ALLIED MACHINE & ENGINEERING | WOHLHAUPTER®

Holemaking Solutions for Today's Manufacturing

Boring

Reaming

Burnishing

Threading

Specials

Drilling

▶ AccuPort 432® Port Contour Cutters

Hydraulic Porting Solutions

AccuPort 432®

Replaceable Insert Port Contour Cutters | J1926 | ISO6149 | AS5202 | JDS-G173.1

High Performance Multi-Step Action

Durable and precise, the AccuPort 432® holders provide a strong and rigid platform for the drilling of hydraulic ports. The precision ground insert location on each holder ensures total repeatability and simple, uncomplicated changing of the replaceable inserts.

With the AccuPort 432® technology, you can drill and finish port forms in ***ONE*** operation. Save time and money with AccuPort 432®.

Single operation hydraulic port cutting system	No pre-drilling required	Replaceable inserts eliminate regrinding and resetting

Applicable Industries

Aerospace | Agriculture | Automotive | Marine / Shipbuilding

Reference Icons
The following icons will appear throughout the catalogue to help you navigate between products.

Setup / Assembly Information
Detailed instructions and information regarding the corresponding part(s)

Recommended Cutting Data
Speed and feed recommendations for optimum and safe drilling

Accuport 432® Holders
Refers to the full details of the holder items included in each kit

Port and Thread Finishing Kits
Lists the available kits complete with AccuPort 432® tool and AccuThread™ solid carbide thread mill

Your safety and the safety of others is very important. This catalogue contains important safety messages. Always read and follow all safety precautions.

This triangle is a safety hazard symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalogue, look for a related safety message that may be near this triangle or referred to in the nearby text.

There are safety signal words also used in the catalogue. Safety messages follow these words.

⚠ WARNING

WARNING (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit www.alliedmachine.com for the most up-to-date information and procedures.

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Port and Thread Finishing Kits

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Recommended Cutting Data (Imperial)

Metric (mm) — HSS . . . . . 30 - 31
Carbide . . . . . 32 - 33

Imperial (inch) — HSS . . . . . 34 - 35
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Product Overview

ONE TOOL | **FOUR** OPERATIONS

4 IN 1

Advanced Solutions, Outstanding Results

As designers and manufacturing engineers push the limits of production technology to improve productivity and performance, Allied Machine has continued to innovate and develop new solutions like the unique AccuPort 432® hydraulic port contour cutter system. Every product in the AccuPort 432® system is designed to deliver maximum performance in a diverse range of hydraulic port cutting applications and demanding manufacturing environments.

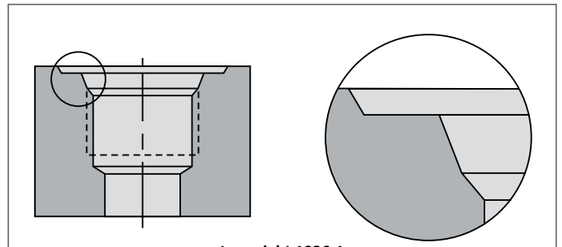
Using precision replaceable inserts for both the drilling and port forming operations, AccuPort 432® eliminates the need for tool regrinding and enables absolute repeatability, excellent surface finish and reduced cost-per-hole. The AccuPort 432® drills, forms and precision-finishes the hydraulic port in **one** pass. This replaces up to three separate cutting operations in a single tool to deliver outstanding improvements in productivity, accuracy and repeatability.

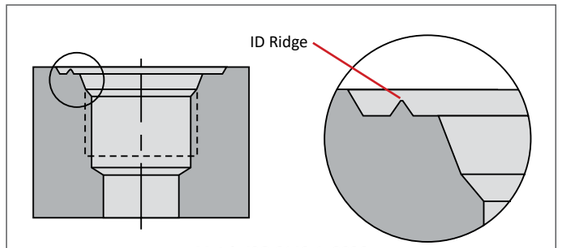
Hydraulic systems are present in an incredibly diverse range of industries. Anywhere a hydraulic port is required, AccuPort 432® can provide a more cost effective and higher performance solution in a fraction of the time taken for traditional methods using separate drills, special forming tools and spot facers.

Port Specification		Notes	
Imperial SAE J-1926 ISO 11926-1 MS-16142		Extended minor diameter length option also available	
Metric ISO 6149-1:2006 SAE J-2244/1		Holders made with ID ridge Utilizes inserts with or without ID ridge ID ridge No ID ridge	
John Deere JDS-G173.1		Adheres to John Deere port standards	
Military SAE AS5202		Also conforms to AND10050 specification by using an alternate tap drill size for a UN thread	

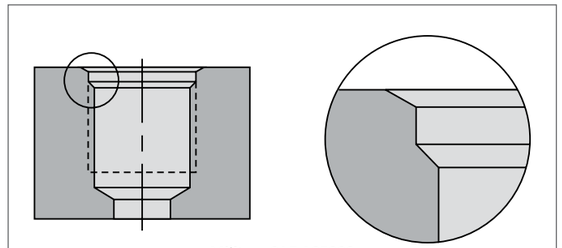
Choosing the Right System

Every product in the AccuPort 432® product line is designed to deliver maximum performance in a diverse range of hydraulic port cutting applications and demanding manufacturing environments. The innovative design delivers the best possible range of benefits in terms of productivity, cost-per-hole and tool life.


Imperial J-1926-1



Metric ISO 6149-1: 2006


Military SAE AS5202

Common Industry Sectors and Components

Aerospace
Pumps
Landing Gear
Brake Cylinders
Manifolds

Agriculture
Pumps
Manifolds
Cylinders and Rams
Gear Pumps

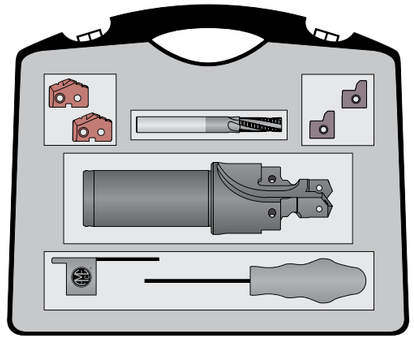
Automotive
Motor Valves
Relief Valves
Brake Cylinders
Power Steering Pumps

Marine / Shipbuilding
Pumps
Cylinders and Rams
Motors
Manifolds

The Complete Package

Producing fully finished threaded hydraulic ports has never been easier. The Port and Thread Finishing Kit includes the AccuPort 432® contour cutter with a dedicated AccuThread™ solid carbide threadmill in a single kit. You also receive the T-A® inserts and port form inserts needed to complete the assembly.

Port kits incorporate the AccuThread™ solid carbide threadmills to increase the manufacturing flexibility by allowing hydraulic ports to be produced in just two operations. In addition, where a unique port profile is required, Allied Machine provides a dedicated special tooling solution using our extensive tool design and manufacturing experience to meet precise specifications.



Replaceable Inserts Overview

T-A® Drill Insert Grades			
HSS Super Cobalt (T-A®Original / GEN2 T-A®) Suited for good to rigid machining applications, used for drilling exotic and high alloy materials, or general use when surface speed needs to be increased for use in material hardness up to 350 BHN 121kg.	**Carbide P40 (C5)** (T-A®Original only) Excellent for drilling free machining steel, low/medium carbon steels, alloy steels, high strength steels, tool steels, and hardened steels.	**Carbide K35 (C1)** (GEN2 T-A® only) Excellent for drilling free machining steel, low/medium carbon steels, alloy steels, high strength steels, tool steels, and hardened steels.	**Carbide K10 (C3)** (T-A®Original only) Designed for drilling grey/white cast irons. The special geometry offers substantial increases in penetration rates and provides exceptional edge strength and tool life.

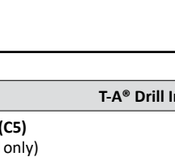
Port Form Inserts		GEN2 T-A Inserts		Original T-A Inserts
				
AM200®	TiAlN	AM300®	AM200®	TiN

GEN2 T-A® Standard Geometry

- Designed for rigid machining applications, primarily used for drilling exotic and high alloy materials
- Ideal for general use when the surface speed needs to be increased

T-A®Original Standard Geometry

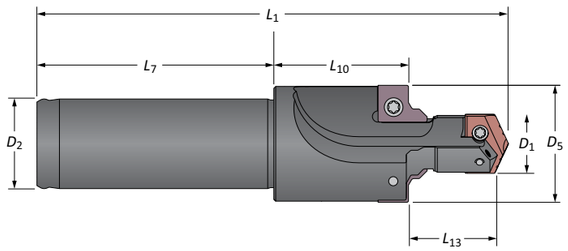
- First choice for machining Aluminium
- Enhanced geometry improves chip formation and hole quality
- TiN coating improves heat resistance and extends tool life



Made-to-Order Tool Specifications

Scan and email a copy of the table below to Allied's Application Engineering Department to receive pricing for a made-to-order AccuPort 432® Port Contour Cutter.

Send emails to engineering.eu@alliedmachine.com



Tube Dash No.	Specification	Port Thread Size	D_1	L_{13}	D_5	L_{10}	L_1	D_2	L_7
	☐ SAE J1926 ☐ ISO 6149-1 ☐ ISO 6149-1 (no ridge) ☐ JDS-G173.1 ☐ SAE AS5202								

Company Name

Contact Name

Phone

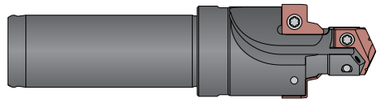
Distributor Name

Fax

Product Nomenclature

AccuPort 432® Holders

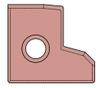
I6149	–	04	Y	–	16FM
1		2	3		4



1. Port Specifications	2. Port Tube Dash No.		3. T-A® Insert Series	4. Shank Configuration	
I6149 = Metric - ISO 6149-1	**04**	**14**	**Y** = Y series	**Metric**	**Imperial**
J1926 = Imperial - SAE J1926-1	**05**	**16**	**Z** = Z series	**16FM** = 16mm flanged	**063F** = 5/8" flanged
X1926 = Imperial - SAE J1926-1 (extended minor length)	**06**	**18**	**0** = 0 series	**20FM** = 20mm flanged	**075F** = 3/4" flanged
	08	**20**	**1** = 1 series	**25FM** = 25mm flanged	**100F** = 1" flanged
G1731 = John Deere - JDS G173.1	**10**	**24**	**2** = 2 series	**32FM** = 32mm flanged	**125F** = 1-1/4" flanged
AS5202 = Military - SAE AS5202	**12**	**32**	**3** = 3 series		**150F** = 1-1/2" flanged
			4 = 4 series		

