	3/4	1-3/8	3-3/4	4	CREM028X048	127.02
7/16	1	1-3/8	4	4	CREM028X100	127.02
1/2	3/4	1-1/2	3-7/8	4	CREM032X048	137.42
1/2	1	1-1/2	4-1/8	4	CREM032X100	137.42
5/8	3/4	1-5/8	4	4	CREM040X048	199.10
5/8	1	1-5/8	4	4	CREM040X100	199.10
3/4	3/4	1-7/8	4	4	CREM048X048	236.06
3/4	1	1-7/8	4	4	CREM048X100	236.06

HIGH SPEED STEEL CONCAVE AND CONVEX (SHANK) CUTTERS

ICS USA

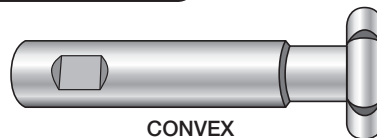
SPECIAL PURPOSE

FORM RELIEVED

WELDON
SHANK



CONCAVE



CONVEX

RIGHT HAND
CUT

Concave Cutters are designed for milling concave (male) half circles in most metals and may be sharpened without changing their form by grinding the face of the teeth.

Convex Cutters are designed for milling convex (female) half circles in most metals and may be sharpened without changing their face by grinding the face of the teeth.

RADIUS	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/32	1/2	3/4	3	6	CSCM002	77.20
1/16	1/2	3/4	3	6	CSCM004	65.68
3/32	1/2	3/4	3	6	CSCM006	65.68
1/8	3/4	1	3-1/2	6	CSCM008	79.28
5/32	3/4	1	3-1/2	6	CSCM010	79.28
3/16	3/4	1	3-1/2	6	CSCM012	79.28
1/4	3/4	1-1/4	4	4	CSCM016	112.90
5/16	3/4	1-1/4	4	4	CSCM020	140.62
3/8	3/4	1-1/2	4-3/16	4	CSCM024	156.80

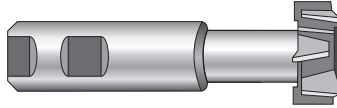
RADIUS	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/32	1/2	3/4	3	6	CSCF002	78.40
1/16	1/2	3/4	3	6	CSCF004	66.74
3/32	1/2	7/8	3	6	CSCF006	70.40
1/8	3/4	1-1/4	3-1/2	6	CSCF008	91.46
5/32	3/4	1-5/16	3-1/2	6	CSCF010	93.58
3/16	3/4	1-3/8	3-1/2	6	CSCF012	99.66
1/4	3/4	1-1/2	4	6	CSCF016	127.90
5/16	3/4	1-5/8	4	6	CSCF020	163.60
3/8	3/4	1-3/4	4	6	CSCF024	177.70

HIGH SPEED STEEL T-SLOT CUTTERS

ICS USA

SPECIAL PURPOSE

STAGGERED TEETH

WELDON
SHANKRIGHT HAND CUT
RIGHT/LEFT HAND HELIX

High Speed Steel T-Slot Cutters are designed for milling T-slots into tables and beds of machine tools and similar applications where a good surface finish is required. A vertical slot must be cut first so that neck and shank may enter the cut. Use with standard end mill arbors.

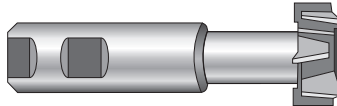
BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/4	9/16	15/64	17/64	1/2	2-19/32	TSC016	40.78
5/16	21/32	17/64	21/64	1/2	2-11/16	TSC020	44.36
3/8	25/32	21/64	13/32	3/4	3-1/4	TSC024	63.02
1/2	31/32	25/64	17/32	3/4	3-7/16	TSC032	70.96
5/8	1-1/4	31/64	21/32	1	3-15/16	TSC040	96.62
3/4	1-15/32	5/8	25/32	1	4-7/16	TSC048	108.82
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	TSC100	182.18
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	TSC116	230.00
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	TSC132	303.14

COBALT T-SLOT CUTTERS

ICS USA

SPECIAL PURPOSE

STAGGERED TEETH

WELDON
SHANKRIGHT HAND CUT
RIGHT/LEFT HAND HELIX

Cobalt T-Slot Cutters are designed for milling T-slots into tougher materials where a good surface finish is required. They are used for machining hard, high strength materials up to a hardness of 40RC. A vertical slot must be cut first so that neck and shank may enter cut. Use with standard end mill arbors.

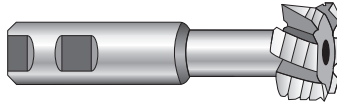
BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/4	9/16	15/64	17/64	1/2	2-19/32	TSCC016	57.06
5/16	21/32	17/64	21/64	1/2	2-11/16	TSCC020	61.68
3/8	25/32	21/64	13/32	3/4	3-1/4	TSCC024	87.66
1/2	31/32	25/64	17/32	3/4	3-7/16	TSCC032	99.02
5/8	1-1/4	31/64	21/32	1	3-15/16	TSCC040	134.86
3/4	1-15/32	5/8	25/32	1	4-7/16	TSCC048	151.60
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	TSCC100	255.36
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	TSCC116	321.06
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	TSCC132	421.12

COBALT ROUGHING T-SLOT CUTTERS

ICS USA

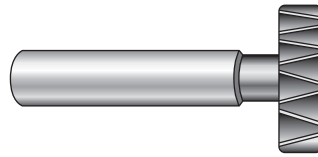
SPECIAL PURPOSE

HELICAL TEETH

WELDON
SHANKRIGHT HAND
CUT

Cobalt Roughing T-Slot Cutters are designed for rapid milling T-slots into tougher materials where finish is not as important. They are used for most metals, even hardened steel and aerospace alloys. A vertical slot must be cut first so that neck and shank may enter cut. Use with standard end mill arbors.

BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/2	31/32	25/64	17/32	3/4	3-7/16	RTSC032	-
5/8	1-1/4	31/64	21/32	1	3-15/16	RTSC040	CALL
3/4	1-15/32	5/8	25/32	1	4-7/16	RTSC048	FOR
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	RTSC100	PRICE
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	RTSC116	-
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	RTSC132	-

WOODRUFF KEY SEAT (SHANK) CUTTERS**ICS USA****SPECIAL PURPOSE****STAGGERED TEETH****1/2"
SHANK****RIGHT HAND CUT
RIGHT/LEFT HAND HELIX**

Woodruff Key Seat Cutters with staggered teeth are designed to mill standard Woodruff keyways in steel and other metals. A staggered teeth design cutter reduces chatter, has more chip clearance, and removes more metal at higher speeds and feeds than straight teeth cutters.

CUTTER NO.		NOMINAL	NO.		WOODRUFF KEY NO.	ITEM NO.	PRICE
AMER. NATL. STANDARD	OLD STANDARD	CUTTER DIAMETER	OVERALL LENGTH	OF TEETH	AMER. NATL. STANDARD		
1/16" FACE WIDTH							
*202	201	1/4	2-1/16	8	202	WKSSCS#202	31.64
*202 -1/2	206	5/16	2-1/16	8	202-1/2	WKSSCS#2025	31.64
*203	211	3/8	2-1/16	8	203	WKSSCS#203	31.64
*204	1	1/2	2-1/16	10	204	WKSSCS#204	28.74
3/32" FACE WIDTH							
*302 -1/2	207	5/16	2-3/32	8	302-1/2	WKSSCS#3025	31.64
*303	212	3/8	2-3/32	8	303	WKSSCS#303	31.64
*304	2	1/2	2-3/32	10	304	WKSSCS#304	28.74
*305	4	5/8	2-3/32	10	305	WKSSCS#305	28.74
1/8" FACE WIDTH							
*403	213	3/8	2-1/8	8	403	WKSSCS#403	31.64
*404	3	1/2	2-1/8	10	404	WKSSCS#404	28.74
405	5	5/8	2-1/8	10	405	WKSSCS#405	28.74
406	7	3/4	2-1/8	10	406	WKSSCS#406	31.54
5/32" FACE WIDTH							
505	6	5/8	2-5/32	10	505	WKSSCS#505	28.74
506	8	3/4	2-5/32	10	506	WKSSCS#506	31.54
507	10	7/8	2-5/32	12	507	WKSSCS#507	38.34
3/16" FACE WIDTH							
605	61	5/8	2-3/16	10	605	WKSSCS#605	28.74
606	9	3/4	2-3/16	10	606	WKSSCS#606	31.54
607	11	7/8	2-3/16	12	607	WKSSCS#607	38.34
608	13	1	2-3/16	12	608	WKSSCS#608	42.86
609	16	1-1/8	2-3/16	12	609	WKSSCS#609	47.22
610	19	1-1/4	2-3/16	14	610	WKSSCS#610	51.58
7/32" FACE WIDTH							
707	12	7/8	2-7/32	12	707	WKSSCS#707	38.34
708	14	1	2-7/32	12	708	WKSSCS#708	42.86
709	17	1-1/8	2-7/32	12	709	WKSSCS#709	47.22
710	20	1-1/4	2-7/32	14	710	WKSSCS#710	51.58
1/4" FACE WIDTH							
806	91	3/4	2-1/4	10	806	WKSSCS#806	31.54
807	A	7/8	2-1/4	12	121, 807	WKSSCS#807	38.34
808	15	1	2-1/4	12	141, 808	WKSSCS#808	42.86
809	18	1-1/8	2-1/4	12	809	WKSSCS#809	47.22
810	21	1-1/4	2-1/4	14	810	WKSSCS#810	51.58
811	22	1-3/8	2-1/4	14	811	WKSSCS#811	57.34
812	24	1-1/2	2-1/4	16	812	WKSSCS#812	62.04
5/16" FACE WIDTH							
1008	B	1	2-5/16	12	131, 1008	WKSSCS1008	42.86
1009	C	1-1/8	2-5/16	12	161, 1009	WKSSCS1009	47.22
1010	D	1-1/4	2-5/16	14	1010	WKSSCS1010	55.88
1011	23	1-3/8	2-5/16	14	1011	WKSSCS1011	61.16
1012	25	1-1/2	2-5/16	16	1012	WKSSCS1012	66.56
3/8" FACE WIDTH							
1208	152	1	2-3/8	12	1208	WKSSCS1208	42.86
1210	E	1-1/4	2-3/8	14	1210	WKSSCS1210	55.88
1211	F	1-3/8	2-3/8	14	1211	WKSSCS1211	61.16
1212	G	1-1/2	2-3/8	16	1212	WKSSCS1212	66.56

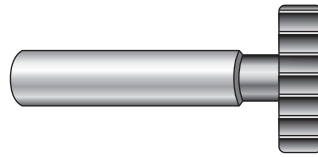
* These cutters are made with extended centers on outer end for strength.

HIGH SPEED STEEL WOODRUFF KEY SEAT (SHANK) CUTTERS

ICS USA

SPECIAL PURPOSE

STRAIGHT TEETH

1/2"
SHANKRIGHT HAND
CUT

Woodruff Key Seat Cutters are designed to mill standard Woodruff keyways in steel and other metals. They are the correct dimensions for Woodruff keys and are made oversize to allow for resharpening. Keys and cutters correspond in size and number as shown below.

CUTTER NO.		NOMINAL		NO.	WOODRUFF KEY NO.			
AMER. NATL.	OLD	CUTTER	OVERALL	OF	AMER. NATL.		ITEM	
STANDARD	STANDARD	DIAMETER	LENGTH	TEETH	STANDARD		NO.	PRICE
1/16" FACE WIDTH								
*202	201	1/4	2-1/16	8	202		WKSSC#202	22.56
*202 -1/2	206	5/16	2-1/16	8	202-1/2		WKSSC#2025	22.56
*203	211	3/8	2-1/16	8	203		WKSSC#203	22.56
*204	1	1/2	2-1/16	10	204		WKSSC#204	19.18
3/32" FACE WIDTH								
*302 -1/2	207	5/16	2-3/32	8	302-1/2		WKSSC#3025	22.56
*303	212	3/8	2-3/32	8	303		WKSSC#303	22.56
*304	2	1/2	2-3/32	10	304		WKSSC#304	19.18
*305	4	5/8	2-3/32	10	305		WKSSC#305	19.18
1/8" FACE WIDTH								
*403	213	3/8	2-1/8	8	403		WKSSC#403	22.56
*404	3	1/2	2-1/8	10	404		WKSSC#404	19.18
405	5	5/8	2-1/8	10	405		WKSSC#405	19.18
406	7	3/4	2-1/8	10	406		WKSSC#406	19.18
5/32" FACE WIDTH								
505	6	5/8	2-5/32	10	505		WKSSC#505	19.18
506	8	3/4	2-5/32	10	506		WKSSC#506	23.80
507	10	7/8	2-5/32	12	507		WKSSC#507	26.76
3/16" FACE WIDTH								
605	61	5/8	2-3/16	10	605		WKSSC#605	19.18
606	9	3/4	2-3/16	10	606		WKSSC#606	26.76
607	11	7/8	2-3/16	12	607		WKSSC#607	26.76
608	13	1	2-3/16	12	608		WKSSC#608	29.72
609	16	1-1/8	2-3/16	12	609		WKSSC#609	32.58
610	19	1-1/4	2-3/16	14	610		WKSSC#610	36.44
7/32" FACE WIDTH								
707	12	7/8	2-7/32	12	707		WKSSC#707	26.76
708	14	1	2-7/32	12	708		WKSSC#708	29.72
709	17	1-1/8	2-7/32	12	709		WKSSC#709	32.58
710	20	1-1/4	2-7/32	14	710		WKSSC#710	36.44
1/4" FACE WIDTH								
806	91	3/4	2-1/4	10	806		WKSSC#806	26.76
807	A	7/8	2-1/4	12	121, 807		WKSSC#807	26.76
808	15	1	2-1/4	12	141, 808		WKSSC#808	29.72
809	18	1-1/8	2-1/4	12	809		WKSSC#809	32.58
810	21	1-1/4	2-1/4	14	810		WKSSC#810	36.44
811	22	1-3/8	2-1/4	14	811		WKSSC#811	39.20
812	24	1-1/2	2-1/4	16	812		WKSSC#812	43.04
5/16" FACE WIDTH								
1008	B	1	2-5/16	12	131, 1008		WKSSC1008	31.54
1009	C	1-1/8	2-5/16	12	161, 1009		WKSSC1009	34.42
1010	D	1-1/4	2-5/16	14	1010		WKSSC1010	38.34
1011	23	1-3/8	2-5/16	14	1011		WKSSC1011	42.16
1012	25	1-1/2	2-5/16	16	1012		WKSSC1012	46.00
3/8" FACE WIDTH								
1208	152	1	2-3/8	12	1208		WKSSC1208	32.58
1210	E	1-1/4	2-3/8	14	1210		WKSSC1210	38.34
1211	F	1-3/8	2-3/8	14	1211		WKSSC1211	42.16
1212	G	1-1/2	2-3/8	16	1212		WKSSC1212	46.00

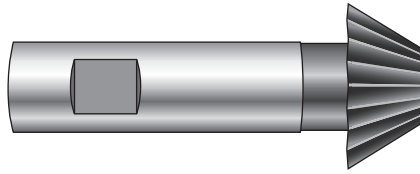
* These cutters are made with extended centers on outer end for strength.

SINGLE ANGLE (SHANK) CUTTERS

ICS USA

GENERAL PURPOSE

PERIPHERAL CUTTING EDGES

WELDON
SHANKRIGHT HAND
CUT

Single Angle Cutters are designed for chamfering or beveling parts, e.g., a 60° cutter can be used to mill a 30° angle. They can be used on manual or CNC machining centers. They are ground for cutting steel.

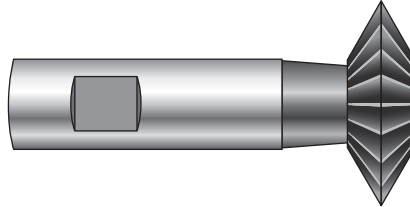
CUTTER DIAMETER	ANGLE (SINGLE)	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
1/2	45°	1/8	3/8	2-1/8	SASC45-032	48.64
3/4		3/16	3/8	2-1/8	SASC45-048	63.06
1		5/16	1/2	2-1/2	SASC45-100	72.66
1-1/2		1/2	3/4	2-3/4	SASC45-132	92.18
1/2	60°	7/32	3/8	2-1/8	SASC60-032	48.64
3/4		5/16	3/8	2-1/8	SASC60-048	63.06
1		7/16	1/2	2-1/2	SASC60-100	72.66
1-1/2		5/8	3/4	2-3/4	SASC60-132	92.18

DOUBLE ANGLE (SHANK) CUTTERS

ICS USA

GENERAL PURPOSE

PERIPHERAL CUTTING EDGES

WELDON
SHANKRIGHT HAND
CUT

Double Angle Cutters are designed for milling threads, V-grooves, serrations, and other angular surfaces. These cutters can mill a double angle cut in one pass and can be used on manual or CNC machining centers. They are ground for cutting steel.

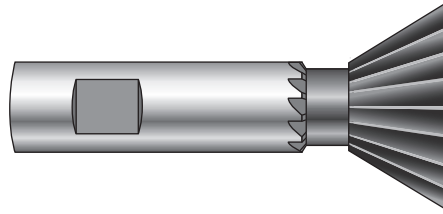
CUTTER DIAMETER	ANGLE (DOUBLE)	CUTTER THICKNESS	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
3/4	60°	3/16	3/8	2-3/8	DASC60-048	52.44
1		5/16	1/2	2-27/32	DASC60-100	61.32
1-3/8		7/16	5/8	3-7/32	DASC60-124	81.20
1-1/2		1/2	5/8	3-3/8	DASC60-132	88.54
1-7/8		5/8	3/4	3-25/32	DASC60-156	98.78
2-1/4		3/4	7/8	4-5/32	DASC60-216	130.84
2-1/4		1/2	3/4	3-1/8	DASC60-216A	125.98
3/4	90°	1/4	3/8	2-7/16	DASC90-048	52.44
1		3/8	1/2	2-29/32	DASC90-100	61.32
1-3/8		1/2	5/8	3-9/32	DASC90-124	81.20
1-1/2		9/16	5/8	3-7/16	DASC90-132	88.54
1-7/8		5/8	3/4	3-25/32	DASC90-156	95.78
2-1/4		3/4	7/8	4-5/32	DASC90-216	150.00
2-1/4		1/2	3/4	3-1/8	DASC90-216A	125.98

HIGH SPEED STEEL DOVETAIL (SHANK) CUTTERS

ICS USA

GENERAL PURPOSE

PROFILE SHARPENED

WELDON
SHANKRIGHT HAND
CUT

Dovetail Cutters are designed for milling angular surfaces and for milling slots shaped like a dovetail into tables and beds of machines. Shank Type Dovetail Cutters save set-up time whether they are used in production or the toolroom.

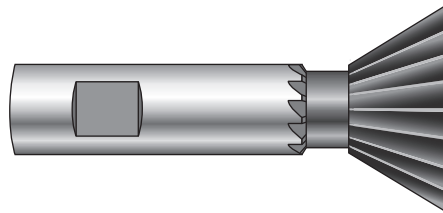
CUTTER DIAMETER	ANGLE	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
3/8	45°	1/8	3/8	2-1/8	6	DSC45-024	51.08
1/2		5/32	3/8	2-1/8	6	DSC45-032	51.08
3/4		1/4	3/8	2-1/8	8	DSC45-048	52.42
1-3/8		7/16	5/8	2-7/8	10	DSC45-124	87.14
1-7/8		9/16	7/8	3-1/4	12	DSC45-156	187.28
2-1/4		5/8	1	3-3/4	12	DSC45-216	228.48
3/8	60°	3/16	3/8	2-1/8	6	DSC60-024	51.08
1/2		1/4	3/8	2-1/8	6	DSC60-032	51.08
3/4		5/16	3/8	2-1/8	8	DSC60-048	52.42
1-3/8		9/16	5/8	2-7/8	10	DSC60-124	87.14
1-7/8		13/16	7/8	3-1/4	12	DSC60-156	187.28
2-1/4		1-1/16	1	3-3/4	12	DSC60-216	228.48

COBALT DOVETAIL (SHANK) CUTTERS

ICS USA

HEAVY DUTY

PROFILE SHARPENED

WELDON
SHANKRIGHT HAND
CUT

Cobalt Dovetail Cutters are designed for milling dovetails, angular surfaces, and special shapes. They are used for machining hard, high strength materials up to a hardness of 40 RC.

CUTTER DIAMETER	ANGLE	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
3/8	45°	1/8	3/8	2-1/8	6	DSCC45-024	76.62
1/2		5/32	3/8	2-1/8	6	DSCC45-032	76.62
3/4		1/4	3/8	2-1/8	8	DSCC45-048	78.18
1-3/8		7/16	5/8	2-7/8	10	DSCC45-124	130.38
1-7/8		9/16	7/8	3-1/4	12	DSCC45-156	281.12
2-1/4		5/8	1	3-3/4	12	DSCC45-216	342.72
3/8	60°	3/16	3/8	2-1/8	6	DSCC60-024	76.62
1/2		1/4	3/8	2-1/8	6	DSCC60-032	76.62
3/4		5/16	3/8	2-1/8	8	DSCC60-048	78.18
1-3/8		9/16	5/8	2-7/8	10	DSCC60-124	130.38
1-7/8		13/16	7/8	3-1/4	12	DSCC60-156	281.12
2-1/4		1-1/16	1	3-3/4	12	DSCC60-216	342.72

END MILL (NMTB) HOLDERS

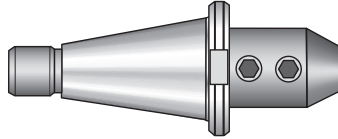
MT-37

ICS USA

ADAPTERS

PRECISION GROUND

NATIONAL
STANDARD
TAPER



MAXIMUM
TIR
.0006

NMTB End Mill Holders are designed to fit milling machines using the National Machine Tool Builders (NMTB) spindle taper of 3-1/2" per foot, with manual or power draw bar. All holders are hardened and precision ground to ensure accurate size and concentricity. They will hold single or double end mills, except where noted. Set screws are furnished and are located according to weld on shank specifications.

END MILL SHANK DIA.	SHANK TAPER	SET SCREW SIZE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
3/16	30	1/4-28 x 5/16	1/2-13	EMH-NST30X012	-
3/8		3/8-24 x 25/64		EMH-NST30X024	-
1/2		7/16-20 x 15/32		EMH-NST30X032	-
5/8		9/16-18 x 15/32		EMH-NST30X040	-
3/4		5/8-18 x 33/64		EMH-NST30X048	-
7/8		5/8-18 x 33/64		EMH-NST30X056	-
1		3/4-16 x 19/32		EMH-NST30X100	-
					-
3/16	40	1/4-28 x 5/16	5/8-11	EMH-NST40X012	-
3/8		3/8-24 x 25/64		EMH-NST40X024	-
1/2		7/16-20 x 15/32		EMH-NST40X032	-
5/8		9/16-18 x 15/32		EMH-NST40X040	CALL FOR PRICE
3/4		5/8-18 x 33/64		EMH-NST40X048	-
7/8		5/8-18 x 33/64		EMH-NST40X056	-
1		3/4-16 x 19/32		EMH-NST40X100	-
*1-1/4		3/4-16 x 5/8		EMH-NST40X116	-
*1-1/2		3/4-16 x 45/64		EMH-NST40X132	-
					-
3/8	50	3/8-24 x 25/64	1-8	EMH-NST50X024	-
1/2		7/16-20 x 15/32		EMH-NST50X032	-
5/8		9/16-18 x 15/32		EMH-NST50X040	-
3/4		5/8-18 x 33/64		EMH-NST50X048	-
7/8		5/8-18 x 33/64		EMH-NST50X056	-
1		3/4-16 x 19/32		EMH-NST50X100	-
*1-1/4		3/4-16 x 5/8		EMH-NST50X116	-
*1-1/2		3/4-16 x 45/64		EMH-NST50X132	-
*2		1-14 x 15/16		EMH-NST50X200	-
					-

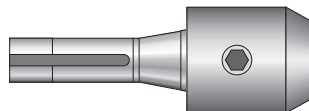
END MILL (R-8) HOLDERS

ICS USA

ADAPTERS

PRECISION GROUND

R-8
SHANK



MAXIMUM
TIR
.0006

R-8 End Mill Holders are designed to fit Bridgeport and other milling machines using the R-8 spindle taper. All holders are hardened and precision ground to ensure accurate size and concentricity. They will hold single or double end mills, except where noted. Set screws are furnished and are located according to Weldon Shank specifications.

END MILL SHANK DIA.	SHANK TAPER	SET SCREW SIZE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
3/16	R-8	1/4-28 x 5/16	7/16-20	EMH-R8X012	-
3/8		3/8-24 x 25/64		EMH-R8X024	-
1/2		7/16-20 x 15/32		EMH-R8X032	-
5/8		9/16-18 x 15/32		EMH-R8X040	CALL FOR PRICE
*3/4		5/8-18 x 33/64		EMH-R8X048	-
*7/8		5/8-18 x 33/64		EMH-R8X056	-
*1		3/4-16 x 19/32		EMH-R8X100	-
*1-1/4		3/4-16 x 5/8		EMH-R8X116	-
*1-1/2		3/4-16 x 45/64		EMH-R8X132	-
					-

* These holders are only for single end mills.

R-8 TO MORSE TAPER MILLING MACHINE ADAPTERS

ICS USA

ADAPTERS

PRECISION GROUND

R-8
SHANKMORSE TAPER
HOLE

R-8 to Morse Taper Milling Machine Adapters are designed to adapt cutting tools with a morse taper shank to an R-8 shank. All adapters are hardened and precision ground to ensure accurate size and concentricity.

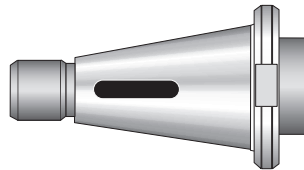
(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
R-8	MT2	7/16-20	MMA-R8M2	63.50
	MT3		MMA-R8M3	73.52

NMTB TO MORSE TAPER MILLING MACHINE ADAPTERS

ICS USA

ADAPTERS

PRECISION GROUND

NATIONAL
STANDARD
TAPER SHANKMORSE
TAPER
HOLE

NMTB to Morse Taper Milling Machine Adapters are designed to adapt cutting tools with a morse taper shank to a National Standard taper spindle. All adapters are hardened and precision ground to ensure accurate size and concentricity.

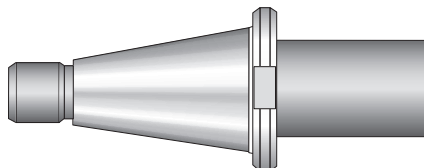
(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
NST40	MT2	5/8-11	MMA-NST40MT2	87.12
	MT3		MMA-NST40MT3	87.12
	MT4		MMA-NST40MT4	87.12
	MT5		MMA-NST40MT5	124.20
NST50	MT2	1-8	MMA-NST50MT2	123.00
	MT3		MMA-NST50MT3	129.00
	MT4		MMA-NST50MT4	129.00
	MT5		MMA-NST50MT5	153.00

NMTB TO R-8 MILLING MACHINE ADAPTERS

ICS USA

ADAPTERS

PRECISION GROUND

NATIONAL
STANDARD
TAPER SHANKR-8
SHANK
HOLE

NMTB to R-8 Milling Machine Adapters are designed to adapt R-8 holders for use on milling machines using an NMTB spindle taper. All adapters are hardened and precision ground to ensure accurate size and concentricity.

(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
NST 40	R8	5/8-11	MMA-NST40R8	177.98
NST 50	R8	1-8	MMA-NST50R8	250.20

PREMIUM (10% COBALT) MICROGRAIN CARBIDE
SOLID CARBIDE 60° & 90° DRILL MILLS

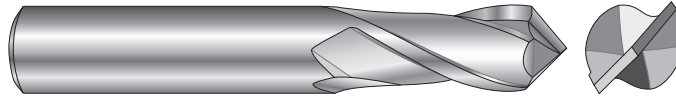
MT-39

ICS USA

HEAVY DUTY

RIGHT HAND CUT

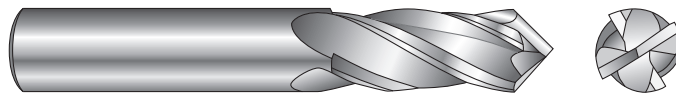
2 Flute - Single End



Solid Carbide Drill Mills are designed to be a 5 in 1 multi-purpose tool for drilling, chamfering, spotting, side milling, and countersinking.

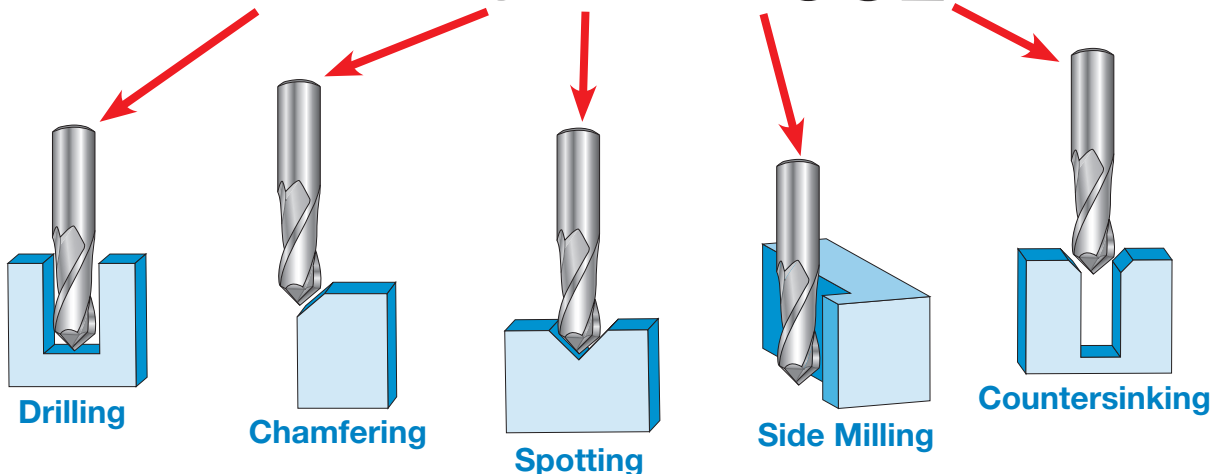
SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	2 FLUTE - 60° POINT ANGLE		2 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM260-008	16.20	SCDM290-008	16.20
3/16	3/16	5/8	2	SCDM260-012	21.60	SCDM290-012	21.60
1/4	1/4	3/4	2-1/2	SCDM260-016	29.00	SCDM290-016	29.00
5/16	5/16	13/16	2-1/2	SCDM260-020	39.20	SCDM290-020	39.20
3/8	3/8	1	2-1/2	SCDM260-024	40.60	SCDM290-024	40.60
7/16	7/16	1	2-3/4	SCDM260-028	41.36	SCDM290-028	41.36
1/2	1/2	1	3	SCDM260-032	75.80	SCDM290-032	75.80
5/8	5/8	1-1/4	3-1/2	SCDM260-040	127.40	SCDM290-040	127.40
3/4	3/4	1-1/2	4	SCDM260-048	210.40	SCDM290-048	210.40

4 Flute - Single End



SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	4 FLUTE - 60° POINT ANGLE		4 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM460-008	16.20	SCDM490-008	16.20
3/16	3/16	5/8	2	SCDM460-012	21.60	SCDM490-012	21.60
1/4	1/4	3/4	2-1/2	SCDM460-016	29.00	SCDM490-016	29.00
5/16	5/16	13/16	2-1/2	SCDM460-020	39.20	SCDM490-020	39.20
3/8	3/8	1	2-1/2	SCDM460-024	40.60	SCDM490-024	40.60
7/16	7/16	1	2-3/4	SCDM460-028	41.36	SCDM490-028	41.36
1/2	1/2	1	3	SCDM460-032	75.80	SCDM490-032	75.80
5/8	5/8	1-1/4	3-1/2	SCDM460-040	127.40	SCDM490-040	127.40
3/4	3/4	1-1/2	4	SCDM460-048	210.40	SCDM490-048	210.40

5 USES IN 1 TOOL



BORING/TURNING TOOLS

Accessories

Indexable Boring Bars

Carbide Inserts.....	2
Spare Parts	2

Boring Bars - Carbide Tipped

C2 & C5 Grade

Style "AR & AL"	4
Style "BR & BL"	4
Style "C"	4
Style "D"	4
Style "E"	4
Style "CTR"	4

C6 Grade	1

Cut-Off Blades

Ground	6
T-Shaped.....	6

Tool Bits

Rectangular Section.....	5
Round Section.....	5
Square Section.....	5

Tool Holders

Cut-Off	7
Indexable Screw On.....	2
Turning.....	7

Sets

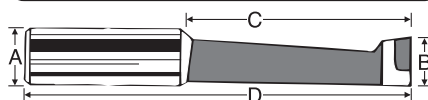
Boring Bars - Carbide Tipped.....	1
Boring Bar and Mini Tool Holder	3

CARBIDE (GRADE C-6) CARBIDE TIPPED BORING BARS

ICS

WIS

GENERAL PURPOSE



C-6 grade Carbide Tipped Boring Bars are designed for general purpose boring in steel and alloys. Ideal for flat bottom boring without changing tool. Made of high quality alloy steel for greater rigidity. Precision ground shanks fit standard holders. Offset taper to provide rigidity at cutting point. Minimum bore sizes come in three lengths.

SHORT - for counterboring and short hole work **MEDIUM** - for general boring **LONG** - for extra depth holes

A	B	C	D		
SHANK DIA.	MIN. BORE	BORE DEPTH	LENGTH	ITEM NO.	PRICE EACH
3/8"	5/16	3/4	2	CTBB-A20A	9.94
	5/16	1-1/8	2-3/8	CTBB-A20B	10.26
	5/16	1-1/2	2-3/4	CTBB-A20C	10.58
	3/8	15/16	2-3/16	CTBB-A24A	10.94
	3/8	1-13/32	2-21/32	CTBB-A24B	11.28
	3/8	1-7/8	3-1/8	CTBB-A24C	12.14
	7/16	1-1/8	2-3/8	CTBB-A28A	12.28
	7/16	1-11/16	2-15/16	CTBB-A28B	12.62
	7/16	2-1/4	3-1/2	CTBB-A28C	13.00
5/8"	5/16	3/4	2-1/4	CTBB-C20A	16.40
	5/16	1-1/8	2-5/8	CTBB-C20B	16.92
	5/16	1-1/2	3	CTBB-C20C	17.58
	7/16	1-1/8	2-5/8	CTBB-C28A	18.46
	7/16	1-11/16	3-3/16	CTBB-C28B	19.30
	7/16	2-1/4	3-3/4	CTBB-C28C	20.32
	9/16	1-1/2	3	CTBB-C36A	20.86
	9/16	2-1/4	3-3/4	CTBB-C36B	21.70
	9/16	3	4-1/2	CTBB-C36C	22.36
	11/16	1-7/8	3-3/8	CTBB-C44A	23.20
	11/16	2-13/16	4-5/16	CTBB-C44B	23.92
	11/16	3-3/4	5-1/4	CTBB-C44C	24.94

A	B	C	D		
SHANK DIA.	MIN. BORE	BORE DEPTH	LENGTH	ITEM NO.	PRICE EACH
1/2"	5/16	3/4	2-1/4	CTBB-B20A	13.12
	5/16	1-1/8	2-5/8	CTBB-B20B	13.50
	5/16	1-1/2	3	CTBB-B20C	14.02
	7/16	1-1/8	2-5/8	CTBB-B28A	14.52
	7/16	1-11/16	3-3/16	CTBB-B28B	14.86
	7/16	2-1/4	3-3/4	CTBB-B28C	15.36
	9/16	1-1/2	3	CTBB-B36A	15.72
	9/16	2-1/4	3-3/4	CTBB-B36B	16.06
	9/16	3	4-1/2	CTBB-B36C	16.40
3/4"	7/16	1-1/4	3-1/8	CTBB-D28A	19.30
	7/16	1-11/16	3-11/16	CTBB-D28B	20.14
	7/16	2-1/4	4-1/4	CTBB-D28C	21.02
	9/16	1-1/2	3-1/2	CTBB-D36A	21.86
	9/16	2-1/4	4-1/4	CTBB-D36B	22.36
	9/16	3	5	CTBB-D36C	23.38
	11/16	1-7/8	3-7/8	CTBB-D44A	24.10
	11/16	2-13/16	4-13/16	CTBB-D44B	24.94
	11/16	3-3/4	5-3/4	CTBB-D44C	25.60
	13/16	2-1/4	4-1/4	CTBB-D52A	27.32
	13/16	3-3/8	5-3/8	CTBB-D52B	28.86
	13/16	4-1/2	6-1/2	CTBB-D52C	30.56

A	B	C	D		
SHANK DIA.	MIN. BORE	BORE DEPTH	LENGTH	ITEM NO.	PRICE EACH
1"	9/16	3	5	CTBB-E036	35.62
	11/16	3-3/4	5-3/4	CTBB-E044	35.62
	7/8	4-1/2	6-1/2	CTBB-E056	35.62
	1-1/16	4-1/2	6-1/2	CTBB-E104	35.62
	1-1/4	5-3/4	7-3/4	CTBB-E116	35.62
	1-1/2	6-1/4	8-1/4	CTBB-E132	35.62
	1-5/8	7-1/2	9-1/2	CTBB-E140	35.62

CARBIDE (GRADE C-6) CARBIDE TIPPED BORING BAR SETS

WOOD STAND

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	9 PC SET - 3/8" SHANK Carbid Tipped Boring Bars	CTBBS-A-9	45.08
	9 PC SET - 1/2" SHANK Carbide Tipped Boring Bars	CTBBS-B-9	59.32
	12 PC SET - 5/8" SHANK Carbide Tipped Boring Bars	CTBBS-C-12	104.46
	12 PC SET - 3/4" SHANK Carbide Tipped Boring Bars	CTBBS-D-12	137.94
	7 PC SET - 1" SHANK Carbide Tipped Boring Bars	CTBBS-E-7	183.96

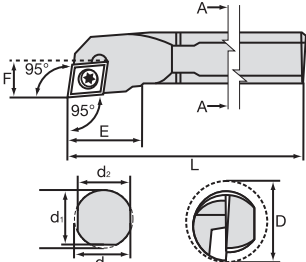
INDEXABLE (SCREW ON) BORING BARS

ICS

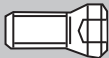
EUR

SPECIAL PURPOSE

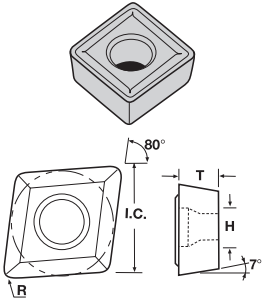
PRECISION GROUND

SCREW ON STYLE		DIMENSIONS						INSERT USED	PRICE
ITEM NO.	INSCRIBED CIRCLE I.C.	SHANK DIA. D	MIN. BORE D	OVERALL LENGTH L	CENTER TO POINT F				
SCLCR 80° Diamond 5° Negative End & Side Cutting Angle 	IT-SCLCR04-2	1/4"	.315	.354	4	.1875	I-CCMT-21.51	40.96	
	IT-SCLCR06-2		.375	.468	6	.2500	I-CCMT-21.51	40.96	
	IT-SCLCR08-3	3/8"	.500	.600	7	.3120	I-CCMT-32.52	40.96	
	IT-SCLCR10-3		.625	.866	8	.4060	I-CCMT-32.52	49.36	
	IT-SCLCR12-3		.750	.920	10	.5000	I-CCMT-32.52	53.56	
	IT-SCLCR16-3		1.000	1.120	12	.6094	I-CCMT-32.52	60.90	

SPARE PARTS FOR INDEXABLE BORING BARS

BORING BAR		SPARE PARTS USED		
				
		TORX KEY		LOCKING SCREW
ITEM NO.	ITEM NO.	PRICE	ITEM NO.	PRICE
IT-SCLCR04-2	ISP-TK-T07	6.30	ISP-LS-3	1.06
IT-SCLCR06-2	ISP-TK-T07	6.30	ISP-LS-3	1.06
IT-SCLCR08-3	ISP-TK-T15	6.30	ISP-LS-6	1.06
IT-SCLCR10-3	ISP-TK-T15	6.30	ISP-LS-6	1.06
IT-SCLCR12-3	ISP-TK-T15	6.30	ISP-LS-6	1.06
IT-SCLCR16-2	ISP-TK-T15	6.30	ISP-LS-6	1.06

CARBIDE INSERTS FOR INDEXABLE BORING BARS

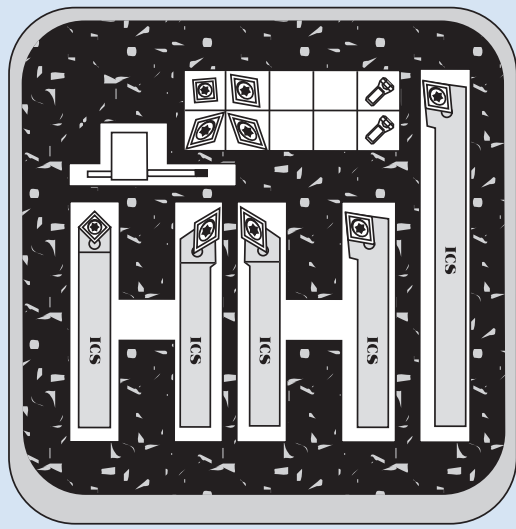
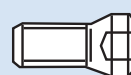
STYLE	ITEM NO.		INSCRIBED CIRCLE I.C.	THICKNESS T	RADIUS R	HOLE H	GRADES	
	PREFIX	NUMERIC SUFFIX INSERT-CUT-(GRADE)					NON COATED	TiN COATED
							C2, C5, C6	T5, T6
CCMT 80° Diamond 7° Positive Rake Single Sided Chipbreaker	I-CCMT	21.51 F ()	1/4"	3/32	1/64	.110	4.94	5.68
	I-CCMT	21.51 M ()		3/32	1/32	.110	4.94	5.68
	I-CCMT	32.52 F ()	3/8"	5/32	1/64	.173	5.14	5.98
	I-CCMT	32.52 M ()		5/32	1/32	.173	5.14	5.98
 CUT → F = Finish Cut M = Medium Cut								

MINI TOOLHOLDER & BORING BAR SET

ICS EUR

SPECIAL PURPOSE

PRECISION GROUND

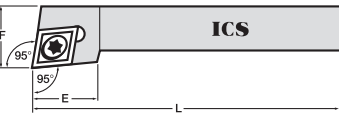
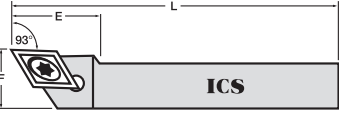
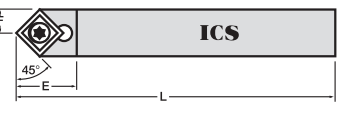
ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE	
5 PC MINI TOOLHOLDER AND BORING BAR SET 	5 PC Mini Toolholder & Boring Bar Set in plastic case. Each set contains one each of four types of Toolholders and one Boring Bar. Set also includes 1 Torx Key and 2 spare Locking Screws. Inserts are sold separately.	IMT-MTBBS-5	264.60	
	MINI TOOLHOLDERS AND BORING BAR IN SET			
	ITEM NO.	DESCRIPTION	CUT	INSERT USED
	IMT-SCLCR04-2	Mini Toolholders	Right Hand	I-CCMT21.51
	IMT-SDJCR04-2		Right Hand	I-DCMT21.51
	IMT-SDJCL04-2		Left Hand	I-DCMT21.51
	IMT-SSDCN04-2		Neutral	I-SCMT21.51
	IT-SCLCR04-2	Boring Bar	Right Hand	I-CCMT21.51
	SPARE PARTS IN SET			
				
TORX KEY		LOCKING SCREW		
ITEM NO.	PRICE	ITEM NO.	PRICE	
ISP-TK-T07	6.30	ISP-LS-3	1.06	

INDEXABLE (SCREW-ON) MINI TOOLHOLDERS

ICS EUR

SPECIAL PURPOSE

PRECISION GROUND

TOOLHOLDER STYLE	ITEM NO.	DIMENSIONS				INSERT USED	PRICE
		SHANK		HEAD			
		SIZE H x B	LENGTH L	WIDTH F	TOP E		
 RIGHT HAND	IMT-SCLCR04-2	.315 x .315	2.36	.394	.394	I-CCMT21.51	51.98
 RIGHT HAND	IMT-SDJCR04-2	.315 x .315	2.36	.394	.630	I-DCMT21.51	51.98
 LEFT HAND	IMT-SCDJCL04-2	.315 x .315	2.36	.394	.630	I-DCMT21.51	51.98
 NEUTRAL	IMT-SSDCN04-2	.315 x .315	2.36	.157	.472	I-SCMT21.51	51.98

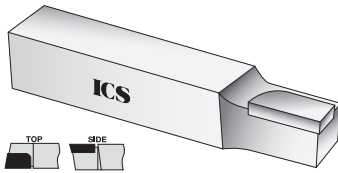
CARBIDE TIPPED BORING BARS

ICS EUR/KOR

GENERAL PURPOSE

All Carbide Tipped Tool Bits are available with either a C-2 (cast iron) or C-5 (steel) grade carbide tip for cutting. Please specify grade when ordering.