AccuPort 432® Port Form Inserts

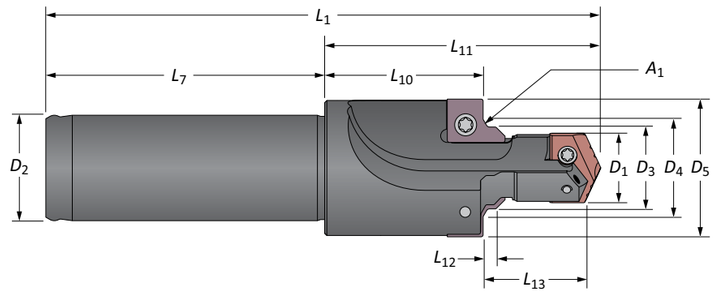
I6149	–	04	R	–	C5	A
1		2	3		4	5



1. Port Specifications	2. Insert Size		3. Port Specifications	4. Substrate	5. Coating
I6149 = Metric (ISO)	**02**	**10**	**Blank** = No ID ridge	**C5** = P40 carbide	**A** = TiAlN
J1926 = Imperial	**03**	**11**	**R** = ID ridge	**C3** = K35 carbide	**H** = AM200®
G1731 = John Deere	**04**	**12**			
AS5202 = Military	**05**	**14**			
	06	**16**			
	07	**20**			
	08	**24**			
	09	**32**			

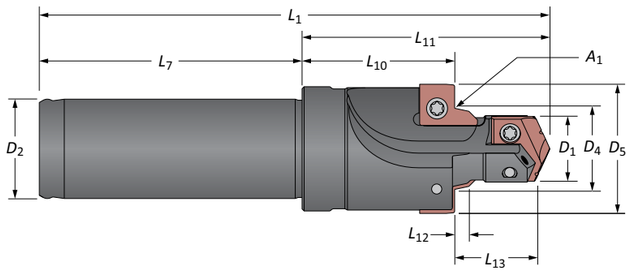
Reference Key

Symbol	Attribute
A_1	Seal angle
D_1	Minor diameter
D_2	Shank diameter
D_3	Pilot diameter
D_4	Seal angle diameter
D_5	Spot face diameter
L_1	Overall length
L_7	Shank length
L_{10}	Spot face to shoulder length
L_{11}	Total body length
L_{12}	Seal angle length
L_{13}	Minor diameter length



SAE J-1926 / ISO 11926-1 / MS-16142

Imperial Shank Holders



	Tube Dash No.	Cutting D_1	Cutting L_{13}*	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
	-4	9.80	14.00	21.30	12°	12.45	2.70	38.80	22.80	86.40	47.63	15.88	7/16-20 UNF-2B	**J1926-04Y-063F**
	-5	11.50	14.00	23.50	12°	14.05	2.70	38.80	22.50	86.40	47.63	15.88	1/2-20 UNF-2B	**J1926-05Z-063F**
	-6	13.00	15.50	25.10	12°	15.70	2.70	47.20	29.00	97.20	50.00	19.05	9/16-18 UNF-2B	**J1926-060-075F**
	-8	17.50	17.50	30.60	15°	20.65	2.70	50.30	29.20	100.40	50.00	19.05	3/4-16 UNF-2B	**J1926-080-075F**
	-10	20.50	20.00	34.10	15°	24.00	2.70	54.40	30.10	112.30	57.94	25.40	7/8-14 UNF-2B	**J1926-101-100F**
ⓜ	-12	25.00	23.00	42.00	15°	29.20	3.50	67.10	38.90	125.00	57.94	31.75	1 1/16-12 UN-2B	**J1926-122-125F**
	-14	28.00	23.00	45.20	15°	32.40	3.50	67.10	38.20	125.00	57.94	31.75	1 3/16-12 UN-2B	**J1926-142-125F**
	-16	31.20	23.00	49.10	15°	35.55	3.50	67.10	37.50	125.00	57.94	31.75	1 5/16-12 UN-2B	**J1926-162-125F**
	-20	39.00	23.00	58.50	15°	43.55	3.50	77.80	46.60	146.00	68.28	38.10	1 5/8-12 UN-2B	**J1926-203-150F**
	-24	45.50	23.00	65.10	15°	49.90	3.50	77.80	45.20	146.00	68.28	38.10	1 7/8-12 UN-2B	**J1926-243-150F**
	-32	61.50	23.00	88.10	15°	65.75	3.50	96.80	60.80	165.10	68.28	38.10	2 1/2-12 UN-2B	**J1926-324-150F**
	-4	0.386	0.551	0.840	12°	0.490	0.106	1.527	0.896	3.402	1.875	0.625	7/16-20 UNF-2B	**J1926-04Y-063F**
	-5	0.453	0.551	0.926	12°	0.553	0.106	1.527	0.885	3.402	1.875	0.625	1/2-20 UNF-2B	**J1926-05Z-063F**
	-6	0.512	0.610	0.989	12°	0.618	0.106	1.857	1.144	3.826	1.969	0.750	9/16-18 UNF-2B	**J1926-060-075F**
	-8	0.689	0.689	1.206	15°	0.813	0.106	1.982	1.150	3.951	1.969	0.750	3/4-16 UNF-2B	**J1926-080-075F**
	-10	0.807	0.787	1.344	15°	0.945	0.106	2.140	1.185	4.421	2.281	1.000	7/8-14 UNF-2B	**J1926-101-100F**
ⓘ	-12	0.984	0.906	1.655	15°	1.150	0.138	2.640	1.530	4.921	2.281	1.250	1 1/16-12 UN-2B	**J1926-122-125F**
	-14	1.102	0.906	1.781	15°	1.276	0.138	2.640	1.504	4.921	2.281	1.250	1 3/16-12 UN-2B	**J1926-142-125F**
	-16	1.231	0.906	1.934	15°	1.400	0.138	2.640	1.477	4.921	2.281	1.250	1 5/16-12 UN-2B	**J1926-162-125F**
	-20	1.535	0.906	2.306	15°	1.715	0.138	3.062	1.835	5.750	2.688	1.500	1 5/8-12 UN-2B	**J1926-203-150F**
	-24	1.791	0.906	2.564	15°	1.965	0.138	3.062	1.778	5.750	2.688	1.500	1 7/8-12 UN-2B	**J1926-243-150F**
	-32	2.421	0.906	3.470	15°	2.589	0.138	3.812	2.393	6.500	2.688	1.500	2 1/2-12 UN-2B	**J1926-324-150F**

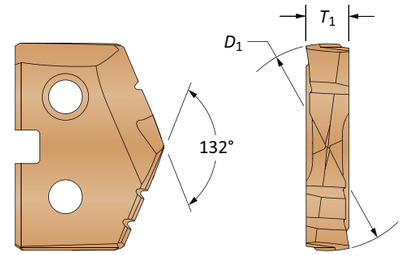
*Port contour cutters are available with extended pilot length (L_{13}). See pages A92: 10-11 for items.

A92: 30 - 37 A92: 2 - 4 A92: 18 - 21
Key on A92: 1

ⓜ = Metric (mm)
ⓘ = Imperial (in)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts



See section A30 for complete T-A insert details

T-A® Original / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200)	Part No. Carbide (AM300®)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	J1926-04Y-063F	Y	**45YH-.386**	**4C1YP-.386**	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	J1926-05Z-063F	Z	**45ZH-11.5**	**4C1ZP-11.5**	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	J1926-060-075F	0	**450H-13**	**4C10P-13**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	J1926-080-075F	0	**450H-0022**	**4C10P-0022**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	J1926-101-100F	1	**451H-20.5**	**4C11P-20.5**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	J1926-122-125F	2	**452H-25**	**4C12P-25**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	J1926-142-125F	2	**452H-28**	**4C12P-28**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	J1926-162-125F	2	**452H-1.231**	**4C12P-1.231**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	J1926-203-150F	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	J1926-243-150F	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	J1926-324-150F	4	**454H-61.5**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)

*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	J1926-04Y-063F	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	J1926-05Z-063F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	J1926-060-075F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	J1926-080-075F	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	J1926-101-100F	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-12	J1926-122-125F	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-14	J1926-142-125F	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-16	J1926-162-125F	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-20	J1926-203-150F	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-24	J1926-243-150F	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-32	J1926-324-150F	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)

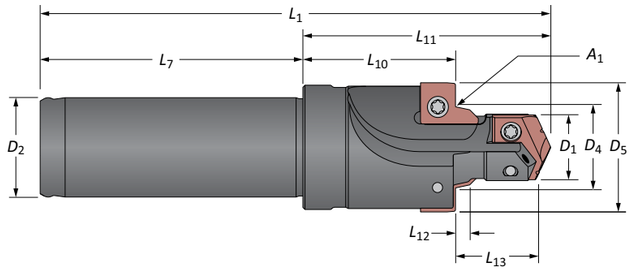
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37 A92: 2 - 4 A92: 18 - 21
Key on A92: 1

Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE J-1926 / ISO 11926-1 / MS-16142