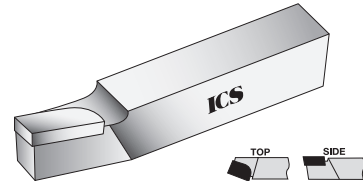
STYLE "AR & AL"



STRAIGHT OR NO LEAD ANGLE

All tools have size and grade of carbide stamped on side.

STYLE "BR & BL"

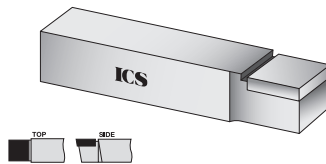


15° LEAD ANGLE

ITEM NO.				
PREFIX - GRADE	TOOL NO. RT. HAND	TOOL NO. LFT. HAND	SHANK SIZE	PRICE
CTTB (GRADE)	AR 04	AL 04	1/4 x 1/4 x 2	7.06
CTTB (GRADE)	AR 05	AL 05	5/16 x 5/16 x 2-1/4	7.32
CTTB (GRADE)	AR 06	AL 06	3/8 x 3/8 x 2-1/2	7.42
CTTB (GRADE)	AR 08	AL 08	1/2 x 1/2 x 3-1/2	8.00
CTTB (GRADE)	AR 10	AL 10	5/8 x 5/8 x 4	10.58
CTTB (GRADE)	AR 12	AL 12	3/4 x 3/4 x 4-1/2	14.12

ITEM NO.				
PREFIX - GRADE	TOOL NO. RT. HAND	TOOL NO. LFT. HAND	SHANK SIZE	PRICE
CTTB (GRADE)	BR 04	BL 04	1/4 x 1/4 x 2	7.06
CTTB (GRADE)	BR 05	BL 05	5/16 x 5/16 x 2-1/4	7.32
CTTB (GRADE)	BR 06	BL 06	3/8 x 3/8 x 2-1/2	7.42
CTTB (GRADE)	BR 08	BL 08	1/2 x 1/2 x 3-1/2	8.00
CTTB (GRADE)	BR 10	BL 10	5/8 x 5/8 x 4	10.58
CTTB (GRADE)	BR 12	BL 12	3/4 x 3/4 x 4-1/2	14.12

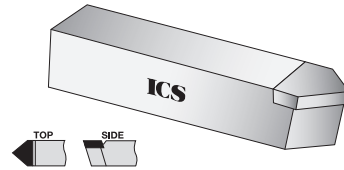
STYLE "C"



SQUARE NOSE

ITEM NO.				
PREFIX - GRADE - TOOL NO.			SHANK SIZE	PRICE
CTTB (GRADE) C 04			1/4 x 1/4 x 2	7.06
CTTB (GRADE) C 05			5/16 x 5/16 x 2-1/4	7.32
CTTB (GRADE) C 06			3/8 x 3/8 x 2-1/2	7.42
CTTB (GRADE) C 08			1/2 x 1/2 x 3-1/2	8.00
CTTB (GRADE) C 10			5/8 x 5/8 x 4	10.58
CTTB (GRADE) C 12			3/4 x 3/4 x 4-1/2	14.12

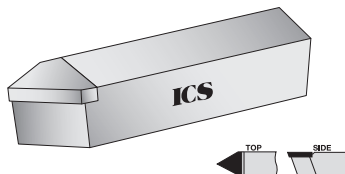
STYLE "D"



80° INCLUDED ANGLE

ITEM NO.				
PREFIX - GRADE - TOOL NO.			SHANK SIZE	PRICE
CTTB (GRADE) D 04			1/4 x 1/4 x 2	7.06
CTTB (GRADE) D 05			5/16 x 5/16 x 2-1/4	7.32
CTTB (GRADE) D 06			3/8 x 3/8 x 2-1/2	7.42
CTTB (GRADE) D 08			1/2 x 1/2 x 3-1/2	8.00
CTTB (GRADE) D 10			5/8 x 5/8 x 4	10.58
CTTB (GRADE) D 12			3/4 x 3/4 x 4-1/2	14.12

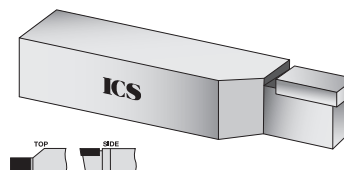
STYLE "E"



60° INCLUDED ANGLE

ITEM NO.				
PREFIX - GRADE - TOOL NO.			SHANK SIZE	PRICE
CTTB (GRADE) E 04			1/4 x 1/4 x 2	7.06
CTTB (GRADE) E 05			5/16 x 5/16 x 2-1/4	7.32
CTTB (GRADE) E 06			3/8 x 3/8 x 2-1/2	7.42
CTTB (GRADE) E 08			1/2 x 1/2 x 3-1/2	8.00
CTTB (GRADE) E 10			5/8 x 5/8 x 4	10.58
CTTB (GRADE) E 12			3/4 x 3/4 x 4-1/2	14.12

STYLE "CTR"



CUT-OFF RIGHT HAND

ITEM NO.				TIP	
PREFIX - GRADE - TOOL NO.			WIDTH	SHANK SIZE	PRICE
CTTB - (GRADE) CTR 11			1/8	1/2 x 1 x 5	15.64
CTTB - (GRADE) CTR 22			3/16	1/2 x 1 x 5	16.56
CTTB - (GRADE) CTR 33			1/4	1/2 x 1 x 5	21.30

PACKAGING

No. 4 to 6 - 10 Pcs. No. 8 to 12 - 5 Pcs.

TOOL BITS

ICS WIS

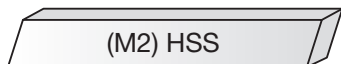
GENERAL PURPOSE

PRECISION GROUND

HIGH SPEED STEEL

(M2) High Speed Steel Tool Bits are designed for general purpose machining of mild steel, alloys, and tool steels. They have good heat and abrasion resistant properties and are best used when making an interrupted cut or where the tool may be subjected to heavy load or shock.

SQUARE SECTION



(M2) HSS

Both ends beveled 10°

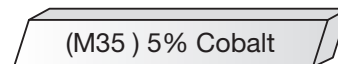
SIZE	OVERALL LENGTH	HSS TB-SQ
1/8	2-1/2	2.36
3/16	2-1/2	2.36
1/4	2-1/2	2.90
1/4	4	4.72
5/16	2-1/2	3.54
5/16	4	7.88
3/8	3	5.04
3/8	4	5.78
3/8	6	12.18

SIZE	OVERALL LENGTH	HSS TB-SQ
7/16	3-1/2	7.20
1/2	4	9.28
1/2	6	18.90
5/8	4-1/2	14.98
3/4	5	22.10
7/8	6	35.48
1	7	63.00
1-1/4	7	115.50

5% COBALT (M35)

(M35) 5% Cobalt Tool Bits are designed for heavy duty machining of alloy steels and tough materials, such as castings and forgings. They have high heat and abrasion resistant properties and are best used when making heavy cuts, at high speeds and feeds, or where high heat is a factor.

SQUARE SECTION



(M35) 5% Cobalt

Both ends beveled 10°

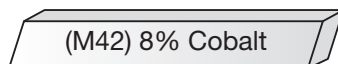
SIZE	OVERALL LENGTH	HSS TB-SQ5C
1/8	2-1/2	4.08
3/16	2-1/2	4.08
1/4	2-1/2	5.36
1/4	4	7.96
5/16	2-1/2	6.48
5/16	4	10.12
3/8	3	8.20
3/8	4	11.30

SIZE	OVERALL LENGTH	HSS TB-SQ5C
7/16	3-1/2	12.78
1/2	4	14.76
1/2	6	25.20
5/8	4-1/2	26.34
3/4	5	40.50
7/8	6	69.38
1	7	84.68
1-1/4	7	134.58

8% COBALT (M42)

(M42) 8% Cobalt tool bits are designed for machining work hardening alloys and other tough materials. They have increased water resistance and tool life. This improves performance and retention of the cutting edge.

SQUARE SECTION



(M42) 8% Cobalt

Both ends beveled 10°

SIZE	OVERALL LENGTH	HSS TB-SQ8C
3/16	2-1/2	5.26
1/4	2-1/2	5.78
5/16	2-1/2	7.00
3/8	3	10.50
7/16	3-1/2	14.70

SIZE	OVERALL LENGTH	HSS TB-SQ8C
1/2	4	19.26
5/8	4-1/2	21.52
3/4	5	30.46
7/8	6	49.88

PACKAGING

1/8 to 3/8 - 10 Tools / Pkg., 7/16 to 1/2 - 5 Tools / Pkg., 5/8 to 1-1/4 - 1 Tool / Pkg.

RECTANGULAR SECTION



(M2) HSS

SIZE	OVERALL LENGTH	HSS TB-R
1/4 x 3/8	3	5.40
1/4 x 1/2	4	6.48
1/4 x 3/4	5	11.34
1/4 x 1	6	16.28
5/16 x 7/16	3	9.60
3/8 x 1/2	4	9.72
3/8 x 3/4	5	15.64

SIZE	OVERALL LENGTH	HSS TB-R
1/2 x 3/4	5	18.38
1/2 x 1	7	31.26
1/2 x 1-1/4	7	38.50
5/8 x 3/4	5	30.98
3/4 x 1	6	47.78
3/4 x 1-1/4	7	59.74

PACKAGING

1/4 to 3/8 - 5 Tools / Pkg., 1/2 to 3/4 - 1 Tool / Pkg.

ROUND SECTION



(M2) HSS

SIZE	OVERALL LENGTH	HSS TB-RD
1/8	2-3/4	1.06
5/32	3-1/8	1.14
3/16	3-1/2	1.36
1/4	4	1.90
5/16	4-1/2	2.94
3/8	5	4.20

SIZE	OVERALL LENGTH	HSS TB-RD
7/16	5-1/2	5.62
1/2	6	7.28
5/8	6	14.38
3/4	6	20.80
1	6	36.50

PACKAGING

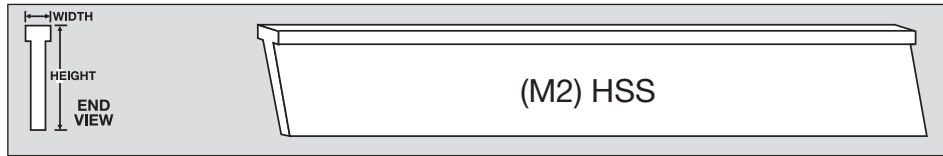
1/8 to 1/4 - 10 Tools / Pkg., 5/16 to 1/2 - 5 Tools / Pkg., 5/8 to 1 - 1 Tool / Pkg.

HIGH SPEED STEEL T-SHAPED CUT-OFF BLADES

ICS EUR

GENERAL PURPOSE

PRECISION GROUND



T-Shaped blades are ideal for cutting-off, grooving, and similar operations. The narrow design conserves material being cut and reduces the heat generated when cutting. This style blade will produce a chip narrower than the blade itself. Increased clearance angles on each side of the blade reduce friction and assure long tool life. These blades fit all cut-off tool holders made for holding T-shaped blades.

SIZE WIDTH x HEIGHT	OVERALL LENGTH	ITEM/BLADE NO.	PRICE
.040 x 1/2	3-1/2	COB-TSP1N	20.50
1/16 x 1/2	4-1/2	COB-TSP1	17.96
5/64 x 1/2	4-1/2	COB-TSP2N	18.42
3/32 x 1/2	4-1/2	COB-TSP2	18.42
1/8 x 1/2	4-1/2	COB-TSP3S	18.42
3/32 x 11/16	5	COB-TSP3N	19.36
1/8 x 11/16	5	COB-TSP3	19.82
5/32 x 11/16	5	COB-TSP4	20.50
3/16 x 11/16	5	COB-TSP5S	20.50
1/8 x 3/4	5	COB-TSP3W	20.16

SIZE WIDTH x HEIGHT	OVERALL LENGTH	ITEM/BLADE NO.	PRICE
5/32 x 3/4	5	COB-TSP4W	20.16
3/16 x 3/4	5	COB-TSP5W	24.02
1/8 x 7/8	6	COB-TSP5X	23.08
5/32 x 7/8	6	COB-TSP5N	24.02
3/16 x 7/8	6	COB-TSP5	24.66
1/4 x 7/8	6	COB-TSP6	26.24
1/8 x 1-1/8	6-1/2	COB-TSP8X	36.04
5/32 x 1-1/8	6-1/2	COB-TSP8N	39.68
3/16 x 1-1/8	6-1/2	COB-TSP8	44.32
1/4 x 1-1/8	6-1/2	COB-TSP9	49.50

GROUND CUT-OFF BLADES

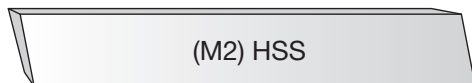
ICS EUR

GENERAL PURPOSE

PRECISION GROUND

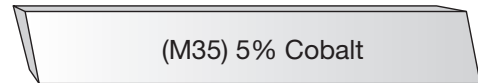
HIGH SPEED STEEL

(M2) High Speed Steel Cut-off Blades are designed for cutting-off, grooving, and similar operations.



COBALT

(M-35) 5% Cobalt Cut-off Blades are designed for heavy duty and high speed machining operations.



End View
Both ends beveled 5°.

SIZE WIDTH x HEIGHT	OVERALL LENGTH	ITEM/BLADE NO.	PRICE
3/32 x 1/2	4-1/2	COB-HS 006 x 032	14.76
3/32 x 5/8	5	COB-HS 006 x 040	18.12
1/8 x 3/4	6	COB-HS 008 x 048	21.80
1/8 x 7/8	6	COB-HS 008 x 056	28.32
3/16 x 1	6-1/2	COB-HS 012 x 100	33.66

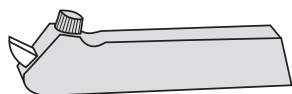
SIZE WIDTH x HEIGHT	OVERALL LENGTH	ITEM/BLADE NO.	PRICE
3/32 x 1/2	4-1/2	COB-5C 006 x 032	17.72
3/32 x 5/8	5	COB-5C 006 x 040	21.76
1/8 x 3/4	6	COB-5C 008 x 048	27.24
1/8 x 7/8	6	COB-5C 008 x 056	35.76
3/16 x 1	6-1/2	COB-5C 012 x 100	46.88

ALLOY STEEL TURNING TOOL HOLDERS

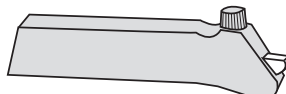
ICS IND

GENERAL PURPOSE

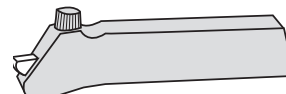
DROP FORGED



STRAIGHT



LEFT HAND OFFSET



RIGHT HAND OFFSET

Drop Forged Alloy Steel Tool Holders have a relieved cutter bit hole for proper seating and reduced breakage of tool bits. All holders come complete with a wrench. Left hand holders offset to the right. Right hand holders offset to left.

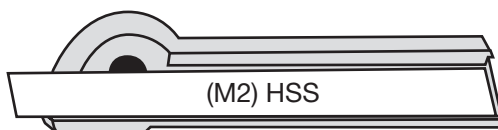
SIZE OF TOOL BIT SQUARE	HOLDER SIZE	FOR LATHES APPROX. SWING (IN.)	ITEM NO.			PRICE EACH HOLDER WITH WRENCH
			STRAIGHT SHANK	LEFT HAND OFFSET	RIGHT HAND OFFSET	
1/8	5/16 x 1/2 x 4	9-10	TTHS008	TTHL008	TTHR008	22.68
3/16	5/16 x 3/4 x 4-1/2	9-10	TTHS012	TTHL012	TTHR012	25.36
1/4	3/8 x 7/8 x 5	10-14	TTHS016	TTHL016	TTHR016	26.34
5/16	1/2 x 1-1/8 x 6	14-16	TTHS020	TTHL020	TTHR020	33.68
3/8	5/8 x 1-3/8 x 7	16-18	TTHS024	TTHL024	TTHR024	38.86
7/16	3/4 x 1-5/8 x 8	18-20	TTHS028	TTHL028	TTHR028	51.22
1/2	7/8 x 1-3/4 x 9	24-36	TTHS032	TTHL032	TTHR032	57.20

ALLOY STEEL CUT-OFF BLADE TOOL HOLDERS

ICS IND

GENERAL PURPOSE

DROP FORGED



Drop Forged Alloy Steel Cut-off Blade Tool Holders are designed to support cut-off blades and help prevent blade breakage. All holders come complete with a wrench.

CUT-OFF BLADE SIZE	HOLDER SIZE	FOR LATHES APPROX. SWING (IN.)	ITEM NO.		PRICE EACH TOOL HOLDER WITH WRENCH
			STRAIGHT SHANK		
3/32 x 1/2	5/16 x 3/4 x 4-1/2	9-10	COBTHS006		21.88
3/32 x 5/8	3/8 x 7/8 x 5	9-10	COBTHS006A		24.80
1/8 x 3/4	1/2 x 1-1/8 x 6	11-14	COBTHS008		27.10
1/8 x 7/8	5/8 x 1-3/8 x 7	14-16	COBTHS008A		37.30
3/16 x 1	3/4 x 1-5/8 x 8	16	COBTHS012		46.88

SAWING TOOLS

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Hole Saw Arbor	26
Hole Saw Plug Ejecting Arbor Adapter	26
Mandrel Arbor Adapter.....	27

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Handsaws

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Hole Cutters

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Set	29

Hole Saws

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Fractional.....	22
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Separate Arbor	
Fractional.....	22
Metric	23
Carbide Grit Edged	30
Carbide Tipped.....	28

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Bayonet Shank.....	3
Bosch Style Shank.....	4
Makita Shank.....	3
Scroll / Jigsaw	7

SABER/JIG SAW BLADES - 1/4" SHANK

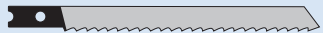
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ICS WIS

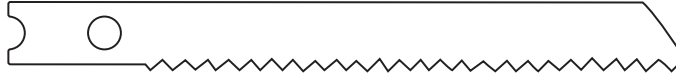


MILLED TEETH

Fits all Saber Saws using universal 1/4" shank.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - HIGH SPEED STEEL								
 RED BLADE	2-3/4	5/16	14	Medium - Fast Metals 1/4" - 3/8"	Wavy Set	SSB-M-314	.94	.86
	2-3/4	5/16	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSB-M-318	.94	.86
	2-3/4	5/16	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSB-M-324	.94	.86
	2-3/4	5/16	32	Extra Fine - Slow	Wavy Set	SSB-M-332	.94	.86
WOOD CUTTING - HIGH CARBON								
 BLACK BLADE	2-3/4	5/16	6	Coarse - Fast Wood up to 1-1/2"	Wavy Set	SSB-W-306	.50	.46
	3-1/8	5/16	8	Medium - Medium Wood up to 2"	Alt. Set	SSB-W-308	.50	.46
	3-1/8	5/16	10	Smooth - Medium Wood up to 2"	Alt. Set	SSB-W-310	.50	.46
 SILVER GROUND FINISH	4	5/16	6	Smooth - Fast Wood up to 2-3/8"	Taper Ground	SSB-TG-406	1.68	1.42
	4	5/16	10	Fine - Medium Wood up to 2-3/8"	Taper	SSB-TG-410	1.68	1.42
 BLACK BLADE	6	9/16	6	Rough - Fast Wood up to 4"	Alt. Set	SSB-W-606	1.68	1.42
 BLACK BLADE	3-5/8	1-3/8	8	Medium - Medium Flush cuts to wall	Alt. Set	SSB-WF-308	2.02	1.82
 BLACK BLADE	3-1/8	1/4	10	Medium - Medium Cuts wood both directions	Alt. Set	SSB-TE-310	1.24	1.12
WOOD SCROLL CUTTING - HIGH CARBON								
 BLUE BLADE	2-3/4	5/32	12	Smooth - Medium Scroll cuts wood to 1"	Wavy Set	SSB-S-312	.84	.72
FIBERGLASS CUTTING - HIGH SPEED STEEL								
 BLUE BLADE	2-3/4	5/16	14	Fine - Very Fast Special Angle cuts 30% faster	Wavy Set	SSB-F-314	1.30	1.12
ALUMINUM & NON-FERROUS METAL CUTTING - HIGH SPEED STEEL								
 RED BLADE	3-1/8	5/16	8	Medium - Fast Special teeth eject chips	Skip Tooth	SSB-A-308	1.86	1.66
PLASTER CUTTING - HIGH CARBON								
 BLACK BLADE	3-5/8	5/16	9	Rough - Fast V-Tooth prevents clogging	V- Tooth	SSB-P-309	1.14	1.02

SABER/JIG SAW BLADES - 1/4" SHANK

ICS **USA**

MILLED TEETH

Fits all Saber Saws using universal 1/4" shank.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - BI-METAL								
 WHITE BLADE	3-5/8	5/16	14	Medium - Fast Metals 1/4" - 3/8"	Wavy Set	SSB-BM-314	2.04	1.86
	2-3/4	5/16	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSB-BM-318	1.82	1.64
	2-3/4	5/16	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSB-BM-324	1.82	1.64
WOOD CUTTING - BI-METAL								
 WHITE BLADE	4-1/8	1/4	6	Coarse - Fast Wood up to 2-3/8"	Alt. Set	SSB-BW-406	2.24	2.02
	4-1/8	1/4	10	Smooth - Medium Wood up to 2-3/8"	Alt. Set	SSB-BW-410	2.24	2.02

SABER/JIG SAW BLADES - 1/4" SHANK

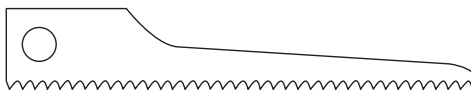
ICS **USA**

CARBIDE GRIT EDGE

Fits all Saber Saws using universal 1/4" shank.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	GRIT LEVEL	GRIT STYLE	CUT - SPEED APPLICATION	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
ABRASIVE MATERIALS CUTTING - CARBIDE GRIT EDGE								
 BLACK BLADE	2-7/8	3/8	30 Grit	Coarse	Plywood, cast iron,	SSB-CE-2C	3.54	3.18
	2-7/8	3/8	40 Grit	Medium	stainless steel, fiberglass,	SSB-CE-2M	3.54	3.18
	2-7/8	3/8	50 Grit	Fine	ceramic tile, slate, brick,	SSB-CE-2F	3.54	3.18
	3-5/8	3/8	30 Grit	Coarse	marble, etc. Cuts many	SSB-CE-3C	3.54	3.18
	3-5/8	3/8	40 Grit	Medium	materials conventional steel blades cannot cut.	SSB-CE-3M	3.54	3.18

AIR SAW BLADES - 1/2" SHANK

ICS **USA**

MILLED TEETH

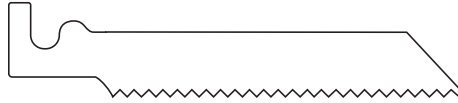
Fits Florida Pneumatic, Snap On, Mag Tools and most popular pneumatic reciprocating saws.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL SCROLL CUTTING - BI-METAL								
 WHITE BLADE	3-1/2	1/2	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	ASB-BM-318	2.42	2.18
	3-1/2	1/2	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	ASB-BM-324	2.42	2.18
	3-1/2	1/2	32	Extra Fine - Slow Metals 1/32" - 1/8"	Wavy Set	ASB-BM-332	2.42	2.18
METAL CUTTING - BI-METAL								
 WHITE BLADE	4	1/2	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	ASB-BM-418	2.52	2.28
	4	1/2	32	Extra Fine - Slow Metals 1/32" - 1/8"	Wavy Set	ASB-BM-432	2.52	2.28
	5	1/2	18	Heavy Gauge Metals	Wavy Set	ASB-BM-518	2.94	2.70

SABER/JIG SAW BLADES - BAYONET SHANK

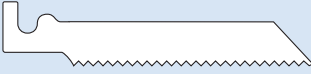
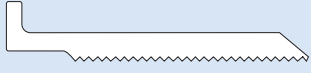
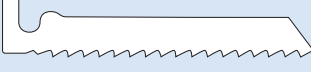
ST-3

ICS USA



MILLED TEETH

For Porter Cable® or Rockwell® Machines Models 348, 548, 648

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - BI-METAL								
 WHITE BLADE	2	3/8	14	Medium - Fast Metals 1/4" - 3/8"	Wavy Set	SSBP-BM-214	1.90	1.70
	2	3/8	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSBP-BM-224	1.90	1.70
	3	3/8	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSBP-BM-318	2.20	1.98
	3-5/8	3/8	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSBP-BM-318L	2.32	2.08
METAL SCROLL CUTTING - BI-METAL								
 WHITE BLADE	2	1/4	18	Fine - Slow Metals 1/8" - 1/4"	Wavy Set	SSBP-BMS-218	1.96	1.76
WOOD CUTTING - BI-METAL								
 WHITE BLADE	3	3/8	6	Coarse - Fast Wood up to 2"	Alt. Set	SSBP-BW-306	2.20	1.98
	3	3/8	10	Smooth - Medium Wood up to 2"	Alt. Set	SSBP-BW-310	2.20	1.98

SABER/JIG SAW BLADES - MAKITA SHANK

ICS USA



MILLED TEETH

For Makita® Models JG 1600, JV 2000, 4300BV, 4301BV

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - BI-METAL								
 RED BLADE	3-1/4	3/8	14	Medium - Fast Metals 3/16" - 3/8"	Wavy Set	SSBM-M-314	1.70	1.54
	3-1/4	3/8	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSBM-M-324	1.70	1.54
NAIL EMBEDDED WOOD CUTTING - HIGH SPEED STEEL								
 RED BLADE	3-1/4	3/8	10	Smooth - Medium Wood up to 2"	Raker Set	SSBM-NW-310	1.70	1.54
WOOD CUTTING - HIGH CARBON								
 BLACK BLADE	3-1/4	3/8	8	Medium - Medium Wood up to 2"	Alt. Set	SSBM-W-308	1.12	1.02
 GROUND FINISH	3-1/4	3/8	10	Smooth - Fast Wood up to 2"	Taper Ground	SSBM-TG-310	2.10	1.90
ABRASIVE MATERIALS CUTTING - CARBIDE GRIT EDGE								
 BLACK BLADE	3-1/8	5/16	40 Grit	Medium - Slow Ceramic Tile, Fiberglass, Plastic, Cast Iron Pipe, etc.	Medium	SSBM-CE-3M	3.56	3.18

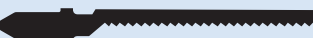
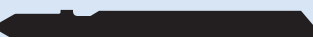
SABER/JIG SAW BLADES - BOSCH STYLE SHANK

ICS USA



MILLED TEETH

For Bosch® Machines with T-Shank design.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - COBALT BI-METAL								
 WHITE BLADE	3-5/8	5/16	14	Medium - Fast Metals 1/4" - 3/8"	Wavy Set	SSBB-BM-314	2.10	2.00
	3-5/8	5/16	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSBB-BM-318	2.10	2.00
	3-5/8	5/16	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSBB-BM-324	2.10	2.00
NAIL EMBEDDED WOOD CUTTING - COBALT BI-METAL								
 WHITE BLADE	4	5/16	6	Coarse - Fast Wood up to 2-1/4"	Alt. Set	SSBB-BW-406	2.42	2.30
	4	5/16	8	Medium - Medium Wood up to 2-1/4"	Alt. Set	SSBB-BW-408	2.42	2.30
	4	5/16	10	Smooth - Medium Wood up to 2-1/4"	Alt. Set	SSBB-BW-410	2.42	2.30
WOOD SCROLL CUTTING - COBALT BI-METAL								
 WHITE BLADE	4	1/4	10	Smooth - Medium Scroll cuts wood up to 2-1/4"	Alt. Set	SSBB-BMS-410	2.42	2.30
FIBERGLASS CUTTING - COBALT BI-METAL								
 WHITE BLADE	3	5/16	12	Fine - Fast Special tooth and coating	Special	SSBB-BMF-312	3.28	3.12
METAL CUTTING - HIGH SPEED STEEL								
 RED BLADE	3	5/16	14	Medium - Fast Metals 1/4" - 3/8"	Wavy Set	SSBB-M-314	2.36	2.24
	3	5/16	18	Smooth - Medium Metals 1/8" - 1/4"	Wavy Set	SSBB-M-318	2.36	2.24
	3	5/16	24	Fine - Slow Metals 1/16" - 3/16"	Wavy Set	SSBB-M-324	2.36	2.24
	5	5/16	21	Fine - Slow Pipe and Channels up to 3"	Wavy Set	SSBB-M-521	2.70	2.58
NAIL EMBEDDED WOOD CUTTING - HIGH SPEED STEEL								
 RED BLADE	4	5/16	8	Medium - Medium Wood up to 2-1/4"	Alt. Set	SSBB-NW-408	1.94	1.84
	5	5/16	14	Smooth - Medium Wood up to 2-1/4"	Alt. Set	SSBB-NW-514	2.88	2.74
WOOD CUTTING - HIGH CARBON								
 BLACK BLADE	4	5/16	6	Coarse - Fast Wood up to 2-1/4"	Alt. Set	SSBB-W-406	1.74	1.66
	4	5/16	10	Smooth - Medium Wood up to 2-1/4"	Alt. Set	SSBB-W-410	1.28	1.22
 SILVER GROUND FINISH	4	5/16	10	Fine - Medium Wood up to 2-1/4"	Taper Ground	SSBB-TG-410	2.42	2.30
WOOD SCROLL CUTTING - HIGH CARBON								
 BLACK BLADE	4	1/4	6	Coarse - Fast Scroll cuts wood up to 2-1/4"	Alt. Set	SSBB-S-406	1.74	1.66
ABRASIVE MATERIALS CUTTING - CARBIDE GRIT EDGE								
 BLACK BLADE	3-5/8	5/16	40 Grit	Medium - Slow Ceramic Tile, Fiberglass, Plastic, Cast Iron Pipe, etc.	Medium	SSBB-CE-300	3.16	3.00

RECIPROCATING SAW BLADES - 1/2" SHANK

ST-5

ICS USA



MILLED TEETH

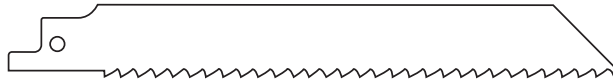
Fits any Reciprocating Saw using 1/2" universal shank.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - HIGH SPEED STEEL								
 RED BLADE	4	5/8	12	Medium - Fast Metals 1/8" and over	Raker Set	RSB-M-412	1.64	1.48
	4	5/8	18	Smooth - Medium Metals 1/8" and under	Raker Set	RSB-M-418	1.64	1.48
	4	5/8	24	Fine - Slow Metals 3/64" and under	Raker Set	RSB-M-424	1.64	1.48
	6	5/8	10	Medium - Fast Metals 1/4" and over	Raker Set	RSB-M-610	2.00	1.60
	6	5/8	14	Medium - Fast Metals 1/8" and over	Raker Set	RSB-M-614	2.00	1.60
	6	5/8	18	Smooth - Medium Metals 1/8" and under	Raker Set	RSB-M-618	2.00	1.60
	8	5/8	10	Medium - Fast Metals - Deep cuts	Raker Set	RSB-M-810	2.78	2.64
METAL SCROLL CUTTING - HIGH SPEED STEEL								
 RED BLADE	4	5/16	18	Smooth - Medium Metals 3/64" and over	Wavy Set	RSB-MS-418	1.70	1.54
NAIL-EMBEDDED WOOD CUTTING - HIGH ALLOY STEEL								
 BLACK BLADE	6	5/8	6	Coarse - Fast Roughing work	Alt. Set	RSB-NW-606	1.36	1.24
	6	5/8	10	Medium - Medium Standard work	Alt. Set	RSB-NW-610	1.36	1.24
	6	5/8	18	Smooth - Medium Finish work	Wavy Set	RSB-NW-618	1.36	1.24
	12	5/8	3	Coarse - Very Fast Heavy work	Alt. Set	RSB-NW-123	2.48	2.26
	12	5/8	6	Coarse - Fast Roughing work	Alt. Set	RSB-NW-126	2.48	2.26
	12	5/8	10	Medium - Medium Standard work	Alt. Set	RSB-NW-1210	2.48	2.26
NAIL-EMBEDDED WOOD CUTTING - HIGH ALLOY STEEL								
 BLACK BLADE	6	5/8	3	Coarse - Very Fast Heavy work	Alt. Set	RSB-W-603	1.36	1.24
	9	5/8	3	Coarse - Very Fast Heavy work	Alt. Set	RSB-W-903	2.18	1.96
	6	5/8	6	Coarse - Fast Roughing work	Alt. Set	RSB-W-606	1.76	1.62
 BLACK BLADE	9	3/4	6	Coarse - Fast Roughing work	Alt. Set	RSB-W-906	2.66	2.40
	12	3/4	6	Coarse - Fast Roughing work	Alt. Set	RSB-W-126	3.54	3.20
WOOD SCROLL [CONTOUR] CUTTING - HIGH CUTTING								
 BLACK BLADE	6	1/2	6	Coarse - Fast Cutting irregular curves	Alt. Set	RSB-S-606	1.68	1.52
PLASTER CUTTING - HIGH ALLOY STEEL								
 WHITE BLADE	6	3/4	6	Rough - Fast V-Tooth prevents clogging	V- Tooth	RSB-P-606	1.82	1.62

RECIPROCATING SAW BLADES - 1/2" SHANK

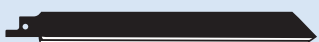
ICS

USA



MILLED TEETH

Fits any Reciprocating Saw using 1/2" universal shank.

ILLUSTRATION AND COLOR	LENGTH	WIDTH	TEETH PER INCH	CUT - SPEED APPLICATION	TYPE TEETH	ITEM NO.	PRICE EACH	
							POUCH 5 PCS.	BOX 100 PCS.
METAL CUTTING - COBALT BI-METAL								
 WHITE BLADE	6	3/4	10	Medium - Fast Metals 1/4" and over	Raker Set	RSB-BMC-610	2.80	2.50
	6	3/4	14	Medium - Fast Metals 1/8" and over	Raker Set	RSB-BMC-614	2.80	2.50
	6	3/4	18	Smooth - Medium Metals 1/8" and under	Raker Set	RSB-BMC-618	2.80	2.50
	6	3/4	24	Fine - Slow Metals 3/64" and under	Raker Set	RSB-BMC-624	2.80	2.50
	8	3/4	10	Medium - Fast Metals - Deep Cuts	Raker Set	RSB-BMC-810	4.48	4.04
METAL CUTTING - BI-METAL								
 WHITE BLADE	4	5/8	10	Medium - Fast Metals 1/4" and over	Raker Set	RSB-BM-410	1.86	1.66
	4	5/8	14	Medium - Fast Metals 1/8" and over	Raker Set	RSB-BM-414	1.86	1.66
	4	5/8	18	Smooth - Medium Metals 1/8" and under	Raker Set	RSB-BM-418	1.86	1.66
	4	5/8	24	Fine - Slow Metals 3/64" and under	Wavy Set	RSB-BM-424	1.86	1.66
	6	5/8	10	Medium - Fast Metals 1/4" and over	Raker Set	RSB-BM-610	2.30	2.20
	6	5/8	14	Medium - Fast Metals 1/8" and over	Raker Set	RSB-BM-614	2.30	2.20
	6	5/8	18	Smooth - Medium Metals 1/8" and under	Raker Set	RSB-BM-618	2.30	2.20
	6	5/8	24	Fine - Slow Metals 3/64" and under	Wavy Set	RSB-BM-624	2.30	2.20
	8	5/8	10	Medium - Fast Metals - Deep Cuts	Raker Set	RSB-BM-810	3.58	3.40
 WHITE BLADE	6	3/4	5-7	Coarse - Fast Metals 1/4" and over	Variable Tooth	RSB-BM-607	3.88	3.52
	9	3/4	10-14	Medium - Fast Pipe & Channels up to 6"	Variable Tooth	RSB-BM-914	5.88	5.30
METAL SCROLL CUTTING - BI-METAL								
 WHITE BLADE	3-1/2	5/16	18	Smooth - Medium Cutting irregular curves	Raker Set	RSB-BMS-318	1.86	1.66
NAIL-EMBEDDED WOOD CUTTING - BI-METAL								
 WHITE BLADE	6	3/4	6	Coarse - Fast Roughing work	Alt. Set	RSB-BW-606	3.46	3.14
	9	3/4	6	Coarse - Fast Roughing work	Alt. Set	RSB-BW-906	4.00	3.60
	12	3/4	6	Coarse - Fast Roughing work	Alt. Set	RSB-BW-126	5.68	5.10
 WHITE BLADE	6	5/8	10	Medium - Medium Standard work	Alt. Set	RSB-BW-610	2.48	2.26
WOOD SCROLL [CONTOUR] CUTTING - BI-METAL								
 WHITE BLADE	6	1/2	6	Coarse - Fast Cutting irregular curves	Alt. Set	RSB-BS-606	3.16	2.84
ABRASIVE MATERIALS CUTTING - CARBIDE GRIT EDGE								
 BLACK BLADE	4	3/4	30 Grit	Coarse - Medium	Coarse	RSB-CE-04	3.80	3.42
	6	3/4	30 Grit	Ceramic Tile, Fiberglass,	Coarse	RSB-CE-06	3.80	3.42
	8	3/4	30 Grit	Plastic, Cast Iron Pipe,	Coarse	RSB-CE-08	5.26	4.72
	9	3/4	30 Grit	Stainless Steel, etc.	Coarse	RSB-CE-09	6.26	5.64

HIGH CARBON STEEL SCROLL/JIGSAW BLADES

ICS

USA

SPECIAL PURPOSE

MILLED TEETH



Scroll/Jigsaw Blades are designed for precise, internal and external cutting of wood, plastic, and non ferrous metals. Plain end styles fit virtually any scroll saw, as well as hand held fret and jewelers saw frames.

5" PLAIN END-REG. TEETH

TEETH PER INCH	WIDTH THICKNESS	ITEM NO.	PRICE EACH
			5 PACK
9.5	.062 x .024	SJB-509	0.48
11	.053 x .018	SJB-511	0.42
12.5	.038 x .016	SJB-512*	0.42

* With 6 Reverse Teeth

CARBIDE GRIT EDGED ROD SAW

ICS

UK

SPECIAL PURPOSE



Carbide grit edged sawing wire cuts tile, glass, marble, hardened tool steel, fiber board and many other hard to cut materials. Cuts in both directions. Can cut curves and change cutting direction without altering the saw angle. Self sharpening. Fits all standard hacksaw frames.

LENGTH	ITEM NO.	PRICE EACH	
		1 PC. POUCH	10 PC. POUCH
6"	RS-CE-06	3.24	2.90
10"	RS-CE-10	4.00	3.60
12"	RS-CE-12	4.76	4.36

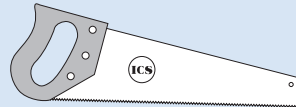
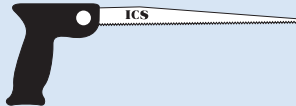
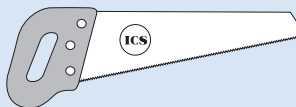
HANDSAWS - WOOD CUTTING

ICS USA

ALL PURPOSE

WOOD CUTTING

ICS Handsaws are available in a variety of styles for all hand cutting needs. Each handsaw is designed for a specific cutting application. The descriptions below will assist the user in selecting the handsaw needed for their particular application.

DESCRIPTION	LENGTH	POINTS PER INCH	CUT	ITEM NO.	PRICE
CROSSCUT SAWS HEAVY DUTY  Wood Handle	26"	8	Crosscut - Medium	H-CCH-26X08TM	32.14
	26"	10	Crosscut - Fine	H-CCH-26X10TF	31.56
For high quality wood cutting. Chrome-nickel alloy steel blade teeth are bevel-filed and accurately set.					
CROSSCUT SAW GENERAL PURPOSE  Plastic Handle	26"	8	Crosscut - Medium	H-CC-26X08TM	12.10
For general purpose wood cutting. Polished steel blade. Teeth are filed and accurately set.					
TOOL BOX SAW HEAVY DUTY  Plastic Handle	15"	9	Push-Pull Crosscut	H-TB-1	19.12
For general purpose wood cutting. New 9-point triangular tooth design cuts in both directions and twice as fast as regular handsaws. Handle designed with 45° and 90° angles for layout and marking. Polished steel blade. Teeth are bevel-filed and accurately set.					
COMPASS SAW SPECIAL PURPOSE  Plastic Handle	12"	8	Crosscut - Medium	H-C-12X08TM	5.56
For cutting out curved shapes and freehand cutting in wood, plasterboard, plywood and plastic. Polished steel blade teeth are filed and accurately set.					
DRYWALL/WALLBOARD SAW SPECIAL PURPOSE  Wood Handle	6"	8	Ripsaw - Medium	H-DW-06X08TM	5.56
For making cutouts for electrical outlets in drywall, wallboard, plasterboard and similar materials. Blade has self-starting point for plunge cutting. Polished steel blade. Teeth are filed and accurately set.					
DRYWALL SAW SPECIAL PURPOSE  Plastic Handle	15"	5	Ripsaw - Coarse	H-D-15X05TC	15.88
For cutting quickly through drywall, wallboard, plasterboard, and similar materials. Polished steel blade. Teeth are filed and accurately set.					
PVC SAWS SPECIAL PURPOSE  Aluminum Handle	12"	10	Push-Pull Crosscut	H-PVC-12X10T	13.08
	18"	10	Push-Pull Crosscut	H-PVC-18X10T	16.60
For cutting PVC/ABS plastic pipe, wallboard, nail embedded wood, fiberglass panels, brass and copper tubing, and general purpose woodcutting. Tempered steel blade. Teeth are milled and accurately set.					
PVC REPLACEMENT BLADES					
	12" PVC Blade			PVCB12	8.72
	18" PVC Blade			PVCB18	12.22

HIGH SPEED STEEL HACKSAW BLADES

ICS USA

SPECIAL PURPOSE

MILLED TEETH



BLADES ARE PAINTED RED

Flexible Molybdenum High Speed Steel Blades are double heat treated to provide a hard cutting edge on the teeth and a flexible, shatter resistant back. Used where accuracy and high cutting rates are required. Recommended when work cannot be firmly secured. Ideal for specialized sawing of tool steel, alloy steel and other tough materials.

LENGTH	WIDTH	TEETH		PRICE EACH		
		PER INCH	ITEM NO.	2 PCS. POUCH	10 PCS. POUCH	100 PCS. POUCH
12	1/2	14	HSB-HS-12X14T	2.10	1.90	1.70
12	1/2	18	HSB-HS-12X18T	2.10	1.90	1.70
12	1/2	24	HSB-HS-12X24T	2.10	1.90	1.70
12	1/2	32	HSB-HS-12X32T	2.10	1.90	1.70

BI-METAL (8% COBALT) HACKSAW BLADES

ICS USA

HEAVY DUTY

MILLED TEETH



BLADES ARE PAINTED WHITE

Bi-Metal Blades have a Molybdenum High Speed Steel cutting edge electronically welded to a tough alloy spring steel back. The full tooth hardness, combined with a flexible back, provides the highest possible cutting efficiency. Shatterproof blades may last twice as long as other HSS blades. Ideal for cutting stainless, pipe, conduit - almost any material.

LENGTH	WIDTH	TEETH		PRICE EACH		
		PER INCH	ITEM NO.	2 PCS. POUCH	10 PCS. POUCH	100 PCS. POUCH
12	1/2	14	HSB-BM-12X14T	2.10	1.90	1.70
12	1/2	18	HSB-BM-12X18T	2.10	1.90	1.70
12	1/2	24	HSB-BM-12X24T	2.10	1.90	1.70
12	1/2	32	HSB-BM-12X32T	2.10	1.90	1.70

CARBIDE GRIT EDGED HACKSAW BLADES

ICS USA

SPECIAL PURPOSE

CARBIDE GRIT EDGE



BLADES ARE PAINTED BLACK

Carbide Grit Edged Hacksaw Blades are extra wide to help maintain a straight cut and to cut very difficult work such as thin gauge stainless steel, perforated metal, wire rope. Cuts in both directions. Self sharpening. Fits all standard hacksaw frames.

LENGTH	WIDTH	ITEM NO.	PRICE EACH	
			1 PC. POUCH	10 PC. POUCH
10	1/2	HSB-CE-10	4.12	3.72
12	1/2	HSB-CE-12	4.70	4.24
12	3/4	HSB-CE-12A	4.70	4.24

TOOTH SELECTION

ICS Hand Hacksaw Blades can be used to cut a variety of materials and shapes. The proper blade will provide maximum blade life and high cutting efficiency. Selection depends on several considerations.

TEETH PER INCH	14 TOOTH BLADE - COARSE - 1" or greater cross section cutting
	18 TOOTH BLADE - MEDIUM - 1/4" to 1" cross section cutting
	24 TOOTH BLADE - FINE - Sheet metal cutting and tubing
	32 TOOTH BLADE - VERY FINE - Up to 1/16" Thickness cutting

TOOTH SELECTION: Selecting a blade with the correct number of teeth is dependent on the thickness and type of material to be cut. The teeth must never straddle the material and at least 3 teeth must always be in contact. For thin sections, the highest number of teeth should be selected.

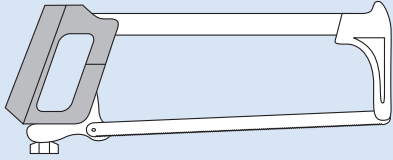
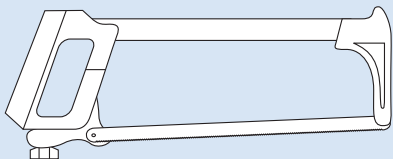
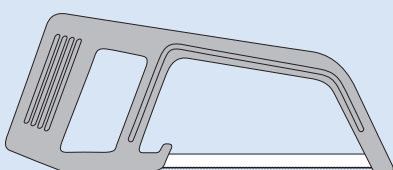
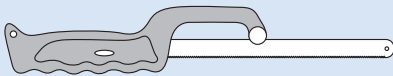
HACKSAWS - METAL CUTTING

ICS USA

ALL PURPOSE

METAL CUTTING

ICS Hacksaws are available in a variety of styles for all hand metal cutting needs. Each hacksaw is designed for a specific cutting application. The description below will assist the user in selecting the hacksaw needed for their particular application.

DESCRIPTION	FEATURES	ITEM NO.	PRICE
HIGH TENSION FRAME HEAVY DUTY 	• Die cast aluminum and steel frame • Uses 12" bi-metal blade • Blade adjusts to cut at either 45° or 90° • Blade storage compartment in frame • Lever tensions blade to 28,000 psi • Use frame as Jab or key hole saw • Cutting depth is 3-3/4"	HSF-HT-1	22.88
HIGH TENSION FRAME HEAVY DUTY 	• Die cast aluminum and steel frame • Uses 12" bi-metal blade • Blade adjusts to cut at either 45° or 90° • Blade storage compartment in frame • Lever tensions blade to 28,000 psi • Use frame as Jab or key hole saw • Cutting depth is 4"	HSF-HT-2	19.40
JUNIOR (MINI) FRAME HEAVY DUTY 	• Heavy duty ABS frame • Uses 6" pin end blade • Blade cuts in one direction • Tapered nose design for tight spots • Cutting depth is 2"	HSF-JM-1	3.70
CLOSE QUARTER FRAME HEAVY DUTY 	• Unbreakable nylon frame • Uses any size blade, even broken ones • Blade position can be adjusted or reversed • Cuts flush to surface	HSF-CQ-2	5.26

NOTE: All saws come with a metal cutting hacksaw blade.

HIGH SPEED STEEL POWER HACKSAW BLADES

ICS USA

HEAVY DUTY

MILLED TEETH



All Hard Molybdenum High Speed Steel Hacksaw Blades are fully heat treated throughout for rigidity and exceptional blade life. The all hard feature assures straight cuts and gives excellent results on tough materials.

DIMENSIONS: INCHES				TEETH	ITEM
LENGTH	WIDTH	THICK		PER INCH	NO.
12	x	1	x .050	10	PHSB12X100X10
12	x	1	x .050	14	PHSB12X100X14
14	x	1	x .050	10	PHSB14X100X10
14	x	1	x .050	14	PHSB14X100X14
14	x	1-1/4	x .062	6	PHSB14X116X.6
14	x	1-1/4	x .062	10	PHSB14X116X10
14	x	1-1/2	x .079	4	PHSB14X132X04
14	x	1-1/2	x .079	6	PHSB14X132X06
17	x	1	x .050	10	PHSB17X100X10
17	x	1	x .050	14	PHSB17X100X14
17	x	1-1/4	x .062	4	PHSB17X100X04
17	x	1-1/4	x .062	6	PHSB17X100X06

DIMENSIONS: INCHES				TEETH	ITEM
LENGTH	WIDTH	THICK		PER INCH	NO.
17	x	1-1/4	x .062	10	PHSB17X116X10
18	x	1-1/4	x .062	6	PHSB18X116X06
18	x	1-1/4	x .062	10	PHSB18X116X10
18	x	1-1/2	x .079	4	PHSB18X132X04
18	x	1-1/2	x .079	6	PHSB18X132X06
18	x	1-3/4	x .088	4	PHSB18X148X04
18	x	1-3/4	x .088	6	PHSB18X148X06
21	x	1-3/4	x .088	4	PHSB21X148X04
21	x	1-3/4	x .088	6	PHSB21X148X06
24	x	1-3/4	x .088	6	PHSB24X148X06
24	x	1-3/4	x .088	4	PHSB24X148X04
24	x	2	x .100	4	PHSB24X200X04

CALL FOR PRICE

PACKAGING: 10 Pcs. / Box

PORTABLE BANDSAW BLADES

ICS USA

GENERAL PURPOSE / HEAVY DUTY

MILLED TEETH

HARD BACK

Hard Back Carbon ensures fast and accurate cuts. Excellent for cutting mild steel.

LENGTH	WIDTH	TEETH PER INCH	TOOTH SET	ITEM NO.
44-7/8	1/2	10	RAKER	PB-HB44-10TR
44-7/8	1/2	14	RAKER	PB-HB44-14TR
44-7/8	1/2	18	RAKER	PB-HB44-18TR
44-7/8	1/2	24	RAKER	PB-HB44-24TR

BI-METAL

Bi-Metal for cutting stainless steel and other tough jobs. Full tooth hardness and flexible back for long blade life.

LENGTH	WIDTH	TEETH PER INCH	TOOTH SET	ITEM NO.
44-7/8	1/2	10	RAKER	PB-BM44-10TR
44-7/8	1/2	14	RAKER	PB-BM44-14TR
44-7/8	1/2	18	RAKER	PB-BM44-18TR
44-7/8	1/2	24	RAKER	PB-BM44-24TR
44-7/8	1/2	10	COMBO	PB-BM44-10TV

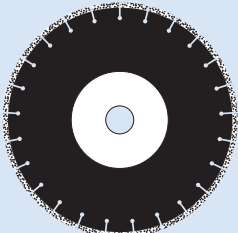
CALL FOR PRICE

PACKAGING: 3 Pcs. / Box – 10 Pcs. / Box – 100 Pcs. / Box

NOTE: Carbide Grit Edge Portable Band Saw Blades are available upon request.

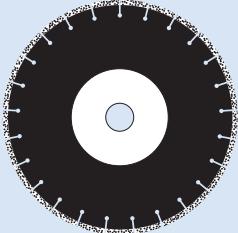
DIAMOND SAW BLADES - ASPHALT & GREEN CONCRETE

Roc-Edge™ Premium Grade Asphalt and Green Concrete Diamond Saw Blades are laser welded and designed for wet cutting asphalt, green concrete, and hard aggregate asphalt. All sizes have a 42% diamond concentration and a 10mm (.395) segment height. Deep drop segments for undercut protection is standard for cutting abrasive asphalt. Blades cut 30% faster and last up to 40% longer. Length of cuts: 20,000 to 60,000 inch feet. They are used on hand held high speed power saws and low horse power (20 hp) walk behind saws. Blades meet or exceed DOT and professional concrete/asphalt cutter specifications. HARD BOND.

DESCRIPTION	DIAMETER	THICKNESS	ARBOR	SEGMENT HEIGHT	ITEM NO.	PRICE
 CURED CONCRETE	12	.125	1-20mm	.395	DSB-WP-AGC-12	607.34
	14	.125	1-20mm	.395	DSB-WP-AGC-14	724.68
	12	.125	1-20mm	.395	DSB-WS-AGC-12	607.34
	14	.125	1-20mm	.395	DSB-WS-AGC-14	724.68
PREMIUM STEEL						

DIAMOND SAW BLADES - ASPHALT OVER CONCRETE

Roc-Edge™ Premium Grade Asphalt Over Concrete Diamond Saw Blades are laser welded and designed for wet cutting asphalt over cured concrete, abrasive asphalt, and very hard aggregate asphalt. Deep drop segments for undercut protection is standard for cutting abrasive asphalt. Blades cut 30% faster and last up to 40% longer. Length of cuts: 10,000 to 15,000 inch feet. They are used on hand held high speed power saws and low horse power (20 hp) walk behind saws. Blades meet or exceed DOT and professional concrete/asphalt cutter specifications. HARD BOND.

DESCRIPTION	DIAMETER	THICKNESS	ARBOR	SEGMENT HEIGHT	ITEM NO.	PRICE
 CURED CONCRETE	12	.142	1	.395	DSB-WP-AC-12B	521.66
	12	.155	1	.395	DSB-WP-AC-12C	607.34
	12	.250	1	.395	DSB-WP-AC-12E	794.32
	12	.375	1	.395	DSB-WP-AC-12F	1105.34
	14	.142	1	.395	DSB-WP-AC-14B	650.34
	14	.250	1	.395	DSB-WP-AC-14E	1052.00
	14	.375	1	.395	DSB-WP-AC-14F	1558.00
	16	.125	1	.433	DSB-WP-AC-16A	666.34
	18	.142	1	.433	DSB-WP-AC-18A	921.68
	20	.142	1	.433	DSB-WP-AC-20A	1087.34
	24	.155	1	.433	DSB-WP-AC-24A	1403.32
	26	.155	1	.433	DSB-WP-AC-26A	1725.00
	30	.187	1	.433	DSB-WP-AC-30A	2403.32
	36	.187	1	.433	DSB-WP-AC-36A	3396.68
PREMIUM STEEL						

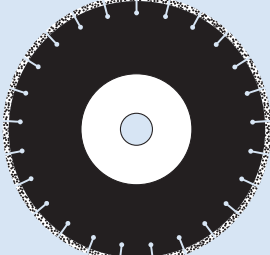
DIAMOND SAW BLADES - CURED CONCRETE

ICS USA

SPECIAL PURPOSE

DIAMOND SEGMENTS

Roc-Edge™ Premium Grade Cured Concrete Diamond Saw Blades are designed for wet cutting cured and reinforced concrete, brick, concrete block, bluestone, limestone, roof tile, and all other aggregates. They are laser welded with a special matrix bond on both sides of the segments for strength and long life. Length of cuts: 6,000 to 18,000 inch feet. They are used on hand held high speed power saws and low horse power (20 hp) walk behind saws. Blades meet or exceed DOT and professional concrete/asphalt cutter specifications. SOFT BOND.

DESCRIPTION	DIAMETER	THICKNESS	ARBOR	SEGMENT HEIGHT	ITEM NO.	PRICE
 CURED CONCRETE	12	0.155	1	.395	DSB-WP-CC-12A	539.02
	12	0.250	1	.395	DSB-WP-CC-12E	665.66
	12	0.375	1	.395	DSB-WP-CC-12F	872.34
	14	0.155	1	.395	DSB-WP-CC-14C	593.34
	14	0.250	1	.395	DSB-WP-CC-14E	783.34
	14	0.375	1	.395	DSB-WP-CC-14F	978.00
	16	0.155	1	.395	DSB-WP-CC-16A	693.04
	18	0.142	1	.433	DSB-WP-CC-18A	826.66
	20	0.142	1	.433	DSB-WP-CC-20A	1003.34
	24	0.155	1	.433	DSB-WP-CC-24A	1366.66
	26	0.155	1	.433	DSB-WP-CC-26A	1663.34
	30	0.187	1	.433	DSB-WP-CC-30A	2210.00
	36	0.187	1	.433	DSB-WP-CC-36A	2866.68
PREMIUM STEEL						

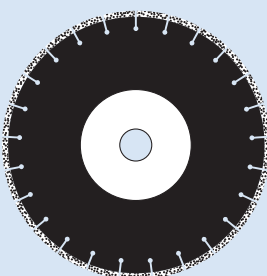
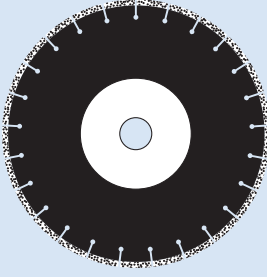
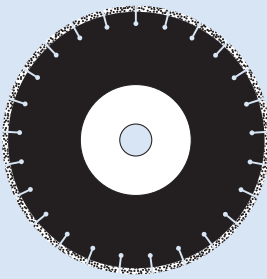
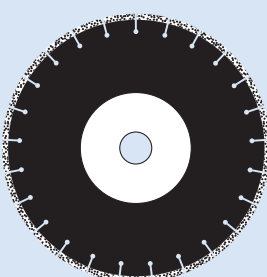
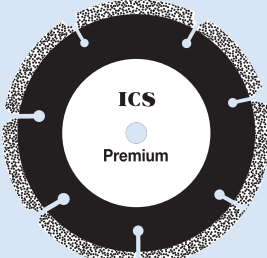
DRY CUTTING DIAMOND SAW BLADES

ST-13

USA

SPECIAL PURPOSE

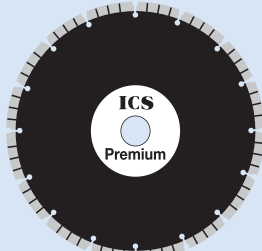
DIAMOND SEGMENTS

DESCRIPTION	DIAMETER	THICKNESS	ARBOR	SEGMENT HEIGHT	GRADE	ITEM NO.	PRICE	
CURED CONCRETE 	12	.110	1-20mm	.264	PREMIUM	DSB-DP-CC-12A	296.82	
	12	.110	1-20mm	.315		DSB-DP-CC-12B	331.34	
	14	.110	1-20mm	.264		DSB-DP-CC-14A	335.64	
	14	.125	1-20mm	.315		DSB-DP-CC-14B	369.00	
	12	.110	1-20mm	.315	SUPER PREMIUM	DSB-DS-CC-12A	338.62	
	12	.125	1-20mm	.378		DSB-DS-CC-12B	507.36	
	14	.110	1-20mm	.315		DSB-DS-CC-14A	376.32	
	14	.125	1-20mm	.378		DSB-DS-CC-14B	544.72	
Recommended for cutting cured concrete, brick, and non-abrasive materials. General purpose, soft to medium aggregate.								
PREMIUM STEEL ASPHALT & GREEN COCRETE BLADE 	12	.125	1-20mm	.315	PREMIUM	DSB-DP-AGC-12	389.76	
	14	.125	1-20mm	.315		DSB-DP-AGC-14	463.30	
	12	.125	1-20mm	.378	SUPER PREMIUM	DSB-DS-AGC-12	483.48	
	14	.125	1-20mm	.378		DSB-DS-AGC-14	564.12	
	Recommended for cutting asphalt and soft green concrete. General purpose, medium aggregate asphalt.							
	BRICK & BLOCK BLADE 	12	.110	1-20mm	.315	PREMIUM	DSB-DP-BB-12	327.06
		14	.110	1-20mm	.315		DSB-DP-BB-14	374.86
		12	.110	1-20mm	.378	SUPER PREMIUM	DSB-DS-BB-12	409.94
14		.110	1-20mm	.378	DSB-DS-BB-14		464.44	
Recommended for cutting regular brick and concrete light weight block.								
BLOCK BLADE 		12	.125	1-20mm	.315	PREMIUM	DSB-DP-BLK-12	356.18
		14	.125	1-20mm	.315		DSB-DP-BLK-14	404.70
		20	.125	1-20mm	.315		DSB-DP-BLK-20	720.56
	12	.125	1-20mm	.378	SUPER PREMIUM	DSB-DS-BLK-12	439.78	
	14	.125	1-20mm	.378		DSB-DS-BLK-14	494.30	
	20	.142	1	.378		DSB-DS-BLK-20	854.94	
	Recommended for cutting concrete light weight block, soft brick, and limestone.							
	TUCK POINTING BLADE 	4	.250	7/8-5/8	.275	PREMIUM	DSB-DP-TP-04	135.92
7		.250	7/8-5/8	.275	DSB-DP-TP-07		284.50	
4		.250	7/8-5/8	.354	SUPER PREMIUM	DSB-DS-TP-04	158.68	
5		.250	7/8-5/8	.354		DSB-DS-TP-05	210.22	
7		.250	7/8-5/8	.354		DSB-DS-TP-07	297.34	
Recommended for routing old mortar between brick and block joints. Can be used on circular saws or angle grinders.								

USA

SPECIAL PURPOSE

DIAMOND SEGMENTS

DESCRIPTION	DIAMETER	THICKNESS	ARBOR	SEGMENT HEIGHT	GRADE	ITEM NO.	PRICE
CURED CONCRETE 	12	.125	1-20mm	.315	PREMIUM	DSB-DP-ST-12	402.46
	14	.125	1-20mm	.315		DSB-DP-ST-14	483.84
	12	.125	1-20mm	.354	SUPER PREMIUM	DSB-DS-ST-12	434.58
	14	.125	1-20mm	.354		DSB-DS-ST-14	510.34
	Recommended for cutting hard aggregates and hard masonry materials.						
TURBO BLADE 	4	.090	7/8-5/8	.295	PREMIUM	DSB-DP-T-04	43.30
	4.5	.090	7/8-5/8	.295		DSB-DP-T-045	50.42
	5	.090	7/8-5/8	.295		DSB-DP-T-05	57.88
	7	.100	◆-5/8	.295		DSB-DP-T-07	88.12
	8	.100	◆-5/8	.295		DSB-DP-T-08	104.18
	9	.105	◆-5/8	.295		DSB-DP-T-09	131.42
	10	.110	◆-5/8	.295		DSB-DP-T-10	188.16
	12	.118	1-20mm	.295		DSB-DP-T-12	291.22
	14	.125	1-20mm	.295		DSB-DP-T-14	333.40
Recommended for cutting concrete, brick, and paving stones.							
SMALL DIAMETER SEGMENTED BLADE 	4	.080	7/8-5/8	.275	PREMIUM	DSB-DP-SDS-04	48.92
	4.5	.080	7/8-5/8	.275		DSB-DP-SDS-045	55.64
	5	.088	7/8-5/8	.275		DSB-DP-SDS-05	64.60
	7	.088	◆-5/8	.275		DSB-DP-SDS-07	95.58
	8	.095	◆-5/8	.275		DSB-DP-SDS-08	123.58
	9	.100	◆-5/8	.275		DSB-DP-SDS-09	159.82
	Recommended for cutting concrete, brick, stone, and hard materials.						
CONTINUOUS RIM TILE BLADE 	4	.060	7/8-5/8	.236	PREMIUM	DSB-DP-CRT-04	27.28
	4.5	.060	7/8-5/8	.236		DSB-DP-CRT-045	31.36
	6	.060	5/8	.236		DSB-DP-CRT-06	40.32
	7	.060	5/8	.236		DSB-DP-CRT-07	51.90
	8	.060	5/8	.236		DSB-DP-CRT-08A	52.66
	8	.087	5/8	.374		DSB-DP-CRT-08B	111.64
	10	.060	5/8	.236		DSB-DP-CRT-10A	70.56
	10	.087	5/8	.374		DSB-DP-CRT-10B	136.30
	12	.087	1	.275		DSB-DP-CRT-12	126.58
	14	.087	1	.275		DSB-DP-CRT-14	165.40
Recommended for cutting ceramic tile, slate, glazed tile, and marble.							
SMALL DIAMETER LASER WELDED BLADE 	4	.090	7/8-5/8	.315	PREMIUM	DSB-DP-SDL-04	60.86
	4.5	.090	7/8-5/8	.315		DSB-DP-SDL-045	69.82
	5	.090	7/8-5/8	.315		DSB-DP-SDL-05	87.36
	7	.090	◆-5/8	.315		DSB-DP-SDL-07	119.48
	8	.100	◆-5/8	.315		DSB-DP-SDL-08	149.72
	9	.100	◆-5/8	.315		DSB-DP-SDL-09	186.32
	10	.100	◆-5/8	.315		DSB-DP-SDL-10	223.28
Recommended for cutting concrete, brick, and other hard materials.							

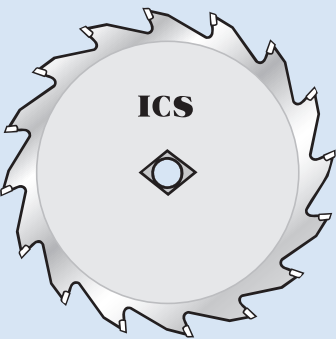
CARBIDE TIPPED CIRCULAR SAW BLADES

ST-15

ICS USA

STANDARD/THIN KERF

CARBIDE TIPPED

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
Standard Kerf Carbide Tipped Circular Saw Blades are designed for heavy duty construction work. Thin Kerf Carbide Tipped Circular Saw Blade are designed to cut very fast and clean, as it is cutting less material. They are manufactured with the finest tungsten carbide tips and an alternate top bevel tooth design. All carbide tipped blades can be resharpened and/or retipped for longer cutting life.					
STANDARD KERF					
	4	40	1/2"-3/8"	CTCB-SK-0440	8.76
	5-1/2	16	5/8"	CTCB-SK-05516	11.00
	5-1/2	18	5/8"	CTCB-SK-05518	11.00
	6-1/2	12	5/80-UNIV	CTCB-SK-0612	11.10
	6-1/2	20	5/80-UNIV	CTCB-SK-06520	9.72
	6-1/2	24	5/80-UNIV	CTCB-SK-06524	9.72
	7-1/4	16	5/80-UNIV	CTCB-SK-0716	8.26
	7-1/4	18	5/80-UNIV	CTCB-SK-0718	11.82
	7-1/4	20	5/80-UNIV	CTCB-SK-0720	9.14
	7-1/4	24	5/80-UNIV	CTCB-SK-0724	8.68
	7-1/4	40	5/80-UNIV	CTCB-SK-0740	14.18
	8-1/4	24	5/8"	CTCB-SK-0824	17.32
	8-1/4	40	5/8"	CTCB-SK-0840	19.28
	9	28	5/8"	CTCB-SK-0928	19.54
	10	28	5/8"	CTCB-SK-1028	19.72
	10	40	5/8"	CTCB-SK-1040	23.00
	10	60	5/8"	CTCB-SK-1060	28.48
	10	80	5/8"	CTCB-SK-1080	48.68
	12	40	1"	CTCB-SK-1240	48.30
	12	60	1"	CTCB-SK-1260	44.20
	14	60	1"	CTCB-SK-1460	68.88
	14	80	1"	CTCB-SK-1480	77.70

Thin Kerf Carbide Tipped Circular Saw Blade are designed to cut very fast and clean, as it is cutting less material. They have an alternate top bevel tooth grind for the cleanest cutting. All thin kerf blades have special engineered body slots to dissipate heat and a unique shoulder design for improved cutting performance. New anti-friction coating reduces friction and heat build-up.

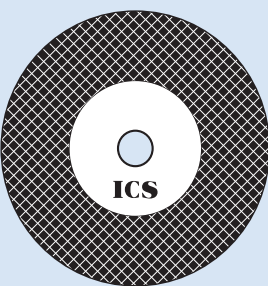
THIN KERF					
	7-1/4	24	5/8"-UNIV	CTCB-TK-0724	12.58
	10	24	5/8"	CTCB-TK-1024	24.44
	12	24	1"	CTCB-TK-1224	37.80
	12	30	1"	CTCB-TK-1230	43.08
	12	40	1"	CTCB-TK-1240	52.50
	12	80	1"	CTCB-TK-1280	78.34
	14	30	1"	CTCB-TK-1430	81.02

ABRASIVE CUT-OFF WHEELS

ICS USA

HEAVY DUTY

RESIN BONDED

DESCRIPTION	SIZE			MAX R.P.M.	ITEM NO.	PRICE EACH
	DIAMETER	THICKNESS	ARBOR			10 PC.
	Metal cutting wheels are designed for use with electric circular saws to cut most ferrous metals, e.g., structural steel, sheet metal, etc.					
	6-1/2	3/32	◆-5/8	8600	ACW-M-632	3.96
	7	3/32	◆-5/8	8600	ACW-M-700	3.86
	8	3/32	◆-5/8	7500	ACW-M-800	CALL
	Masonry cutting wheels are designed for use with electric circular saws to cut most masonry materials, e.g., concrete, masonry, brick, block, stone, aluminum, non-ferrous metals.					
	6-1/2	1/8	◆-5/8	8600	ACW-MAS-632	3.42
	7	1/8	◆-5/8	8600	ACW-MAS-700	3.46
	8	1/8	◆-5/8	7500	ACW-MAS-800	4.82

CARBIDE TIPPED INDUSTRIAL SAW BLADES

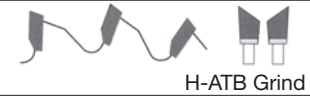
LAMINATE CUTTING

ICS USA

HEAVY DUTY

H-ATB GRIND

Carbide Tipped Industrial Laminate / Plywood Blades are designed for cutting smooth, clean chip free cuts on fine plwoods, composite materials, and single sided laminate such as melamine. Expansion slots and heat vents reduce heat build-up and warping.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
LAMINATE CUTTING  	8	60	5/8"-UNIV	CTCB-LP-0860	42.64
	10	80	5/8"	CTCB-LP-10080	56.70
	10	100	5/8"	CTCB-LP-10100	68.88
	10	120	5/8"	CTCB-LP-10120	81.06
	10	100	1"	CTCB-LP-1100	68.88
	12	60	1"	CTCB-LP-1260	64.84

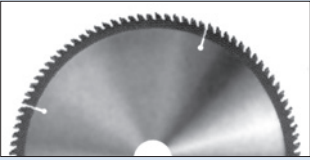
MITER CUTTING

ICS USA

HEAVY DUTY

4ATB+R GRIND

Carbide Tipped Industrial Miter Blades are designed for satin smooth miter cuts on moldings, picture frames, furniture parts, and for cross-cutting all types of hardwood, softwood and plywood. For use in miter saws, compound miter and radial arm saws. Teeth consist of 4 alternate top bevel followed by 1 square top rake.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
MITER CUTTING  	10	60	5/8"	CTCB-MIT-1060	63.42
	10	80	5/8"	CTCB-MIT-1080	76.44
	12	80	1"	CTCB-MIT-12080	CALL
	12	100	1"	CTCB-MIT-12100	CALL

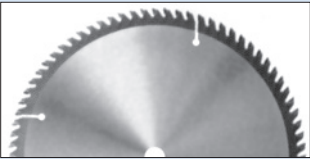
COMBINATION BLADES

ICS USA

HEAVY DUTY

4ATB+R GRIND

Carbide Tipped Industrial Combination Blades are designed for ripping and cross-cutting all types of hard and soft wood, particle board, and plywood. For use with Miter and radial arm saws, and chip tables. Teeth consist of 4 alternative top bevel followed by 1 square top rake. Large gullets in saw body allow for deeper cuts and better chip ejection despite its short pitch.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
COMBINATION  	10	50	5/8"	CTCB-C-1050	74.76
	14	70	1"	CTCB-C-1470	96.66

STEEL CUTTING BLADES

ICS USA

HEAVY DUTY

TC GRIND

Carbide Tipped Industrial Steel Cutting Blades are designed for dry saw, fine finish cutting on steel, pipe, angle iron, rebar, cast iron, and nail embedded wood. Expansion slots reduce heat build-up and warping. Not designed for high RPM abrasive or wood cutting machines. They cut up to 10 times faster and last up to 30 times longer than abrasive blades.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
STEEL CUTTING  	7-1/4	36	5/8"	CTCB-SC-0736	29.40
	7-1/4	36	20mm	CTCB-SC-0736M	29.40
	10	52	5/8"	CTCB-SC-1052	38.40
	12	60	1"	CTCB-SC-1260	51.00
	14	72	1"	CTCB-SC-1472	67.20
	14	90	1"	CTCB-SC-1490	70.80

ALUMINUM CUTTING BLADES

ICS USA

HEAVY DUTY

TC GRIND

Carbide Tipped Industrial Aluminum Cutting Blades are designed for cutting non-ferrous metals, aluminum, copper, brass and lead. Blades are also used for smooth, chip free cutting of high pressure laminates, plastics, polyurethane, PVC, and acrylics. Expansion slots and heat vents reduce heat build-up and warping. Not designed for cutting steel or ferrous metals.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
ALUMINUM CUTTING  	7	40	5/8"-UNIV	CTCB-AL-0740	CALL
	8	64	5/8"	CTCB-AL-0864	38.40
	10	80	5/8"	CTCB-AL-1080	50.68
	10	100	5/8"	CTCB-AL-10100	59.20
	10	120	5/8"	CTCB-AL-10120	74.76
	12	60	1"	CTCB-AL-12060	78.12
	12	100	1"	CTCB-AL-12100	104.16
	12	120	1"	CTCB-AL-12120	96.18

MELAMINE CUTTING BLADES

ICS USA

HEAVY DUTY

TC GRIND

Carbide Tipped Industrial Melamine Blades are designed for chip free cuts in single or double sided melamine, laminates, and veneers. Expansion slots and heat vents reduce heat build-up and warping.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
MELAMINE CUTTING  	8	64	5/8"	CTCB-MEL-0864	40.32
	10	80	5/8"	CTCB-MEL-1080	50.82
	10	96	5/8"	CTCB-MEL-1096	61.74
	12	96	1"	CTCB-MEL-1296	90.10

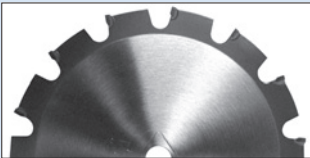
DECK/NAIL CUTTER BLADES

ICS USA

HEAVY DUTY

ATB GRIND

Carbide Tipped Deck and Nail Cutter Blades are designed for cutting lumber and flooring where occasional nails or staples are present. Used for remodeling work and roofing jobs. Blades is ideal for ripping and cross-cutting all types of pressure treated lumber to build outdoor decks, porches, etc...

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
NAIL CUTTING  	7-1/4	14	5/8"-UNIV	CTCB-NCD-0714	10.72
	10	40	5/8"	CTCB-NCD-1040	25.20

PALLET CUTTING BLADE

ICS USA

HEAVY DUTY

ATB GRIND

Carbide Tipped Pallet Cutting Blade is designed for cutting all types of wood used to manufacture wood pallets.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
PALLET CUTTING  	7-1/4	40	5/8"-UNIV	CTCB-PC-0740	CALL

BISCUIT JOINER BLADE

ICS USA

SPECIAL PURPOSE

Carbide Tipped Biscuit Joiner Blades are designed to fit various model Biscuit Joiners with a 5/80 spindle and 7/80 adapters to cut a crescent shape hole (mouth) in the opposite edges of two pieces of wood so they can be glued together with a wooden biscuit. Biscuit Joiners are also known as Plate Joiners.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
BISCUIT JOINER 	4	6	7/8"	CTCB-BB-0406	CALL

FIBER CEMENT BLADES

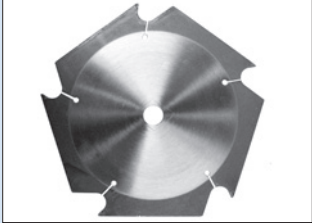
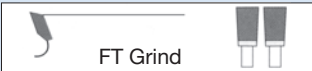
ST-19

ICS USA

SPECIAL PURPOSE

FT GRIND

Carbide Tipped Fiber Cement Saw Blades are designed for cutting single sheet fiber cement board, roofing, and siding. Unique five tooth design cuts larger chips for cleaner work.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
FIBER CEMENT  	7-1/4	5	5/8"-UNIV	CTCB-FC-0705	CALL

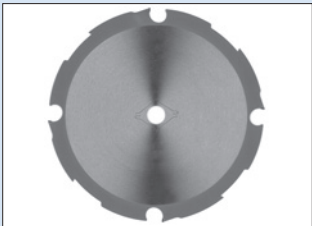
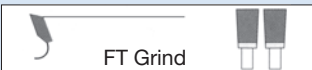
PCD DIAMOND TIPPED FIBER CEMENT BLADES

ICS USA

SPECIAL PURPOSE

FT GRIND

Polycrystalline Diamond (PCD) Tipped Fiber Cement Saw Blades are designed for cutting up to 5 stacked fiber cement boards, Hardie Board™, and CertainTeed Weatherboard™. Diamond Tipped Fiber Cement Saw Blades can last up to 60 times longer than Carbide Tipped Fiber Cement Saw Blades.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
FIBER CEMENT  	7-1/4 10 12	4 6 8	5/8"-UNIV 5/8" 1"	PCDCB-FC-0704 PCDCB-FC-1006 PCDCB-FC-1208	CALL CALL CALL

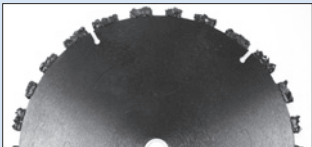
CARBIDE CHUNK RESCUE / DEMOLITION BLADES

ICS USA

HEAVY DUTY

CARBIDE CHUNKS

Carbide Chunk Rescue/Demolition Blades are designed for cutting and ripping through almost any material including roof shingles, wall siding, and auto and truck bodies in emergency police and firefighter operations. They are also used by landscapers, farmers, foresters to cut tree roots, and roofers for demolition work. Blades are manufactured with a heavy duty steel plate with large fracture resistant carbide chunk segments.

DESCRIPTION	DIA.	THICKNESS	SEGMENT HEIGHT	ARBOR	ITEM NO.	PRICE EACH
SPECIAL CUTTING  	4 5 7 10 12 12 14 14 16	.250 .250 .250 .250 .250 .250 .250 .250 .250	7mm 7mm 7mm 7mm 7mm 7mm 7mm 7mm 7mm	7/8" 7/8" 5/8"-UNIV 7/8" 1" 20mm 1" 20mm 1"	CTCB-RD-0400 CTCB-RD-0500 CTCB-RD-0700 CTCB-RD-1000 CTCB-RD-1200 CTCB-RD-1200M CTCB-RD-1400 CTCB-RD-1400M CTCB-RD-1600	114.24 142.80 227.86 291.90 392.70 392.70 449.82 449.82 542.64

PRO-CUT™ PREMIUM STEEL BLADES

PLYWOOD

ICS USA

SPECIAL PURPOSE

PRO-CUT™ Premium Steel Plywood Blades are designed for very smooth, clean cutting in plywood, paneling, Celotex®, thin plastics, and veneer 3/4" and under. With the most precise and largest number of teeth per blade in the USA, splintering and sanding is practically eliminated.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
 PLYWOOD	7-1/4	186	5/8"-UNIV	CB-PCP-07186	3.76
	10	248	5/8"-UNIV	CB-PCP-10248	CALL

COMBINATION / RIP BLADES

ICS USA

GENERAL PURPOSE

PRO-CUT™ Premium Steel Combination / Rip Blades are designed for all purpose cutting. They are used for crosscuts, ripping, and miters in both hard and soft woods.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
 COMBINATION/RIP	6-1/2	18	5/8"-UNIV	CB-PCC-06518	4.18
	6-1/2	30	5/8"-UNIV	CB-PCC-06530	4.18
	7-1/4	32	5/8"-UNIV	CB-PCC-0732	3.14
	7-1/4	40	5/8"-UNIV	CB-PCC-0740	3.14

CHROME STEEL PLYWOOD SAW BLADES

ICS USA

HEAVY DUTY

PRO-CUT™ Chrome Steel Plywood Saw Blades are designed for professional and production applications where long cutting life is required. Industrial bright chrome hard plated blades last 10 times longer than steel blades and are used for extra smooth clean cutting in plywood, paneling, veneer, Cellotex® and thin plastics.