Metric Shank Holders



Tube Dash No.	Cutting D_1	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
-4	9.80	14.00	21.30	12°	12.45	2.70	45.10	22.80	80.70	41.90	16.00	7/16-20 UNF-2B	**J1926-04Y-16FM**
-5	11.50	14.00	23.50	12°	14.05	2.70	45.10	22.50	92.80	41.90	16.00	1/2-20 UNF-2B	**J1926-05Z-16FM**
-6	13.00	15.50	25.10	12°	15.70	2.70	47.20	29.00	89.10	41.90	20.00	9/16-18 UNF-2B	**J1926-060-20FM**
-8	17.50	17.50	30.60	15°	20.65	2.70	50.30	29.20	92.30	41.90	20.00	3/4-16 UNF-2B	**J1926-080-20FM**
-10	20.50	20.00	34.10	15°	24.00	2.70	54.40	30.10	107.40	53.10	25.00	7/8-14 UNF-2B	**J1926-101-25FM**
Ⓜ -12	25.00	23.00	42.00	15°	29.20	3.50	67.10	38.90	125.00	57.90	32.00	1 1/16-12 UN-2B	**J1926-122-32FM**
-14	28.00	23.00	45.20	15°	32.40	3.50	67.10	38.20	125.00	57.90	32.00	1 3/16-12 UN-2B	**J1926-142-32FM**
-16	31.20	23.00	49.10	15°	35.55	3.50	67.10	37.50	125.00	57.90	32.00	1 5/16-12 UN-2B	**J1926-162-32FM**
-20	39.00	23.00	58.50	15°	43.55	3.50	77.80	46.60	143.30	65.50	32.00	1 5/8-12 UN-2B	**J1926-203-32FM***
-24	45.50	23.00	65.10	15°	49.90	3.50	77.80	45.20	143.30	65.50	32.00	1 7/8-12 UN-2B	**J1926-243-32FM***
-32	61.50	23.00	88.10	15°	65.75	3.50	96.80	60.80	162.30	65.50	32.00	2 1/2-12 UN-2B	**J1926-324-32FM***
-4	0.386	0.551	0.840	12°	0.490	0.106	1.527	0.896	3.180	1.650	0.630	7/16-20 UNF-2B	**J1926-04Y-16FM**
-5	0.453	0.551	0.926	12°	0.553	0.106	1.527	0.885	3.650	1.650	0.630	1/2-20 UNF-2B	**J1926-05Z-16FM**
-6	0.512	0.610	0.989	12°	0.618	0.106	1.857	1.144	3.510	1.650	0.787	9/16-18 UNF-2B	**J1926-060-20FM**
-8	0.689	0.689	1.206	15°	0.813	0.106	1.982	1.150	3.630	1.650	0.787	3/4-16 UNF-2B	**J1926-080-20FM**
-10	0.807	0.787	1.344	15°	0.945	0.106	2.140	1.185	4.230	2.091	0.984	7/8-14 UNF-2B	**J1926-101-25FM**
ⓘ -12	0.984	0.906	1.655	15°	1.150	0.138	2.640	1.530	4.920	2.280	1.260	1 1/16-12 UN-2B	**J1926-122-32FM**
-14	1.102	0.906	1.781	15°	1.276	0.138	2.640	1.504	4.920	2.280	1.260	1 3/16-12 UN-2B	**J1926-142-32FM**
-16	1.231	0.906	1.934	15°	1.400	0.138	2.640	1.477	4.920	2.280	1.260	1 5/16-12 UN-2B	**J1926-162-32FM**
-20	1.535	0.906	2.306	15°	1.715	0.138	3.062	1.835	5.640	2.580	1.260	1 5/8-12 UN-2B	**J1926-203-32FM***
-24	1.791	0.906	2.564	15°	1.965	0.138	3.062	1.778	5.640	2.580	1.260	1 7/8-12 UN-2B	**J1926-243-32FM***
-32	2.421	0.906	3.470	15°	2.589	0.138	3.812	2.393	6.390	2.580	1.260	2 1/2-12 UN-2B	**J1926-324-32FM***

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.

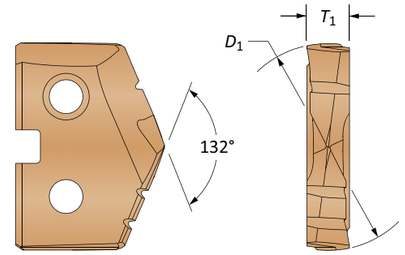
A92: 30 - 37 A92: 2 - 4 A92: 18 - 21

Key on A92: 1

Ⓜ = Metric (mm)
ⓘ = Imperial (in)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts



See section A30 for complete T-A insert details

T-A®Original / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200)	Part No. Carbide (AM300®)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	J1926-04Y-16FM	Y	**45YH-.386**	**4C1YP-.386**	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	J1926-05Z-16FM	Z	**45ZH-11.5**	**4C1ZP-11.5**	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	J1926-060-20FM	0	**450H-13**	**4C10P-13**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	J1926-080-20FM	0	**450H-0022**	**4C10P-0022**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	J1926-101-25FM	1	**451H-20.5**	**4C11P-20.5**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	J1926-122-32FM	2	**452H-25**	**4C12P-25**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	J1926-142-32FM	2	**452H-28**	**4C12P-28**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	J1926-162-32FM	2	**452H-1.231**	**4C12P-1.231**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	J1926-203-32FM*	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	J1926-243-32FM*	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	J1926-324-32FM*	4	**454H-61.5**	**–**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	J1926-04Y-16FM	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	J1926-05Z-16FM	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	J1926-060-20FM	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	J1926-080-20FM	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	J1926-101-25FM	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-12	J1926-122-32FM	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-14	J1926-142-32FM	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-16	J1926-162-32FM	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-20	J1926-203-32FM*	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-24	J1926-243-32FM*	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-32	J1926-324-32FM*	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

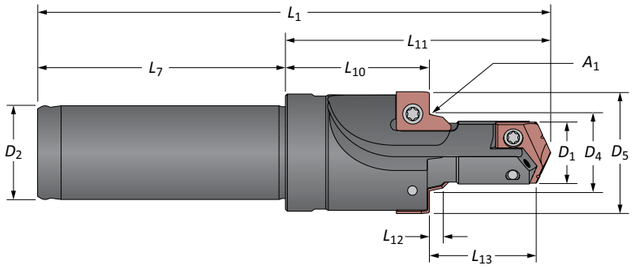
A92: 30 - 37 A92: 2 - 4 A92: 18 - 21

Key on A92: 1

Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE J-1926 / ISO 11926-1 / MS-16142

Imperial Shank Holders | Extended Minor Diameter Lengths (L_{13})



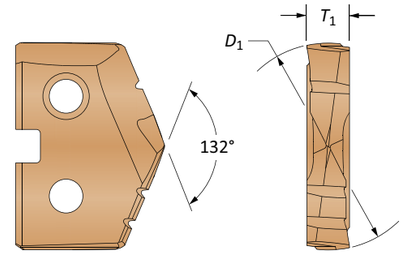
	Tube Dash No.	Cutting D_1	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
	-4	9.80	20.35	21.30	12°	12.45	2.70	45.10	22.80	92.80	47.63	15.88	7/16-20 UNF-2B	**X1926-04Y-063F**
	-5	11.50	20.35	23.50	12°	14.05	2.70	45.10	22.50	92.80	47.63	15.88	1/2-20 UNF-2B	**X1926-05Z-063F**
	-6	13.00	21.84	25.10	12°	15.70	2.70	53.50	29.00	103.50	50.00	19.05	9/16-18 UNF-2B	**X1926-060-075F**
	-8	17.50	23.84	30.60	15°	20.65	2.70	56.70	29.20	106.70	50.00	19.05	3/4-16 UNF-2B	**X1926-080-075F**
	-10	20.50	26.35	34.10	15°	24.00	2.70	60.70	30.10	118.60	57.94	25.40	7/8-14 UNF-2B	**X1926-101-100F**
ⓜ	-12	25.00	29.35	42.00	15°	29.20	3.50	73.40	38.90	131.30	57.94	31.75	1 1/16-12 UN-2B	**X1926-122-125F**
	-14	28.00	29.35	45.20	15°	32.40	3.50	73.40	38.20	131.30	57.94	31.75	1 3/16-12 UN-2B	**X1926-142-125F**
	-16	31.20	29.35	49.10	15°	35.55	3.50	73.40	37.50	131.30	57.94	31.75	1 5/16-12 UN-2B	**X1926-162-125F**
	-20	39.00	29.35	58.50	15°	43.55	3.50	84.10	46.60	152.40	68.28	38.10	1 5/8-12 UN-2B	**X1926-203-150F**
	-24	45.50	29.35	65.10	15°	49.90	3.50	84.10	45.20	152.40	68.28	38.10	1 7/8-12 UN-2B	**X1926-243-150F**
	-32	61.50	29.35	88.10	15°	65.75	3.50	103.20	60.80	171.40	68.28	38.10	2 1/2-12 UN-2B	**X1926-324-150F**
	-4	0.386	0.801	0.840	12°	0.490	0.106	1.777	0.896	3.650	1.875	0.625	7/16-20 UNF-2B	**X1926-04Y-063F**
	-5	0.453	0.801	0.926	12°	0.553	0.106	1.777	0.885	3.650	1.875	0.625	1/2-20 UNF-2B	**X1926-05Z-063F**
	-6	0.512	0.860	0.989	12°	0.618	0.106	2.107	1.144	4.070	1.969	0.750	9/16-18 UNF-2B	**X1926-060-075F**
	-8	0.689	0.939	1.206	15°	0.813	0.106	2.232	1.150	4.200	1.969	0.750	3/4-16 UNF-2B	**X1926-080-075F**
	-10	0.807	1.037	1.344	15°	0.945	0.106	2.390	1.185	4.670	2.281	1.000	7/8-14 UNF-2B	**X1926-101-100F**
ⓘ	-12	0.984	1.156	1.655	15°	1.150	0.138	2.890	1.530	5.170	2.281	1.250	1 1/16-12 UN-2B	**X1926-122-125F**
	-14	1.102	1.156	1.781	15°	1.276	0.138	2.890	1.504	5.170	2.281	1.250	1 3/16-12 UN-2B	**X1926-142-125F**
	-16	1.231	1.156	1.934	15°	1.400	0.138	2.890	1.477	5.170	2.281	1.250	1 5/16-12 UN-2B	**X1926-162-125F**
	-20	1.535	1.156	2.306	15°	1.715	0.138	3.312	1.835	6.000	2.688	1.500	1 5/8-12 UN-2B	**X1926-203-150F**
	-24	1.791	1.156	2.564	15°	1.965	0.138	3.312	1.778	6.000	2.688	1.500	1 7/8-12 UN-2B	**X1926-243-150F**
	-32	2.421	1.156	3.470	15°	2.589	0.138	4.062	2.393	6.750	2.688	1.500	2 1/2-12 UN-2B	**X1926-324-150F**

A92: 30 - 37 A92: 2 - 4 A92: 18 - 21
Key on A92: 1

ⓜ = Metric (mm)
ⓘ = Imperial (in)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts



See section A30 for complete T-A insert details

T-A®Original / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200)	Part No. Carbide (AM300®)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	X1926-04Y-063F	Y	**45YH-.386**	**4C1YP-.386**	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	X1926-05Z-063F	Z	**45ZH-11.5**	**4C1ZP-11.5**	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	X1926-060-075F	0	**450H-13**	**4C10P-13**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	X1926-080-075F	0	**450H-0022**	**4C10P-0022**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	X1926-101-100F	1	**451H-20.5**	**4C11P-20.5**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	X1926-122-125F	2	**452H-25**	**4C12P-25**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	X1926-142-125F	2	**452H-28**	**4C12P-28**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	X1926-162-125F	2	**452H-1.231**	**4C12P-1.231**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	X1926-203-150F	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	X1926-243-150F	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	X1926-324-150F	4	**454H-61.5**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)