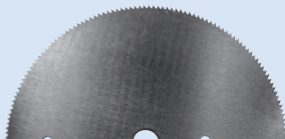
DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
 PLYWOOD	7-1/4	186	5/8"-UNIV	CB-PLY-07186	8.26
	10	248	5/8"-UNIV	CB-PLY-10248	12.00

VINYL SIDING BLADES

ICS USA

GENERAL PURPOSE

PRO-CUT™ Premium Steel Vinyl Siding Blades are designed for smooth, clean cutting in vinyl siding and light gauge aluminum. Precise teeth are not set to ensure the smoothest cut possible.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
 VINYL SIDING	7-1/4	186	5/8"-UNIV	CB-VS-07186	3.58
	10	248	5/8"	CB-VS-10248	8.82

PRO-CUT™ PREMIUM STEEL BLADES

ALUMINUM CUTTING BLADES

ST-21

ICS USA

SPECIAL PURPOSE

PRO-CUT™ Premium Steel Aluminum Cutting Blades are designed for cutting aluminum sheeting and tubing, brass, copper, and other non-ferrous metals. They are also used to cut plastics. Blades have a polished finish for less friction.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
ALUMINUM / PLASTICS	7-1/4	186 16 Slots	5/8"-UNIV	CBS-AL-07186	8.80



STEEL/METAL CUTTING BLADES

ICS USA

SPECIAL PURPOSE

PRO-CUT™ Premium Steel Cutting Blades are designed for cutting with friction in corrugated sheet roofing, sheet metal, black iron, furnace pipe, and steel bar stock under 1/4" thick. Blades should be lubricated for best results. They are not designed for cutting non-ferrous metals. CAUTION: Cutting action of blades produces sparks.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
METAL / STEEL	7-1/4	NONE 16 Slots	5/8"-UNIV	CBS-M-0700	7.98



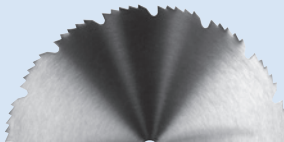
MASTER COMBINATION BLADES

ICS USA

GENERAL PURPOSE

PRO-CUT™ Premium Steel Master Combination Blades are designed for fast, smooth crosscutting, ripping, and mitering in both hard and soft wood. It is the best combination blade style for smooth cuts.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
MASTER COMBINATION	7-1/4	60	5/8"-UNIV	CB-MC-0760	5.72
	10	80	5/8"	CB-MC-1080	11.14



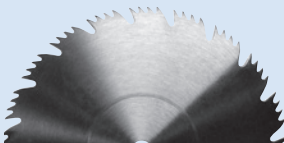
HOLLOW GROUND PLANER BLADES

ICS USA

GENERAL PURPOSE

PRO-CUT™ Premium Steel Hollow Ground Planer Blades are designed with hollow ground clearance for splinter free cutting. They are used for satin smooth crosscutting, ripping and mitering for cabinets, furniture, and other fine work with almost no need for sanding.

DESCRIPTION	DIAMETER	NO. OF TEETH	ARBOR	ITEM NO.	PRICE EACH
HOLLOW GROUND PLANER	10	80	5/8"	CB-HGP-1080	11.56



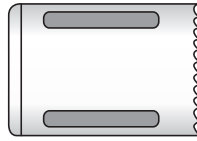
(M3) BI-METAL
HOLE SAWS

ICS USA

HEAVY DUTY

VARIABLE PITCH

SEPARATE
ARBOR STYLE



RED FINISH

Bi-Metal Hole Saws have a high speed steel cutting edge, electron-beam welded to a tough alloy steel back. They cut clean and accurate holes 1-1/2" deep in virtually any machinable material - steel, cast iron, stainless steel, non-ferrous metals, wood, or plastics. Arbor is sold separately. Extra Large Hole Saws are any hole saw larger than 6 inches.

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
9/16	3/8	1/4		HS-BM036	6.94
5/8	-	-		HS-BM040	6.52
11/16	-	-		HS-BM044	6.52
3/4	1/2	3/8		HS-BM048	6.52
13/16	-	-	HSM-3	HS-BM052	6.52
7/8	3/4	1/2	HSM-6	HS-BM056	6.68
15/16	-	-	or	HS-BM060	6.68
1	-	-	HSM-9	HS-BM100	6.68
1-1/16	-	-		HS-BM104	6.80
1-1/8	1	3/4		HS-BM108	6.80
1-3/16	-	-		HS-BM112	6.80
1-1/4	-	-	HSM-4	HS-BM116	6.94
1-5/16	-	-	HSM-5	HS-BM120	6.94
1-3/8	-	1	or	HS-BM124	7.38
1-7/16	-	-	HSM-7	HS-BM128	7.38
1-1/2	1-1/4	-		HS-BM132	7.70
1-9/16	-	-		HS-BM136	7.70
1-5/8	-	-		HS-BM140	7.70
1-11/16	-	-		HS-BM144	8.02
1-3/4	1-1/2	1-1/4	HSM-4	HS-BM148	9.46
1-13/16	-	-	or	HS-BM152	9.46
1-7/8	-	-	HSM-5	HS-BM156	9.46
2	-	1-1/2		HS-BM200	9.46
2-1/16	-	-		HS-BM204	11.74
2-1/8	-	-		HS-BM208	11.74
2-1/4	2	-		HS-BM216	11.74
2-5/16	-	-		HS-BM220	11.74
2-3/8	-	-		HS-BM224	11.74
2-1/2	-	2		HS-BM232	12.60

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
2-9/16	-	-		HS-BM236	12.60
2-5/8	2-1/2	-		HS-BM240	12.60
2-3/4	-	-		HS-BM248	12.60
2-7/8	-	-		HS-BM256	12.60
3	-	2-1/2		HS-BM300	12.98
3-1/8	-	-		HS-BM308	12.98
3-1/4	3	-		HS-BM316	14.32
3-3/8	-	-		HS-BM324	14.32
3-1/2	-	-		HS-BM332	14.32
3-5/8	-	3		HS-BM340	15.48
3-3/4	3-1/2	-		HS-BM348	17.96
3-7/8	-	-	HSM-4	HS-BM356	18.10
4	-	-	or	HS-BM400	18.70
4-1/8	-	3-1/2	HSM-5	HS-BM408	19.40
4-1/4	4	-		HS-BM416	24.26
4-3/8	-	-		HS-BM424	26.70
4-1/2	-	4		HS-BM432	26.70
4-3/4	-	-		HS-BM448	29.12
5	-	-		HS-BM500	31.54
5-1/2	-	-		HS-BM532	33.96
5-3/4	-	-		HS-BM548	46.10
6	-	-		HS-BM600	53.36
EXTRA LARGE HOLE SAWS					
6-5/16	-	-		HS-BM620	76.90
6-1/2	-	-	HSM-4	HS-BM632	80.06
6-5/8	-	6	or	HS-BM640	86.60
7	-	-	HSM-5	HS-BM700	86.60
7-7/8	-	-		HS-BM756	95.10
8-1/4	-	-		HS-BM816	95.10

(M3) BI-METAL
HOLE SAW KITS
PLASTIC CASES

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	MECHANIC'S HOLE SAW KIT - 1 ea. 7/8, 1, 1-1/8, 1-1/4, 1-1/2 Hole Saws, HSM-6 Arbor.	HSK-BM-06M	81.78
	MAINTENANCE HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2 Hole Saws, HSM-3, HSM-4, HSM-6 Arbors and 12" extension.	HSK-BM-13M	216.86
	PLUMBER'S HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-1/2, 1-3/4, 2-1/4 Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-BM-09P	146.24
	ELECTRICIAN'S HOLE SAW KIT - 1 ea. 7/8, 1-1/8, 1-3/8, 1-3/4, 2, 2-1/2 Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-BM-09E	159.52

(M3) BI-METAL
METRIC HOLE SAWS

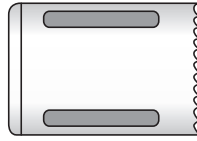
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ICS USA

HEAVY DUTY

VARIABLE PITCH

SEPARATE
ARBOR STYLE



RED FINISH

Metric Bi-Metal Hole Saws have a high speed steel cutting edge, electron-beam welded to a tough alloy steel back. They cut clean and accurate holes 1-1/2" (38.1mm) deep in virtually any machinable material - steel, cast iron, stainless steel, non-ferrous metals, wood, or plastics. Arbor is sold separately. Extra Large Hole Saws are any hole saw larger than 152mm.

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
14mm	3/8	1/4		HS-BMM014.00	6.94
16mm	-	-		HS-BMM016.00	6.52
17mm	-	-		HS-BMM017.00	6.52
19mm	1/2	3/8		HS-BMM019.00	6.52
20mm	-	-	HSM-3	HS-BMM020.00	6.52
21mm	-	-	HSM-6	HS-BMM021.00	6.52
22mm	3/4	1/2	or	HS-BMM022.00	6.68
24mm	-	-	HSM-9	HS-BMM024.00	6.68
25mm	-	-		HS-BMM025.00	6.68
27mm	-	-		HS-BMM027.00	6.80
29mm	1	3/4		HS-BMM029.00	6.80
30mm	-	-		HS-BMM030.00	6.80
32mm	-	-	HSM-4	HS-BMM032.00	6.94
33mm	-	-	HSM-5	HS-BMM033.00	6.94
35mm	-	1	or	HS-BMM035.00	7.38
37mm	-	-	HSM-7	HS-BMM037.00	7.38
38mm	1-1/4	-		HS-BMM038.00	7.70
40mm	-	-		HS-BMM040.00	7.70
41mm	-	-		HS-BMM041.00	7.70
43mm	-	-		HS-BMM043.00	8.02
44mm	1-1/2	1-1/4		HS-BMM044.00	9.46
46mm	-	-	HSM-4	HS-BMM046.00	9.46
48mm	-	-	or	HS-BMM048.00	9.46
51mm	-	1-1/2	HSM-5	HS-BMM050.00	9.46
52mm	-	-		HS-BMM052.00	11.74
54mm	-	-		HS-BMM054.00	11.74
57mm	2	-		HS-BMM057.00	11.74
59mm	-	-		HS-BMM059.00	11.74
60mm	-	-		HS-BMM060.00	11.74
64mm	-	2		HS-BMM064.00	12.60

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
65mm	-	-		HS-BMM065.00	12.60
67mm	2-1/2	-		HS-BMM067.00	12.60
70mm	-	-		HS-BMM070.00	12.60
73mm	-	-		HS-BMM073.00	12.60
76mm	-	2-1/2		HS-BMM076.00	12.98
79mm	-	-		HS-BMM079.00	12.98
83mm	3	-		HS-BMM083.00	14.32
86mm	-	-		HS-BMM086.00	14.32
89mm	-	-		HS-BMM089.00	14.32
92mm	-	3	HSM-4	HS-BMM092.00	15.48
95mm	3-1/2	-	or	HS-BMM095.00	17.96
98mm	-	-	HSM-5	HS-BMM098.00	18.10
102mm	-	-		HS-BMM102.00	18.70
105mm	-	3-1/2		HS-BMM105.00	19.40
108mm	4	-		HS-BMM108.00	24.26
111mm	-	-		HS-BMM111.00	26.70
114mm	-	4		HS-BMM114.00	26.70
121mm	-	-		HS-BMM121.00	26.70
127mm	-	-		HS-BMM127.00	29.12
133mm	-	-		HS-BMM133.00	31.54
140mm	-	-		HS-BMM140.00	33.96
146mm	-	-		HS-BMM146.00	46.10
152mm	-	-		HS-BMM152.00	53.36
EXTRA LARGE HOLE SAWS					
160mm	-	6		HS-BMM160.00	76.90
165mm	-	-	HSM-4	HS-BMM165.00	80.06
168mm	-	-	or	HS-BMM168.00	86.60
177mm	-	-	HSM-5	HS-BMM177.00	86.60
200mm	-	-		HS-BMM200.00	95.10
210mm	-	-		HS-BMM210.00	95.10

(M3) BI-METAL
METRIC HOLE SAW KITS

PLASTIC CASES

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	MECHANIC'S METRIC HOLE SAW KIT - 1 ea. 22mm, 25mm, 29mm, 32mm, 38mm Hole Saws, HSM-6 Arbor.	HSK-BMM-06M	81.78
	MAINTENANCE METRIC HOLE SAW KIT - 1 ea. 19mm, 22mm, 29mm, 35mm, 38mm, 44mm, 51mm, 57mm, 64mm Hole Saws, HSM-3, HSM-4, HSM-6 Arbors and 12" extension.	HSK-BMM-13M	216.86
	PLUMBER'S METRIC HOLE SAW KIT - 1 ea. 19mm, 22mm, 29mm, 38mm, 44mm, 57mm Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-BMM-09P	146.24
	ELECTRICIAN'S METRIC HOLE SAW KIT - 1 ea. 22mm, 29mm, 35mm, 44mm, 51mm, 64mm Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-BMM-09E	159.52

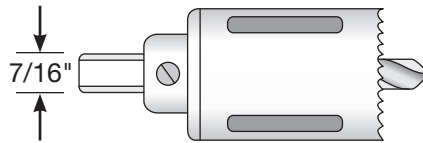
(M3) BI-METAL
HOLE SAWS (BUILT-IN ARBOR)

ICS USA

HEAVY DUTY

VARIABLE PITCH

BUILT-IN 7/16" ARBOR STYLE



RED FINISH

Bi-Metal Hole Saws have a high speed steel cutting edge, electron-beam welded to a tough alloy steel back. They cut clean and accurate holes 1-1/2" deep in virtually any machinable material - steel, cast iron, stainless steel, non-ferrous metals, wood, or plastics.

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	ITEM NO.	PRICE
9/16	3/8	1/4	HS-BMA036	9.12
5/8	-	-	HS-BMA040	9.12
11/16	-	-	HS-BMA044	9.12
3/4	1/2	3/8	HS-BMA048	9.04
13/16	-	-	HS-BMA052	9.70
7/8	3/4	1/2	HS-BMA056	9.70
15/16	-	-	HS-BMA060	9.70
1	-	-	HS-BMA100	9.70
1-1/16	-	-	HS-BMA104	9.70
1-1/8	1	3/4	HS-BMA108	9.70
1-3/16	-	-	HS-BMA112	9.70
1-1/4	-	-	HS-BMA116	9.70
1-5/16	-	-	HS-BMA120	9.70
1-3/8	-	1	HS-BMA124	10.34
1-7/16	-	-	HS-BMA128	10.34
1-1/2	1-1/4	-	HS-BMA132	10.34
1-9/16	-	-	HS-BMA136	10.34
1-5/8	-	-	HS-BMA140	10.34
1-11/16	-	-	HS-BMA144	10.34
1-3/4	1-1/2	1-1/4	HS-BMA148	12.14
1-13/16	-	-	HS-BMA152	12.14
1-7/8	-	-	HS-BMA156	12.14
2	-	1-1/2	HS-BMA200	12.14
2-1/16	-	-	HS-BMA204	14.56
2-1/8	-	-	HS-BMA208	14.56
2-1/4	2	-	HS-BMA216	14.56
2-5/16	-	-	HS-BMA220	14.56
2-3/8	-	-	HS-BMA224	14.56
2-1/2	-	2	HS-BMA232	16.38

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	ITEM NO.	PRICE
2-9/16	-	-	HS-BMA236	16.38
2-5/8	2-1/2	-	HS-BMA240	16.38
2-3/4	-	-	HS-BMA248	16.38
2-7/8	-	-	HS-BMA256	16.38
3	-	2-1/2	HS-BMA300	17.00
3-1/8	-	-	HS-BMA308	17.00
3-1/4	3	-	HS-BMA316	19.40
3-3/8	-	-	HS-BMA324	19.40
3-1/2	-	-	HS-BMA332	19.40
3-5/8	-	3	HS-BMA340	21.84
3-3/4	3-1/2	-	HS-BMA348	26.08
3-7/8	-	-	HS-BMA356	26.70
4	-	-	HS-BMA400	29.12
4-1/8	-	3-1/2	HS-BMA408	29.12
4-1/4	4	-	HS-BMA416	33.96
4-3/8	-	-	HS-BMA424	41.24
4-1/2	-	4	HS-BMA432	50.96
4-3/4	-	-	HS-BMA448	55.80
5	-	-	HS-BMA500	60.66
5-1/2	-	-	HS-BMA532	72.76
6	-	-	HS-BMA600	78.48
EXTRA LARGE HOLE SAWS				
6-5/16	-	-	HS-BMA620	83.34
6-1/2	-	-	HS-BMA632	85.88
6-5/8	-	6	HS-BMA640	87.60
7	-	-	HS-BMA700	92.44
7-7/8	-	-	HS-BMA756	101.06
8-1/4	-	-	HS-BMA816	101.06

(M3) BI-METAL
HOLE SAW KITS (BUILT-IN ARBOR)

PLASTIC CASES

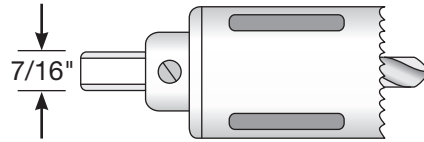
ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	MECHANIC'S HOLE SAW KIT - 1 ea. 7/8, 1, 1-1/8, 1-1/4, 1-1/2 Hole Saws, and 1 Pilot Drill	HSK-BMA-06	87.02
	ELECTRICIAN'S HOLE SAW KIT - 1 ea. 7/8, 1-1/8, 1-3/8, 1-3/4, 2, 2-1/2 Hole Saws, and 3 Pilot Drills	HSK-BMA-09E	122.80
	PLUMBER'S HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-1/2, 1-3/4, 2-1/4 Hole Saws, and 3 Pilot Drills	HSK-BMA-09P	116.50
	MAINTENANCE HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2 Hole Saws, 4 Pilot Drills, 12" Extension, and 1 Screwdriver	HSK-BMA-15M	201.78

(M3) BI-METAL METRIC HOLE SAWS

ICS USA

HEAVY DUTY

VARIABLE PITCH

BUILT-IN 7/16"
ARBOR STYLE

RED FINISH

Metric Bi-Metal Hole Saws have a high speed steel cutting edge, electron-beam welded to a tough alloy steel back. They cut clean and accurate holes 1-1/2" (38.1mm) deep in virtually any machinable material - steel, cast iron, stainless steel, non-ferrous metals, wood, or plastics. Arbor is sold separately. Extra Large Hole Saws are any hole saw larger than 152mm.

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	ITEM NO.	PRICE
14mm	3/8	1/4	HS-BMMA014.00	9.12
16mm	-	-	HS-BMMA016.00	9.12
17mm	-	-	HS-BMMA017.00	9.12
19mm	1/2	3/8	HS-BMMA019.00	9.12
20mm	-	-	HS-BMMA020.00	9.70
21mm	-	-	HS-BMMA021.00	8.82
22mm	3/4	1/2	HS-BMMA022.00	8.82
24mm	-	-	HS-BMMA024.00	9.70
25mm	-	-	HS-BMMA025.00	8.82
27mm	-	-	HS-BMMA027.00	8.82
29mm	1	3/4	HS-BMMA029.00	9.70
30mm	-	-	HS-BMMA030.00	9.70
32mm	-	-	HS-BMMA032.00	9.70
33mm	-	-	HS-BMMA033.00	9.70
35mm	-	1	HS-BMMA035.00	9.70
37mm	-	-	HS-BMMA037.00	9.70
38mm	1-1/4	-	HS-BMMA038.00	9.70
40mm	-	-	HS-BMMA040.00	9.70
41mm	-	-	HS-BMMA041.00	9.70
43mm	-	-	HS-BMMA043.00	9.70
44mm	1-1/2	1-1/4	HS-BMMA044.00	12.14
46mm	-	-	HS-BMMA046.00	12.14
48mm	-	-	HS-BMMA048.00	12.14
51mm	-	1-1/2	HS-BMMA051.00	12.14
52mm	-	-	HS-BMMA052.00	14.56
54mm	-	-	HS-BMMA054.00	14.56
57mm	2	-	HS-BMMA057.00	14.56
59mm	-	-	HS-BMMA059.00	14.56
60mm	-	-	HS-BMMA060.00	14.56
64mm	-	2	HS-BMMA064.00	16.38

SIZE (mm)	PIPE TAP SIZE	PIPE ENTRANCE SIZE	ITEM NO.	PRICE
65mm	-	-	HS-BMMA065.00	16.38
67mm	2-1/2	-	HS-BMMA067.00	16.38
70mm	-	-	HS-BMMA070.00	16.38
73mm	-	-	HS-BMMA073.00	16.38
76mm	-	2-1/2	HS-BMMA076.00	17.00
79mm	-	-	HS-BMMA079.00	17.00
83mm	3	-	HS-BMMA083.00	19.40
86mm	-	-	HS-BMMA086.00	19.40
89mm	-	-	HS-BMMA089.00	19.40
92mm	-	3	HS-BMMA092.00	21.84
95mm	3-1/2	-	HS-BMMA095.00	26.08
98mm	-	-	HS-BMMA098.00	26.70
102mm	-	-	HS-BMMA102.00	29.12
105mm	-	3-1/2	HS-BMMA105.00	29.12
108mm	4	-	HS-BMMA108.00	33.96
111mm	-	-	HS-BMMA111.00	41.36
114mm	-	4	HS-BMMA114.00	50.96
121mm	-	-	HS-BMMA121.00	55.80
127mm	-	-	HS-BMMA127.00	60.66
140mm	-	-	HS-BMMA140.00	72.76
146mm	-	-	HS-BMMA146.00	-
152mm	-	-	HS-BMMA152.00	78.48
EXTRA LARGE HOLE SAWS				
160mm	-	-	HS-BMMA160.00	83.34
165mm	-	-	HS-BMMA165.00	85.88
168mm	-	6	HS-BMMA168.00	87.60
177mm	-	-	HS-BMMA177.00	92.44
200mm	-	-	HS-BMMA200.00	101.06
210mm	-	-	HS-BMMA210.00	101.06

(M3) BI-METAL METRIC HOLE SAW KITS

PLASTIC CASES

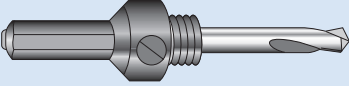
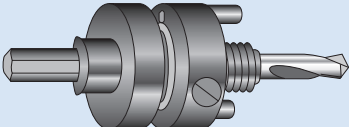
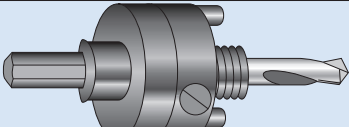
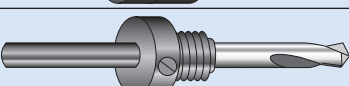
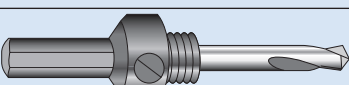
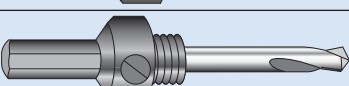
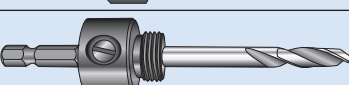
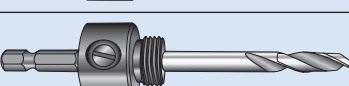
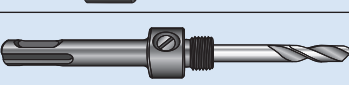
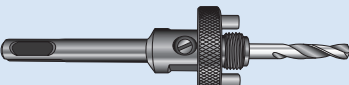
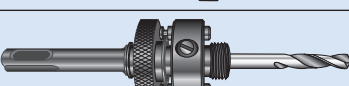
ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	MECHANIC'S METRIC HOLE SAW KIT - 1 ea. 22mm, 25mm, 29mm, 32mm, 38mm Hole Saws	HSK-BMMA-06	87.02
	MAINTENANCE METRIC HOLE SAW KIT - 1 ea. 19mm, 22mm, 29mm, 35mm, 38mm, 44mm, 51mm, 57mm, 64mm Hole Saws, 12" Extension and HSPD-3S Pilot Drills.	HSK-BMMA-15M	216.86
	PLUMBER'S METRIC HOLE SAW KIT - 1 ea. 19mm, 22mm, 29mm, 38mm, 44mm, 57mm Hole Saws, and HSPD-3S Pilot Drill.	HSK-BMMA-09P	146.24
	ELECTRICIAN'S METRIC HOLE SAW KIT - 1 ea. 22mm, 29mm, 35mm, 44mm, 51mm, 64mm Hole Saws, and HSPD-3S Pilot Drill.	HSK-BMMA-09E	159.52

HOLE SAW ARBOR / 1/4" PILOT DRILLS

ICS USA

MANDRELS

Fits all standard Bi-Metal Hole Saws.

ILLUSTRATION	THREAD SIZE	FITS HOLE SAWS	SHANK SIZE	ITEM NO.	PRICE
	1/2-20	9/16 to 1-3/16	7/16 Hex	HSM-3	7.56
	5/8-18	1-1/4 to 8-1/4	7/16 Hex	HSM-4	17.86
	5/8-18	1-1/4 to 8-1/4	5/8 Hex	HSM-5	19.12
	1/2-20	9/16 to 1-1/2	1/4 Rd	HSM-6	7.56
	5/8-18	1-1/4 to 1-7/16	7/16 Hex	HSM-7	11.26
	1/2-20	9/16 to 1-3/16	5/16 Hex	HSM-9	11.26
	1/2-20	9/16 to 1-3/16	1/4 Hex Quick Change	HSM-9QC	11.26
	5/8-18	1-3/4 to 3	1/4 Hex Quick Change	HSM-10QC	10.72
	1/2-20	9/16 to 1-3/16	SDS Shank	HSM-3SDS	11.26
	5/8-18	1-1/4 to 8-1/4	SDS Shank	HSM-4SDS	19.12
	5/8-18	1-1/4 to 8-1/4	SDS Shank	HSM4-SDSPD	19.12

PLUG EJECTING (HOLE SAW) ARBOR ADAPTER WITH 1/4" PILOT DRILL

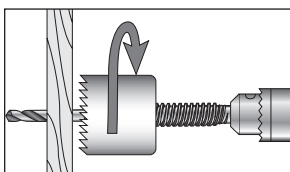
ICS USA

ADAPTERS

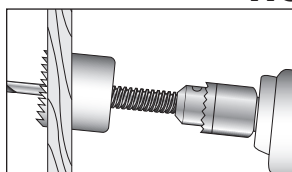
Plug Ejecting Arbor Adapters convert all standard hole saws into plug ejecting style. Just screw adapter into hole saw, then insert Plug Ejecting Arbor, cut hole, put drill in reverse and plug is ejected. Speeds up production 400%.

ILLUSTRATION	THREAD SIZE	FITS HOLE SAWS	SHANK SIZE	THREAD SIZE	PRICE
	HSMA-PE1	3/4 to 1-3/16	1/4 Hex	1/2-20	19.18
	HSMA-PE2	1-1/4 to 6	3/8 Hex	5/8-18	19.18

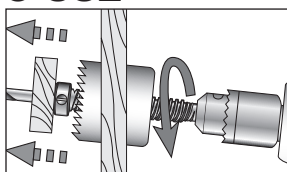
HOW TO USE



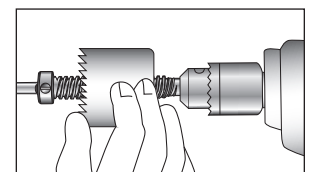
1. Drill Hole



2. Wedge Saw



3. Reverse Drill to Eject Plug



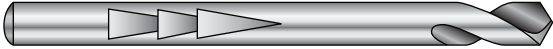
4. Spin Cup Forward to Reset Saw

HIGH SPEED STEEL **HOLE SAW PILOT DRILLS**

ICS **WIS**

SPECIAL PURPOSE

118° / 135° S/P



3 STEPS ON SHANK FOR SET SCREW



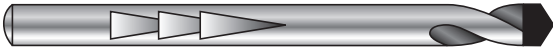
3 FLATS ON SHANK

ICS Hole Saw Pilot Drills fit all styles of Hole Saws and are available with a 118° point or 135° split point.

SIZE DIA. x LENGTH	DRILL POINT	DESCRIPTION	ITEM NO.	PRICE	UNIT PKG.
1/4 x 4	118° Point	3 Ground Steps on Shank for Set Screws	HSPD-3S	2.60	10/12
1/4 x 4	135° Split Point	3 Ground Steps on Shank for Set Screws	HSPD-3SH	2.94	10/12
1/4 x 4	118° Point	3 Ground Flats on Shank (3 Sides)	HSPD-3F	2.60	10/12
1/4 x 4	135° Split Point	3 Ground Flats on Shank (3 Sides)	HSPD-3FH	2.94	10/12

CARBIDE TIPPED **PILOT DRILL**

SPECIAL PURPOSE



3 STEPS ON SHANK FOR SET SCREW

For use in Hole Saws, Hole Cutters, and other Pilot Tools.

SIZE	DESCRIPTION	ITEM NO.	PRICE
1/4x4	3 Steps on Shank for Set Screw	CTHSPD016	7.06

HOLE SAW EXTENSIONS

SPECIAL PURPOSE

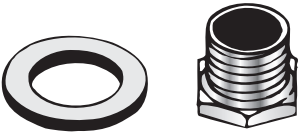


For boring jobs requiring longer reach. Extensions can be connected to one another for extra long reach. Hex wrench included.

HEX SHANK	LENGTH	ITEM NO.	PRICE
7/16	12	HSX028X12	12.94

MANDREL (ARBOR) ADAPTER

SPECIAL PURPOSE



Adapts Arbors with 1/2-20 threads to fit hole saws with 5/8-18 threads.

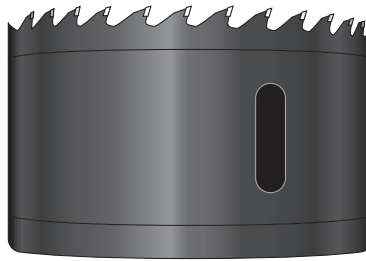
DESCRIPTION	ITEM NO.	PRICE
Fits HSM-3, HSM-6, and HSM-9 Mandrels	HSMA	5.26

CARBIDE TIPPED HOLE SAWS

ICS USA

SPECIAL PURPOSE

CARBIDE TIPPED



Carbide Tipped Hole Saws retain their cutting edge up to 10 times longer than high speed steel hole saws. They cut clean and accurate holes 1-7/8" deep. Carbide tips withstand heat and abrasion extremely well and can be run at faster speeds, resulting in a reduction of cutting time and cost per cut. They are not designed for cutting concrete, steel, or other ferrous materials. They are designed for cutting abrasive materials; i.e. fiberglass, particle board, insulation board, aluminum castings, and copper.

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
3/4	1/2	3/8		HS-CT048	18.10
13/16	-	-		HS-CT052	17.72
7/8	3/4	1/2	HSM-3	HS-CT056	18.26
15/16	-	-	HSM-6	HS-CT060	18.94
1	-	-	or	HS-CT100	19.48
1-1/16	-	-	HSM-9	HS-CT104	20.16
1-1/8	1	3/4		HS-CT108	20.64
1-3/16	-	-		HS-CT112	21.38
1-1/4	-	-	HSM-4	HS-CT116	21.46
1-5/16	-	-	HSM-5	HS-CT120	21.62
1-3/8	-	1	or	HS-CT124	21.80
1-7/16	-	-	HSM-7	HS-CT128	21.86
1-1/2	1-1/4	-		HS-CT132	22.34
1-9/16	-	-		HS-CT136	23.16
1-5/8	-	-		HS-CT140	23.72
1-11/16	-	-		HS-CT144	24.24
1-3/4	1-1/2	1-1/4	HSM-4	HS-CT148	24.82
1-13/16	-	-	or	HS-CT152	25.38
1-7/8	-	-	HSM-5	HS-CT156	25.90
2	-	1-1/2		HS-CT200	26.64
2-1/16	-	-		HS-CT204	30.82
2-1/8	-	-		HS-CT208	31.36
2-1/4	2	-		HS-CT216	32.42
2-5/16	-	-		HS-CT220	33.06

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
2-3/8	-	-		HS-CT224	33.50
2-1/2	-	2		HS-CT232	35.06
2-9/16	-	-		HS-CT236	35.64
2-5/8	2-1/2	-		HS-CT240	35.12
2-3/4	-	-		HS-CT248	37.28
2-7/8	-	-		HS-CT256	38.42
3	-	2-1/2		HS-CT300	39.48
3-1/8	-	-		HS-CT308	47.50
3-1/4	3	-	HSM-4	HS-CT316	48.76
3-3/8	-	-	or	HS-CT324	51.84
3-1/2	-	-	HSM-5	HS-CT332	52.52
3-5/8	-	3		HS-CT340	53.64
3-3/4	3-1/2	-		HS-CT348	55.16
3-7/8	-	-		HS-CT356	56.22
4	-	-		HS-CT400	58.62
4-1/8	-	3-1/2		HS-CT408	81.38
4-1/4	4	-		HS-CT416	84.30
4-3/8	-	-		HS-CT424	85.36
4-1/2	-	4		HS-CT432	85.82
4-3/4	-	-		HS-CT448	93.46
5	-	-		HS-CT500	96.18
5-1/2	-	-		HS-CT532	101.28
5-3/4	-	-		HS-CT548	111.34
6	-	-		HS-CT600	118.04

CARBIDE TIPPED HOLE SAW KIT

PLASTIC CASES

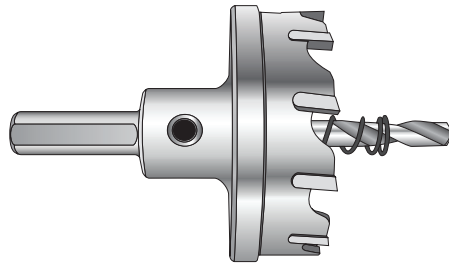
DESCRIPTION	ITEM NO.	PRICE
MAINTENANCE CARBIDE TIPPED HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2 Hole Saws, HSM-3, HSM-4, HSM-6 Arbors and 12" extension.	HSK-CT-13M	294.00

CARBIDE TIPPED HOLE CUTTERS

ICS

WIS

SPECIAL PURPOSE

3 FLAT
SHANK

Carbide Tipped Fractional and Metric Hole Cutters are designed for cutting steel plate, stainless steel, galvanized iron, fiberglass, aluminum, and copper up to 3/16" thick. Built-in safety stopper prevents over penetration. Ejector spring ejects slug to save production time. The center drill is a Titanium Nitride coated 135° split point drill. Used by electricians, plumbers, auto and truck repairmen, and general contractors. Outlasts hole saws 5 to 1.

Fractional and Metric Sizes

SIZE	SHANK DIA.	PILOT DRILL	ITEM NO.	PRICE
FRACTIONAL SIZES				
3/4	3/8	6mm	CTHC048	25.84
7/8	3/8	6mm	CTHC056	28.14
1	3/8	6mm	CTHC100	34.24
1-1/8	3/8	6mm	CTHC108	39.70
1-1/4	3/8	6mm	CTHC116	43.68
1-3/8	3/8	6mm	CTHC124	47.88
1-1/2	3/8	6mm	CTHC132	51.88
1-5/8	3/8	6mm	CTHC140	55.86
1-3/4	3/8	6mm	CTHC148	60.06
2	3/8	6mm	CTHC200	69.72
2-1/8	3/8	6mm	CTHC208	73.72
2-1/4	3/8	6mm	CTHC216	77.92
2-5/8	1/2	6mm	CTHC240	91.36
2-7/8	1/2	6mm	CTHC256	99.76
3	1/2	6mm	CTHC300	103.74
3-5/8	1/2	6mm	CTHC340	125.58
4	1/2	6mm	CTHC400	139.24
4-1/4	1/2	6mm	CTHC416	147.42
4-1/2	1/2	6mm	CTHC432	155.62
METRIC SIZES				
22mm	10mm	6mm	CTHCM022.0	28.14
29mm	10mm	6mm	CTHCM029.0	39.48
41mm	10mm	6mm	CTHCM041.0	55.86

CARBIDE TIPPED HOLE CUTTER KIT

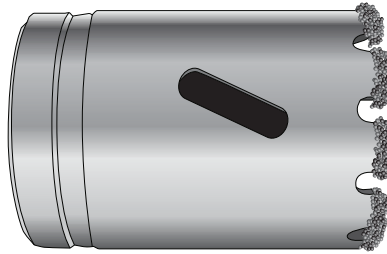
DESCRIPTION	ITEM NO.	PRICE
Electrician's Carbide Tipped Hole Cutter Set 1 each: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2"	HCS-CT-06E	369.60
Packaged in a plastic case.		

CARBIDE GRIT EDGED HOLE SAWS

ICS USA

SPECIAL PURPOSE

CARBIDE GRIT EDGE



Carbide Grit Edged Hole Saws have no teeth to chip or dull and will last up to 10 times longer than High Speed Steel Hole Saws. Cuts almost all the materials which diamond hole saws can cut at less than half the cost. Used to cut the most difficult work encountered: cast iron, ceramic tile, fiberglass (all types), plastic laminates, etc.

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
3/4	1/2	3/8		HS-CE048	20.48
13/16	-	-		HS-CE052	20.48
7/8	3/4	1/2		HS-CE056	20.58
15/16	-	-		HS-CE060	21.52
1	-	-		HS-CE100	22.06
1-1/16	-	-		HS-CE104	22.58
1-1/8	1	3/4		HS-CE108	22.58
1-3/16	-	-		HS-CE112	23.10
1-1/4	-	-	HSM-4	HS-CE116	23.62
1-3/8	-	1	HSM-5 HSM-7	HS-CE124	24.46
1-1/2	1-1/4	-		HS-CE132	25.72
1-9/16	-	-		HS-CE136	26.26
1-11/16	-	-		HS-CE144	26.26
1-3/4	1-1/2	1-1/4		HS-CE148	26.56
2	-	1-1/2		HS-CE200	29.20
2-1/8	-	-		HS-CE208	30.46
2-1/4	2	-		HS-CE216	32.56
2-3/8	-	-		HS-CE224	33.92
2-1/2	-	2		HS-CE232	36.22

SIZE	PIPE TAP SIZE	PIPE ENTRANCE SIZE	USE ARBOR NO.	ITEM NO.	PRICE
2-9/16	-	-		HS-CE236	37.80
2-5/8	2-1/2	-		HS-CE240	37.80
2-3/4	-	-		HS-CE248	38.44
2-7/8	-	-		HS-CE256	40.96
3	-	2-1/2		HS-CE300	42.10
3-1/8	-	-		HS-CE308	44.10
3-1/4	3	-		HS-CE316	45.04
3-1/2	-	-		HS-CE332	47.78
3-5/8	-	3	HSM-4	HS-CE340	52.50
3-3/4	3-1/2	-	or	HS-CE348	54.60
4	-	-	HSM-5	HS-CE400	56.70
4-1/8	-	3-1/2		HS-CE408	58.80
4-1/4	4	-		HS-CE416	59.86
4-1/2	-	4		HS-CE432	63.00
4-3/4	-	4		HS-CE448	65.10
5	-	4		HS-CE500	70.36
5-1/2	-	4		HS-CE532	84.00
6	-	4		HS-CE600	97.86

CARBIDE GRIT EDGED HOLE SAW KITS

PLASTIC CASES

ILLUSTRATION	DESCRIPTION	ITEM NO.	PRICE
	MECHANIC'S CARBIDE GRIT EDGED HOLE SAW KIT - 1ea. 7/8, 1, 1-1/8, 1-1/4, 1-1/2 Hole Saws, HSM-6 Arbor.	HSK-CE-06M	224.88
	MAINTENANCE CARBIDE GRIT EDGED HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2 Hole Saws, HSM-3, HSM-4, HSM-6 Arbors and 12" Extension	HSK-CE-13M	511.84
	PLUMBER'S CARBIDE GRIT EDGED HOLE SAW KIT - 1 ea. 3/4, 7/8, 1-1/8, 1-1/2, 1-3/4, 2-1/4 Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-CE-09P	331.34
	ELECTRICIAN'S CARBIDE GRIT EDGED HOLE SAW KIT - 1 ea. 7/8, 1-1/8, 1-3/8, 1-3/4, 2, 2-1/2 Hole Saws, HSM-3 and HSM-4 Arbors, and HSPD-3S Pilot Drill.	HSK-CE-09E	357.68

CARBIDE GRIT EDGED HOLE SAWS - RECESSED LIGHTING

ICS USA

SPECIAL PURPOSE

CARBIDE GRIT EDGE



Recessed Lighting Hole Saws are designed for electricians. They are used to drill holes in ceilings for recessed lighting fixtures. Carbide Grit Edged Hole Saws have no teeth to eliminate snagging. Will cut almost any ceiling material encountered.