*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	X1926-04Y-063F	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	X1926-05Z-063F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	X1926-060-075F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	X1926-080-075F	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	X1926-101-100F	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-12	X1926-122-125F	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-14	X1926-142-125F	**J1926-08-C3H**	**J1926-08-C5A**	7375-IP9-1	8IP-9	175 N-cm (15.5 in/lbs)
-16	X1926-162-125F	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-20	X1926-203-150F	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-24	X1926-243-150F	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-32	X1926-324-150F	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)

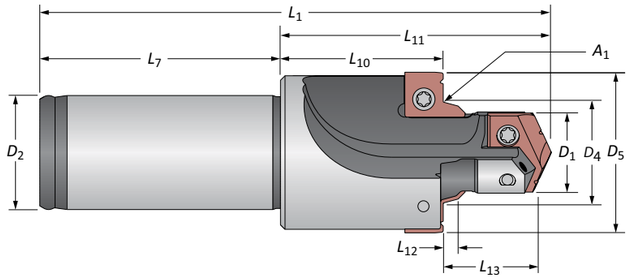
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37 A92: 2 - 4 A92: 18 - 21
Key on A92: 1

Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

ISO 6149-1:2006 / SAE J-2244/1

Metric Shank Holders



	Tube Dash No.	Cutting D_1	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
	-4	10.50	14.10	24.00	15°	13.81	2.60	38.80	22.20	80.70	41.90	16.00	M12 X 1.5	**I6149-04RY-16FM**
	-5	12.50	14.10	26.00	15°	15.82	2.60	38.80	21.80	80.70	41.90	16.00	M14 X 1.5	**I6149-05RZ-16FM**
	-6	14.50	15.60	28.00	15°	17.83	2.60	47.20	28.30	89.10	41.90	20.00	M16 X 1.5	**I6149-06R0-20FM**
	-8	16.50	17.10	30.00	15°	19.84	2.60	50.30	29.60	92.20	41.90	20.00	M18 X 1.5	**I6149-08R0-20FM**
	-10	20.50	18.20	34.00	15°	23.83	2.60	54.40	31.60	107.50	53.10	25.00	M22 X 1.5	**I6149-10R1-25FM**
ⓜ	-12	25.00	22.20	40.00	15°	29.44	3.30	67.10	39.40	125.00	57.90	32.00	M27 X 2	**I6149-12R2-32FM**
	-14	28.00	22.20	44.00	15°	32.44	3.30	67.10	38.80	125.00	57.90	32.00	M30 X 2	**I6149-14R2-32FM**
	-16	31.00	22.20	49.00	15°	35.43	3.30	67.10	38.10	125.00	57.90	32.00	M33 X 2	**I6149-16R2-32FM**
	-20	40.00	22.70	60.00	15°	44.42	3.30	77.80	46.40	143.30	65.50	32.00	M42 X 2	**I6149-20R3-32FM***
	-24	46.00	25.20	66.10	15°	50.42	3.30	77.80	42.60	143.30	65.50	32.00	M48 X 2	**I6149-24R3-32FM***
	-32	58.00	27.70	76.00	15°	62.43	3.30	96.80	56.60	162.30	65.50	32.00	M60 X 2	**I6149-32R4-32FM***
	-4	0.413	0.556	0.945	15°	0.544	0.102	1.527	0.876	3.180	1.650	0.630	M12 X 1.5	**I6149-04RY-16FM**
	-5	0.492	0.556	1.024	15°	0.623	0.102	1.527	0.858	3.180	1.650	0.630	M14 X 1.5	**I6149-05RZ-16FM**
	-6	0.571	0.615	1.102	15°	0.702	0.102	1.857	1.116	3.510	1.650	0.787	M16 X 1.5	**I6149-06R0-20FM**
	-8	0.650	0.674	1.181	15°	0.781	0.102	1.982	1.164	3.630	1.650	0.787	M18 X 1.5	**I6149-08R0-20FM**
	-10	0.807	0.717	1.339	15°	0.938	0.102	2.140	1.246	4.230	2.091	0.984	M22 X 1.5	**I6149-10R1-25FM**
ⓘ	-12	0.984	0.874	1.575	15°	1.159	0.130	2.640	1.552	4.920	2.280	1.260	M27 X 2	**I6149-12R2-32FM**
	-14	1.102	0.874	1.733	15°	1.277	0.130	2.640	1.526	4.920	2.280	1.260	M30 X 2	**I6149-14R2-32FM**
	-16	1.220	0.874	1.929	15°	1.395	0.130	2.640	1.499	4.920	2.280	1.260	M33 X 2	**I6149-16R2-32FM**
	-20	1.575	0.895	2.362	15°	1.749	0.130	3.062	1.828	5.640	2.580	1.260	M42 X 2	**I6149-20R3-32FM***
	-24	1.811	0.993	2.602	15°	1.985	0.130	3.062	1.676	5.640	2.580	1.260	M48 X 2	**I6149-24R3-32FM***
	-32	2.283	1.092	2.992	15°	2.458	0.130	3.812	2.228	6.390	2.580	1.260	M60 X 2	**I6149-32R4-32FM***

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.

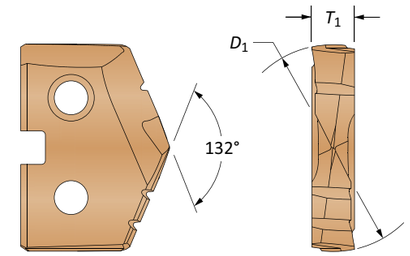
A92: 30 - 37 | A92: 2 - 4 | A92: 22 - 25

Key on A92: 1

ⓜ = Metric (mm)
ⓘ = Imperial (in)

ISO 6149-1:2006 / SAE J-2244/1

Inserts



See section A30 for complete T-A insert details

T-A®Original / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200)	Part No. Carbide (AM300®)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	I6149-04RY-16FM	Y	**45YH-10.5**	**4C1YP-10.5**	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	I6149-05RZ-16FM	Z	**45ZH-12.5**	**4C1ZP-12.5**	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	I6149-06R0-20FM	0	**450H-14.5**	**4C10P-14.5**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	I6149-08R0-20FM	0	**450H-16.5**	**4C10P-16.5**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	I6149-10R1-25FM	1	**451H-20.5**	**4C11P-20.5**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	I6149-12R2-32FM	2	**452H-25**	**4C12P-25**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	I6149-14R2-32FM	2	**452H-28**	**4C12P-28**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	I6149-16R2-32FM	2	**452H-31**	**4C12P-31**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	I6149-20R3-32FM*	3	**453H-40**	**1C53A-40**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	I6149-24R3-32FM*	3	**453H-46**	**1C53A-46**	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	I6149-32R4-32FM*	4	**454H-58**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. - C3 Carbide (AM200®) ID Ridge	Part No. - C3 Carbide (AM200®) No ID Ridge	Part No. - C5 Carbide (TiAlN) ID Ridge	Part No. - C5 Carbide (TiAlN) No ID Ridge	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	I6149-04RY-16FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	I6149-05RZ-16FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	I6149-06R0-20FM	**I6149-06R-C3H**	**I6149-06-C3H**	**I6149-06R-C5A**	**I6149-06-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	I6149-08R0-20FM	**I6149-06R-C3H**	**I6149-06-C3H**	**I6149-06R-C5A**	**I6149-06-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	I6149-10R1-25FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-12	I6149-12R2-32FM	**I6149-12R-C3H**	**I6149-12-C3H**	**I6149-12R-C5A**	**I6149-12-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-14	I6149-14R2-32FM	**I6149-14R-C3H**	**I6149-14-C3H**	**I6149-14R-C5A**	**I6149-14-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-16	I6149-16R2-32FM	**I6149-16R-C3H**	**I6149-16-C3H**	**I6149-16R-C5A**	**I6149-16-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-20	I6149-20R3-32FM*	**I6149-20R-C3H**	**I6149-20-C3H**	**I6149-20R-C5A**	**I6149-20-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-24	I6149-24R3-32FM*	**I6149-24R-C3H**	**I6149-24-C3H**	**I6149-24R-C5A**	**I6149-24-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-32	I6149-32R4-32FM*	**I6149-32R-C3H**	**I6149-32-C3H**	**I6149-32R-C5A**	**I6149-32-C5A**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

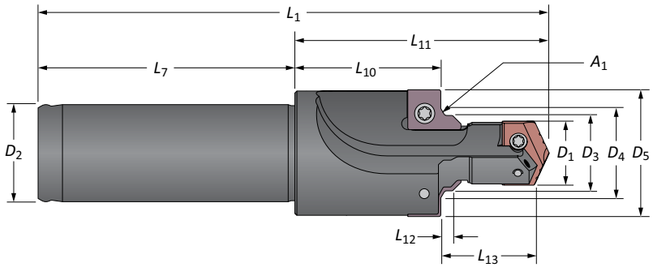
A92: 30 - 37 | A92: 2 - 4 | A92: 22 - 25

Key on A92: 1

Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE AS5202 / AND10050

Imperial Shank Holders



	Tube Dash No.	Cutting D_1	Cutting D_1*	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder D_3	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Port Thread Size*	Part No.
	-4	9.90	9.80	16.79	22.23	60°	14.34	2.11	11.53	41.58	22.76	89.20	47.63	15.88	7/16-20 UNJF-3B	7/16-20 UNF-3B	AS5202-04Y-063F
	-5	11.50	11.45	16.79	23.27	60°	15.88	2.11	13.13	41.58	22.39	89.20	47.63	15.88	1/2-20 UNJF-3B	1/2-20 UNF-3B	AS5202-05Z-063F
	-6	12.95	12.85	18.14	24.87	60°	17.46	2.11	14.73	49.28	28.43	99.29	50.01	19.05	9/16-18 UNJF-3B	9/16-18 UNF-3B	AS5202-060-075F
	-8	17.50	17.46	21.31	30.43	60°	22.23	2.39	19.53	53.52	28.57	103.53	50.01	19.05	3/4-16 UNJF-3B	3/4-16 UNF-3B	AS5202-080-075F
	-10	20.50	20.35	23.75	34.39	60°	25.46	2.72	22.76	58.17	30.19	116.10	57.94	25.40	7/8-14 UNJF-3B	7/8-14 UNF-3B	AS5202-101-100F
ⓜ	-12	25.00	24.80	27.15	41.53	60°	31.42	3.18	27.58	70.23	37.94	128.17	57.94	31.75	1 1/16-12 UNJ-3B	1 1/16-12 UN-3B	AS5202-122-125F
	-14	28.17	28.00	27.15	45.09	60°	34.61	3.18	30.76	70.23	37.22	128.17	57.94	31.75	1 3/16-12 UNJ-3B	1 3/16-12 UN-3B	AS5202-142-125F
	-16	31.34	31.15	27.15	48.77	60°	37.77	3.18	33.93	70.23	36.51	128.17	57.94	31.75	1 5/16-12 UNJ-3B	1 5/16-12 UN-3B	AS5202-162-125F
	-20	39.29	39.00	28.47	57.91	60°	45.69	3.18	41.86	80.95	44.32	149.23	68.28	38.10	1 5/8-12 UNJ-3B	1 5/8-12 UN-3B	AS5202-203-150F
	-24	45.64	45.50	28.75	65.28	60°	52.07	3.18	48.21	80.95	42.58	149.23	68.28	38.10	1 7/8-12 UNJ-3B	1 7/8-12 UN-3B	AS5202-243-150F
	-32	61.49	61.30	34.87	88.65	60°	67.97	3.18	64.11	93.65	45.78	161.93	68.28	38.10	2 1/2-12 UNJ-3B	2 1/2-12 UN-3B	AS5202-324-150F
	-4	0.390	0.386	0.661	0.875	60°	0.564	0.083	0.454	1.637	0.896	3.510	1.875	0.625	7/16-20 UNJF-3B	7/16-20 UNF-3B	AS5202-04Y-063F
	-5	0.453	0.451	0.661	0.916	60°	0.625	0.083	0.517	1.637	0.882	3.510	1.875	0.625	1/2-20 UNJF-3B	1/2-20 UNF-3B	AS5202-05Z-063F
	-6	0.510	0.506	0.714	0.979	60°	0.688	0.083	0.580	1.940	1.119	3.910	1.969	0.750	9/16-18 UNJF-3B	9/16-18 UNF-3B	AS5202-06Z-075F
	-8	0.689	0.688	0.839	1.198	60°	0.875	0.094	0.769	2.107	1.125	4.080	1.969	0.750	3/4-16 UNJF-3B	3/4-16 UNF-3B	AS5202-080-075F
	-10	0.807	0.801	0.935	1.354	60°	1.002	0.107	0.896	2.290	1.189	4.570	2.281	1.000	7/8-14 UNJF-3B	7/8-14 UNF-3B	AS5202-101-100F
ⓘ	-12	0.984	0.976	1.069	1.635	60°	1.237	0.125	1.086	2.765	1.494	5.050	2.281	1.250	1 1/16-12 UNJ-3B	1 1/16-12 UN-3B	AS5202-122-125F
	-14	1.109	1.102	1.069	1.775	60°	1.363	0.125	1.211	2.765	1.465	5.050	2.281	1.250	1 3/16-12 UNJ-3B	1 3/16-12 UN-3B	AS5202-142-125F
	-16	1.234	1.226	1.069	1.920	60°	1.487	0.125	1.336	2.765	1.437	5.050	2.281	1.250	1 5/16-12 UNJ-3B	1 5/16-12 UN-3B	AS5202-162-125F
	-20	1.547	1.535	1.121	2.280	60°	1.799	0.125	1.648	3.187	1.745	5.880	2.688	1.500	1 5/8-12 UNJ-3B	1 5/8-12 UN-3B	AS5202-203-150F
	-24	1.797	1.791	1.132	2.570	60°	2.050	0.125	1.898	3.187	1.676	5.880	2.688	1.500	1 7/8-12 UNJ-3B	1 7/8-12 UN-3B	AS5202-243-150F
	-32	2.421	2.413	1.373	3.490	60°	2.676	0.125	2.524	3.687	1.802	6.380	2.688	1.500	2 1/2-12 UNJ-3B	2 1/2-12 UN-3B	AS5202-324-150F

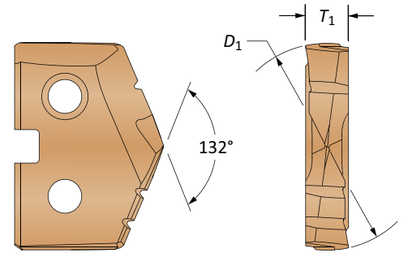
*AND10050 specifications shown in red

A92: 30 - 37 A92: 2 - 4 A92: 26 - 27
Key on A92: 1

ⓜ = Metric (mm)
ⓘ = Imperial (in)

SAE AS5202 / AND10050

Inserts



See section A30 for complete T-A insert details

T-A®Original / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200®)		Part No. Carbide (AM300®)		Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	AS5202-04Y-063F	Y	**45YH-.390**	45YH-.386	**4C1YP-.390**	4C1YP-.386	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	AS5202-05Z-063F	Z	**45ZH-11.5**	45ZH-.451	**4C1ZP-11.5**	4C1ZP-.451	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	AS5202-060-075F	Z	**45ZH-.510**	45ZH-.506	**4C1ZP-.510**	4C1ZP-.506	7247-IP7-1	8IP-7	175 N-cm (15.5 in/lbs)
-8	AS5202-080-075F	0	**450H-17.5**	450H-0022	**4C10P-17.5**	4C10P-0022	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	AS5202-101-100F	1	**451H-20.5**	451H-.801	**4C11P-20.5**	4C11P-.801	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	AS5202-122-125F	2	**452H-25**	452H-.976	**4C12P-25**	4C12P-.976	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	AS5202-142-125F	2	**452H-1.109**	452H-28	**4C12P-1.109**	4C12P-28	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	AS5202-162-125F	2	**452H-1.234**	452H-1.226	**4C12P-1.234**	4C12P-1.226	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	AS5202-203-150F	3	**453H-1.547**	453H-39	**1C53A-1.547**	1C53A-39	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	AS5202-243-150F	3	**453H-1.797**	453H-45.5	**1C53A-1.797**	1C53A-45.5	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	AS5202-324-150F	4	**454H-2.421**	454H-2.413	–	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)

*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength
NOTE: AND10050 specifications shown in red

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	AS5202-04Y-063F	**AS5202-04-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	AS5202-05Z-063F	**AS5202-05-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	AS5202-060-075F	**AS5202-06-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	AS5202-080-075F	**AS5202-08-C5A**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	AS5202-101-100F	**AS5202-10-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-12	AS5202-122-125F	**AS5202-12-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	AS5202-142-125F	**AS5202-14-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	AS5202-162-125F	**AS5202-16-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-20	AS5202-203-150F	**AS5202-20-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-24	AS5202-243-150F	**AS5202-24-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-32	AS5202-324-150F	**AS5202-32-C5A**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)

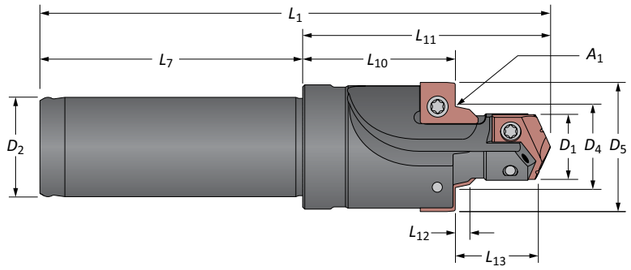
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37 A92: 2 - 4 A92: 26 - 27
Key on A92: 1

Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

JDS-G173.1

Metric Shank Holders



	Tube Dash No.	Cutting D_1	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
	-4	10.50	18.00	24.00	15°	13.90	2.65	40.10	22.20	84.50	41.90	16.00	M12 X 1.5	**G1731-04Y-16FM**
	-5	12.50	18.00	26.00	15°	15.90	2.65	40.10	21.80	84.50	41.90	16.00	M14 X 1.5	**G1731-05Z-16FM**
	-6	14.50	19.00	29.00	15°	17.90	2.65	47.60	28.40	92.20	41.90	20.00	M16 X 1.5	**G1731-060-20FM**
	-8	16.50	21.00	31.00	15°	19.90	2.65	51.20	29.50	95.80	41.90	20.00	M18 X 1.5	**G1731-080-20FM**
	-10	20.50	22.00	35.00	15°	23.90	2.65	54.40	31.60	111.00	53.10	25.00	M22 X 1.5	**G1731-101-25FM**
	-12	25.00	27.00	41.00	15°	29.50	3.35	68.10	39.40	129.60	57.90	32.00	M27 X 2	**G1731-122-32FM**
ⓜ	-14	28.00	27.00	44.00	15°	32.50	3.35	68.10	39.70	129.60	57.90	32.00	M30 X 2	**G1731-142-32FM**
	-16	31.00	27.00	50.00	15°	35.50	3.35	68.10	38.10	129.60	57.90	32.00	M33 X 2	**G1731-162-32FM**
	-18	36.00	27.00	55.00	15°	40.50	3.35	76.60	46.80	146.80	65.50	32.00	M38 X 2	**G1731-183-32FM***
	-20	40.00	27.00	61.00	15°	44.50	3.35	76.60	45.90	146.80	65.50	32.00	M42 X 2	**G1731-203-32FM***
	-24	46.00	29.00	67.00	15°	50.50	3.35	76.60	42.80	146.80	65.50	32.00	M48 X 2	**G1731-243-32FM***
	-32	58.00	32.00	77.00	15°	62.50	3.35	96.10	58.40	166.40	65.50	32.00	M60 X 2	**G1731-324-32FM***
	C**	18.50	20.00	33.00	15°	21.90	2.65	50.80	32.50	107.40	53.10	25.00	M20 X 1.5	**G1731-CV1-25FM**
	-4	0.413	0.709	0.945	15°	0.547	0.104	1.580	0.875	3.320	1.650	0.630	M12 X 1.5	**G1731-04Y-16FM**
	-5	0.492	0.709	1.024	15°	0.626	0.104	1.580	0.858	3.320	1.650	0.630	M14 X 1.5	**G1731-05Z-16FM**
	-6	0.571	0.748	1.142	15°	0.705	0.104	1.870	1.117	3.630	1.650	0.787	M16 X 1.5	**G1731-060-20FM**
	-8	0.650	0.827	1.220	15°	0.783	0.104	2.020	1.161	3.770	1.650	0.787	M18 X 1.5	**G1731-080-20FM**
	-10	0.807	0.866	1.378	15°	0.941	0.104	2.140	1.246	4.370	2.090	0.984	M22 X 1.5	**G1731-101-25FM**
	-12	0.984	1.063	1.614	15°	1.161	0.132	2.680	1.553	5.100	2.280	1.260	M27 X 2	**G1731-122-32FM**
ⓘ	-14	1.102	1.063	1.732	15°	1.280	0.132	2.680	1.526	5.100	2.280	1.260	M30 X 2	**G1731-142-32FM**
	-16	1.221	1.063	1.969	15°	1.398	0.132	2.680	1.500	5.100	2.280	1.260	M33 X 2	**G1731-162-32FM**
	-18	1.417	1.063	2.165	15°	1.594	0.132	3.020	1.844	5.780	2.580	1.260	M38 X 2	**G1731-183-32FM***
	-20	1.575	1.063	2.402	15°	1.752	0.132	3.020	1.809	5.780	2.580	1.260	M42 X 2	**G1731-203-32FM***
	-24	1.811	1.142	2.638	15°	1.988	0.132	3.020	1.687	5.780	2.580	1.260	M48 X 2	**G1731-243-32FM***
	-32	2.284	1.260	3.031	15°	2.461	0.132	3.780	2.300	6.550	2.580	1.260	M60 X 2	**G1731-324-32FM***
	C**	0.728	0.787	1.299	15°	0.862	0.104	2.000	1.281	4.230	2.090	0.984	M20 X 1.5	**G1731-CV1-25FM**