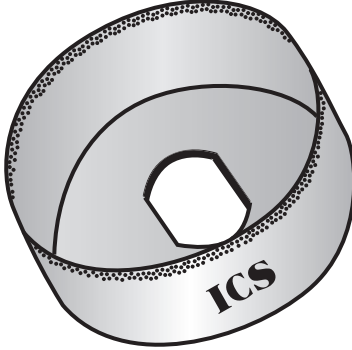
SIZE	USA ARBOR NO.	USE WITH THESE LIGHTING FIXTURES	ITEM NO.	PRICE
4-3/8	HSM-4 or HSM-5	Mini Juno, Capri, Marco, Halo	HS-RL424	66.16
6-3/8		Halo, Capri	HS-RL624	74.56
6-5/8		Juno, Progress	HS-RL640	74.56
6-7/8		Lithonia, Marco, Progress, Capri, Lightloier, Preacolite	HS-RL656	74.56

CARBIDE GRIT EDGED HOLE SAWS - "D" DRIVE

ICS USA

SPECIAL PURPOSE

CARBIDE GRIT EDGE



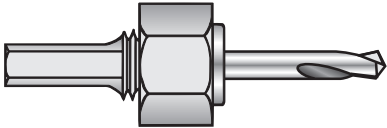
D-Drive Hole Saws are specifically designed to drill plumbing installation holes in fiberglass bathtubs, showers, spas, hot tubs etc. D-Drive Hole Saws derive their name from having a "D" shaped arbor hole.

SIZE	USE ARBOR NO.	ITEM NO.	PRICE
1-1/4	HSM-CT	HS-DD116	17.64
1-3/8	or	HS-DD124	18.16
1-3/4	HSM-2	HS-DD148	19.66

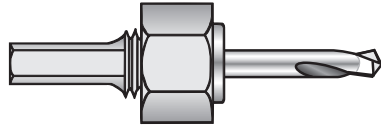
ARBOR/PILOT DRILLS - "D" DRIVE

ICS USA

SPECIAL PURPOSE



HIGH SPEED STEEL



CARBIDE TIPPED

For use in "D" Drive Hole Saws and other Hole Saws.

SHANK SIZE	PILOT DRILL	ITEM NO.	PRICE
3/8	Carbide Tip	HSM-CT	15.42
1/4	High Speed Steel	HSM-2	10.58

FILING TOOLS

Accessories

File Card Cleaner - Wood Handle	19
Flexible Curved Tooth File Holder	20

Burs - Solid Carbide

60° Cone Shape - (SJ) Burs	30
90° Cone Shape - (SK) Burs	30
Ball Shape - (SD) Burs.....	29
Cone Shape - (SM) Burs.....	30
Cylinder Shape End Cut - (SB) Burs	28
Cylinder Shape Radius End - (SC) Burs.....	28
Cylinder Shape - (SA) Burs.....	28
Flame Shape - (SH) Burs.....	30
Inverted Cone Shape - (SN) Burs.....	30
Oval Shape - (SE) Burs	29
Taper Shape Radius End - (SL) Burs	30
Tree Shape Pointed End - (SG) Burs.....	29
Tree Shape Radius End - (SF) Burs	29

1/4" Shank - 6" Length

14° Taper - Radius End	32
Ball Shape	32
Cylinder Shape	32
Cylinder Shape - Radius End.....	32
Flame Shape	32
Oval Shape	32
Tree Shape - Pointed End.....	32
Tree Shape - Radius End	32

Extra Long (Miniature)

Ball Shape	31
Cone Shape	31
Cylinder Shape	31
Cylinder Shape - End Cut	31
Cylinder Shape - Radius End.....	31
Flame Shape	31
Oval Shape	31
Taper Shape - Radius End	31
Tree Shape - Pointed End.....	31
Tree Shape - Radius End	31

NF Burs

14° Taper - Radius End	27
Ball Shape	27
Cylinder Shape	27
Cylinder Shape - Radius End.....	27
Oval Shape	27
Tree Shape - Radius End	27

Files

Curved Tooth Files

Flat	12
Flat Flexible.....	12

External Thread Restoring Files.....

Machinists' (American Pattern) Files

Aluminum (FLAT)	3
Aluminum (HALF ROUND).....	3
Aluminum (PIPE LINE).....	3
Dual Cut Laminate.....	10

Machinists' (American Pattern) Files

Flat Hand	4
Flat Taper.....	5
Half Round.....	6
Ignition Point	4
Knife	9
Long Angle Lathe.....	7
Mill Laminate.....	10
Rapid Cross Cut Laminate	10
Round Files	7
Square Files	8
Three Square (Triangular).....	8
Warding.....	9

Needle (Swiss Pattern) Files.....

Saw (American Pattern) Files

Chain Saw	14
Double End	14
Farmer's Own.....	14
Mill	13
Taper	13

Stainless Steel Files

Thread Restoring Files.....

Universal Thread Restoring File.....

Handles

Metal

Safety File Handle	18

Plastic

Chain Saw File Handle - Adjustable	20
Handle with Inserts	19
Needle File Handle - Precision Chuck	20
Solid Tang Hole Handle.....	19
Universal Tang Hole Handle.....	18

Wood

Handle - with Metal Ferrule	18

Rasps

Farrier	16
Four-in-Hand (SHOE)	16
Horse.....	16

Wood Rasps

Half Round Cabinet.....	15
Half Round.....	15
Round	15

Rifflers

Die Sinkers' (Swiss Pattern)	25
Silversmiths' (Swiss Pattern).....	26

Sets

American Pattern File Sets	17
External Thread Restoring File Sets.....	22
Internal Rethreading Tool Sets.....	21
Needle File Sets - Diamond Coated	17
Precision (Swiss Pattern) File Sets.....	23
Riffler (Swiss Pattern) Rasp Sets.....	17
Solid Carbide Bur Sets.....	33-34

ICS Technical Information

Files

Cuts (Coarseness)

Bastard Cut is a coarse cut for filing steels and castings.

Second Cut is a medium cut for filing hard metals.

Smooth Cut is a fine cut for filing hard metals and for finishing.

Cabinet Rasp Second Cut is a finer rasp cut for filing wood.

Wood Rasp Second Cut is a very coarse rasp cut for filing wood.

Styles

Mill or Saw Files are used for sharpening and dressing edge tools.

Machinists Files are used where metal must be removed rapidly.

Curved Tooth Files are used for auto body repair and sheet metal work.

Swiss Pattern Files are used for fine finish work.

Rasps are used for filing soft metals, wood, and plastics.

Cuts (Teeth)

Single Cut is a file tooth arrangement where a series of parallel teeth run diagonally across the width of the file. It is used for sharpening saws and for finishing work.

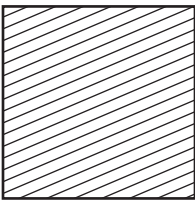
Double Cut is a file tooth arrangement formed by two series of parallel teeth running diagonally across the width of the file with one series crossing over the other. It is used for fast stock removal.

Rasp Cut is a file tooth arrangement where a series of individual raised round teeth are formed by a single pointed punch tool. It is used for fast and rough cutting of wood, leather, hooves, and soft metals.

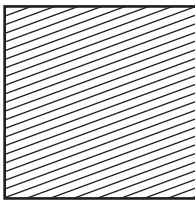
Curved Cut is a file tooth arrangement where a series of teeth are mill cut in curved contours across the width of the file. It is used for filing soft metals, plastics and where chip removal is required.

SINGLE CUT

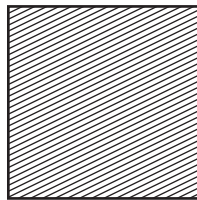
Bastard Cut



Second Cut

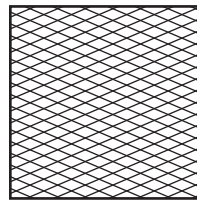


Smooth Cut

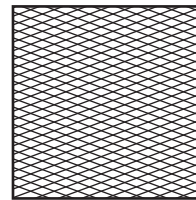


DOUBLE CUT

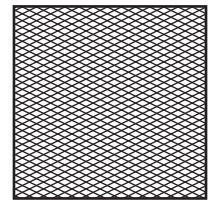
Bastard Cut



Second Cut

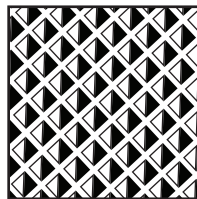


Smooth Cut

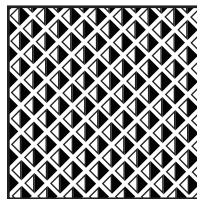


RASP

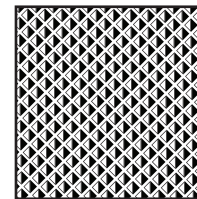
Bastard Cut



Second Cut



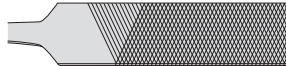
Smooth Cut



SINGLE CUT



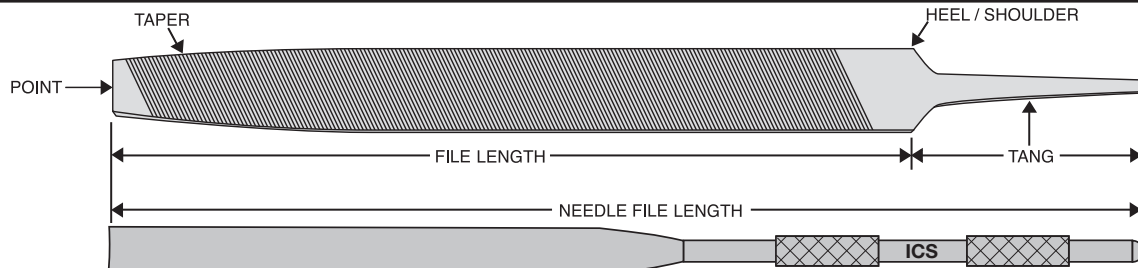
DOUBLE CUT



RASP CUT

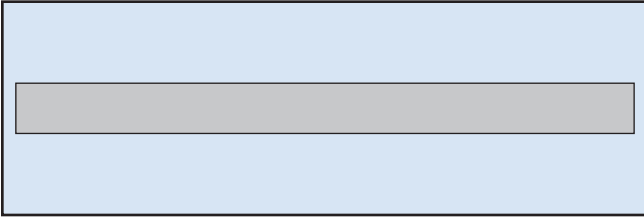


CURVED CUT

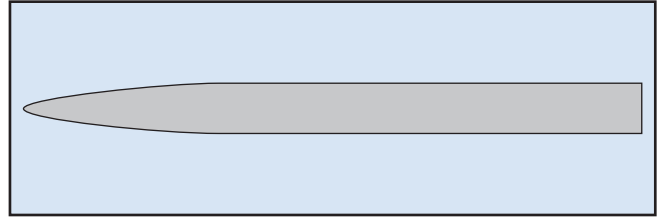


As illustrated above, file lengths do not include the tang. Needle file lengths do represent the overall length.

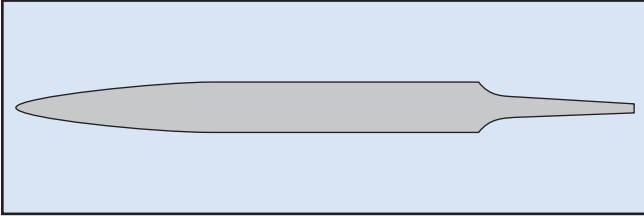
THE FILE MANUFACTURING PROCESS



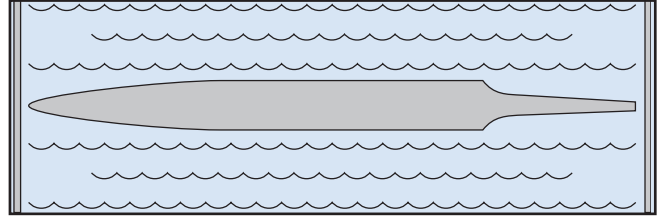
1) Steel cut to size.



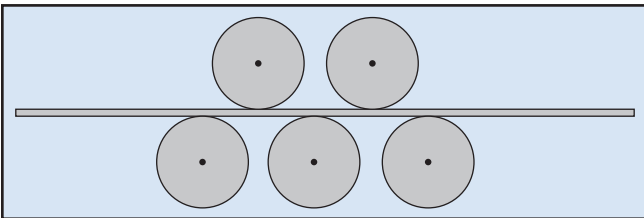
2) Steel is heated to forge point.



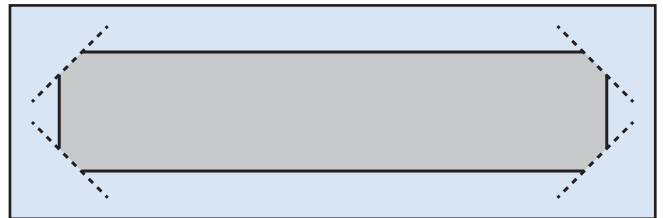
3) Steel heated to forge tang.



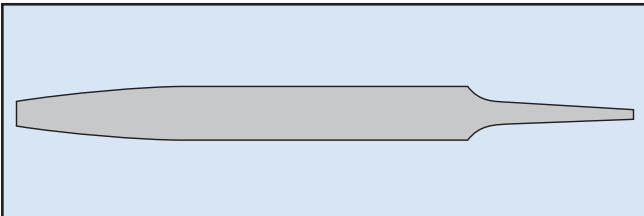
4) Formed file blank annealed in furnace.



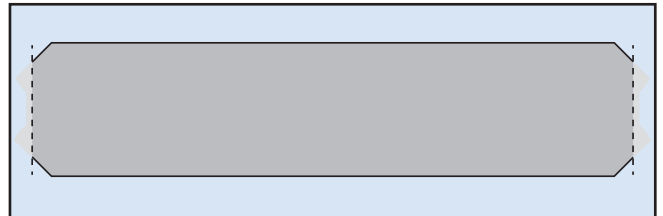
5) File blank is now straightened.



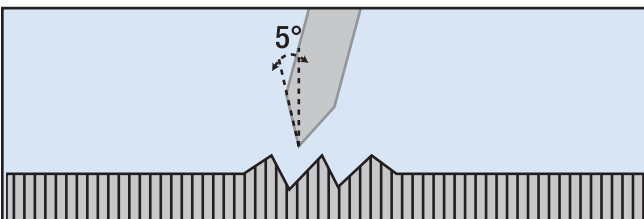
6) Edges and sides are ground.



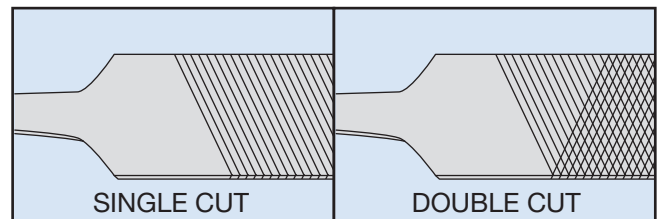
7) Point edge cut.



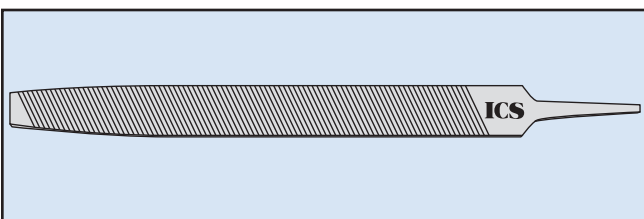
8) Edges cut and burs on sides are "stripped".



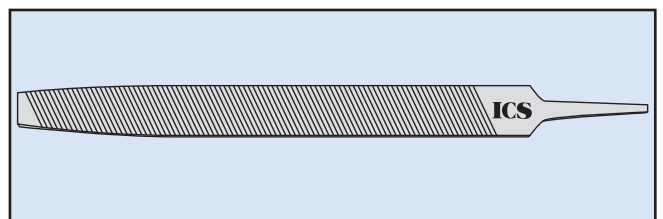
9) Teeth are formed by striking with chisel.



10) Teeth are either single cut or double cut.



11) Files are straightened, cut to size and marked.



12) Files are hardened and finished.

MACHINISTS' (AMERICAN PATTERN) FILES

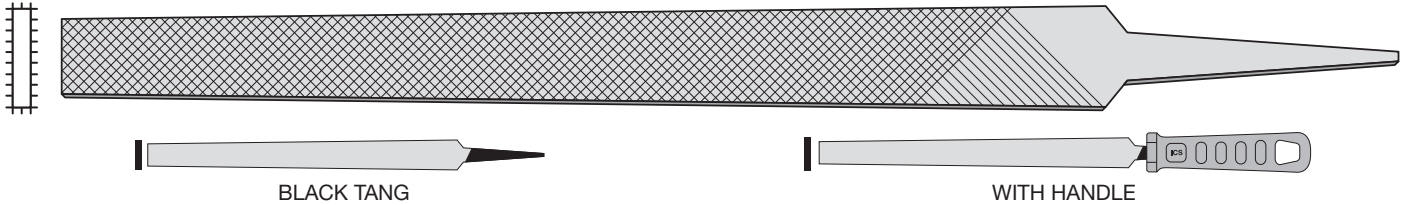
ICS

WIS

SPECIAL PURPOSE

CHISEL CUT

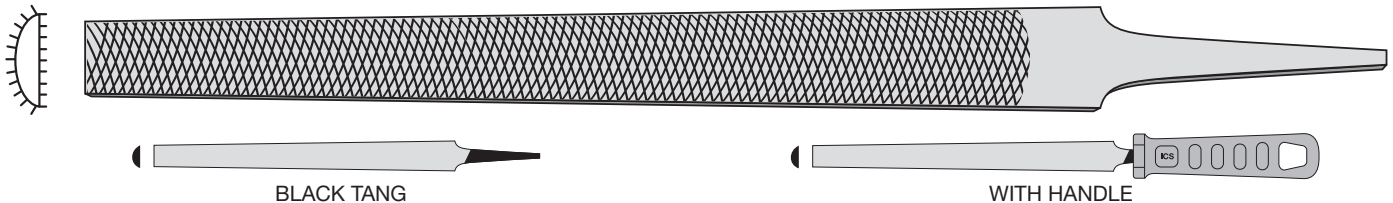
ALUMINUM (FLAT) FILES



Aluminum Flat Files are designed with a special tooth construction for filing aluminum and other soft metals with a minimum of clogging. They are double cut and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		FILE WITH HANDLE			
8 x 25/32 x 7/32	Special	F-AF-08	10.00	FH-AF-08	11.42	12	3.7
10 x 31/32 x 1/4	Double	F-AF-10	13.32	FH-AF-10	14.74	12	7.2
12 x 1-5/32 x 9/32	Cut	F-AF-12	17.00	FH-AF-12	18.52	12	11.2

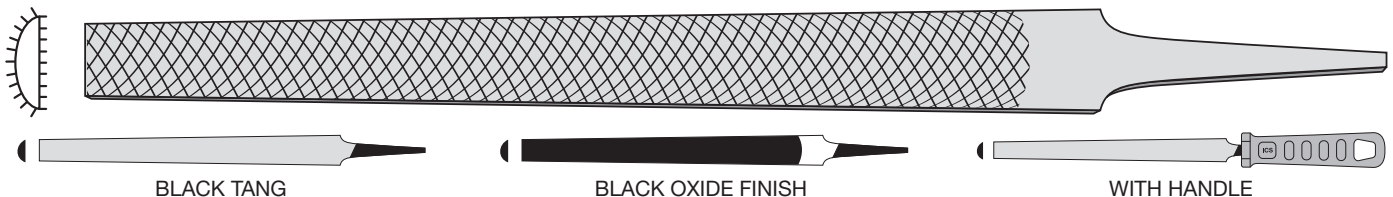
ALUMINUM (HALF ROUND) FILES



Aluminum Half Round Files are designed with a special tooth construction for filing both flat and curved surfaces in aluminum and other soft metals. They are double cut and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		FILE WITH HANDLE			
8 x 3/4 x 7/32	Special Double Cut	F-AHR-08	14.26	FH-AHR-08	15.68	12	3.3
10 x 15/16 x 9/32		F-AHR-10	17.84	FH-AHR-10	19.26	12	6.0
12 x 1-1/8 x 11/32		F-AHR-12	26.00	FH-AHR-12	27.54	12	10.5
14 x 1-9/32 x 13/32		F-AHR-14	32.48	FH-AHR-14	34.00	6	16.2

ALUMINUM (HALF ROUND) PIPE LINE FILES



Half Round Aluminum Pipe Line Files are designed for filing weld beads and scale off pipe line. The narrow, half round design gives more contact on the edge for cleaning welds. They are double cut and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
14 x 1-1/8 x 11/32	Bastard	F-HRP-14B	12.64	FO-HRP-14B	13.00	FH-HRP-14B	14.06	12	19.1

MACHINISTS' (AMERICAN PATTERN) FILES

FT-4

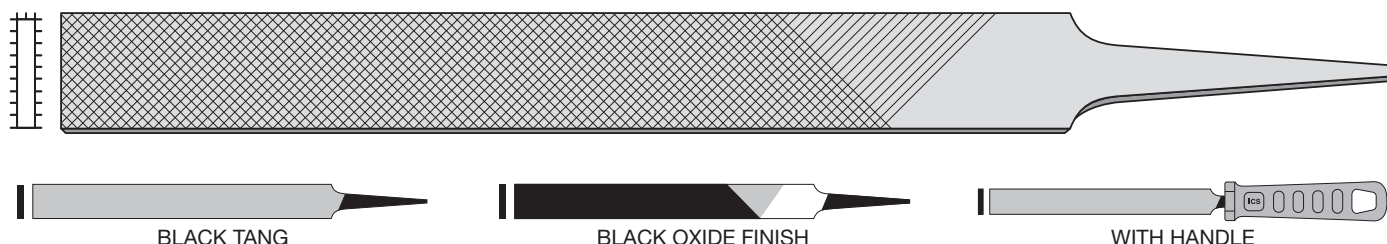
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SPECIAL PURPOSE

CHISEL CUT

FLAT HAND FILES



Flat Hand Files are designed for safe filing of internal corners and where metal must be removed rapidly. One edge is uncut or "safe" for filing one surface without damaging an adjoining one. They are double cut on both sides and one edge, and parallel in width. Similar to Flat Taper Files but taper in thickness and have one safe edge.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.		ITEM NO.		ITEM NO.		WEIGHT	
		BLACK TANG	PRICE EACH	BLACK OXIDE	PRICE EACH	FILE WITH HANDLE	PRICE EACH	STD. PKG.	PER DOZ. (lbs.)
4 x 15/32 x 3/32	Bastard Cut	F-H-04B	3.62	FO-H-04B	3.72	FH-H-04B	4.80	12	0.9
6 x 39/64 x 5/32		F-H-06B	3.70	FO-H-06B	3.82	FH-H-06B	4.88	12	1.6
8 x 25/32 x 13/64		F-H-08B	5.18	FO-H-08B	5.40	FH-H-08B	6.70	12	4.3
10 x 31/32 x 1/4		F-H-10B	6.52	FO-H-10B	6.74	FH-H-10B	8.02	12	7.1
12 x 1-5/32 x 9/32		F-H-12B	10.32	FO-H-12B	10.68	FH-H-12B	11.84	12	11.9
14 x 1-11/32 x 5/16		F-H-14B	13.64	FO-H-14B	14.00	FH-H-14B	15.16	6	17.8
4 x 15/32 x 3/32	Second Cut	F-H-04SC	3.70	FO-H-04SC	3.82	FH-H-04SC	4.88	12	0.9
6 x 39/64 x 5/32		F-H-06SC	4.30	FO-H-06SC	4.52	FH-H-06SC	5.82	12	1.6
8 x 25/32 x 13/64		F-H-08SC	5.86	FO-H-08SC	6.08	FH-H-08SC	7.40	12	4.3
10 x 31/32 x 1/4		F-H-10SC	7.12	FO-H-10SC	7.36	FH-H-10SC	8.66	12	7.1
12 x 1-5/32 x 9/32		F-H-12SC	11.06	FO-H-12SC	11.40	FH-H-12SC	12.58	12	11.9
14 x 1-11/32 x 5/16		F-H-14SC	14.62	FO-H-14SC	14.98	FH-H-14SC	16.16	6	17.8
4 x 15/32 x 3/32	Smooth Cut	F-H-04SM	4.44	FO-H-04SM	4.56	FH-H-04SM	5.62	12	0.9
6 x 39/64 x 5/32		F-H-06SM	4.66	FO-H-06SM	4.80	FH-H-06SM	5.84	12	1.6
8 x 25/32 x 13/64		F-H-08SM	6.04	FO-H-08SM	6.26	FH-H-08SM	7.56	12	4.3
10 x 31/32 x 1/4		F-H-10SM	8.06	FO-H-10SM	8.30	FH-H-10SM	9.58	12	7.1
12 x 1-5/32 x 9/32		F-H-12SM	11.90	FO-H-12SM	12.24	FH-H-12SM	12.24	12	11.9
14 x 1-11/32 x 5/16		F-H-14SM	15.44	FO-H-14SM	15.80	FH-H-14SM	16.98	6	17.8

IGNITION POINT FILES



Ignition Point Files are designed for dressing tungsten connector points, spark plugs, electrical switches and relays. They are double cut on both sides with two uncut "safe" edges to protect adjacent surfaces.

LENGTH x THICKNESS	CUT	ITEM NO.		STD. PKG.	WEIGHT PER DOZ.
		GRAY FINISH	EACH		
5-1/4 x .044	Smooth	F-IP-05	6.20	10	.030

MACHINISTS' (AMERICAN PATTERN) FILES

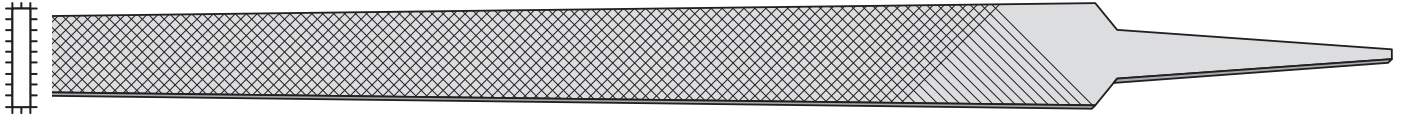
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GENERAL PURPOSE

CHISEL CUT

FLAT TAPER FILES



BLACK TANG



BLACK OXIDE FINISH



WITH HANDLE

Flat Taper Files are designed for use where metal must be removed rapidly and a smooth finish is not required. They are double cut on the sides with single cut edges and tapered in width and thickness. Similar to Mill Files but thicker in cross section and double cut.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
4 x 15/32 x 3/32	Bastard Cut	F-FT-04B	3.62	FO-FT-04B	3.72	FH-FT-04B	4.80	12	0.8
6 x 39/64 x 5/32		F-FT-06B	3.70	FO-FT-06B	3.82	FH-FT-06B	4.88	12	1.7
8 x 25/32 x 13/64		F-FT-08B	5.18	FO-FT-08B	5.40	FH-FT-08B	6.70	12	3.9
10 x 31/32 x 1/4		F-FT-10B	6.52	FO-FT-10B	6.74	FH-FT-10B	8.02	12	7.0
12 x 1-5/32 x 9/32		F-FT-12B	10.32	FO-FT-12B	10.68	FH-FT-12B	11.84	12	11.9
14 x 1-11/32 x 5/16		F-FT-14B	13.64	FO-FT-14B	14.00	FH-FT-14B	15.16	6	17.8
4 x 15/32 x 3/32	Second Cut	F-FT-04SC	3.70	FO-FT-04SC	3.82	FH-FT-04SC	4.88	12	0.8
6 x 39/64 x 5/32		F-FT-06SC	4.08	FO-FT-06SC	4.20	FH-FT-06SC	5.26	12	1.7
8 x 25/32 x 13/64		F-FT-08SC	5.56	FO-FT-08SC	5.80	FH-FT-08SC	7.10	12	3.9
10 x 31/32 x 1/4		F-FT-10SC	7.12	FO-FT-10SC	7.36	FH-FT-10SC	8.66	12	7.0
12 x 1-5/32 x 9/32		F-FT-12SC	11.28	FO-FT-12SC	11.40	FH-FT-12SC	12.58	12	11.9
14 x 1-11/32 x 5/16		F-FT-14SC	14.62	FO-FT-14SC	14.98	FH-FT-14SC	16.16	6	17.8
4 x 15/32 x 3/32	Smooth Cut	F-FT-04SM	4.44	FO-FT-04SM	4.56	FH-FT-04SM	5.62	12	0.8
6 x 39/64 x 5/32		F-FT-06SM	4.66	FO-FT-06SM	4.80	FH-FT-06SM	5.84	12	1.7
8 x 25/32 x 13/64		F-FT-08SM	6.04	FO-FT-08SM	6.26	FH-FT-08SM	7.56	12	3.9
10 x 31/32 x 1/4		F-FT-10SM	8.06	FO-FT-10SM	8.30	FH-FT-10SM	9.58	12	7.0
12 x 1-5/32 x 9/32		F-FT-12SM	11.90	FO-FT-12SM	12.24	FH-FT-12SM	12.24	12	11.9
14 x 1-11/32 x 5/16		F-FT-14SM	15.44	FO-FT-14SM	15.80	FH-FT-14SM	16.98	6	17.8

MACHINISTS' (AMERICAN PATTERN) FILES

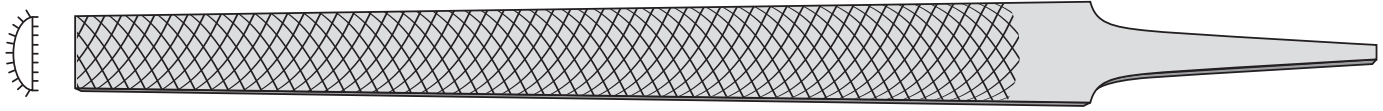
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GENERAL PURPOSE

CHISEL CUT

HALF ROUND FILES



BLACK TANG



BLACK OXIDE FINISH



WITH HANDLE

Half Round Files are designed for filing both flat and curved surfaces. They are double cut and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. BLACK OXIDE	PRICE EACH	ITEM NO. FILE WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
4 x 23/64 x 9/64	Bastard Cut	F-HR-04B	4.68	FO-HR-04B	4.82	FH-HR-04B	5.86	12	0.6
6 x 19/32 x 11/64		F-HR-06B	5.34	FO-HR-06B	5.44	FH-HR-06B	6.52	12	1.5
8 x 3/4 x 7/32		F-HR-08B	8.22	FO-HR-08B	8.46	FH-HR-08B	9.74	12	3.3
10 x 7/8 x 9/32		F-HR-10B	10.06	FO-HR-10B	10.30	FH-HR-10B	11.60	12	6.0
12 x 1-1/8 x 11/32		F-HR-12B	12.58	FO-HR-12B	12.82	FH-HR-12B	14.10	12	10.5
14 x 1-9/32 x 13/32		F-HR-14B	18.54	FO-HR-14B	18.78	FH-HR-14B	20.08	6	16.2
4 x 23/64 x 9/64	Second Cut	F-HR-04SC	5.28	FO-HR-04SC	5.40	FH-HR-04SC	6.46	12	0.6
6 x 19/32 x 11/64		F-HR-06SC	5.86	FO-HR-06SC	5.98	FH-HR-06SC	7.04	12	1.5
8 x 3/4 x 7/32		F-HR-08SC	8.98	FO-HR-08SC	9.20	FH-HR-08SC	10.50	12	3.3
10 x 7/8 x 9/32		F-HR-10SC	11.08	FO-HR-10SC	11.30	FH-HR-10SC	12.60	12	6.0
12 x 1-1/8 x 11/32		F-HR-12SC	13.62	FO-HR-12SC	13.84	FH-HR-12SC	15.14	12	10.5
14 x 1-9/32 x 13/32		F-HR-14SC	20.58	FO-HR-14SC	20.84	FH-HR-14SC	22.12	6	16.2
4 x 23/64 x 9/64	Smooth Cut	F-HR-04SM	5.76	FO-HR-04SM	5.86	FH-HR-04SM	6.94	12	0.6
6 x 19/32 x 11/64		F-HR-06SM	6.54	FO-HR-06SM	6.64	FH-HR-06SM	7.72	12	1.5
8 x 3/4 x 7/32		F-HR-08SM	9.80	FO-HR-08SM	10.04	FH-HR-08SM	11.32	12	3.3
10 x 7/8 x 9/32		F-HR-10SM	12.14	FO-HR-10SM	12.40	FH-HR-10SM	13.68	12	6.0
12 x 1-1/8 x 11/32		F-HR-12SM	14.58	FO-HR-12SM	14.80	FH-HR-12SM	16.12	12	10.5
14 x 1-9/32 x 13/32		F-HR-14SM	22.08	FO-HR-14SM	22.30	FH-HR-14SM	23.60	6	16.2

MACHINISTS' (AMERICAN PATTERN) FILES

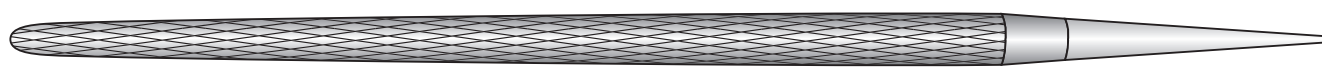
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GENERAL PURPOSE

CHISEL CUT

ROUND FILES



BLACK TANG

BLACK OXIDE FINISH

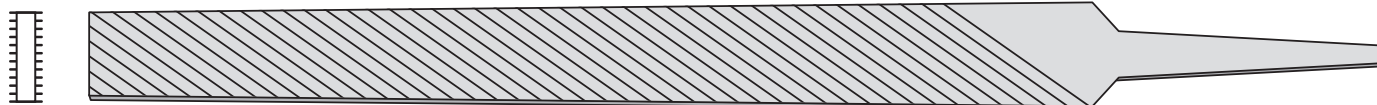
WITH HANDLE

Round Files are designed for enlarging holes and shaping curved surfaces. They taper slightly to a point and teeth are either 'Single' cut or 'Double' cut depending on the size.

			ITEM NO.		ITEM NO.		ITEM NO.			WEIGHT
LENGTH x			BLACK	PRICE	BLACK	PRICE	FILE WITH	PRICE	STD.	PER DOZ.
SIZE	TEETH*	CUT*	TANG	EACH	OXIDE	EACH	HANDLE	EACH	PKG.	(lbs.)
4 x 5/32	Single	Bastard Cut	F-R-04B	3.50	FO-R-04B	3.62	FH-R-04B	4.66	12	0.2
6 x 1/4	Double		F-R-06B	3.72	FO-R-06B	3.84	FH-R-06B	4.90	12	0.9
8 x 19/64			F-R-08B	4.44	FO-R-08B	4.66	FH-R-08B	5.96	12	1.4
10 x 3/8			F-R-10B	6.08	FO-R-10B	6.32	FH-R-10B	7.60	12	3.2
12 x 1/2			F-R-12B	9.08	FO-R-12B	9.30	FH-R-12B	10.58	12	6.8
14 x 5/8			F-R-14B	12.54	FO-R-14B	12.80	FH-R-14B	14.08	6	11.9
4 x 5/32	Single	Second Cut	F-R-04SC	3.72	FO-R-04SC	3.84	FH-R-04SC	4.90	12	0.2
6 x 1/4			F-R-06SC	4.12	FO-R-06SC	4.90	FH-R-06SC	5.30	12	0.9
8 x 19/64			F-R-08SC	4.66	FO-R-08SC	4.90	FH-R-08SC	6.20	12	1.4
10 x 3/8			F-R-10SC	6.52	FO-R-10SC	6.74	FH-R-10SC	8.02	12	3.2
12 x 1/2	Double		F-R-12SC	9.66	FO-R-12SC	9.90	FH-R-12SC	11.18	12	6.8
14 x 5/8			F-R-14SC	13.44	FO-R-14SC	13.68	FH-R-14SC	14.98	6	11.9
4 x 5/32	Single	Smooth Cut	F-R-04SM	4.26	FO-R-04SM	4.40	FH-R-04SM	5.44	12	0.2
6 x 1/4			F-R-06SM	4.48	FO-R-06SM	4.60	FH-R-06SM	5.66	12	0.9
8 x 19/64			F-R-08SM	5.54	FO-R-08SM	5.78	FH-R-08SM	7.06	12	1.4
10 x 3/8			F-R-10SM	6.66	FO-R-10SM	6.92	FH-R-10SM	8.20	12	3.2
12 x 1/2			F-R-12SM	10.38	FO-R-12SM	10.64	FH-R-12SM	11.92	12	6.8
14 x 5/8			F-R-14SM	14.10	FO-R-14SM	14.34	FH-R-14SM	15.62	6	11.9

* NOTE: Single or Double Cut 'TEETH' refers to whether the teeth are cut in one or two directions, whereas Bastard, Second or Smooth 'CUT' refers to how coarse or fine the teeth are. The finer the 'CUT' the smaller and more numerous the teeth will be. Refer to page 346 for more information.

LONG ANGLE LATHE FILES



BLACK TANG

BLACK OXIDE FINISH

WITH HANDLE

Long Angle Lathe Files are designed for filing work that is rotating in a lathe and for bench filing of aluminum and copper alloys. The long bastard cut tooth angle is self clearing when used at right angles to work. It cuts clean and does not drag or tear. Both edges are safe (uncut) to protect shoulders of work which are not to be filed. This file tapers slightly in width toward the point.

NOTE: Safety File Handle (page 358A) should be attached to any file when working with a lathe.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE	ITEM NO.	PRICE	ITEM NO.	PRICE	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG	EACH	BLACK OXIDE	EACH	FILE WITH HANDLE	EACH		
8 x 25/32 x 13/64	Special Cut	F-LAL-08	9.58	FO-LAL-08	9.84	FH-LAL-08	11.00	12	4.0
10 x 31/32 x 1/4		F-LAL-10	13.30	FO-LAL-10	13.52	FH-LAL-10	14.70	12	7.2
12 x 1-5/32 x 9/32		F-LAL-12	18.72	FO-LAL-12	19.08	FH-LAL-12	20.12	12	11.2
14 x 1-11/32 x 5/16		F-LAL-14	24.82	FO-LAL-14	25.18	FH-LAL-14	26.24	6	16.6

MACHINISTS' (AMERICAN PATTERN) FILES

FT-8

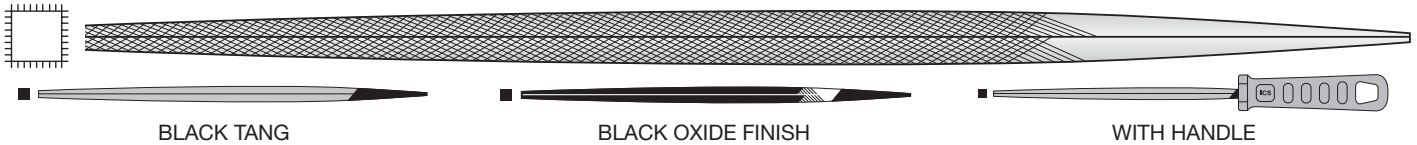
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GENERAL PURPOSE

CHISEL CUT

SQUARE FILES



Square Files are designed for filing slots, key ways, grooves, square holes and edges, and for filing flat surfaces where a heavier section is preferred. They are double cut on all four sides and taper slightly to a point.

LENGTH x SIZE	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
4 x 5/32	Bastard Cut	F-SQ-04B	3.50	FO-SQ-04B	3.62	FH-SQ-04B	4.66	12	0.2
6 x 1/4		F-SQ-06B	3.92	FO-SQ-06B	4.04	FH-SQ-06B	5.08	12	1.0
8 x 5/16		F-SQ-08B	5.92	FO-SQ-08B	6.16	FH-SQ-08B	7.44	12	1.9
10 x 3/8		F-SQ-10B	7.64	FO-SQ-10B	7.90	FH-SQ-10B	9.18	12	3.9
12 x 1/2		F-SQ-12B	10.42	FO-SQ-12B	10.66	FH-SQ-12B	11.94	12	8.4
14 x 5/8		F-SQ-14B	13.72	FO-SQ-14B	13.96	FH-SQ-14B	15.26	6	14.7
4 x 5/32	Second Cut	F-SQ-04SC	3.84	FO-SQ-04SC	3.98	FH-SQ-04SC	5.02	12	0.2
6 x 1/4		F-SQ-06SC	4.30	FO-SQ-06SC	4.44	FH-SQ-06SC	5.48	12	1.0
8 x 5/16		F-SQ-08SC	5.94	FO-SQ-08SC	6.18	FH-SQ-08SC	7.48	12	1.9
10 x 3/8		F-SQ-10SC	8.24	FO-SQ-10SC	8.48	FH-SQ-10SC	9.78	12	3.9
12 x 1/2		F-SQ-12SC	11.16	FO-SQ-12SC	11.40	FH-SQ-12SC	12.68	12	8.4
14 x 5/8		F-SQ-14SC	14.74	FO-SQ-14SC	14.98	FH-SQ-14SC	16.26	6	14.7
4 x 5/32	Smooth Cut	F-SQ-04SM	4.22	FO-SQ-04SM	4.36	FH-SQ-04SM	5.40	12	0.2
6 x 1/4		F-SQ-06SM	4.64	FO-SQ-06SM	4.78	FH-SQ-06SM	6.06	12	1.0
8 x 5/16		F-SQ-08SM	7.40	FO-SQ-08SM	7.62	FH-SQ-08SM	8.92	12	1.9
10 x 3/8		F-SQ-10SM	8.86	FO-SQ-10SM	9.10	FH-SQ-10SM	10.38	12	3.9
12 x 1/2		F-SQ-12SM	11.28	FO-SQ-12SM	11.52	FH-SQ-12SM	12.82	12	8.4
14 x 5/8		F-SQ-14SM	15.48	FO-SQ-14SM	15.74	FH-SQ-14SM	17.02	6	14.7

THREE SQUARE (TRIANGULAR) FILES



Three Square Files are designed for filing internal angles above 60°, corners, grooves, notches, and for filing HSS taps and cutters after machining. They are double cut on all three sides and taper slightly to point. Note: This file has sharp corners and is not recommended for filing saws.