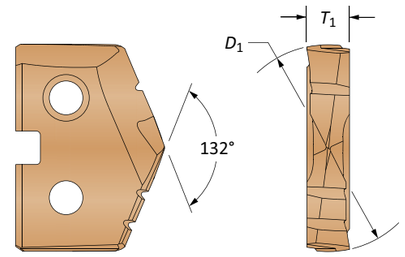
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Cartridge cavity

A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 28

ⓜ = Metric (mm)
ⓘ = Imperial (in)

JDS-G173.1

Inserts



See section A30 for complete T-A insert details

GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	T-A® Insert Series	Part No. Super Cobalt (AM200)	Part No. Carbide (AM300®)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	G1731-04Y-16FM	Y	**45YH-10.5**	**4C2YP-10.5**	724-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-5	G1731-05Z-16FM	Z	**45ZH-12.5**	**4C2ZP-12.5**	7247-IP7-1	8IP-7	84 N-cm (7.4 in/lbs)
-6	G1731-060-20FM	0	**450H-14.5**	**4C20P-14.5**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	G1731-080-20FM	0	**450H-16.5**	**4C20P-16.5**	72567-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	G1731-101-25FM	1	**451H-20.5**	**4C21P-20.5**	739-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-12	G1731-122-32FM	2	**452H-25**	**4C22P-25**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-14	G1731-142-32FM	2	**452H-28**	**4C22P-28**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-16	G1731-162-32FM	2	**452H-31**	**4C22P-31**	7495-IP15-1	8IP-15	690 N-cm (61.0 in/lbs)
-18	G1731-183-32FM*	3	**453H-36**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-20	G1731-203-32FM*	3	**453H-40**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-24	G1731-243-32FM*	3	**453H-46**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
-32	G1731-324-32FM*	4	**454H-58**	–	7514-IP20-1	8IP-20	1370 N-cm (121.3 in/lbs)
C***	G1731-CV1-25FM	1	**451H-18.5**	**4C21P-18.5**	739-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength
***Cartridge cavity

Port Form Drill Inserts

Tube Dash No.	AccuPort 432® Part No.	Part No. C3 Carbide (AM200®)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	G1731-04Y-16FM	**G1731-01-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-5	G1731-05Z-16FM	**G1731-01-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-6	G1731-060-20FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-8	G1731-080-20FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-10	G1731-101-25FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-12	G1731-122-32FM	**G1731-03-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-14	G1731-142-32FM	**G1731-03-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)
-16	G1731-162-32FM	**G1731-04-C3H**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-18	G1731-183-32FM*	**G1731-04-C3H**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-20	G1731-203-32FM*	**G1731-05-C3H**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-24	G1731-243-32FM*	**G1731-05-C3H**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
-32	G1731-324-32FM*	**G1731-06-C3H**	7375-IP9-1	8IP-9	305 N-cm (27.0 in/lbs)
C***	G1731-CV1-25FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	175 N-cm (15.5 in/lbs)

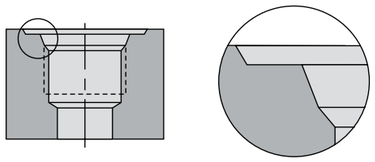
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength
***Cartridge cavity

A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 28

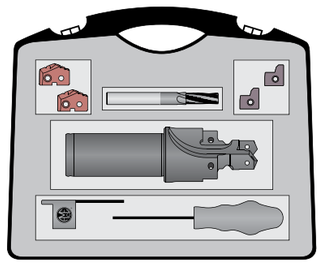
Y - 2 series T-A® inserts sold in multiples of 2
3 - 4 series T-A® inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

Port and Thread Finishing Kits

SAE J-1926-1 | Imperial | Ferrous Materials

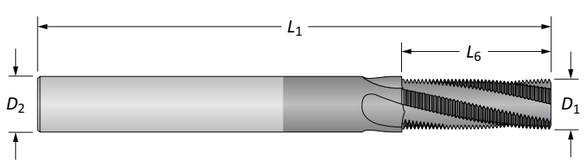


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

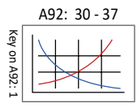
Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-063F	7/16-20 UNF-2B	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20	1	**ATKK04-1926**
-5	J1926-05Z-063F	1/2-20 UNF-2B	1	45ZH-11.5	2	J1926-03-C5A	2	TMAK0438-20	1	**ATKK05-1926**
-6	J1926-060-075F	9/16-18 UNF-2B	1	450H-13	2	J1926-03-C5A	2	TMAK0563-18	1	**ATKK06-1926**
-8	J1926-080-075F	3/4-16 UNF-2B	1	450H-0022	2	J1926-07-C5A	2	TMAK0750-16	1	**ATKK08-1926**
-10	J1926-101-100F	7/8-14 UNF-2B	1	451H-20.5	2	J1926-04-C5A	2	TMAK0875-14	1	**ATKK10-1926**
-12	J1926-122-125F	1-1/16-12 UN-2B	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12	1	**ATKK12-1926**
-14	J1926-142-125F	1-3/16-12 UN-2B	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12	1	**ATKK14-1926**
-16	J1926-162-125F	1-5/16-12 UN-2B	1	452H-1.231	2	J1926-09-C5A	2	TMAK1063-12	1	**ATKK16-1926**
-20	J1926-203-150F	1-5/8-12 UN-2B	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12	1	**ATKK20-1926**
-24	J1926-243-150F	1-7/8-12 UN-2B	1	453H-45.5	1	J1926-11-C5A	2	TMAK1063-12	1	**ATKK24-1926**
-32	J1926-324-150F	2-1/2-12 UN-2B	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12	1	**ATKK32-1926**

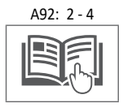


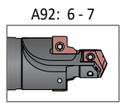
AccuThread™ Port Specific Solid Carbide Thread Mills

Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAK0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAK0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAK0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAK0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAK1063-12**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

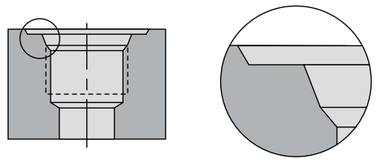




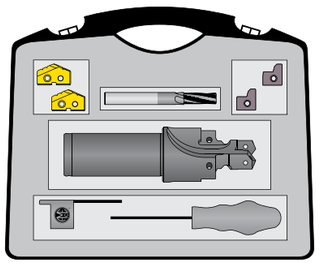


Port and Thread Finishing Kits

SAE J-1926-1 | Imperial | Non-Ferrous Materials

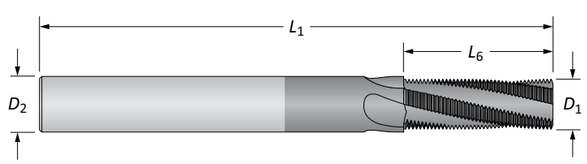


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

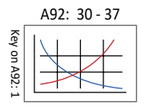
Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	T-A®Original/Insert Super Cobalt (TiN)	T-A®Original/Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-063F	7/16-20 UNF-2B	1	45YH-.386	2	J1926-02-C5A	2	TMAU0438-20	1	**ATKU04-1926**
-5	J1926-05Z-063F	1/2-20 UNF-2B	1	45ZH-11.5	2	J1926-03-C5A	2	TMAU0438-20	1	**ATKU05-1926**
-6	J1926-060-075F	9/16-18 UNF-2B	1	450H-13	2	J1926-03-C5A	2	TMAU0563-18	1	**ATKU06-1926**
-8	J1926-080-075F	3/4-16 UNF-2B	1	450H-0022	2	J1926-07-C5A	2	TMAU0750-16	1	**ATKU08-1926**
-10	J1926-101-100F	7/8-14 UNF-2B	1	451H-20.5	2	J1926-04-C5A	2	TMAU0875-14	1	**ATKU10-1926**
-12	J1926-122-125F	1-1/16-12 UN-2B	1	452H-25	2	J1926-08-C5A	2	TMAU1063-12	1	**ATKU12-1926**
-14	J1926-142-125F	1-3/16-12 UN-2B	1	452H-28	2	J1926-08-C5A	2	TMAU1063-12	1	**ATKU14-1926**
-16	J1926-162-125F	1-5/16-12 UN-2B	1	452H-1.231	2	J1926-09-C5A	2	TMAU1063-12	1	**ATKU16-1926**
-20	J1926-203-150F	1-5/8-12 UN-2B	1	453H-39	1	J1926-10-C5A	2	TMAU1063-12	1	**ATKU20-1926**
-24	J1926-243-150F	1-7/8-12 UN-2B	1	453H-45.5	1	J1926-11-C5A	2	TMAU1063-12	1	**ATKU24-1926**
-32	J1926-324-150F	2-1/2-12 UN-2B	1	454H-61.5	1	J1926-12-C5A	2	TMAU1063-12	1	**ATKU32-1926**

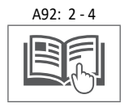


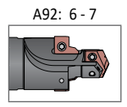
AccuThread™ Port Specific Solid Carbide Thread Mills

Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAU0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAU0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAU0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAU0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAU1063-12**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