LENGTH x SIZE	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
4 x 11/64	Bastard Cut	F-TSQ-04B	4.26	FO-TSQ-04B	4.40	FH-TSQ-04B	5.44	12	1.0
6 x 15/32		F-TSQ-06B	5.04	FO-TSQ-06B	4.86	FH-TSQ-06B	5.92	12	1.9
8 x 5/8		F-TSQ-08B	6.14	FO-TSQ-08B	6.36	FH-TSQ-08B	7.64	12	4.2
10 x 3/4		F-TSQ-10B	8.60	FO-TSQ-10B	8.82	FH-TSQ-10B	10.12	12	7.5
12 x 7/8		F-TSQ-12B	13.10	FO-TSQ-12B	13.46	FH-TSQ-12B	14.64	12	10.0
4 x 11/64	Second Cut	F-TSQ-04SC	4.76	FO-TSQ-04SC	4.86	FH-TSQ-04SC	5.92	12	1.0
6 x 15/32		F-TSQ-06SC	5.04	FO-TSQ-06SC	5.18	FH-TSQ-06SC	6.22	12	1.9
8 x 5/8		F-TSQ-08SC	6.80	FO-TSQ-08SC	7.04	FH-TSQ-08SC	8.34	12	4.2
10 x 3/4		F-TSQ-10SC	9.02	FO-TSQ-10SC	9.26	FH-TSQ-10SC	10.54	12	7.5
12 x 7/8		F-TSQ-12SC	13.72	FO-TSQ-12SC	14.08	FH-TSQ-12SC	15.26	12	10.0
4 x 11/64	Smooth Cut	F-TSQ-04SM	4.96	FO-TSQ-04SM	5.06	FH-TSQ-04SM	6.14	12	1.0
6 x 15/32		F-TSQ-06SM	5.22	FO-TSQ-06SM	5.34	FH-TSQ-06SM	6.38	12	1.9
8 x 5/8		F-TSQ-08SM	7.04	FO-TSQ-08SM	7.30	FH-TSQ-08SM	8.58	12	4.2
10 x 3/4		F-TSQ-10SM	9.84	FO-TSQ-10SM	10.06	FH-TSQ-10SM	11.34	12	7.5
12 x 7/8		F-TSQ-12SM	14.34	FO-TSQ-12SM	14.68	FH-TSQ-12SM	15.86	12	10.0

MACHINISTS' (AMERICAN PATTERN) FILES

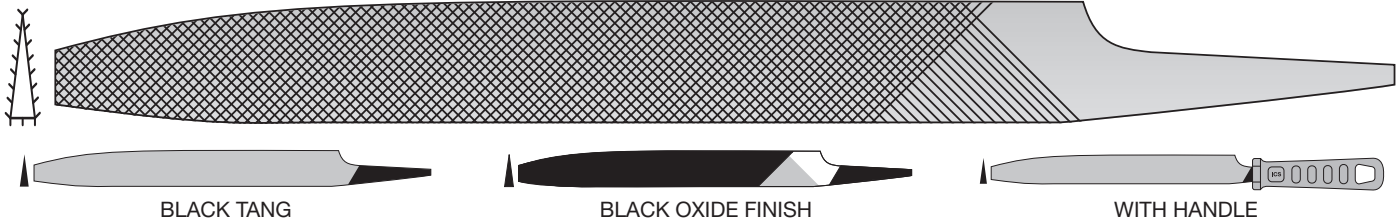
ICS

WIS

GENERAL PURPOSE

CHISEL CUT

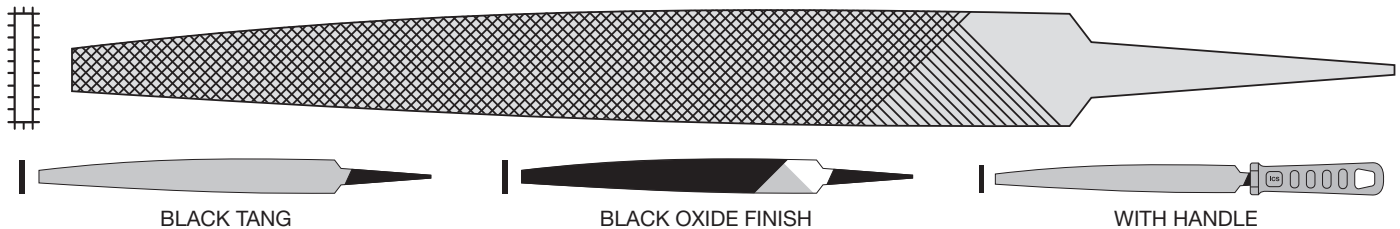
KNIFE FILES



Knife Files are designed in the shape of a knife for filing slots, keyways, and acute angles. It is used primarily for tool and die work. They are double cut on sides and have a thin single cut edge.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
4 x 15/32 x 7/64	Bastard Cut	F-K-04 B	8.78	FO-K-04 B	8.90	FH-K-04 B	9.96	12	0.4
6 x 21/32 x 5/32		F-K-06 B	8.78	FO-K-06 B	8.90	FH-K-06 B	9.96	12	1.2
8 x 27/32 x 3/16		F-K-08 B	11.02	FO-K-08 B	11.26	FH-K-08 B	12.66	12	2.5
10 x 1-1/32 x 1/4		F-K-10 B	14.44	FO-K-10 B	14.66	FH-K-10 B	15.96	12	4.6
4 x 15/32 x 7/64	Second Cut	F-K-04 SC	9.66	FO-K-04 SC	9.78	FH-K-04 SC	10.84	12	0.4
6 x 21/32 x 5/32		F-K-06 SC	9.66	FO-K-06 SC	9.78	FH-K-06 SC	10.84	12	1.2
8 x 27/32 x 3/16		F-K-08 SC	12.14	FO-K-08 SC	12.40	FH-K-08 SC	13.68	12	2.5
10 x 1-1/32 x 1/4		F-K-10 SC	15.86	FO-K-10 SC	16.12	FH-K-10 SC	17.40	12	4.6
4 x 15/32 x 7/64	Smooth Cut	F-K-04 SM	9.86	FO-K-04 SM	9.96	FH-K-04 SM	11.02	12	0.4
6 x 21/32 x 5/32		F-K-06 SM	9.86	FO-K-06 SM	9.96	FH-K-06 SM	11.02	12	1.2
8 x 27/32 x 3/16		F-K-08 SM	12.40	FO-K-08 SM	12.62	FH-K-08 SM	13.90	12	2.5
10 x 1-1/32 x 1/4		F-K-10 SM	16.16	FO-K-10 SM	16.38	FH-K-10 SM	17.68	12	4.6

WARDING FILES



Warding Files are designed for filing in narrow spaces where other files will not fit. They are used by locksmiths to repair or file ward notches in keys. This file is also useful for sharpening small drills. They are double cut on sides and single cut on edges.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
4 x 15/32 x 3/64	Bastard Cut	F-W-04 B	6.62	FO-W-04 B	6.74	FH-W-04 B	7.92	12	0.3
6 x 39/64 x 5/64		F-W-06 B	6.62	FO-W-06 B	6.74	FH-W-06 B	7.92	12	0.8
8 x 25/32 x 3/32		F-W-08 B	8.16	FO-W-08 B	8.38	FH-W-08 B	9.92	12	1.6
4 x 15/32 x 3/64	Second Cut	F-W-04 SC	6.90	FO-W-04 SC	7.00	FH-W-04 SC	8.18	12	0.3
6 x 39/64 x 5/64		F-W-06 SC	6.90	FO-W-06 SC	7.00	FH-W-06 SC	8.18	12	0.8
8 x 25/32 x 3/32		F-W-08 SC	8.46	FO-W-08 SC	8.70	FH-W-08 SC	10.24	12	1.6
4 x 15/32 x 3/64	Smooth Cut	F-W-04 SM	7.18	FO-W-04 SM	7.32	FH-W-04 SM	8.36	12	0.3
6 x 39/64 x 5/64		F-W-06 SM	7.18	FO-W-06 SM	7.32	FH-W-06 SM	8.36	12	0.8
8 x 25/32 x 3/32		F-W-08 SM	9.64	FO-W-08 SM	9.88	FH-W-08 SM	11.16	12	1.6

MACHINISTS' (AMERICAN PATTERN) FILES

FT-10

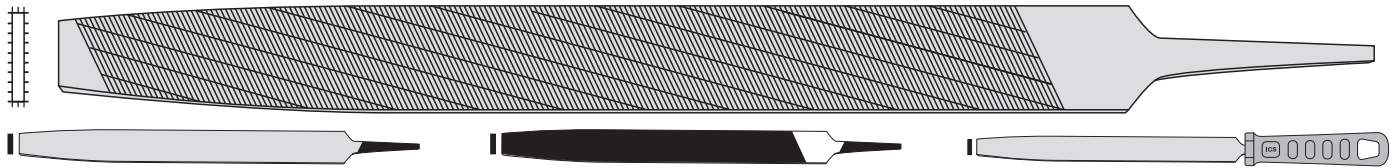
ICS

WIS

SPECIAL PURPOSE

CHISEL CUT

RAPID CROSS CUT LAMINATE



BLACK TANG

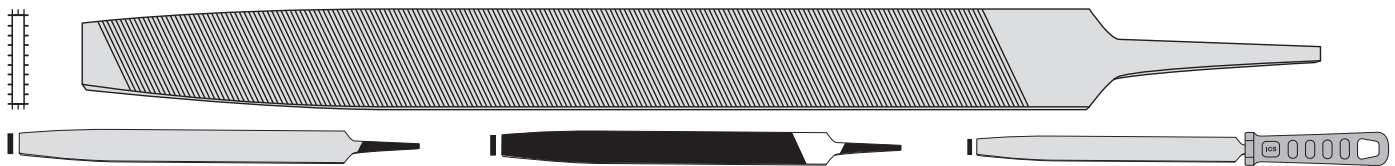
BLACK OXIDE FINISH

WITH HANDLE

Rapid Cross Cut Laminate Files are designed for fast stock removal while leaving a smooth finish. They are single cut on the sides and edges. The width is tapered slightly.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. BLACK OXIDE	PRICE EACH	ITEM NO. FILE WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 25/32 x 7/32	Special Cut	F-LRC-08	9.58	FO-LRC-08	9.82	FH-LRC-08	10.98	12	3.7
10 x 31/32 x 1/4		F-LRC-10	12.52	FO-LRC-10	12.76	FH-LRC-10	13.92	12	5.4
12 x 1-5/32 x 9/32		F-LRC-12	16.72	FO-LRC-12	17.06	FH-LRC-12	18.12	12	9.0
14 x 1-11/32 x 5/16		F-LRC-14	20.08	FO-LRC-14	20.42	FH-LRC-14	21.48	6	14.0

MILL LAMINATE



BLACK TANG

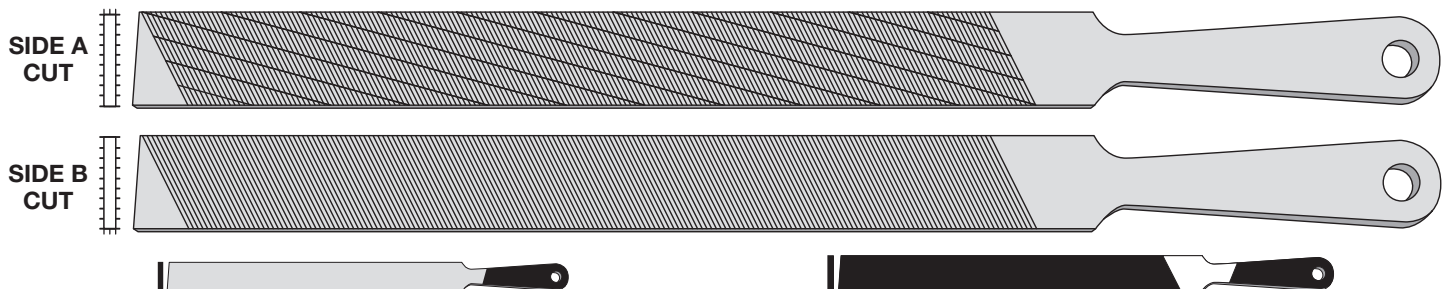
BLACK OXIDE FINISH

WITH HANDLE

Mill Laminate files are designed for the smoothest finish on plastics and laminates. They are single cut on the sides and edges. The width is tapered slightly.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. BLACK OXIDE	PRICE EACH	ITEM NO. FILE WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 25/32 x 7/32	Special Cut	F-LM-08	9.58	FO-LM-08	9.84	FH-LM-08	11.00	12	3.7
10 x 31/32 x 1/4		F-LM-10	12.52	FO-LM-10	12.78	FH-LM-10	13.94	12	5.4
12 x 1-5/32 x 9/32		F-LM-12	16.72	FO-LM-12	17.06	FH-LM-12	18.12	12	9.0
14 x 1-11/32 x 5/16		F-LM-14	20.08	FO-LM-14	20.44	FH-LM-14	21.48	6	14.0

DUAL CUT LAMINATE



BLACK HANDLE

BLACK OXIDE FINISH

Dual Cut Laminate Files combine the best features of all laminate files in one file. They have a rapid cross cut on one side and a mill cut on the other side. They also have a built in handle. One edge has no teeth for safe corner filing.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK HANDLE	PRICE EACH	ITEM NO. BLACK FINISH	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 25/32 x 7/32	Special	F-LDC-08	9.58	FO-LDC-08	9.82	3.7	3.7
10 x 31/32 x 1/4	Cut	F-LDC-10	12.52	FO-LDC-10	12.76	5.4	5.4

MACHINISTS' (AMERICAN PATTERN) FILES

STAINLESS STEEL FILES

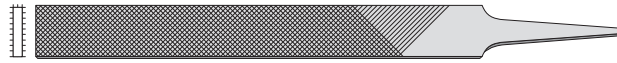
ICS WIS

SPECIAL PURPOSE

CHISEL CUT

Designed for use in filing stainless steel and other hard-to-file metals with little to no clogging. Files are chrome plated and therefore corrosion resistant. Surface hardness of 72 RC for excellent wear resistance and long service life.

HAND



OPTIONAL HANDLE



Flat Hand Files are designed for safe filing of internal corners and where metal must be removed rapidly. One edge is uncut or "safe" for filing one surface without damaging an adjoining one. They are double cut on both sides and one edge, and parallel in width. Similar to Flat Taper Files but taper in thickness and have one safe edge.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. GOLD TANG	PRICE EACH	ITEM NO. FILE WITH ERGONOMIC HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
6 x 3/4 x 5/32	Bastard Cut	CF-H-06B	8.80	CFHE-H-06B	12.80	12	1.6
6 x 3/4 x 5/32	Second Cut	CF-H-06SC	9.40	CFHE-H-06SC	13.40	12	1.6
8 x 55/64 x 3/16	Bastard Cut	CF-H-08B	12.60	CFHE-H-08B	16.60	12	4.3
8 x 55/64 x 3/16	Second Cut	CF-H-08SC	12.30	CFHE-H-08SC	16.30	12	4.3
8 x 55/64 x 3/16	Smooth Cut	CF-H-08SM	14.30	CFHE-H-08SM	18.30	12	4.3

HALF ROUND



OPTIONAL HANDLE



Half Round Files are designed for filing both flat and curved surfaces. They are double cut and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. GOLD TANG	PRICE EACH	ITEM NO. FILE WITH ERGONOMIC HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
6 x 39/64 x 5/32	Second Cut	CF-HR-06SC	17.00	CFHE-HR-06SC	21.00	12	1.5
8 x 55/64 x 7/32	Smooth Cut	CF-HR-08SM	16.66	CFHE-HR-08SM	20.66	12	3.3

ROUND



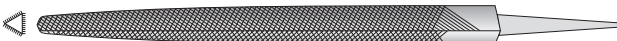
OPTIONAL HANDLE



Round Files are designed for enlarging holes and shaping curved surfaces. They taper slightly to a point and teeth are either 'Single' cut or 'Double' cut depending on the size.

LENGTH x SIZE	CUT	ITEM NO. GOLD TANG	PRICE EACH	ITEM NO. FILE WITH ERGONOMIC HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 5/16 DIA.	Second Cut	CF-R-08SC	12.20	CFHE-R-08SC	16.20	12	1.4
8 x 5/16 DIA.	Smooth Cut	CF-R-08SM	13.26	CFHE-R-08SM	17.26	12	1.4

TRIANGULAR



OPTIONAL HANDLE



Three Square Files are designed for filing internal angles above 60°, corners, grooves, notches, and for filing HSS taps and cutters after machining. They are double cut on all three sides and taper slightly to point. Note: This file has sharp corners and is not recommended for filing saws.

LENGTH x SIZE	CUT	ITEM NO. GOLD TANG	PRICE EACH	ITEM NO. FILE WITH ERGONOMIC HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 9/16	Bastard Cut	CF-TSQ-08B	13.40	CFHE-TSQ-08B	17.40	12	4.2
8 x 9/16	Second Cut	CF-TSQ-08SC	14.66	CFHE-TSQ-08SC	18.66	12	4.2

SQUARE



OPTIONAL HANDLE



Square Files are designed for filing slots, key ways, grooves, square holes and edges, and for filing flat surfaces where a heavier section is preferred. They are double cut on all four sides and taper slightly to a point.

LENGTH x SIZE	CUT	ITEM NO. GOLD TANG	PRICE EACH	ITEM NO. FILE WITH ERGONOMIC HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
6 x 13/64	Second Cut	CF-SQ-06SC	12.14	CFHE-SQ-06SC	16.14	12	1.0
6 x 13/64	Smooth Cut	CF-SQ-06SM	12.54	CFHE-SQ-06SM	16.54	12	1.0

CURVED TOOTH FILES

FT-12

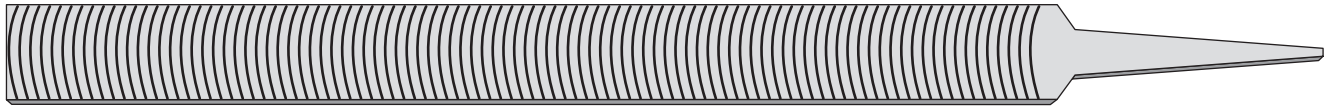
ICS WIS

SPECIAL PURPOSE

MILLED CUT

FLAT

(Tanged Type)



BLACK TANG



BLACK OXIDE FINISH



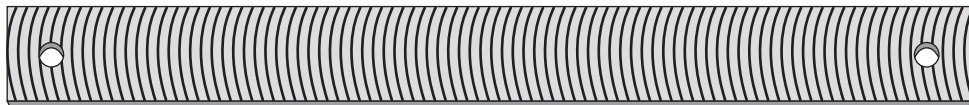
WITH HANDLE

Flat (with Tang) Curved Tooth Files are designed for smooth, rapid work on all materials from the softest aluminum to the hardest (annealed) steel without any clogging of the teeth. The undercut sharp edges enable the file to self clean and to remove material in a spiral form similar to lathe turnings. It is considered to be the most efficient file ever designed for auto body repair and sheet metal work.

LENGTH x WIDTH x THICKNESS	CUT (T.P.I.)	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
8 x 13/16 x 11/64	15 Tooth	CTF-F-08	28.14	CTFO-F-08	28.38	CTFH-F-08	29.56	10	3.5
10 x 1 x 7/32	12 Tooth	CTF-F-10	30.54	CTFO-F-10	30.76	CTFH-F-10	31.94	10	5.0
12 x 1-9/64 x 17/64	9 Tooth	CTF-F-12	34.58	CTFO-F-12	34.92	CTFH-F-12	35.98	10	8.9
14 x 1-11/32 x 19/64	8 Tooth	CTF-F-14	41.92	CTFO-F-14	41.72	CTFH-F-14	42.78	10	13.7

FLAT FLEXIBLE

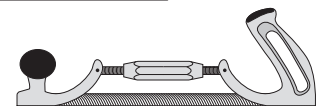
(Blade Type)



GRAY FINISH



BLACK OXIDE FINISH



WITH HANDLE

Flat Flexible (Blade) Curved Tooth Files are designed for smooth, scratch-free work on all types of auto body and sheet metal work and where filing has to be done in the middle of large surfaces. Flexible blades have teeth on both sides and can be adjusted to file outward (convex) and inward (concave) or flat.

LENGTH x WIDTH x THICKNESS	CUT (T.P.I.)	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		GRAY FINISH		BLACK OXIDE		FILE WITH HANDLE			
14 x 1-11/32 x 3/16	8 Tooth	CTF-FF-14	41.36	CTFO-FF-14	36.22	CTFH-FF-14	85.98	10	6.0

CURVED TOOTH FILE RECOMMENDATIONS

TEETH PER INCH	MATERIALS
6 to 9	Aluminum, plastics, rubber, wood, lead, white metal, fiber, auto body fillers, etc.
10 to 13	Copper, bronze, brass, slate, marble, etc.
15 to 18	Cast iron, stainless steel, high carbon steel, etc.

SAW (AMERICAN PATTERN) FILES

ICS

WIS

SPECIAL PURPOSE

CHISEL CUT

MILL SAW FILES



BLACK TANG



BLACK OXIDE FINISH

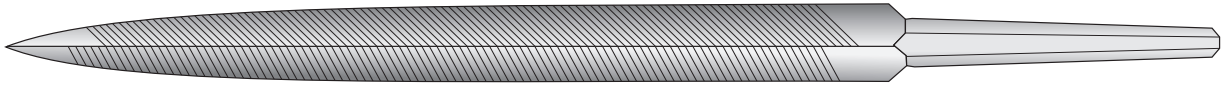


WITH HANDLE

Mill Saw Files are designed as multi-purpose files for sharpening saws, various cutting edge tools, draw filing, lathe work, and finishing work on hard materials. They are single cut on the sides and edges, width is tapered slightly.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. BLACK OXIDE	PRICE EACH	ITEM NO. FILE WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
6 x 19/32 x 7/64	Bastard Cut	F-M-06B	3.44	FO-M-06B	3.58	FH-M-06B	4.62	12	1.2
8 x 25/32 x 9/64		F-M-08B	4.44	FO-M-08B	4.66	FH-M-08B	5.96	12	2.7
10 x 31/32 x 11/64		F-M-10B	5.66	FO-M-10B	5.88	FH-M-10B	7.18	12	5.4
12 x 1-5/32 x 7/32		F-M-12B	8.90	FO-M-12B	9.14	FH-M-12B	10.44	12	9.0
14 x 1-5/16 x 1/4		F-M-14B	20.86	FO-M-14B	21.62	FH-M-14B	23.12	6	17.8
16 x 1-1/2 x 9/32		F-M-16B	32.00	FO-M-16B	33.50	FH-M-16B	35.00	6	23.2
6 x 19/32 x 7/64	Second Cut	F-M-06SC	3.72	FO-M-06SC	3.84	FH-M-06SC	4.90	12	1.2
8 x 25/32 x 9/64		F-M-08SC	4.78	FO-M-08SC	5.00	FH-M-08SC	6.30	12	2.7
10 x 31/32 x 11/64		F-M-10SC	6.26	FO-M-10SC	6.52	FH-M-10SC	7.80	12	5.4
12 x 1-5/32 x 7/32		F-M-12SC	10.00	FO-M-12SC	10.24	FH-M-12SC	11.54	12	9.0
6 x 19/32 x 7/64	Smooth Cut	F-M-06SM	4.28	FO-M-06SM	4.42	FH-M-06SM	5.46	12	1.2
8 x 25/32 x 9/64		F-M-08SM	5.18	FO-M-08SM	5.40	FH-M-08SM	6.70	12	2.7
10 x 31/32 x 11/64		F-M-10SM	7.06	FO-M-10SM	7.32	FH-M-10SM	8.60	12	5.4
12 x 1-5/32 x 7/32		F-M-12SM	11.54	FO-M-12SM	11.68	FH-M-12SM	13.06	12	9.0

TAPER SAW FILES



BLACK TANG



BLACK OXIDE FINISH



WITH HANDLE

Taper Saw Files are designed for sharpening all styles of saws with 60° angle teeth. They are single cut on edges and flat sides. Flat sides are equal and taper towards point. Note: The side (size) of the file used should always be a little more than twice as wide as the side of the saw teeth.

LENGTH x SIZE	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. BLACK OXIDE	PRICE EACH	ITEM NO. FILE WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
6 x 15/32	Regular	F-TSR-06	3.76	FO-TSR-06	3.86	FH-TSR-06	4.94	12	2.0
7 x 17/32		F-TSR-07	4.40	FO-TSR-07	4.62	FH-TSR-07	5.92	12	2.9
8 x 19/32		F-TSR-08	5.46	FO-TSR-08	5.72	FH-TSR-08	7.00	12	4.3
10 x 47/64		F-TSR-10	5.88	FO-TSR-10	6.24	FH-TSR-10	6.24	12	7.5
4 x 15/64	Slim	F-TSS-04	2.82	FO-TSS-04	2.92	FH-TSS-04	4.00	12	0.4
5 x 17/64		F-TSS-05	3.20	FO-TSS-05	3.30	FH-TSS-05	4.38	12	0.5
6 x 21/64		F-TSS-06	3.76	FO-TSS-06	3.86	FH-TSS-06	4.94	12	1.0
7 x 25/64		F-TSS-07	4.20	FO-TSS-07	4.44	FH-TSS-07	5.74	12	1.7
8 x 15/32		F-TSS-08	5.06	FO-TSS-08	5.30	FH-TSS-08	6.60	12	2.6
10 x 19/32		F-TSS-10	5.66	FO-TSS-10	6.02	FH-TSS-10	7.18	12	5.2
4 x 3/16	Extra Slim	F-TSES-04	2.86	FO-TSES-04	2.98	FH-TSES-04	4.04	12	0.2
5 x 15/64		F-TSES-05	3.54	FO-TSES-05	3.66	FH-TSES-05	4.70	12	0.4
6 x 17/64		F-TSES-06	3.76	FO-TSES-06	3.86	FH-TSES-06	4.94	12	0.7
7 x 21/64		F-TSES-07	4.20	FO-TSES-07	4.44	FH-TSES-07	5.74	12	1.2
8 x 25/64		F-TSES-08	5.66	FO-TSES-08	5.88	FH-TSES-08	7.18	12	1.9
4 x 11/64	Double Extra Slim	F-TSDES-04	3.84	FO-TSDES-04	3.98	FH-TSDES-04	CALL	12	0.2
5 x 3/16		F-TSDES-05	3.92	FO-TSDES-05	3.92	FH-TSDES-05	CALL	12	0.3
6 x 15/64		F-TSDES-06	4.24	FO-TSDES-06	4.38	FH-TSDES-06	CALL	12	0.5
7 x 17/64		F-TSDES-07	5.14	FO-TSDES-07	5.38	FH-TSDES-07	CALL	12	0.7
8 x 19/64		F-TSDES-08	6.24	FO-TSDES-08	6.48	FH-TSDES-08	CALL	12	1.0

SAW (AMERICAN PATTERN) FILES

FT-14

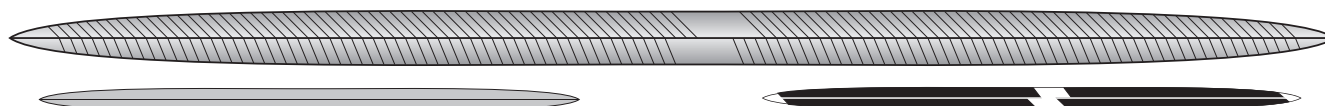
ICS

WIS

SPECIAL PURPOSE

CHISEL CUT

DOUBLE END SAW FILES



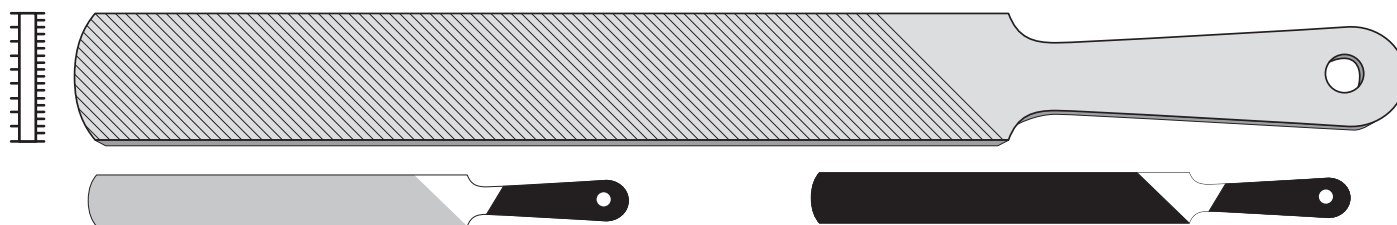
GRAY FINISH

BLACK OXIDE

Double End Saw Files are designed for general saw sharpening. They are triangular in shape and are equivalent to a slim taper saw file. They are supplied second cut with no tang and are tapered from center to each end.

LENGTH x SIZE	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		GRAY FINISH		BLACK OXIDE			
8 x 9/32	Second	F-DES-08	4.48	FO-DES-08	4.60	12	0.8
9 x 11/32	Cut	F-DES-09	5.30	FO-DES-09	5.42	12	1.4

FARMER'S OWN FILES



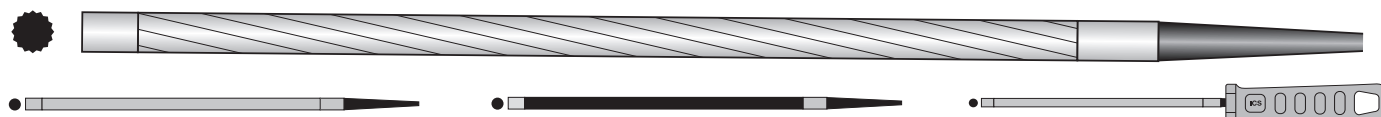
BLACK FINISH HANDLE

BLACK OXIDE FINISH

Farmer's Own Files are designed for sharpening cutting edge tools, i.e., knives, hoes, mower machine blades, etc. This file is also popular for working with formica. They are single cut on one side and double cut on the other side. Edges are not cut. Self handled with 3/8" diameter hole for hanging up file.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK HANDLE		BLACK OXIDE			
8 x 31/32 x 3/16	Second	F-FO-08	4.84	FO-FO-08	5.06	12	5.6
10 x 31/32 x 11/64	Cut	F-FO-10	5.88	FO-FO-10	6.14	12	8.0

CHAIN SAW FILES



BLACK TANG

BLACK OXIDE FINISH

WITH HANDLE

Chain Saw Files are designed for sharpening all sizes of chain saw teeth. They are single cut and parallel in diameter.

LENGTH x SIZE	CUT	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	ITEM NO.	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
		BLACK TANG		BLACK OXIDE		FILE WITH HANDLE			
6 x 1/8	Single Cut	F-CS-6X008	2.36	FO-CS-6X008	2.48	FH-CS-6X008	3.66	12	0.4
6 x 5/32		F-CS-6X010	2.36	FO-CS-6X010	2.48	FH-CS-6X010	3.66	12	0.4
8 x 5/32		F-CS-8X010	2.36	FO-CS-8X010	2.48	FH-CS-8X010	3.66	12	0.5
8 x 3/16		F-CS-8X012	2.36	FO-CS-8X012	2.48	FH-CS-8X012	3.66	12	0.8
8 x 13/64		F-CS-8X013	2.36	FO-CS-8X013	2.48	FH-CS-8X013	3.66	12	1.0
8 x 7/32		F-CS-8X014	2.36	FO-CS-8X014	2.48	FH-CS-8X014	3.66	12	1.1
8 x 1/4		F-CS-8X016	2.36	FO-CS-8X016	2.48	FH-CS-8X016	3.66	12	1.4

WOOD FILES AND RASPS

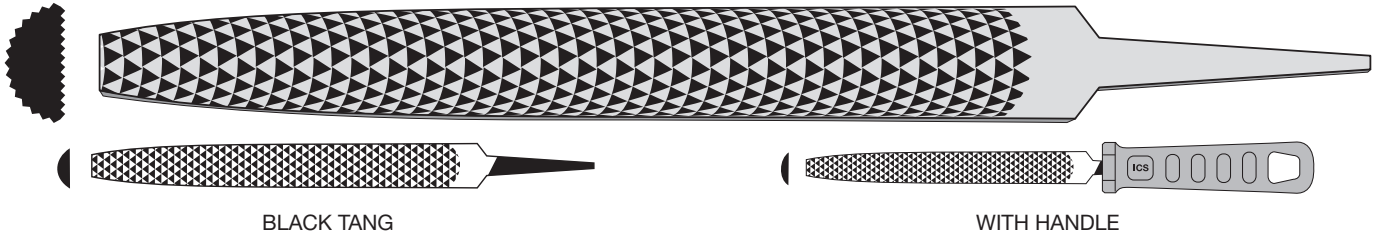
ICS

WIS

SPECIAL PURPOSE

CHISEL CUT

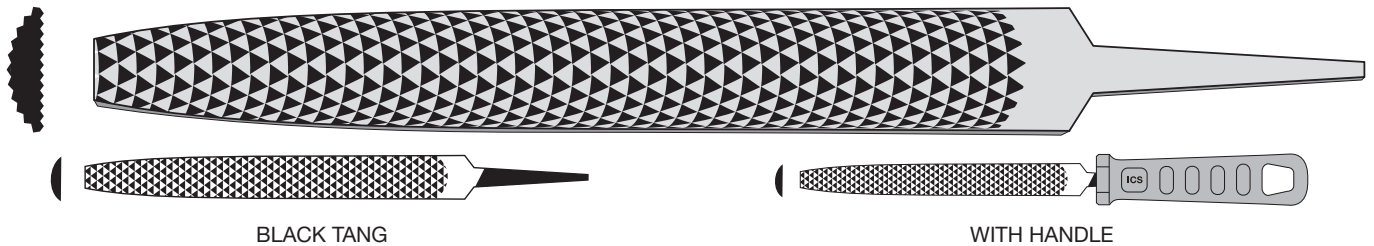
HALF ROUND WOOD RASPS



Half Round Wood Rasps are designed with a very coarse rasp cut for filing both flat and curved surfaces in wood or soft metals. They are used primarily by woodworkers and plumbers. They are rasp cut on both flat and rounded sides with single cut edges and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. RASP WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 25/32 x 5/16	Bastard Cut	FR-HRW-08B	8.60	FRH-HRW-08B	10.12	12	3.4
10 x 31/32 x 3/8		FR-HRW-10B	11.36	FRH-HRW-10B	12.90	12	6.5
12 x 1-5/32 x 7/16		FR-HRW-12B	13.44	FRH-HRW-12B	15.00	12	10.5

HALF ROUND CABINET RASPS



Half Round Cabinet Rasps are designed with a finer rasp cut for filing both flat and curved surfaces. The rounded side has a larger radius for smooth finish work. They are used primarily by cabinet makers and woodworkers. They have a fine rasp cut on both flat and rounded sides with single cut edges and tapered in width and thickness.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. RASP WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 29/32 x 1/4	Second	FR-HRC-08SC	8.70	FRH-HRC-08SC	10.24	12	4.0
10 x 1-1/8 x 9/32	Cut	FR-HRC-10SC	11.44	FRH-HRC-10SC	12.98	12	5.6

ROUND WOOD RASPS



Round Wood Rasps are designed with a coarse rasp cut for enlarging holes and shaping curved surfaces in wood or soft metals. They are used primarily by woodworkers, plumbers, and aluminum workers. They are rasp cut and taper slightly to a point.

LENGTH x SIZE	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. RASP WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
10 x 3/8	Bastard	FR-R-10B	9.06	FRH-R-10B	10.56	12	0.7

HORSE RASPS AND FILES

FT-16

ICS WIS

SPECIAL PURPOSE

CHISEL CUT

FOUR-IN-HAND (SHOE) RASPS

(Half-File)



GRAY FINISH

Four-In-Hand Rasps are designed for filing both flat and curved surfaces in soft metals, wood, plastics and leather. They are an all-purpose file used by metal and wood workers, hobbyists, shoe repairmen and leather craftsmen. They have a rasp cut and a double cut file on both the flat and curved side. This rasp is also referred to as a Shoe or Hobby Rasp.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. GRAY FINISH	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
8 x 13/16 x 9/32	Combination File & Rasp	FR-FIH-08C	8.00	6	4.0
9 x 7/8 x 9/32		FR-FIH-09C	9.42	6	4.5
10 x 1-1/16 x 11/32		FR-FIH-10C	11.56	6	7.5

HORSE RASPS

(Half-File)



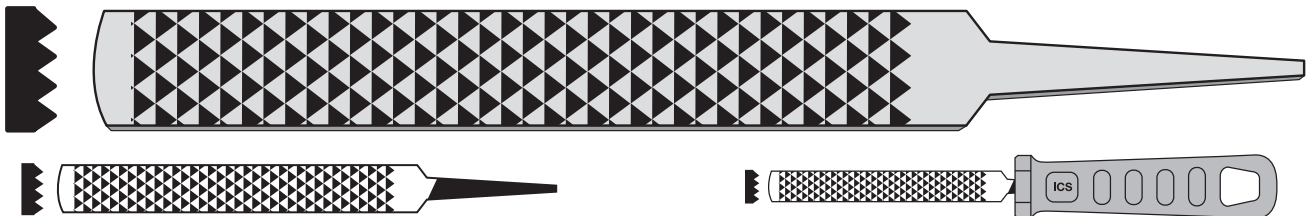
GRAY FINISH

Horse Rasps were designed for filing and shaping horses' hooves prior to shoeing. They are now also used for filing fiberglass and other abrasive materials. They have a rasp cut on one side and double cut coarse file teeth on the other side with single cut edges.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. GRAY FINISH	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
14 x 1-46/64 x 9/32	Combination Double Cut File/Rasp	FR-H-14C	CALL	6	16.5

FARRIER RASPS

(With Tang)



BLACK TANG

WITH HANDLE

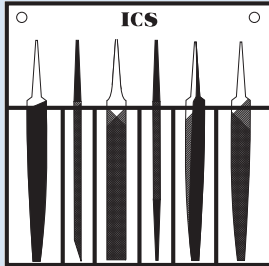
Farrier Rasps were designed for filing and shaping horses' hooves prior to shoeing. They are now also used for filing fiberglass and other abrasive materials. They have a rasp cut on one side and double cut coarse file teeth on the other side with single cut edges.

LENGTH x WIDTH x THICKNESS	CUT	ITEM NO. BLACK TANG	PRICE EACH	ITEM NO. RASP WITH HANDLE	PRICE EACH	STD. PKG.	WEIGHT PER DOZ. (lbs.)
14 x 1-3/4 x 9/32	Combination Double Cut File/Rasp	FR-F-14C	44.74	FRH-F-14C	44.74	6	16.5

FILE SETS (AMERICAN PATTERN)

6 PC FILE SET

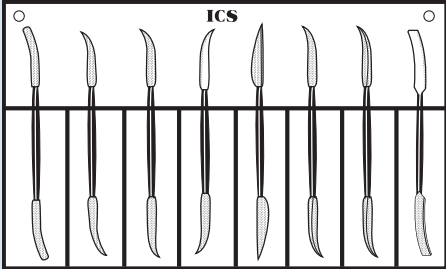
VINYL POUCHES

DESCRIPTION	LENGTH INCH	CUT	ITEM NO.	PRICE PER SET
6 PC FILE SET 	4	Bastard	FS-AP-4	25.46
	6		FS-AP-6	27.40
	8		FS-AP-8	37.32
	TYPE OF FILES IN 6 PC SET			
	1 - Three Square		1 - Flat Taper	
	1 - Square		1 - Round	
	1 - Flat Hand		1 - Half Round	

RIFFLER (SWISS PATTERN) RASP SETS

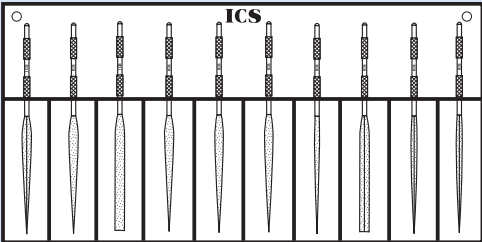
8 PC RIFFLER RASP SET

VINYL POUCHES

DESCRIPTION	LENGTH INCH	CUT	ITEM NO.	PRICE PER SET
8 PC RIFFLER RASP SET 	7-1/2	Rasp	RRS-SP-8	34.36
CONTENTS OF SET				
One each of eight different shaped Riffler Rasps for woodworking, carving, and sculpting.				