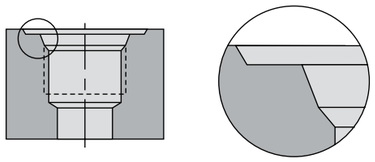




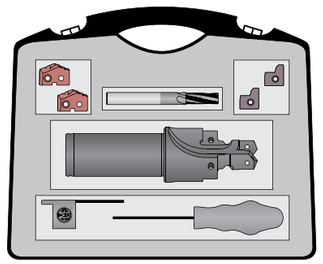


Port and Thread Finishing Kits

SAE J-1926-1 | Metric | Ferrous Materials

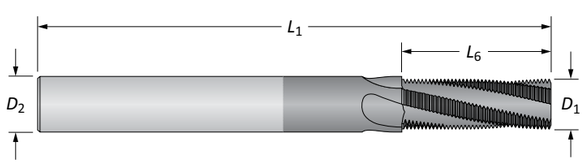


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-16FM	7/16-20 UNF-2B	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20M	1	**ATKK04-1926M**
-5	J1926-05Z-16FM	1/2-20 UNF-2B	1	45ZH-11.5	2	J1926-03-C5A	2	TMAK0438-20M	1	**ATKK05-1926M**
-6	J1926-060-20FM	9/16-18 UNF-2B	1	450H-13	2	J1926-03-C5A	2	TMAK0563-18M	1	**ATKK06-1926M**
-8	J1926-080-20FM	3/4-16 UNF-2B	1	450H-0022	2	J1926-07-C5A	2	TMAK0750-16M	1	**ATKK08-1926M**
-10	J1926-101-25FM	7/8-14 UNF-2B	1	451H-20.5	2	J1926-04-C5A	2	TMAK0875-14M	1	**ATKK10-1926M**
-12	J1926-122-32FM	1-1/16-12 UN-2B	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12M	1	**ATKK12-1926M**
-14	J1926-142-32FM	1-3/16-12 UN-2B	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12M	1	**ATKK14-1926M**
-16	J1926-162-32FM	1-5/16-12 UN-2B	1	452H-1.231	2	J1926-09-C5A	2	TMAK1063-12M	1	**ATKK16-1926M**
-20	J1926-203-32FM	1-5/8-12 UN-2B	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12M	1	**ATKK20-1926M**
-24	J1926-243-32FM	1-7/8-12 UN-2B	1	453H-45.5	1	J1926-11-C5A	2	TMAK1063-12M	1	**ATKK24-1926M**
-32	J1926-324-32FM	2-1/2-12 UN-2B	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12M	1	**ATKK32-1926M**



AccuThread™ Port Specific Solid Carbide Thread Mills

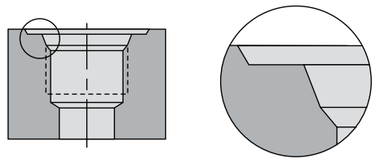
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	8.51	15.24	10.00	73.00	4	**TMAK0438-20M**
-6	18	9.40	16.92	10.00	73.00	4	**TMAK0563-18M**
-8	16	11.94	19.05	12.00	84.00	4	**TMAK0750-16M**
-10	14	11.94	21.77	12.00	84.00	4	**TMAK0875-14M**
-12 to -32	12	11.94	23.29	12.00	84.00	4	**TMAK1063-12M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

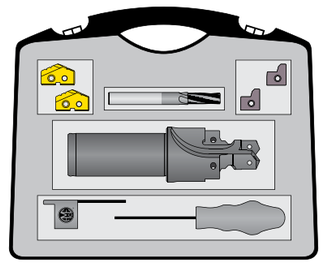
A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 8 - 9

Port and Thread Finishing Kits

SAE J-1926-1 | Metric | Non-Ferrous Materials

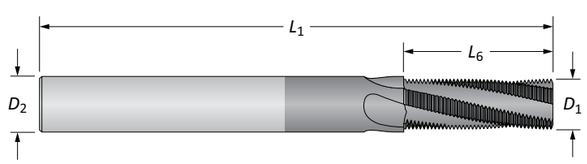


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	T-A®OriginalInsert Super Cobalt (TiN)	T-A®OriginalInsert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-16FM	7/16-20 UNF-2B	1	15YT-.386	2	J1926-02-C5A	2	TMAU0438-20M	1	**ATKU04-1926M**
-5	J1926-05Z-16FM	1/2-20 UNF-2B	1	15ZT-11.5	2	J1926-03-C5A	2	TMAU0438-20M	1	**ATKU05-1926M**
-6	J1926-060-20FM	9/16-18 UNF-2B	1	150T-13	2	J1926-03-C5A	2	TMAU0563-18M	1	**ATKU06-1926M**
-8	J1926-080-20FM	3/4-16 UNF-2B	1	150T-0022	2	J1926-07-C5A	2	TMAU0750-16M	1	**ATKU08-1926M**
-10	J1926-101-25FM	7/8-14 UNF-2B	1	151T-20.5	2	J1926-04-C5A	2	TMAU0875-14M	1	**ATKU10-1926M**
-12	J1926-122-32FM	1-1/16-12 UN-2B	1	152T-25	2	J1926-08-C5A	2	TMAU1063-12M	1	**ATKU12-1926M**
-14	J1926-142-32FM	1-3/16-12 UN-2B	1	152T-28	2	J1926-08-C5A	2	TMAU1063-12M	1	**ATKU14-1926M**
-16	J1926-162-32FM	1-5/16-12 UN-2B	1	152T-1.231	2	J1926-09-C5A	2	TMAU1063-12M	1	**ATKU16-1926M**
-20	J1926-203-32FM	1-5/8-12 UN-2B	1	453T-39	1	J1926-10-C5A	2	TMAU1063-12M	1	**ATKU20-1926M**
-24	J1926-243-32FM	1-7/8-12 UN-2B	1	453T-45.5	1	J1926-11-C5A	2	TMAU1063-12M	1	**ATKU24-1926M**
-32	J1926-324-32FM	2-1/2-12 UN-2B	1	454T-61.5	1	J1926-12-C5A	2	TMAU1063-12M	1	**ATKU32-1926M**



AccuThread™ Port Specific Solid Carbide Thread Mills

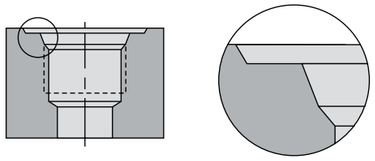
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	8.51	15.24	10.00	73.00	4	**TMAU0438-20M**
-6	18	9.40	16.92	10.00	73.00	4	**TMAU0563-18M**
-8	16	11.94	19.05	12.00	84.00	4	**TMAU0750-16M**
-10	14	11.94	21.77	12.00	84.00	4	**TMAU0875-14M**
-12 to -32	12	11.94	23.29	12.00	84.00	4	**TMAU1063-12M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

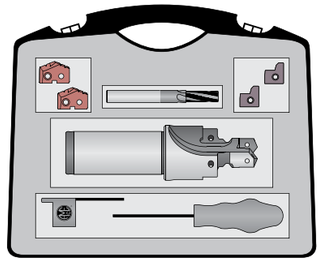
A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 8 - 9

Port and Thread Finishing Kits

ISO 6149-1 | No ID Ridge | Ferrous Materials

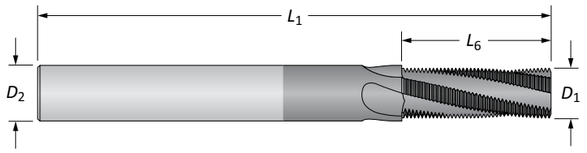


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	45YH-10.5	2	I6149-04-C5A	2	TMMK1000-150M	1	**ATKK04-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	45ZH-12.5	2	I6149-04-C5A	2	TMMK1400-150M	1	**ATKK05-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	450H-14.5	2	I6149-06-C5A	2	TMMK1400-150M	1	**ATKK06-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	450H-16.5	2	I6149-06-C5A	2	TMMK1800-150M	1	**ATKK08-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	451H-20.5	2	I6149-04-C5A	2	TMMK1800-150M	1	**ATKK10-6149**
-12	I6149-12R2-32FM	M27 X 2	1	452H-25	2	I6149-12-C5A	2	TMMK2000-200M	1	**ATKK12-6149**
-14	I6149-14R2-32FM	M30 X 2	1	452H-28	2	I6149-14-C5A	2	TMMK2000-200M	1	**ATKK14-6149**
-16	I6149-16R2-32FM	M33 X 2	1	452H-31	2	I6149-16-C5A	2	TMMK2000-200M	1	**ATKK16-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453H-40	1	I6149-20-C5A	2	TMMK2000-200M	1	**ATKK20-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453H-46	1	I6149-24-C5A	2	TMMK2000-200M	1	**ATKK24-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454H-58	1	I6149-32-C5A	2	TMMK2000-200M	1	**ATKK32-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

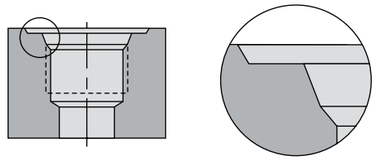
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

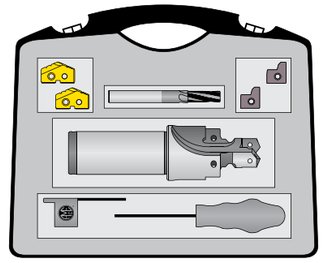
A92: 30 - 37 A92: 2 - 4 A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

ISO 6149-1 | No ID Ridge | Non-Ferrous Materials

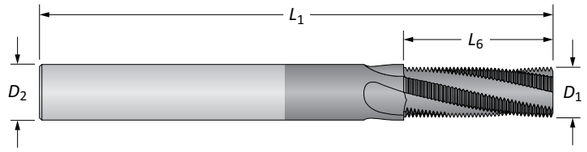


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	T-A®OriginalInsert Super Cobalt (TiN)	T-A®OriginalInsert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	15YT-10.5	2	I6149-04-C5A	2	TMMU1000-150M	1	**ATKU04-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	15ZT-12.5	2	I6149-04-C5A	2	TMMU1400-150M	1	**ATKU05-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	150T-14.5	2	I6149-06-C5A	2	TMMU1400-150M	1	**ATKU06-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	150T-16.5	2	I6149-06-C5A	2	TMMU1800-150M	1	**ATKU08-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	151T-20.5	2	I6149-04-C5A	2	TMMU1800-150M	1	**ATKU10-6149**
-12	I6149-12R2-32FM	M27 X 2	1	152T-25	2	I6149-12-C5A	2	TMMU2000-200M	1	**ATKU12-6149**
-14	I6149-14R2-32FM	M30 X 2	1	152T-28	2	I6149-14-C5A	2	TMMU2000-200M	1	**ATKU14-6149**
-16	I6149-16R2-32FM	M33 X 2	1	152T-31	2	I6149-16-C5A	2	TMMU2000-200M	1	**ATKU16-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453T-40	1	I6149-20-C5A	2	TMMU2000-200M	1	**ATKU20-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453T-46	1	I6149-24-C5A	2	TMMU2000-200M	1	**ATKU24-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454T-58	1	I6149-32-C5A	2	TMMU2000-200M	1	**ATKU32-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

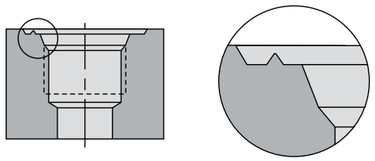
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMU1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMU1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMU1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMU2000-200M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