10 PC DIAMOND COATED NEEDLE FILE SET

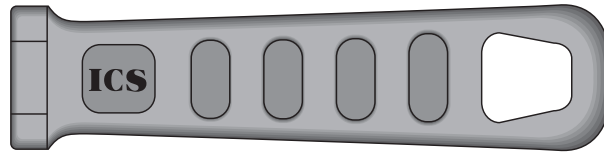
VINYL POUCHES

DESCRIPTION	OVERALL LENGTH	LENGTH OF CUT	GRIT	ITEM NO.	PRICE PER SET
10 PC NEEDLE FILE SET (Diamond Coated) 	4	1-1/2	12	DCNFS-SP-10	25.88
CONTENTS OF SET					
1 - Round			1 - Crossing		
1 - Half Round			1 - Equaling		
1 - Square			1 - Barrette		
1 - Three Square			1 - Marking		
1 - Flat			1 - Slitting		

PLASTIC FILE HANDLES - UNIVERSAL TANG HOLE

ICS WIS

HEAVY DUTY



Heavy Duty Durable Plastic Handles are ergonomically designed to make work go more safely and easily. Handles can be used repeatedly. Hole in handle to hang up files for safer workspace management and to prevent damage to the file.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
4" to 6"	12	.20 lbs.	FHP#04	1.18
6" to 8"	12	.28 lbs.	FHP#06	1.18
8" to 10"	12	.40 lbs.	FHP#08	1.44
10" to 12"	12	.50 lbs.	FHP#10	1.54
12" to 14"	12	.65 lbs.	FHP#12	1.54

WOOD FILE HANDLES - WITH STEEL FERRULE

ICS WIS

HEAVY DUTY

SUPER QUALITY



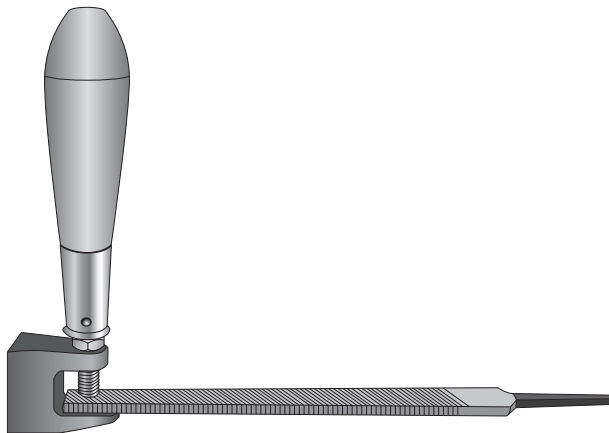
Heavy Duty Hickory File Handles are kiln dried, stained and coated. They are designed with a steel ferrule of heavy construction that "locks in" the tang for the file to remain rigid. Handles can be used repeatedly.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
4"	12	1.2 lbs.	FHW#04	2.28
6"	12	1.7 lbs.	FHW#06	2.62
8" to 10"	12	2.0 lbs.	FHW#08	2.80
12" to 14"	12	2.2 lbs.	FHW#12	3.36

SAFETY FILE HANDLE - METAL CONSTRUCTION

ICS WIS

SPECIAL PURPOSE



Safety File Handles are designed for machinists doing file work on a lathe. It fits on the point end of the file in an upright position to prevent fingers being under the file during use. Fits all flat or rectangular files. Handle is designed for right hand, left hand, or straight use.

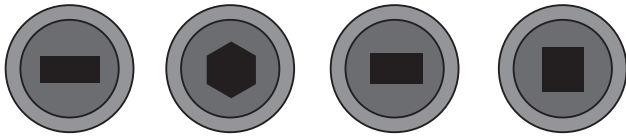
FITS FILE SIZES	STANDARD PACKAGE	WEIGHT EACH	ITEM NO.	PRICE EACH
ALL	1	0.48 lbs.	FHS-S	17.86

PLASTIC FILE HANDLE WITH INSERTS

ICS

WIS

HEAVY DUTY



HANDLE INSERTS



Heavy Duty Plastic File Handle is designed with 4 interchangeable inserts to fit most popular file tangs. Rubber coating over durable plastic handle reduces pressure during each stroke action. Handle is oversized with back taper to fit the hand and prevent slipping. Hole in handle to hang up files for safer workspace management and to prevent damage to the file.

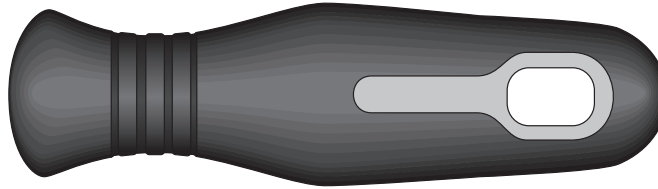
FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
6" to 14"	1	.20 lbs.	FHPI-14	5.14

PLASTIC FILE HANDLE - SOLID TANG HOLE

ICS

WIS

HEAVY DUTY



TANG HOLE SHAPES LISTED BELOW

Heavy Duty Plastic File Handles are designed with solid tang hole to fit most popular file tangs from 6" to 12". Rubber coating over durable plastic handle reduces pressure during each stroke action.

FITS FILE SIZE/TYPE	TANG HOLE	STANDARD PACKAGE	WEIGHT EACH	ITEM NO.	PRICE
6" wide tang	●	6	1.7 oz.	FHPST-06WN	4.20
8" & 10" narrow tang	●	6	1.7 oz.	FHPST-06MS	4.20
6" mill - small hole	●	6	1.7 oz.	FHPST-06MW	4.20
6" mill & wide tang	●	6	1.7 oz.	FHPST-08NW	4.20
6" wide - 8" narrow & wide	■	6	1.7 oz.	FHPST-10HR	4.20
10" & 12" half round	■	6	1.7 oz.	FHPST-10MW	4.20
10" & 12" mill	■	6	1.7 oz.	FHPST-06MR	4.20
8" & 10" wide tang	■	6	1.7 oz.		
6" mill - round		6	1.7 oz.		

NOTE: Handle reference is a general guide only as file tangs vary by manufacturer.

FILE CARD CLEANER - WOOD HANDLE

ICS

WIS

GENERAL PURPOSE



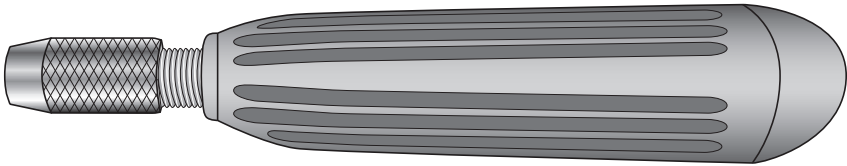
File Cards are used to remove excess filings which clog the teeth. This helps prevent slipping or scratching and increases filing performance. The handle has a hole for hanging.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
ALL	12	2.0 lbs.	FCC	10.08

PLASTIC NEEDLE FILE HANDLE - PRECISION CHUCK

ICS WIS

SPECIAL PURPOSE



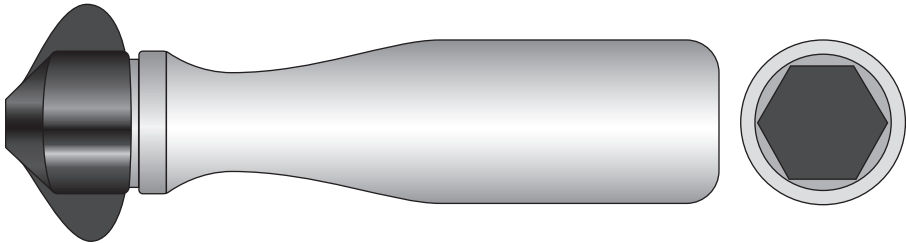
Heavy Duty Plastic Needle File Handles are designed with a precision chuck to tighten the inserted needle file securely in place. Handle can be used repeatedly.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
4", 5-1/2" & 6"	12	2 lbs.	FHPNFPC	7.38

PLASTIC CHAINSAW FILE HANDLE - ADJUSTABLE

ICS WIS

SPECIAL PURPOSE



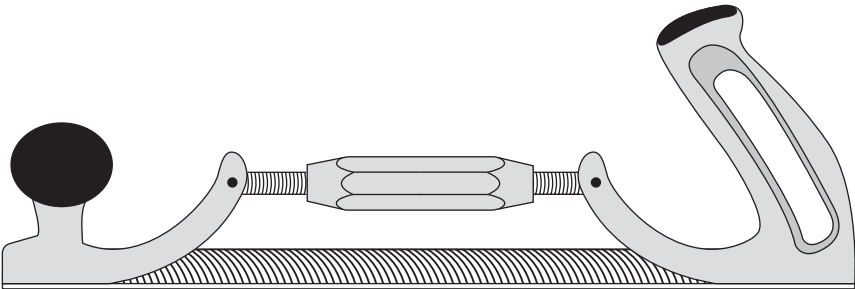
Heavy Duty Plastic Chainsaw File Handle is adjustable and will hold all chainsaw file sizes. End of handle is formed for spark plug removal and installation. Proper guide sharpening angles of 30° and 35° are included on the handle tip.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT PER DOZEN	ITEM NO.	PRICE EACH
6" & 8"	12	1 lb.	FHCS#06	3.16

FLEXIBLE CURVED TOOTH FILE HOLDER

ICS WIS

SPECIAL PURPOSE



Heavy Duty Metal Curved Tooth File Holders are designed for flat or flexible files without a tang. It can bend with screw adjustments to fully utilize the flexible file features. Holder is designed for right or left hand use with either 12" or 14" files.

FITS FILE SIZES	STANDARD PACKAGE	WEIGHT EACH	ITEM NO.	PRICE EACH
12" & 14" Flat or Half Round Flexible Files	1	1 lb.	FHCT#14	49.50

INTERNAL RETHREADING TOOL SETS

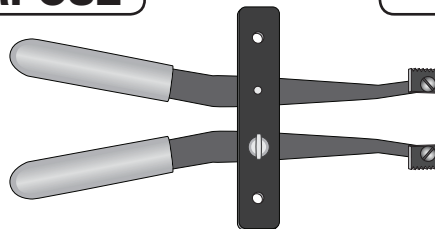
ICS

USA

SPECIAL PURPOSE

MILLED THREAD

SINGLE HANDLE



TWO HANDLES

Internal Retreading Tool Sets are available with either a single handle or two handles. The two handle set can be used to clean and rethread all internal threads from 3/4" to 6" ID capacity and the single handle works with any size internal thread over 3/4" ID. Both tools will rethread right hand, left hand, straight and taper threads. Two handle style automatically lines up with threads and can be locked into place. The rethreaded fit is like new with no undercut. Dies are interchangeable and can be replaced when worn. These are also known as Hand Chasers.

ITEM NO.		SET CONTENTS								PRICE	
IRTS-1H-16 NC, NF & NPT Set		One Handle Rethreader 8, 9, 10, 11, 11-1/2, 12, 13, 14, 16, 18, 20, 24, 27, 28, 32 TPI dies								30.46	
IRTS-1H-9M Metric Set		One Handle Rethreader .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00mm pitch dies								18.90	
IRTS-1H-24C NC, NF, NPT & Metric Set		One Handle Rethreader 8, 9, 10, 11, 11-1/2, 12, 13, 14, 16, 18, 20, 24, 27, 28, 32 TPI dies .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00mm pitch dies								37.80	
IRTS-2H-4NPT Pipe Set		Two Handle Rethreader 14 TPI die for 3/4" diameter pipe • 11-1/2 TPI die for 1" to 2" diameter pipe 8 TPI die for up to 6" diameter pipe								30.46	
IRTS-2H-4M Metric Set		Two Handle Rethreader 1.25, 1.50, 1.75mm pitch dies								30.46	
IRTS-2H-8M Metric Set		Two Handle Rethreader .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00mm pitch dies								60.90	
IRTS-2H-12C NC & NF Set		Two Handle Rethreader 9, 10, 11, 12, 13, 16, 18, 20, 24, 27, 28, 32 TPI dies								69.30	
IRTS-2H-24C NC ,NF, NPT, & Metric Set		Two Handle Rethreader 8, 9, 10, 11, 11-1/2, 12, 13, 14, 16, 18, 20, 24, 27, 28, 32 TPI dies .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00mm pitch dies								81.90	
IRTDS-12 Die Set Only		One pair each 9, 10, 11, 12, 13, 16, 18, 20, 24, 27, 28, 32 TPI dies								30.46	
IRTDS-8M Die Set Only - Metric		One pair each .80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00mm pitch dies								21.00	
IRTDP Replacement Die Pairs - NC, NF & NPT -		IRTDP-08	IRTDP-09	IRTDP-10	IRTDP-11	IRTDP-11.5	IRTDP-12	IRTDP-13	IRTDP-14	IRTDP-16	3.16 per die pair size
		8 TPI	9 TPI	10 TPI	11 TPI	11-1/2 TPI	12 TPI	13 TPI	14 TPI	16 TPI	
		IRTDP-18	IRTDP-20	IRTDP-24	IRTDP-27	IRTDP-28	IRTDP-32				
IRTDPM Replacement Die Pairs - Metric Pitches -		18 TPI	20 TPI	24 TPI	27 TPI	28 TPI	32 TPI				3.16 per die pair size
		PITCH									
		0.75	0.80	1.00	1.25	1.50	1.75	2.00	2.50	3.00	

THREAD RESTORING FILES

ICS

USA

SPECIAL PURPOSE

PRECISION CUT



Thread Restoring Files are designed to restore damaged external and internal threads of any diameter with one tool. They can be used on right or left hand threads or even be used as a thread gauge. Each file restores eight of the most popular sizes.

THREAD TYPE	LENGTH x SIZE	THREADS	ITEM NO.	PRICE
Regular	9-1/4 x 3/8	11, 12, 13, 14, 16, 18, 20, 24	TRF-R	48.44
Extra Fine/Coarse	9-1/4 x 3/8	9, 10, 12, 16, 20, 27, 28, 32	TRF-X	48.44
Metric	9-1/4 x 3/8	.80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00	TRF-M	48.44
Pipe	9-1/4 x 3/8	8, 10, 11-1/2, 14, 16, 18, 24, 27	TRF-P	48.44

UNIVERSAL THREAD RESTORING FILE

ICS USA

GENERAL PURPOSE

MILLED THREAD



The Universal Thread Restoring File is designed to renew all 60° machine screw, fractional, metric, NPT and NPS pipe thread sizes of any diameter. It will restore right or left hand threads.

ITEM NO.	THREAD ANGLE	LENGTH x SIZE	PRICE
UTRF	60°	9 x 7/8 x 1/8	7.56

EXTERNAL THREAD RESTORING FILES

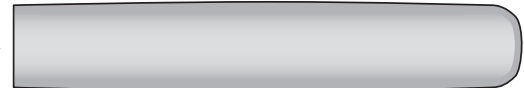
ICS USA

SPECIAL PURPOSE

MILLED THREAD



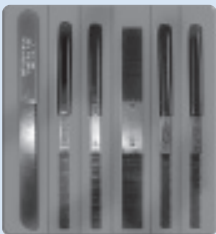
PLASTIC SLIP-ON HANDLE FOR EITHER SIDE



External Thread Restoring Files are designed to renew rusted and damaged external threads of any diameter bolt or pipe with one tool. They can be used on right or left hand threads or even be used as a thread gauge. Files are precision cut and will not skip or jump out of fine pitches. Thread sizes are marked on each file. Each file comes with a plastic handle except ETRF-P4L.

THREAD TYPE	LENGTH x SIZE	THREADS	ITEM NO.	PRICE
REGULAR	8-3/8 x 7/16 SQ	11, 12, 13, 14, 16, 18, 20, 24	ETRF-R	12.60
EXTRA FINE/COARSE	8-3/8 x 7/16 SQ	9, 10, 12, 16, 20, 27, 28, 32	ETRF-X	12.60
METRIC	8-3/8 x 7/16 SQ	.80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00	ETRF-M	12.60
PIPE	8-3/8 x 7/8 x 1/2	8, 10, 11-1/2, 14	ETRF-P4L	27.30
BSW (BRITISH)	8-3/8 x 7/16 SQ	11, 12, 14, 16, 18, 20, 22, 26	ETRF-BSW	13.66
BSP (BRITISH)	8-3/8 x 7/16 SQ	11, 12, 14, 16, 19, 20, 22, 28	ETRF-BSP	13.66
Plastic slip-on handle only (for 7/16" Square Files)			PH-ETRF	1.00

EXTERNAL THREAD RESTORING FILE SETS**VINYL POUCHES**

DESCRIPTION	FILES IN SET	ITEM NO.	PRICE
6PC EXTERNAL THREAD RESTORING FILE SET 	ETRF-R ETRF-X ETRF-M ETRF-P4 ETRF-P4L UTRF	ETRFS-6	68.26
4PC EXTERNAL THREAD RESTORING FILE SET 3 each EXTERNAL THREAD FILES 1 UNIVERSAL THREAD FILE (NOT ILLUSTRATED)	ETRF-R ETRF-M ETRF-P4 UTRF	ETRFS-4U	35.70
3PC EXTERNAL THREAD RESTORING FILE SET 3 each EXTERNAL THREAD FILES (NOT ILLUSTRATED)	ETRF-R ETRF-X ETRF-M	ETRFS-3	34.66

PRECISION (SWISS PATTERN) FILES

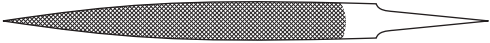
ICS

USA

GENERAL PURPOSE

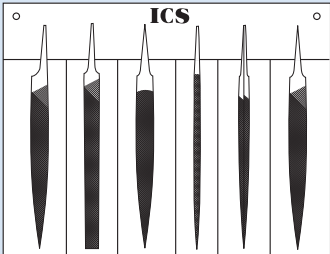
CHISEL/ETCH CUT

Precision (Swiss Pattern) Files are designed for fine finish work and are used by tool and die makers, instrument makers, model makers, and watchmakers. They are made to closer tolerances than American Pattern files and are narrower in width and thickness. The points of the tapered files are smaller for fine detail work.

DESCRIPTION	LENGTH INCH	STD. PKG.	WT. PER DOZ. (lbs)	CUT #0		CUT #2	
				ITEM NO.	PRICE	ITEM NO.	PRICE
 HALF ROUND  For filing both flat and curved surfaces	6	12	1.1	PF-HR-06-#0	24.68	PF-HR-06-#2	35.34
 KNIFE  For filing acute angles	6	12	1.1	PF-K-06-#0	31.08	PF-K-06-#2	27.74
 PILLAR REGULAR  For filing slots and keyways	6	12	1.7	PF-PR-06-#0	17.20	PF-PR-06-#2	15.36
 ROUND  For filing round openings	6	12	0.9	PF-R-06-#0	14.78	PF-R-06-#2	15.48
 THREE SQUARE  For finishing square openings	6	12	1.8	PF-TSQ-06-#0	17.02	PF-TSQ-06-#2	17.86
 WARDING  For filing ward notches in keys	6	12	0.9	PF-W-06-#0	15.76	PF-W-06-#2	16.28

PRECISION (SWISS PATTERN) FILE SET

VINYL POUCHES

DESCRIPTION	LENGTH INCH	CUT #0		CUT #2	
		ITEM NO.	PRICE	ITEM NO.	PRICE
6 PC PRECISION FILE SET	6	PFS-SP-06#0	140.00	PFS-SP-06#2	163.14
					
TPYE OF FILES IN SETS					
1 - Half Round 1 - Round 1 - Knife 1 - Three Square 1 - Pillar (Reg.) 1 - Warding					

NEEDLE (SWISS PATTERN) FILES

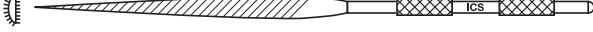
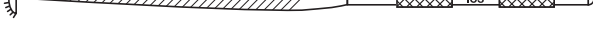
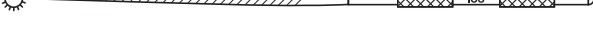
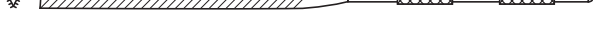
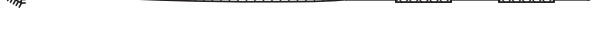
FT-24

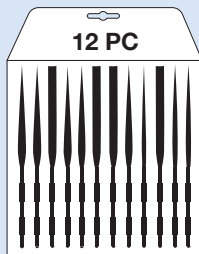
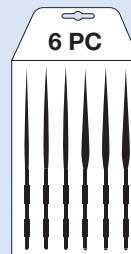
ICS USA

SPECIAL PURPOSE

CHISEL CUT

ICS Needle Files are specially designed for jewelers, watchmakers, diemakers, etc. The appropriate cut number is marked on the round handle.

DESCRIPTION	LENGTH INCH	ITEM NO.			PRICE EACH
		CUT #0	CUT #2	CUT #3	
BARRETTE 	4 5-1/2 6	NF-B-4#0 NF-B-5#0 NF-B-6#0	NF-B-4#2 NF-B-5#2 NF-B-6#2	NF-B-4#3 NF-B-5#3 NF-B-6#3	2.42 3.22 3.22
CROSSING 	4 5-1/2 6	NF-C-4#0 NF-C-5#0 NF-C-6#0	NF-C-4#2 NF-C-5#2 NF-C-6#2	NF-C-4#3 NF-C-5#3 NF-C-6#3	2.42 3.22 3.22
EQUALLING (HAND) 	4 5-1/2 6	NF-E-4#0 NF-E-5#0 NF-E-6#0	NF-E-4#2 NF-E-5#2 NF-E-6#2	NF-E-4#3 NF-E-5#3 NF-E-6#3	2.42 3.22 3.22
FLAT (WARDING) 	4 5-1/2 6	NF-F-4#0 NF-F-5#0 NF-F-6#0	NF-F-4#2 NF-F-5#2 NF-F-6#2	NF-F-4#3 NF-F-5#3 NF-F-6#3	2.42 3.22 3.22
HALF ROUND 	4 5-1/2 6	NF-HR-4#0 NF-HR-5#0 NF-HR-6#0	NF-HR-4#2 NF-HR-5#2 NF-HR-6#2	NF-HR-4#3 NF-HR-5#3 NF-HR-6#3	2.42 3.22 3.22
JOINT 	4 5-1/2 6	NF-J-4#0 NF-J-5#0 NF-J-6#0	NF-J-4#2 NF-J-5#2 NF-J-6#2	NF-J-4#3 NF-J-5#3 NF-J-6#3	2.42 3.22 3.22
KNIFE 	4 5-1/2 6	NF-K-4#0 NF-K-5#0 NF-K-6#0	NF-K-4#2 NF-K-5#2 NF-K-6#2	NF-K-4#3 NF-K-5#3 NF-K-6#3	2.42 3.22 3.22
MARKING 	4 5-1/2 6	NF-M-4#0 NF-M-5#0 NF-M-6#0	NF-M-4#2 NF-M-5#2 NF-M-6#2	NF-M-4#3 NF-M-5#3 NF-M-6#3	2.42 3.22 3.22
ROUND 	4 5-1/2 6	NF-R-4#0 NF-R-5#0 NF-R-6#0	NF-R-4#2 NF-R-5#2 NF-R-6#2	NF-R-4#3 NF-R-5#3 NF-R-6#3	2.42 3.22 3.22
SLITTING 	4 5-1/2 6	NF-S-4#0 NF-S-5#0 NF-S-6#0	NF-S-4#2 NF-S-5#2 NF-S-6#2	NF-S-4#3 NF-S-5#3 NF-S-6#3	2.42 3.22 3.22
SQUARE 	4 5-1/2 6	NF-SQ-4#0 NF-SQ-5#0 NF-SQ-6#0	NF-SQ-4#2 NF-SQ-5#2 NF-SQ-6#2	NF-SQ-4#3 NF-SQ-5#3 NF-SQ-6#3	2.42 3.22 3.22
THREE SQUARE 	4 5-1/2 6	NF-TSQ-4#0 NF-TSQ-5#0 NF-TSQ-6#0	NF-TSQ-4#2 NF-TSQ-5#2 NF-TSQ-6#2	NF-TSQ-4#3 NF-TSQ-5#3 NF-TSQ-6#3	2.42 3.22 3.22

DESCRIPTION		LENGTH INCH	ITEM NO.			PRICE EACH
			CUT #0	CUT #2	CUT #3	
NEEDLE FILE SETS			12 PC SETS - 1 EACH ALL SHAPES			
	4	NFS-12-40	NFS-12-42	NFS-12-43	26.84	
	5-1/2	NFS-12-50	NFS-12-52	NFS-12-53	35.74	
	6	NFS-12-60	NFS-12-62	NFS-12-63	35.74	
	6 PC SETS					
	4	-	NFS-6-42	-	15.28	
	5-1/2	-	NFS-6-52	-	19.76	
	6	-	NFS-6-62	-	19.76	
		CONTENTS OF 6 PC SET				
		1 ea. Round, Square, Three Square, Equalling (Hand), Half Round and Flat (Warding).				

DIE SINKERS' (SWISS PATTERN) RIFFLERS

ICS

USA

SPECIAL PURPOSE

CHISEL CUT

Die Sinkers' Riffilers are specially designed for die sinkers for getting into crevices, corners, and contours of dies and molds. They are also used by jewelers and instrument manufacturers. Riffilers have a cutting surface on each end with a safe (uncut) middle section for handling and are available in many different cross-sectional shapes.

DESCRIPTION	LENGTH INCH	ITEM NO.			PRICE EACH
		CUT #0	CUT #2	CUT #4	
1 	6-1/2	DSR-01#0	DSR-01#2	DSR-01#4	35.28
4 	6-1/2	DSR-04#0	DSR-04#2	DSR-04#4	35.28
5 	6-1/2	DSR-05#0	DSR-05#2	DSR-05#4	35.28
6 	6-1/2	DSR-06#0	DSR-06#2	DSR-06#4	35.28
7 	6-1/2	DSR-07#0	DSR-07#2	DSR-07#4	35.28
8 	6-1/2	DSR-08#0	DSR-08#2	DSR-08#4	35.28
9 	6-1/2	DSR-09#0	DSR-09#2	DSR-09#4	35.28
11 	6-1/2	DSR-11#0	DSR-11#2	DSR-11#4	35.28
12 	6-1/2	DSR-12#0	DSR-12#2	DSR-12#4	35.28
15 	6-1/2	DSR-15#0	DSR-15#2	DSR-15#4	35.28
16 	6-1/2	DSR-16#0	DSR-16#2	DSR-16#4	35.28
18 	6-1/2	DSR-18#0	DSR-18#2	DSR-18#4	35.28

SILVERSMITHS' (SWISS PATTERN) RIFFLERS

FT-26

ICS

USA

SPECIAL PURPOSE

CHISEL CUT

Silversmiths' Riffilers are specially designed for making glass molding dies. They are longer than Die Sinkers' Riffilers and have wider cutting ends with a safe (uncut) middle section for handling. Many different cross-sectional shapes are available.

	DESCRIPTION	LENGTH INCH	ITEM NO.		PRICE EACH
			CUT #0	CUT #2	
1		7-1/2	SSR-01#0	SSR-01#2	48.22
2		7-1/2	SSR-02#0	SSR-02#2	48.22
3		7-1/2	SSR-03#0	SSR-03#2	48.22
4		7-1/2	SSR-04#0	SSR-04#2	48.22
5		7-1/2	SSR-05#0	SSR-05#2	48.22
6		7-1/2	SSR-06#0	SSR-06#2	48.22
7		7-1/2	SSR-07#0	SSR-07#2	48.22
8		7-1/2	SSR-08#0	SSR-08#2	48.22
9		7-1/2	SSR-09#0	SSR-09#2	48.22
10		7-1/2	SSR-10#0	SSR-10#2	48.22
11		7-1/2	SSR-11#0	SSR-11#2	48.22
12		7-1/2	SSR-12#0	SSR-12#2	48.22

SOLID CARBIDE NF BURS

ICS USA

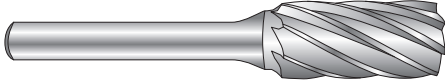
SPECIAL PURPOSE

CNC GROUND

Solid Carbide NF Burs are designed with a milling cutter relief style of flute grind for fast stock removal and easy chip flow with minimum loading. For use on non-ferrous metals, aluminum, reinforced plastics, and other soft, sticky materials.

Zirconium Nitride Coated Solid Carbide NF Burs are the ideal choice for maximizing bur life in long production runs, especially aluminum. As an investment, they cost about 14% more, and produce an average 300% improvement over uncoated tools when machining above materials.

CYLINDER SHAPE



SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
1/4	3/4	1/4	24.50	28.98	SA-1
3/8	3/4	1/4	32.80	38.72	SA-3
1/2	1	1/4	48.08	54.00	SA-5
5/8	1	1/4	73.18	83.78	SA-6
3/4	1	1/4	100.54	112.76	SA-7

CYLINDER SHAPE - RADIUS END



SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
1/4	3/4	1/4	24.50	28.98	SC-1
3/8	3/4	1/4	32.80	38.72	SC-3
1/2	1	1/4	48.08	54.00	SC-5
5/8	1	1/4	73.18	83.78	SC-6
3/4	1	1/4	100.54	112.76	SC-7

BALL SHAPE



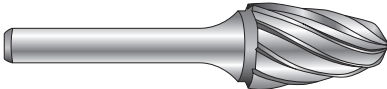
SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
1/4	3/16	1/4	24.22	28.72	SD-1
3/8	5/16	1/4	27.02	32.94	SD-2
1/2	7/16	1/4	36.84	44.60	SD-5
5/8	9/16	1/4	66.56	80.48	SD-6
3/4	11/16	1/4	112.52	130.38	SD-7

OVAL SHAPE



SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
3/8	5/8	1/4	35.54	41.46	SE-3
1/2	7/8	1/4	43.76	49.70	SE-5
5/8	1	1/4	78.78	89.36	SE-6
3/4	1	1/4	104.98	117.18	SE-7
3/4	1	1/4	108.92	-	SE-7A

TREE SHAPE - RADIUS END



SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
1/4	3/4	1/4	24.50	28.98	SF-1
3/8	3/4	1/4	34.74	40.66	SF-3
1/2	1	1/4	48.70	48.70	SF-5
5/8	1	1/4	70.02	80.60	SF-6
3/4	1-1/4	1/4	96.38	108.58	SF-714

14° TAPER - RADIUS END



SIZE	FLUTE LENGTH	SHANK	PRICE		ITEM NO. SUFFIX
			SOLID CARBIDE	ZrN COATED	
			SCBNF	SCBNFZ	
3/8	1-1/16	1/4	44.46	50.40	SL-3
1/2	1-1/8	1/4	61.30	67.22	SL-4
5/8	1-3/16	1/4	98.48	109.06	SL-5
5/8	1-5/16	1/4	111.58	122.16	SL-6
3/4	1-1/2	1/4	130.84	143.04	SL-7

TO ORDER

SPECIFY ITEM NO. COMBINATION

EXAMPLE: SCBNF-SA-1 is a 1/4 Cylinder Shape NF Bur

Unless otherwise specified, all burs are Double Cut.

Plain Cut and Chipbreaker are also available at the same price as Double Cut.

SOLID CARBIDE BURS

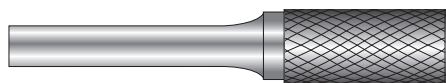
FT-28

ICS USA

SPECIAL PURPOSE

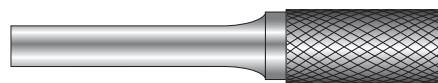
CNC GROUND

CYLINDER SHAPE - (SA) BURS



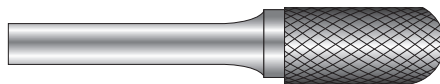
SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/16	1/4	1/8	8.36	10.72	SA#41
3/32	7/16	1/8	8.36	10.72	SA#42
1/8	9/16	1/8	8.36	10.72	SA#43
1/4	1/2	1/8	13.70	16.72	SA#51
5/32	1/2	1/8	20.08	23.08	SA#52
1/16	1/4	3/32	9.56	11.92	SA#61
3/32	3/8	3/32	9.56	11.92	SA#63
3/16	1/2	3/16	14.96	18.52	SA#81
1/8	1/2	1/4	14.26	17.84	SA-011
1/8	5/8	1/4	14.26	17.84	SA-012
5/32	5/8	1/4	14.26	17.84	SA-013
3/16	5/8	1/4	14.26	17.84	SA-014
1/4	5/8	1/4	14.26	17.84	SA-1
1/4	1	1/4	20.64	24.22	SA-1L
5/16	3/4	1/4	18.62	22.20	SA-2
3/8	3/4	1/4	20.08	23.66	SA-3
3/8	1	1/4	23.82	28.56	SA-3L
3/8	1-1/2	1/4	26.18	30.92	SA-3X
7/16	1	1/4	29.00	33.78	SA-4
1/2	1	1/4	31.28	36.02	SA-5
5/8	1	1/4	39.38	47.86	SA-6
3/4	1	1/4	58.64	68.38	SA-7
3/4	1/2	1/4	53.30	63.06	SA-715
3/4	3/4	1/4	58.64	68.38	SA-716
7/8	1	1/4	73.76	85.04	SA-8
1	1	1/4	96.60	93.20	SA-9

CYLINDER SHAPE END CUT - (SB) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/16	1/4	1/8	8.36	10.72	SB#41
3/32	7/16	1/8	8.36	10.72	SB#42
1/8	9/16	1/8	8.36	16.72	SB#43
1/4	3/16	1/8	13.70	16.72	SB#51
1/8	1/2	1/4	15.46	19.06	SB-011
1/8	5/8	1/4	15.46	19.06	SB-012
5/32	5/8	1/4	15.46	19.06	SB-013
3/16	5/8	1/4	15.46	19.06	SB-014
1/4	5/8	1/4	15.46	19.06	SB-1
1/4	1	1/4	22.84	26.44	SB-1L
5/16	3/4	1/4	20.52	24.10	SB-2
3/8	3/4	1/4	22.06	25.62	SB-3
3/8	1	1/4	26.22	30.96	SB-3L
3/8	1-1/2	1/4	28.76	33.50	SB-3X
7/16	1	1/4	32.06	535.04	SB-4
1/2	1	1/4	34.38	39.12	SB-5
5/8	1	1/4	43.24	51.70	SB-6
3/4	1	1/4	64.52	74.26	SB-7
3/4	1/2	1/4	58.64	68.38	SB-715
3/4	3/4	1/4	64.52	74.26	SB-716
7/8	1	1/4	81.24	92.50	SB-8
1	1	1/4	90.22	101.50	SB-9

CYLINDER SHAPE RADIUS END - (SC) BURS



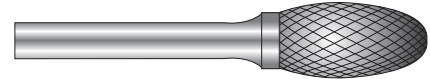
SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
3/32	7/16	1/8	8.36	10.72	SC#41
1/8	9/16	1/8	8.36	10.72	SC#42
1/4	1/2	1/8	13.70	16.72	SC#51
5/32	1/2	1/8	20.08	23.08	SC#52
3/16	1/2	1/8	20.08	23.08	SC#53
3/32	3/8	3/32	9.56	11.92	SC#61
3/16	1/2	3/16	14.96	18.52	SC#81
1/8	1/2	1/4	16.60	20.16	SC-011
1/8	5/8	1/4	16.60	20.16	SC-012
5/32	5/8	1/4	16.60	20.16	SC-013
3/16	5/8	1/4	16.60	20.16	SC-014
1/4	5/8	1/4	16.60	20.16	SC-1

SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/4	1	1/4	22.62	26.20	SC-1L
5/16	3/4	1/4	20.34	23.90	SC-2
3/8	3/4	1/4	22.30	25.88	SC-3
3/8	1	1/4	26.30	31.04	SC-3L
3/8	1-1/2	1/4	28.82	33.58	SC-3X
7/16	1	1/4	31.86	36.60	SC-4
1/2	1	1/4	35.08	39.84	SC-5
5/8	1	1/4	44.14	52.60	SC-6
3/4	1	1/4	63.30	73.06	SC-7
3/4	1/2	1/4	57.60	67.38	SC-715
3/4	3/4	1/4	63.30	73.06	SC-716
1	1	1/4	95.98	107.28	SC-9

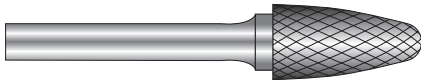
Unless otherwise specified, all burs are Double Cut.
Plain Cut and Chipbreaker are also available at the same price as Double Cut.

SOLID CARBIDE BURS**ICS USA****SPECIAL PURPOSE****CNC GROUND****BALL SHAPE - (SD) BURS**

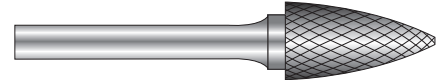
SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
3/32	3/32	1/8	8.36	10.72	SD#41
1/8	1/8	1/8	8.36	10.72	SD#42
1/4	7/32	1/8	13.70	16.72	SD#51
5/32	5/32	1/8	20.08	23.08	SD#52
3/16	5/32	1/8	20.08	23.08	SD#53
3/32	3/32	3/32	9.56	11.92	SD#61
3/16	5/32	3/16	14.96	18.52	SD#81
1/8	3/32	1/4	15.28	18.86	SD-011
3/16	1/8	1/4	15.28	18.86	SD-014
1/4	7/32	1/4	15.28	18.86	SD-1
5/16	1/4	1/4	16.40	19.98	SD-2
3/8	5/16	1/4	18.32	21.88	SD-3
7/16	3/8	1/4	21.16	25.92	SD-4
1/2	7/16	1/4	24.70	29.46	SD-5
5/8	9/16	1/4	30.58	39.06	SD-6
3/4	11/16	1/4	48.58	52.00	SD-7
1	15/16	1/4	72.56	83.84	SD-9

OVAL SHAPE - (SE) BURS

SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	7/32	1/8	8.36	10.72	SE#41
1/4	3/8	1/8	13.70	16.72	SE#51
3/16	9/32	1/8	20.08	23.08	SE#53
3/32	1/8	3/32	9.56	11.92	SE#61
3/16	9/32	3/16	14.96	18.52	SE#81
3/16	5/16	1/4	18.62	22.20	SE-011
1/4	3/8	1/4	18.62	22.20	SE-1
3/8	5/8	1/4	22.30	25.88	SE-3
1/2	7/8	1/4	32.68	37.42	SE-5
5/8	1	1/4	60.90	53.84	SE-6
3/4	1	1/4	60.90	70.66	SE-7

TREE SHAPE RADIUS END - (SF) BURS

SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	1/4	1/8	8.36	10.72	SF#41
1/8	1/2	1/8	8.36	10.72	SF#42
1/4	1/2	1/8	13.70	16.72	SF#51
3/16	1/2	1/8	20.08	23.08	SF#53
3/32	1/4	3/32	9.56	11.92	SF#61
3/16	1/2	3/16	14.96	18.52	SF#81
1/8	1/2	1/4	17.30	20.88	SF-011
1/4	3/4	1/4	17.30	20.88	SF-1
3/8	3/4	1/4	21.84	25.42	SF-3
7/16	1	1/4	30.32	35.08	SF-4
1/2	1	1/4	32.30	37.02	SF-5
1/2	3/4	1/4	32.30	37.02	SF-513
5/8	1	1/4	44.58	53.06	SF-6
3/4	1	1/4	58.64	68.38	SF-7
3/4	1-1/4	1/4	73.76	83.50	SF-714
3/4	1-1/2	1/4	86.58	96.36	SF-715

TREE SHAPE POINTED END - (SG) BURS

SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	1/4	1/8	8.36	10.72	SG#41
1/8	5/16	1/8	8.36	10.72	SG#42
1/8	3/8	1/8	8.36	10.72	SG#43
1/8	1/2	1/8	8.36	10.72	SG#44
1/4	1/2	1/8	13.70	16.72	SG#51
3/16	1/2	1/8	20.08	23.08	SG#53
3/32	1/4	3/32	9.56	11.92	SG#61
3/16	1/2	3/16	14.96	18.52	SG#81
1/4	5/8	1/4	17.30	20.88	SG-1
5/16	3/4	1/4	21.04	24.62	SG-2
3/8	3/4	1/4	23.30	26.88	SG-3
1/2	1	1/4	31.68	36.42	SG-5
1/2	3/4	1/4	31.68	36.42	SG-513
5/8	1	1/4	44.06	52.52	SG-6
3/4	1	1/4	58.64	68.38	SG-7
3/4	1-1/2	1/4	86.58	96.36	SG-715

NOTE: Metric size burs are available upon request.

Unless otherwise specified, all burs are Double Cut.
 Plain Cut and Chipbreaker are also available at the same price as Double Cut.

SOLID CARBIDE BURS

FT-30

ICS USA

SPECIAL PURPOSE

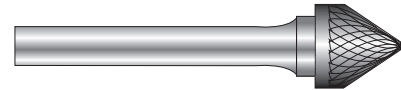
CNC GROUND

FLAME SHAPE - (SH) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	1/4	1/8	8.36	10.72	SH#43
3/16	3/8	1/8	20.08	23.08	SH#53
1/4	5/8	1/4	20.34	23.90	SH-1
5/16	3/4	1/4	22.92	26.50	SH-2
1/2	1-1/4	1/4	46.72	51.48	SH-5
5/8	1-7/16	1/4	64.52	72.98	SH-6
3/4	1-5/8	1/4	81.90	91.66	SH-7

60° CONE SHAPE - (SJ) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	3/32	1/8	8.36	10.72	SJ#42
1/4	3/16	1/4	15.28	18.86	SJ-1
3/8	5/16	1/4	19.90	23.46	SJ-3
1/2	7/16	1/4	24.26	29.00	SJ-5
5/8	9/16	1/4	32.30	40.76	SJ-6
3/4	11/16	1/4	42.34	52.00	SJ-7
1	15/16	1/4	67.94	79.24	SJ-9

90° CONE SHAPE - (SK) BURS



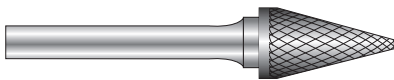
SIZE	FLUTE LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
			DOUBLE CUT	TIN COATED	
			SCB	SCBT	
1/8	1/16	1/8	8.36	10.72	SK#42
3/16	5/32	3/16	14.96	18.52	SK#81
1/4	1/8	1/4	15.28	18.86	SK-1
3/8	3/16	1/4	19.90	23.46	SK-3
1/2	1/4	1/4	24.26	29.00	SK-5
5/8	5/16	1/4	32.30	40.76	SK-6
3/4	3/8	1/4	42.34	52.10	SK-7
1	1/2	1/4	67.94	79.24	SK-9

TAPER SHAPE RADIUS END - (SL) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	TAPER ANGLE	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT	TIN COATED	
				SCB	SCBT	
1/8	3/8	1/8	8°	8.36	10.72	SL#41
1/8	1/2	1/8	8°	8.36	10.72	SL#42
3/16	1/2	1/8	14°	20.08	23.08	SL#53
3/16	7/16	3/16	14°	14.96	18.52	SL#81
1/4	5/8	1/4	14°	17.74	21.32	SL-1
5/16	7/8	1/4	14°	23.26	26.82	SL-2
3/8	1-1/16	1/4	14°	27.88	31.44	SL-3
1/2	1-1/8	1/4	14°	34.06	38.82	SL-4
5/8	1-3/16	1/4	14°	60.84	69.30	SL-5
5/8	1-5/16	1/4	14°	67.04	75.52	SL-6
3/4	1-1/2	1/4	14°	88.44	98.18	SL-7

CONE SHAPE - (SM) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	TAPER ANGLE	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT	TIN COATED	
				SCB	SCBT	
1/8	11/32	1/8	12°	8.36	10.72	SM#41
1/8	7/16	1/8	14°	8.36	10.72	SM#42
1/8	5/8	1/8	7°	8.36	10.72	SM#43
1/4	1/2	1/8	22°	13.70	16.72	SM#51
3/16	1/2	1/8	16°	20.08	23.08	SM#53
3/32	1/4	3/32	10°	9.56	11.92	SM#61
1/4	1/2	1/4	22°	16.78	20.36	SM-1
1/4	3/4	1/4	14°	17.74	21.32	SM-2
1/4	1	1/4	10°	18.94	22.52	SM-3
3/8	5/8	1/4	28°	27.94	32.68	SM-4
1/2	7/8	1/4	28°	35.02	39.76	SM-5
5/8	1	1/4	31°	46.72	55.20	SM-6

INVERTED CONE SHAPE - (SN) BURS



SIZE	FLUTE LENGTH	SHANK DIA.	TAPER ANGLE	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT	TIN COATED	
				SCB	SCBT	
3/32	1/8	1/8	10°	8.36	10.72	SN#41
1/8	3/16	1/8	10°	8.36	10.72	SN#42
1/4	1/4	1/8	10°	13.70	16.72	SN#51
3/16	1/4	1/8	10°	20.08	23.08	SN#53
3/32	1/8	3/32	10°	9.56	11.92	SN#61
3/16	1/4	3/16	10°	14.96	18.52	SN#81
1/4	5/16	1/4	10°	16.94	20.50	SN-1
3/8	3/8	1/4	13°	24.70	28.30	SN-2
1/2	1/2	1/4	28°	34.88	39.66	SN-4
5/8	3/4	1/4	18°	44.78	53.24	SN-6
3/4	5/8	1/4	30°	50.28	60.04	SN-7

Unless otherwise specified, all burs are Double Cut.
Plain Cut and Chipbreaker are also available at the same price as Double Cut.

SOLID CARBIDE BURS - EXTRA LONG (MINIATURE)

ICS USA

SPECIAL PURPOSE

CNC GROUND

CYLINDER SHAPE



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/16	1/4	2	1/8	11.54	13.88	SA#41L2
1/16	1/4	3	1/8	13.06	15.54	SA#41L3
3/32	7/16	2	1/8	11.54	13.88	SA#42L2
3/32	7/16	3	1/8	13.06	15.54	SA#42L3
1/8	9/16	2	1/8	11.54	13.88	SA#43L2
1/8	9/16	3	1/8	13.06	15.54	SA#43L3

CYLINDER SHAPE - END CUT



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/16	1/4	2	1/8	11.54	13.88	SB#41L2
1/16	1/4	3	1/8	13.06	15.54	SB#41L3
3/32	7/16	2	1/8	11.54	13.88	SB#42L2
3/32	7/16	3	1/8	13.06	15.54	SB#42L3
1/8	9/16	2	1/8	11.54	13.88	SB#43L2
1/8	9/16	3	1/8	13.06	15.54	SB#43L3

CYLINDER SHAPE - RADIUS END



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SC#42L2
1/8	9/16	3	1/8	13.06	15.54	SC#42L3

BALL SHAPE



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SD#42L2
1/8	9/16	3	1/8	13.06	15.54	SD#42L3

OVAL SHAPE



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SE#41L2
1/8	9/16	3	1/8	13.06	15.54	SE#41L3

TREE SHAPE - RADIUS END



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SF#42L2
1/8	9/16	3	1/8	13.06	15.54	SF#42L3

TREE SHAPE - POINTED END



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SG#44L2
1/8	9/16	3	1/8	13.06	15.54	SG#44L3

FLAME SHAPE



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	PRICE		ITEM NO. SUFFIX
				DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	9/16	2	1/8	11.54	13.88	SH#41L2
1/8	9/16	3	1/8	13.06	15.54	SH#41L3

TAPER SHAPE - RADIUS END



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	TAPER ANGLE	PRICE		ITEM NO. SUFFIX
					DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	1/2	2	1/8	8°	11.54	13.88	SL#42L2
1/8	1/2	3	1/8	8°	13.06	15.54	SL#42L3

CONE SHAPE



SIZE	FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	TAPER ANGLE	PRICE		ITEM NO. SUFFIX
					DOUBLE CUT SCBXL	TIN COATED SCBXL T	
1/8	1/2	2	1/8	8°	11.54	13.88	SM#42L2
1/8	1/2	3	1/8	8°	13.06	15.54	SM#42L3

Unless otherwise specified, all burs are Double Cut.
Plain Cut and Chipbreaker are also available at the same price as Double Cut.

SOLID CARBIDE BURS - 1/4" SHANK - 6" LENGTH

ICS USA

SPECIAL PURPOSE

CNC GROUND



CYLINDER SHAPE



CYLINDER SHAPE - RADIUS END



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	1/2	1/4	SCBL-SA-1	22.50
3/8	3/4	1/4	SCBL-SA-3	31.74
1/2	1	1/4	SCBL-SA-5	49.50

SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	1/2	1/4	SCBL-SC-1	26.22
3/8	3/4	1/4	SCBL-SC-3	35.32
1/2	1	1/4	SCBL-SC-5	55.50

BALL SHAPE



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	3/16	1/4	SCBL-SD-1	24.22
3/8	5/16	1/4	SCBL-SD-3	29.04
1/2	7/16	1/4	SCBL-SD-5	39.10

OVAL SHAPE



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	3/8	1/4	SCBL-SE-1	29.16
3/8	5/8	1/4	SCBL-SE-3	35.32
1/2	7/8	1/4	SCBL-SE-5	51.70

TREE SHAPE - RADIUS END



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	1/2	1/4	SCBL-SF-1	27.36
3/8	3/4	1/4	SCBL-SF-3	34.60
1/2	1	1/4	SCBL-SF-5	51.00

TREE SHAPE - POINTED END



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	1/2	1/4	SCBL-SG-1	27.36
3/8	3/4	1/4	SCBL-SG-3	36.82
1/2	1	1/4	SCBL-SG-5	50.28

FLAME SHAPE



SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
5/16	3/4	1/4	SCBL-SH-2	36.32
1/2	1-1/4	1/4	SCBL-SH-5	73.92

14° TAPER - RADIUS END



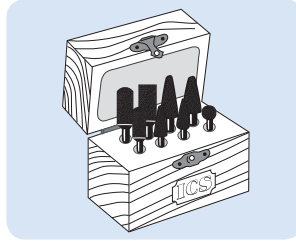
SIZE	FLUTE LENGTH	SHANK	ITEM NO.	PRICE
1/4	5/8	1/4	SCBL-SL-1	28.00
3/8	1-1/16	1/4	SCBL-SL-3	44.10
1/2	1-1/8	1/4	SCBL-SL-4	64.50

SOLID CARBIDE BUR SETS

ICS USA

WOODEN BOXES

CNC GROUND



DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
8 PC BUR SETS	Reg. Sizes-Solid Carbide	1/4	Double	SCBSW-SCB-8	312.22
	Reg. Sizes-Solid Carbide-TiN Coated	1/4	Double	SCBSW-SCBT-8	CALL
SIZES OF BURS IN SETS					
1/4" SHANK	SA-5, SC-3, SC-5, SD-5, SF-3, SF-5, SG-3, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
8 PC NF BUR SETS	Reg. Sizes-NF Solid Carbide	1/4	NF	SCBSW-NF-8	385.64
	Reg. Sizes-NF Solid Carbide-ZrN Coated	1/4	NF	SCBSW-NFZ-8	430.22
SIZES OF BURS IN SETS					
1/4" SHANK	SA-5, SC-3, SC-5, SD-5, SF-3, SF-5, SE-5, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
16 PC BUR SETS	Reg. Sizes-Solid Carbide	1/4	Double	SCBSW-SCB-16	449.54
	Reg. Sizes-Solid Carbide-TiN Coated	1/4	Double	SCBSW-SCBT-16	490.62
SIZES OF BURS IN SETS					
1/4" SHANK	SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SD-3, SD-5, SE-3, SF-1, SF-3, SF-5, SG-1, SG-3, SL-3, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
8 PC BUR SETS	#81 Sizes-Solid Carbide	3/16	Double	SCBSW #81-8	139.06
	#81 Sizes-Solid Carbide-TiN Coated	3/16	Double	SCBSW #81T-8	167.66
SIZES OF BURS IN SETS					
3/16" SHANK	SA #81, SC #81, SD #81, SE #81, SF #81, SG #81, SL #81, SN #81				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
9 PC BUR SETS	#51 Sizes-Solid Carbide	1/8	Double	SCBSW #51-9	142.60
	#51 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBSW #51T-9	169.68
SIZES OF BURS IN SETS					
1/8" SHANK	SA #51, SB #51, SC #51, SD #51, SE #51, SF #51, SG #51, SM #51, SN #51				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
12 PC BUR SETS	#52/#53 Sizes-Solid Carbide	1/8	Double	SCBSW #52-12	260.02
	#52/#53 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBSW #52T-12	296.14
SIZES OF BURS IN SETS					
1/8" SHANK	SA #52, SA #53, SC #52, SC #53, SD #53, SE #53, SF #53, SG #53, SH #53, SL #53, SM #53, SN #53				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
12 PC BUR SETS	#41-#43 Sizes-Solid Carbide	1/8	Double	SCBSW #41-12	119.64
	#41-#43 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBSW #41T-12	147.86
SIZES OF BURS IN SETS					
1/8" SHANK	SA #42, SA #43, SC #41, SC #42, SD #42, SE #41, SF #42, SG #43, SH #41, SL #42, SM #42, SN #42				

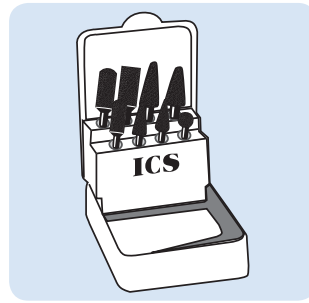
DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
9 PC BUR SETS	#61-#63 Sizes-Solid Carbide	3/32	Double	SCBSW #61-9	105.52
	#61-#63 Sizes-Solid Carbide-TiN Coated	3/32	Double	SCBSW #61T-9	126.70
SIZES OF BURS IN SETS					
3/32" SHANK	SA #61, SA #63, SC #61, SD #61, SE #61, SF #61, SG #61, SM #61, SN #61				

SOLID CARBIDE BUR SETS

ICS USA

METAL INDEXES

CNC GROUND



DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
8 PC BUR SETS	Reg. Sizes-Solid Carbide	1/4	Double	SCBS-SCB-8	235.38
	Reg. Sizes-Solid Carbide-TiN Coated	1/4	Double	SCBS-SCBT-8	442.24
	SIZES OF BURS IN SETS				
1/4" SHANK	SA-5, SC-3, SC-5, SD-5, SF-3, SF-5, SG-3, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
8 PC NF BUR SETS	Reg. Sizes-NF Solid Carbide	1/4	Double	SCBS-SCBNF-8	370.72
	Reg. Sizes-NF Solid Carbide-TiN Coated	1/4	Double	SCBS-SCBNFZ-8	418.14
	SIZES OF BURS IN SETS				
1/4" SHANK	SA-5, SC-3, SC-5, SD-5, SE-5, SF-3, SF-5, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
11 PC BUR SETS	Reg. Sizes-Solid Carbide	1/4	Double	SCBS-SCB-11	300.60
	Reg. Sizes-Solid Carbide-TiN Coated	1/4	Double	SCBS-SCBT-11	345.82
	SIZES OF BURS IN SETS				
1/4" SHANK	SA-3, SA-5, SC-3, SC-5, SD-3, SD-5, SE-3, SF-3, SF-5, SL-3, SL-4				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
9 PC BUR SETS	#51 Sizes-Solid Carbide	1/8	Double	SCBS #51-9	138.26
	#51 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBS #51T-9	165.36
	SIZES OF BURS IN SETS				
1/8" SHANK	SA #51, SB #51, SC #51, SD #51, SE #51, SF #51, SG #51, SM #51, SN #51				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
13 PC BUR SETS	#52-#53 Sizes-Solid Carbide	1/8	Double	SCBS #52-13	275.88
	#52-#53 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBS #52T-13	315.02
	SIZES OF BURS IN SETS				
1/8" SHANK	SA #52, SA #53, SC #52, SC #53, SD #52, SD #53, SE #53, SF #53, SG #53, SH #53, SL #53, SM #53, SN #53				

DESCRIPTION	SIZE / TYPE OF BUR	SHANK	CUT	ITEM NO.	PRICE
13 PC BUR SETS	#41-#43 Sizes-Solid Carbide	1/8	Double	SCBS #41-13	123.62
	#41-#43 Sizes-Solid Carbide-TiN Coated	1/8	Double	SCBS #41T-13	154.18
	SIZES OF BURS IN SETS				
1/8" SHANK	SA #42, SA #43, SC #41, SC #42, SD #42, SE #41, SF #42, SG #43, SH #41, SJ #42, SL #53, SM #53, SN #53				

ALPHABETICAL INDEX

- A -

ABRASIVE CUTOFF WHEELS

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ACME TAPS

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Morse Taper Ext. Socket	MET-85
Morse Taper Sleeve	MET-85
Morse Taper Solid Sockets	MET-86
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AIR SAW BLADES

AIRCRAFT EXTENSION DRILLS

ARBORS HOLE SAW (Mandrels)

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- B -

BALL NOSE END MILLS

BAND SAW BLADES

BELLHANGER'S DRILLS

BITS

Carbide Tile Cutout	MET-126
Curved Hole Wiring	WBT-3
Drywall Cutout	MET-126
Forstner	WBT-7
Multi-Spur Pipe	WBT-8
Railroad Bonding	MET-124
Railroad Tie Boring	MET-125, WBT-29
Railroad Tie Boring - 1 & 2 Flute	MET-125, WBT-29
Railroad Tie Boring - Carbide Tip	MET-125, WBT-29
Railroad Track	MET-124
Spade/Sets	WBT-1

BLADES (Saw)

Air Saw	ST-2
Band Saw	
Bi Metal	ST-11
Flexible	ST-11
Hard Back	ST-11
Portable	ST-11
Circular Saw	
Carbide Tipped	ST-15
Diamond Saw - Dry Cutting	
Asphalt & Green Concrete	ST-13
Block	ST-13
Brick & Block	ST-13
Continuous Rim Tile	ST-14
Cured Concrete	ST-13
Segmented Turbo	ST-14
Small Diameter Laser Welded	ST-14
Small Diameter Segmented	ST-14
Tuck Pointing	ST-13
Turbo	ST-14
Diamond Saw - Wet Cutting	
Asphalt & Green Concrete	ST-12
Asphalt Over Concrete	ST-12
Cured Concrete	ST-12

BLADES (Saw) -->

Hack Saw, Hand	
Bi Metal	ST-9
Carbide Edged	ST-9
High Speed Steel	ST-9
Hack Saw, Power	
High Speed Steel	ST-11
Jigsaw, Scroll	ST-7
Reciprocating Saw	
1/2" Shank	ST-5, ST-6
Air Saw	ST-2
Rod Saw - Carbide Edged	ST-7
Saber Saw	
1/4" Shank	ST-1, ST-2
Bayonet Shank	ST-3
Bosch Shank	ST-4
Makita Shank	ST-3
Scroll/Jigsaw	ST-7

BODY DRILLS

BORING BARS

Carbide Tipped Sets	BT-1
Indexable	BT-2, BT-3

BOWLING BALL DRILLS

BRIDGE REAMERS

Helical Flute	RT-44, RT-45
Round Shank	RT-46
Straight Flute	RT-46
Taper Shank	RT-46

BRITISH STANDARD PIPE TAPS

BURS, SOLID CARBIDE

Extra Long (Mini)	FT-31
Long	FT-32
NF	FT-27
NF - ZrN Coated	FT-27
Sets	FT-33, FT-34
Shapes A to N	FT-28 to FT-30
TiN Coated	FT-28 to FT-30

- C -

CAP SCREW COUNTERBORE - 3 FLUTE

CAR REAMERS

Hex Shank	RT-43
Round Shank	RT-41, RT-42
Taper Shank	RT-41

CARBIDE EDGED

Hack Saw Blade	ST-9
Hole Saws	ST-30
Reciprocating Saw Blades	ST-6
Rod Saw	ST-7
Saber Saw Blades	ST-2 to ST-4

CARBIDE INSERTS (Inserts)

CARBIDE, SOLID

Burs	FT-27 to FT-32
Combined Drill & Countersink	MET-113, RT-7
Drills	MET-47, MET-48, MET-122
End Mills	MT-20 to MT-29
Reamers	RT-26, RT-27

CARBIDE TIPPED

Boring Bars	BT-1
Circular Saw Blades	ST-15
Reamers	RT-19
Tool Bits	BT-5

CHISELS

Asphalt Cutter 5"	MAS-27
Bull (Moi) Point	MAS-26
Bushing Tool	MAS-27
Bushing Tool Heads	MAS-27
Bushing Tool Shanks	MAS-27
Clay Spade 5-1/2"	MAS-27
Flat (Cold) Chisel	MAS-26
Ground Rod Driver	MAS-27
Mortar (Seam) Chisel	MAS-27
Scaling Chisel	MAS-26
Slotting Tool	MAS-27

CHUCK KEY HOLDER	MET-135
CHUCK KEYS	MET-135
Master	MET-136
Master-Magnetic	MET-136
Ratchet.....	MET-136
CHUCKING REAMERS	
Carbide, Solid	RT-26 to RT-30
Carbide Tipped	RT-19
Dowel Pin Sizes	RT-20
Expansion	RT-29
Helical Flute.....	RT-17
Oversize Decimal	RT-20
Straight Flute.....	RT-17, RT-18
Taper Shank	RT-28
Undersize Decimal	RT-20
CHUCKS, MICRO PIN	MET-15
Boring Chucks	WBT-31
CIRCULAR SAW BLADES	ST-12 to ST-21
COMBINED DRILL & COUNTERSINKS	
Bell Type.....	MET-114
Cobalt.....	MET-113
Long Length.....	MET-114
Plain Type.....	MET-113, RT-7
Sets/TiN	MET-114
Solid Carbide	RT-7
Solid Carbide - Long Length.....	RT-7
Titanium Nitride Coated	MET-114, RT-6
COMBINED DRILL & TAP	
Metric	TT-18
Standard	TT-18
CORE DRILLS	
3 & 4 Flute - Taper Length	MET-80
3 & 4 Flute - Taper Shank	MET-81
Percussion Core-Masonry-Carbide Tipped	MAS-8, MAS-9
Rotary Core - Masonry - Carbide Tipped	MAS-5
COUNTERBORES	
Cap Screw - 3 Flute	RT-4
Cap Screw - 3 Flute - Metric.....	RT-4
Drills	RT-8
Fillister Head Screw	RT-2
Interchangeable	
Straight Shank	RT-1
Taper Shank.....	RT-1
COUNTERBORE PILOTS	RT-3
COUNTERSINKS	
Adjustable Drill Type (for Wood Screws)	WBT-20
Carbide	
1 Flute Style	RT-13
1 Flute Style (Long).....	RT-16
3 Flute Style	RT-13
6 Flute Style.....	RT-13
6 Flute Style (Long).....	RT-16
High Speed Steel	
0 Flute - Deburring.....	RT-10
1 Flute - Countersink	RT-10
3 Flute - Center Reamer	RT-11
4 Flute - Machine Countersink	RT-11
6 Flute - Chatterless	RT-12
Indexable.....	RT-14
Sets	RT-12
CUT OFF BLADES	
5% Cobalt.....	BT-6
High Speed Steel	BT-6
T-Shaped.....	BT-6
CUT OFF BLADE HOLDERS	BT-7
CUTTERS	
Adjustable Hole Cutter (Double Bladed)	WBT-5
Annular	
Fractional	MET-131
Metric.....	MET-132
Plate	MAS-3
Circle Hole Cutter.....	WBT-5
Hole Cutter (Hole Saw).....	ST-29
Rebar.....	MAS-4
Spot Weld.....	MET-128

- D -

DIE DRILLS	MET-122
DIE SETS	TT-56, TT-66
DIE STOCKS	TT-79
DIES	
Adjustable - Two Piece	TT-61
Cone.....	TT-63
Cone Die Holder	TT-63
Hexagon	
Acme Thread	TT-64
Automatic Thread	TT-50
Automotive Rethreading	TT-62
Bearing Locknut.....	TT-49
British Standard Hand	TT-51
Heavy Duty - HSS.....	TT-60
Left Hand	TT-52
Left Hand Metric	TT-55
Metric.....	TT-55
Metric - Special Thread	TT-55
Pipe - NPT	TT-53
Special Thread.....	TT-54
Standard	TT-52
Hexagon (Standard Diameter)	
British Standard Pipe (Metric).....	TT-58
Heavy Duty - HSS.....	TT-59
Metric.....	TT-58
Pipe - NPT	TT-58
Standard	TT-58
Round	
British Standard Hand	TT-51
Left Hand	TT-41
Left Hand Metric.....	TT-41
Metric.....	TT-42
Metric - Special Thread	TT-43
Pipe - British Standard - Parallel	TT-48
Pipe - British Standard - Taper	TT-48
Pipe - NPT	TT-47
Pipe - NPS.....	TT-47
Special Thread.....	TT-44
Standard	TT-40
Square	
Pipe - NPT	TT-65
Solid Square Bolt.....	TT-65
DISPENSER CABINETS	
Drill	MET-60
Tap	TT-71
Tap & Drill.....	TT-71
DISPLAYS	
Aircraft Ext. Drills.....	MET-110
Masonry Drills	MAS-9
3/8" Shank Drills	MET-68
1/2" Shank Drills	MET-63
DRILL BLANKS - HSS	MET-51, MET-52
DRILL CHUCKS	MET-137
DRILL DRIFTS (Keys)	MAS-8
DRILL MILLS	MT-39
DRILL SETS	
1/4" Shank Drills	MET-53 to MET-59
3/8" Shank Drills	MET-53 to MET-59
1/2" Shank Drills	MET-62 to MET-70
3/4" Shank Drills	MET-68
Brad Point	WBT-9
Fast Spiral	MAS-9
Jobber's Length Drills	MET-53 to MET-59
Long Boy Drills.....	MET-102
Masonry Drills	MAS-1, MAS-9, MAS-14
Perfect Point	WBT-15, WBT-16
SDS Shank.....	MAS-14
Screw Machine Length Drills	MET-5, MET-6, MET-9
Taper Length Drills	MET-74
Universal	MAS-1
Wide Spiral.....	MAS-9
Wood Bits.....	WBT-1, WBT-9 to WBT-16
DRILL & SCREW EXTRACTOR SET	TT-2
DRILL & TAP SETS	TT-71

DRILLS

Aircraft Ext. Drills	
Cobalt - Type J	MET-108 to MET-110
HSS - Type A, B, C	MET-108 to MET-110
Left Hand	MET-108
TiN Coated.....	MET-108 to MET-109
Bellhanger's Drills	
Auger Tipped	MET-104
Carbide Tipped	MET-106
Flexible Shank	MET-104
Regular.....	MET-106
Ship Auger.....	MET-105
Threaded Flute.....	MET-104
Body Drills (Sheeter Drills).....	MET-8
Bowling Ball	MET-121
Carbide Drills (Solid)	
Die.....	MET-122
Jobber.....	MET-46, MET-47
Metric.....	MET-48
Spade	MET-122
Carbide Tipped Drills	
Bellhanger's	MET-106
Bowling Ball	MET-121
Die.....	MET-122
Extension Length	MET-107
Glass.....	MAS-11
Hard Steel	MET-123, MAS-2
Jobber Length	MET-45, MET-46
Masonry	MAS-1, MAS-2, MAS-9 to MAS-25
Metric.....	MET-46
Pilot (Hole Saw).....	ST-27
Silver & Deming (Bowling Ball).....	MET-121
Taper Shank.....	MET-95
Universal	MAS-1
Cobalt Drills	
Aircraft - Type D.....	MET-111
Aircraft Extension.....	MET-108 to MET-110
Combined Drill & Countersink	MET-113
Jobber Length	MET-36 to MET-39
Metric.....	MET-38, MET-39
Screw Machine Length	MET-9, MET-10
Silver & Deming	MET-65, MET-66
Taper Length	MET-75, MET-76
Taper Shank	MET-95
Cone Drills	
Stepped/TiN.....	MET-117
Core Drills	
3 & 4 Flute - Taper Length	MET-80
3 & 4 Flute - Taper Shank	MET-81
Percussion Core - Masonry	MAS-8
Rotary Core - Masonry	MAS-5
Diamond Coated.....	MET-121
Die Drills	
Carbide, Solid	MET-122
Carbide Tipped	MET-122
Drywall Cut Out Bits	
1 & 2 Flute - HSS - TiN	MET-126
Carbide (Solid).....	MET-126
Double End	MET-126
Extra Length	
3/8" Shank.....	MET-102
1/2" Shank	MET-100, MET-101
Bellhanger's	MET-103 to MET-106
Carbide Tip Bellhanger's.....	MET-106
Carbide Tip Extension	MET-107
Heavy Duty	MET-101, MET-102
Metric.....	MET-100, MET-107
Oil Hole	MET-84
Sheeter	MET-8
Straight Shank/Sets.....	MET-98 to MET-102
Taper Shank.....	MET-96 to MET-97
Vent Drills.....	MET-103
Wood Bit - Spade Type.....	WBT-1
Wood Drill - Brad Point	WBT-9

DRILLS -->

Jobber's Length	
3 Flat	MET-30, MET-31
Aircraft - Type A, B, J.....	MET-21 to MET-38
Auto Tang.....	MET-43, MET-44
Carbide - 2 & 3 Flute.....	MET-47, MET-48
Carbide - Metric.....	MET-48
Carbide - Solid.....	MET-46, MET-47
Carbide Tipped.....	MET-45, MET-46
Carbide Tipped - Metric	MET-46
Cobalt	MET-36
Cobalt - 3/8" Shank	MET-36
Cobalt - 3 Flat	MET-31
Cobalt - 3 Flat - 3/8" Shank.....	MET-31
Fast Spiral.....	MET-41, MET-42
General Purpose.....	MET-11 to MET-16
Heavy Duty - Type A.....	MET-21, MET-22
Heavy Duty - Type B.....	MET-24 to MET-34
Heavy Duty - Type J.....	MET-36 to MET-39
Heavy Duty - Hex Shank	MET-20
Hex Shank - 1/4" Shank	MET-20
Left Hand / 3/8" Shank	MET-34
Metric - 3/8" & 1/2" Shank.....	MET-19
Metric - Heavy Duty - 3/8" Shank.....	MET-35, MET-39
Miniature	MET-15
Parabolic Flute / 3/8" Shank.....	MET-40
Plastic Laminate	MET-118 to MET-120
Slow Spiral.....	MET-41, MET-42
Special Point.....	MET-49, MET-50
TiN Coated.....	MET-11, MET-24 to MET-28
ZrN Coated.....	MET-11, MET-31 to MET-32
1/4" Shank - General Purpose.....	MET-12
3/8" Shank - General Purpose.....	MET-13
1/2" Shank - General Purpose.....	MET-13
Masonry Drills	
A - Taper	MAS-21
B - Taper	MAS-21
Bosch SDS	MAS-14
Bosch SDS Hex	MAS-13
Bosch Spline.....	MAS-19
Core - Hammer.....	MAS-8
Core - Rotary	MAS-5
Fast Spiral.....	MAS-9
Hammer.....	MAS-12
Hilti TE-60	MAS-16
Ramset - Magic Shank	MAS-16
Tap Con.....	MAS-13
Universal	MAS-1
Wide Spiral.....	MAS-10
Mechanics 4" Length - 1/4" Shank	
General Purpose.....	MET-12
Heavy Duty	MET-25
Metric Drills	
Aircraft Extension.....	MET-110
Carbide	MET-48
Carbide Tipped	MET-45
Cobalt	MET-38, MET-39
Extension Length	MET-107
Jobber Length	MET-17 to MET-19, MET-35, MET-38, MET-39
Long Boy	MET-100
Screw Machine Length	MET-7
Silver & Deming	MET-62, MET-63
Taper Length.....	MET-73, MET-74
Taper Shank	MET-93, MET-94
Multi-Angle Drills.....	MET-138
Pilot Drills	
Annular Cutter.....	MET-133
Hole Saw.....	ST-27
Masonry	MAS-5, MAS-7, MAS-8
Plastic Laminate Drills	
Fractional	MET-119
Letter Sizes	MET-120
Metric.....	MET-120
Wire Gauge	MET-119
Special Point	MET-118

DRILLS -->

Railroad Bonding Bits

Cobalt	MET-124
Head Style	MET-124
Univ. Style	MET-124
Web Style	MET-124

Railroad Tie Boring Bit MET-125, WBT-29

Railroad Track Bits MET-124

Reduced Shank Drills

1/4" Shank - Jobber	MET-12, MET-25
1/4" Shank - Mechanics	MET-12, MET-25
1/4" Shank - Screw Machine	MET-3
3/8" Shank - Cobalt	MET-36, MET-39
3/8" Shank - Jobber's	MET-13, MET-16, MET-21, MET-28, MET-29
3/8" Shank - Long Boy Drill	MET-102
3/8" Shank - Metric	MET-19, MET-35, MET-39
3/8" Shank - Parabolic Flute	MET-40
3/8" Shank - Screw Machine	MET-3
3/8" Shank - Silver & Deming	MET-69, MET-70
1/2" Shank - Jobber's	MET-13, MET-27
1/2" Shank - Long Boy	MET-100, MET-101
1/2" Shank - Metric	MET-19, MET-62, MET-63
1/2" Shank - Silver & Deming	MET-61 to MET-68
3/4" Shank - Silver & Deming	MET-68

Screw Machine Length Drills

Cobalt - Type F	MET-9, MET-10
Heavy Duty - Type C/TiN	MET-1 to MET-5
Left Hand	MET-6
Metric	MET-7
Reduced Shank	MET-3
Titanium Nitride Coated	MET-1, MET-4
1/4" Shank	MET-3
3/8" Shank	MET-3

Sheeters Drills

Double End	MET-7
Rivet (Punch)	MET-8
Single End	MET-8
Single End - Long	MET-8

Special Point Drills MET-49, MET-50

Spotting & Centering Drills MET-112

Spot Weld Drills MET-127

Step Drills MET-115, MET-116, RT-8, RT-9

Taper Length Drills

Auto Tang	MET-78, MET-79
Cobalt	MET-75, MET-76
Core - 3 & 4 Flute	MET-80
Fast Spiral	MET-79
General Purpose	MET-71 to MET-74
Heavy Duty	MET-75 to MET-77
Metric	MET-73, MET-74
Oil Hole	MET-82

Taper Point Drills

Drill and Countersink Combination	WBT-21
for Wood Screws	WBT-20

Taper Shank Drills

Carbide Tipped	MET-95
Cobalt	MET-95
Core - 3 & 4 Flute	MET-81
Extra Length	MET-96, MET-97
General Purpose - Regular Shank	MET-87, MET-88
General Purpose - Oversize Shank	MET-90
General Purpose - Undersize Shank	MET-89
General Purpose (metric)	MET-93, MET-94
General Purpose - Extra Length (metric)	MET-97
Heavy Duty (metric)	MET-92
Heavy Duty/TiN	MET-92
Oil Hole	MET-83
Oil Hole - Extra Long	MET-84
Stub Length	MET-90
Titanium Nitride Coated	MET-87, MET-88, MET-92

Threaded Shank Adapter Drills

Type B Specifications	MET-129
Type D Specifications	MET-130

Vent Drills MET-103

DRILLS -->

Wood Bits (Auger Bits)

Forstner	WBT-7
Hinge Boring	WBT-4
Multi Spur Pipe	WBT-8
Spade Type - Power	WBT-1 to WBT-3

Wood Drills

Brad Point	WBT-9, WBT-10
Brad Point Center	WBT-17
Brad Point Silver & Deming	WBT-11
Perfect Point	WBT-15, WBT-16
Screw Point Pilot	WBT-8

- E -**END MILLS**

Corner Radius

2 Flute - Single End	MT-30
4 Flute - Single End	MT-30

Corner Rounding.....

..... MT-31

Double End - 2 Flute (Ball Nose)

Carbide - Regular	MT-21
Carbide - Metric - Stub	MT-25
Carbide - Stub	MT-22
Miniature	MT-15
Regular Length	MT-2

Double End - 2 Flute (Metric)

Carbide - Stub	MT-25
Carbide - Stub - Ball Nose	MT-25
Regular Length	MT-4

Double End - 2 Flute (Miniature)

Ball Nose	MT-15
Carbide - Stub	MT-29
Long Length	MT-16
Regular Length	MT-16
Stub Length	MT-29

Double End - 2 Flute (Square End)

Carbide - Regular	MT-21
Carbide - Metric - Stub	MT-25
Carbide - Miniature - Stub	MT-29
Carbide - Stub	MT-22
Cobalt - Regular	MT-17
Metric	MT-4
Miniature - Long Length	MT-16
Miniature - Regular Length	MT-16
Regular Length	MT-2

Double End - 4 Flute (Ball Nose)

Carbide - Metric - Stub	MT-26
Carbide - Regular	MT-23
Carbide - Stub	MT-24

Double End - 4 Flute (Metric)

Carbide - Stub	MT-26
Carbide - Stub - Ball Nose	MT-26
Regular Length	MT-12

Double End - 4 Flute (Miniature)

Carbide - Stub	MT-29
Long Length	MT-16
Regular Length	MT-12

Double End - 4 Flute (Square End)

Carbide - Regular	MT-23
Carbide - Stub	MT-24
Carbide - Stub - Metric	MT-26
Carbide - Stub - Miniature	MT-29
Center Cutting	MT-9
Cobalt - Regular	MT-18
Metric	MT-12
Miniature - Long Length	MT-16
Miniature - Regular	MT-16
Regular Length	MT-7

Roughing End Mills

Carbide - Type "A"	MT-20
Carbide - Type "N"	MT-20
Carbide - Type "S"	MT-20
Cobalt	MT-19
Super (M2-AL)	MT-19
T-Slot Cutter	MT-32

END MILLS -->

Single End - 2 Flute (Ball Nose)	
Carbide - Regular	MT-21
Carbide - Metric	MT-25
Cobalt - Regular	MT-18
Ext. Length	MT-3
Miniature - Regular	MT-15
Regular Length	MT-3
Single End - 2 Flute (Metric)	
Carbide - Regular	MT-25
Regular Length	MT-4
Single End - 2 Flute (Miniature)	
Ball - Regular	MT-15
Carbide - Decimal Size	MT-29
Regular Length	MT-15
Single End - 2 Flute (Square End)	
Aluminum	MT-9
Aluminum - Long Flute	MT-10
Aluminum - Extra Long	MT-10
Carbide - Extra Long	MT-22
Carbide - Long	MT-22
Carbide - Metric	MT-25
Carbide - Miniature - Decimal	MT-29
Carbide - Regular	MT-21
Cobalt Regular	MT-17
Ext. Length	MT-3
Long Flute	MT-1
Metric - Regular	MT-4
Miniature - Regular	MT-15
Regular Length	MT-1
Zirconium Nitride Coated	MT-9, MT-10
Single End - 3 Flute (Ball Nose)	
Carbide - Regular	MT-27
Carbide - Tapered	MT-28
Single End - 3 Flute (Square End)	
Aluminum	MT-11
Aluminum - Long	MT-11
Aluminum - X Long	MT-11
Long Length	MT-14
Carbide - Regular	MT-27
Carbide - Tapered	MT-28
Regular Length	MT-14
Single End - 4 Flute (Ball Nose)	
Carbide - Metric	MT-26
Carbide - Regular	MT-23
Cobalt - Regular	MT-18
Long Flute	MT-8
Regular Length	MT-8
Single End - 4+ Flutes (Metric)	
Carbide - Regular	MT-26
Regular Length	MT-12
Single End - 4+ Flutes (Miniature)	
Carbide - Decimal Sizes	MT-29
Regular Length	MT-15
Single End - 4+ Flutes (Square End)	
Carbide - Extra Long	MT-24
Carbide - Long	MT-24
Carbide - Metric	MT-26
Carbide - Miniature Decimal	MT-29
Carbide - Regular	MT-23
Center Cutting	MT-7
Cobalt - Long Flute	MT-18
Cobalt - Regular	MT-18
Cobalt - Roughing	MT-19
Extra Long Flute	MT-6, MT-7
Long Flute	MT-6, MT-7
Metric - Regular	MT-12
Miniature - Regular	MT-15
Regular Length	MT-5
T-Slot Cutters Roughing	MT-32
Tapered End - 3 Flute	
Ball Nose	MT-28
Square End	MT-28

EXTENSIONS

Hole Saw	ST-27
Power Bit	WBT-23
Wood Bit	WBT-3

EXTRACTORS (Screw Extractors)	TT-1, TT-2

- F -**FILE ACCESSORIES**

Curved Tooth File Holder	FT-20
File Card Cleaner	FT-19
File Handles	
for Chain Saw	FT-20
Plastic Slip-on Handle	FT-22
Precision Chuck	FT-20
Safety File Handle (metal construction)	FT-18
Solid Tang Hole (plastic)	FT-19
Universal Tang Hole (plastic)	FT-18
with Individual Inserts (plastic)	FT-19
with Metal Ferrule (wood)	FT-18

FILE SETS

American Pattern	FT-17
Needle	FT-24
Needle - Diamond Coated	FT-17
Rifflers - Rasp	FT-17
Swiss Pattern	FT-17, FT-23, FT-24

FILES

American Pattern (Machinists' & Saw)	
Aluminum Flat	FT-3
Aluminum Half Round	FT-3
Chain Saw	FT-14
Double End Saw	FT-14
Dual Cut Laminate	FT-10
Farmer's Own	FT-14
Flat Hand	FT-4
Flat Taper	FT-5
Half Round	FT-6
Half Round (Pipe Line)	FT-3
Knife	FT-9
Laminate (Dual Cut)	FT-10
Laminate (Mill)	FT-10
Laminate (Rapid Cross Cut)	FT-10
Long Angle Lathe	FT-7
Round	FT-7
Square	FT-8
Taper Saw - Double Extra Slim	FT-13
Taper Saw - Extra Slim	FT-13
Taper Saw - Regular	FT-13
Taper Saw - Slim	FT-13
Three Square (Triangle)	FT-8
Warding	FT-9
Curved Tooth	
Flat	FT-12
Flat Flexible	FT-12
Thread Restoring	
External	FT-22
Universal	FT-22
Rasps	
Farrier	FT-16
Four-in-Hand (Shoe)	FT-16
Half Round Cabinet	FT-15
Half Round Wood	FT-15
Horse	FT-16
Riffler	FT-17
Round Wood	FT-15
Swiss Pattern	
Half Round	FT-23
Knife	FT-23
Needle	FT-24
Needle - Diamond Coated	FT-17
Pillar - Regular	FT-23
Rifflers - Die Sinkers	FT-25
Rifflers - Rasp	FT-17
Rifflers - Silversmiths	FT-26
Round	FT-23
Three Square	FT-23
Warding	FT-23
Thread Restoring	FT-21
FLOATING DIE HOLDER	TT-79
FORSTNER BITS	WBT-7

- G -

GIMLETS WBT-19

- H -

HACK SAW BLADES

Bi Metal ST-9
Carbide Edged ST-9
High Speed Steel ST-9
Power ST-11

HACK SAW FRAMES

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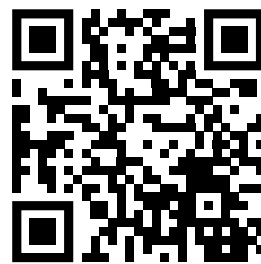
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