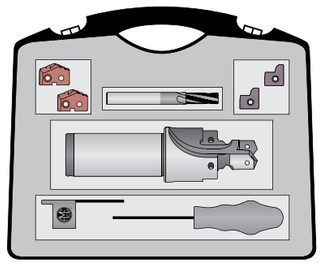
A92: 30 - 37 A92: 2 - 4 A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

ISO 6149-1 | ID Ridge | Ferrous Materials

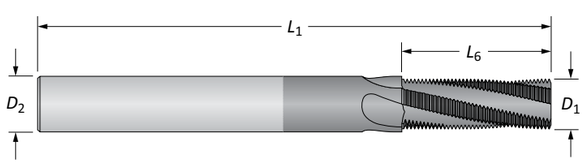


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	45YH-10.5	2	I6149-04R-C5A	2	TMMK1000-150M	1	**ATKK04R-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	45ZH-12.5	2	I6149-04R-C5A	2	TMMK1400-150M	1	**ATKK05R-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	450H-14.5	2	I6149-06R-C5A	2	TMMK1400-150M	1	**ATKK06R-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	450H-16.5	2	I6149-06R-C5A	2	TMMK1800-150M	1	**ATKK08R-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	451H-20.5	2	I6149-04R-C5A	2	TMMK1800-150M	1	**ATKK10R-6149**
-12	I6149-12R2-32FM	M27 X 2	1	452H-25	2	I6149-12R-C5A	2	TMMK2000-200M	1	**ATKK12R-6149**
-14	I6149-14R2-32FM	M30 X 2	1	452H-28	2	I6149-14R-C5A	2	TMMK2000-200M	1	**ATKK14R-6149**
-16	I6149-16R2-32FM	M33 X 2	1	452H-31	2	I6149-16R-C5A	2	TMMK2000-200M	1	**ATKK16R-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453H-40	1	I6149-20R-C5A	2	TMMK2000-200M	1	**ATKK20R-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453H-46	1	I6149-24R-C5A	2	TMMK2000-200M	1	**ATKK24R-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454H-58	1	I6149-32R-C5A	2	TMMK2000-200M	1	**ATKK32R-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

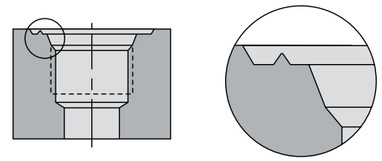
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

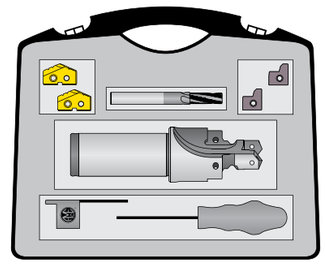
A92: 30 - 37 A92: 2 - 4 A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

ISO 6149-1 | ID Ridge | Non-Ferrous Materials

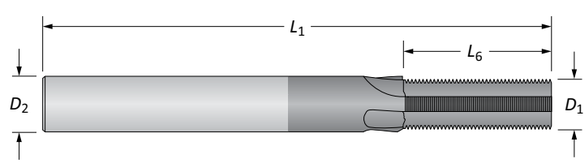


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	T-A®OriginalInsert Super Cobalt (TiN)	T-A®OriginalInsert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	15YT-10.5	2	I6149-04R-C5A	2	TMMU1000-150M	1	**ATKU04R-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	15ZT-12.5	2	I6149-04R-C5A	2	TMMU1400-150M	1	**ATKU05R-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	150T-14.5	2	I6149-06R-C5A	2	TMMU1400-150M	1	**ATKU06R-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	150T-16.5	2	I6149-06R-C5A	2	TMMU1800-150M	1	**ATKU08R-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	151T-20.5	2	I6149-04R-C5A	2	TMMU1800-150M	1	**ATKU10R-6149**
-12	I6149-12R2-32FM	M27 X 2	1	152T-25	2	I6149-12R-C5A	2	TMMU2000-200M	1	**ATKU12R-6149**
-14	I6149-14R2-32FM	M30 X 2	1	152T-28	2	I6149-14R-C5A	2	TMMU2000-200M	1	**ATKU14R-6149**
-16	I6149-16R2-32FM	M33 X 2	1	152T-31	2	I6149-16R-C5A	2	TMMU2000-200M	1	**ATKU16R-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453T-40	1	I6149-20R-C5A	2	TMMU2000-200M	1	**ATKU20R-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453T-46	1	I6149-24R-C5A	2	TMMU2000-200M	1	**ATKU24R-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454T-58	1	I6149-32R-C5A	2	TMMU2000-200M	1	**ATKU32R-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

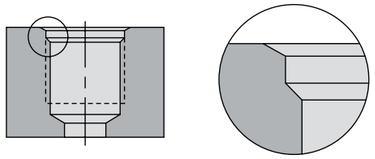
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMU1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMU1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMU1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMU2000-200M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

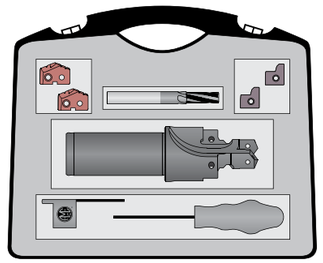
A92: 30 - 37 A92: 2 - 4 A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

SAE AS5202 | Ferrous Materials

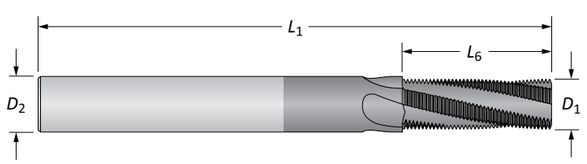


SAE AS5202



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	AS5202-04Y-063F	7/16-20 UNJF-3B	1	45YH-.390	2	AS5202-04-C5A	2	TMAK0438-20	1	**ATKK04-5202**
-5	AS5202-05Z-063F	1/2-20 UNJF-3B	1	45ZH-11.5	2	AS5202-05-C5A	2	TMAK0438-20	1	**ATKK05-5202**
-6	AS5202-06Z-075F	9/16-18 UNJF-3B	1	45ZH-.510	2	AS5202-06-C5A	2	TMAK0563-18	1	**ATKK06-5202**
-8	AS5202-080-075F	3/4-16 UNJF-3B	1	450H-17.5	2	AS5202-08-C5A	2	TMAK0750-16	1	**ATKK08-5202**
-10	AS5202-101-100F	7/8-14 UNJF-3B	1	451H-20.5	2	AS5202-10-C5A	2	TMAK0875-14	1	**ATKK10-5202**
-12	AS5202-122-125F	1-1/16-12 UNJ-3B	1	452H-25	2	AS5202-12-C5A	2	TMAK1063-12	1	**ATKK12-5202**
-14	AS5202-142-125F	1-3/16-12 UNJ-3B	1	452H-1.109	2	AS5202-14-C5A	2	TMAK1063-12	1	**ATKK14-5202**
-16	AS5202-162-125F	1-5/16-12 UNJ-3B	1	452H-1.234	2	AS5202-16-C5A	2	TMAK1063-12	1	**ATKK16-5202**
-20	AS5202-203-150F	1-5/8-12 UNJ-3B	1	453H-1.547	1	AS5202-20-C5A	2	TMAK1063-12	1	**ATKK20-5202**
-24	AS5202-243-150F	1-7/8-12 UNJ-3B	1	453H-1.797	1	AS5202-24-C5A	2	TMAK1063-12	1	**ATKK24-5202**
-32	AS5202-324-150F	2-1/2-12 UNJ-3B	1	454H-61.5	1	AS5202-32-C5A	2	TMAK1063-12	1	**ATKK32-5202**



AccuThread™ Port Specific Solid Carbide Thread Mills

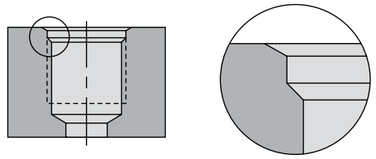
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAK0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAK0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAK0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAK0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAK1063-12**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

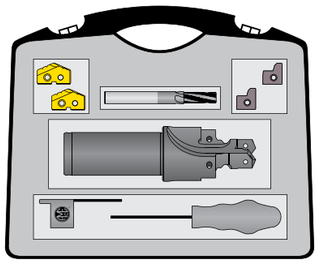
A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 14 - 15

Port and Thread Finishing Kits

SAE AS5202 | Non-Ferrous Materials

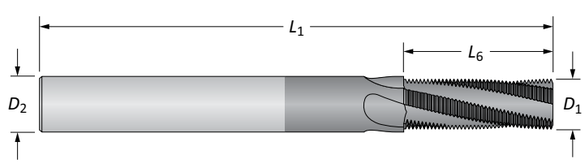


SAE AS5202



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	T-A®Original Insert Super Cobalt (TiN)	T-A®Original Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	AS5202-04Y-063F	7/16-20 UNJF-3B	1	15YT-.390	2	AS5202-04-C5A	2	TMAU0438-20	1	**ATKU04-5202**
-5	AS5202-05Z-063F	1/2-20 UNJF-3B	1	15ZT-11.5	2	AS5202-05-C5A	2	TMAU0438-20	1	**ATKU05-5202**
-6	AS5202-06Z-075F	9/16-18 UNJF-3B	1	15ZT-.510	2	AS5202-06-C5A	2	TMAU0563-18	1	**ATKU06-5202**
-8	AS5202-080-075F	3/4-16 UNJF-3B	1	150T-17.5	2	AS5202-08-C5A	2	TMAU0750-16	1	**ATKU08-5202**
-10	AS5202-101-100F	7/8-14 UNJF-3B	1	151T-20.5	2	AS5202-10-C5A	2	TMAU0875-14	1	**ATKU10-5202**
-12	AS5202-122-125F	1-1/16-12 UNJ-3B	1	152T-25	2	AS5202-12-C5A	2	TMAU1063-12	1	**ATKU12-5202**
-14	AS5202-142-125F	1-3/16-12 UNJ-3B	1	152T-1.109	2	AS5202-14-C5A	2	TMAU1063-12	1	**ATKU14-5202**
-16	AS5202-162-125F	1-5/16-12 UNJ-3B	1	152T-1.234	2	AS5202-16-C5A	2	TMAU1063-12	1	**ATKU16-5202**
-20	AS5202-203-150F	1-5/8-12 UNJ-3B	1	453T-1.547	1	AS5202-20-C5A	2	TMAU1063-12	1	**ATKU20-5202**
-24	AS5202-243-150F	1-7/8-12 UNJ-3B	1	453T-1.797	1	AS5202-24-C5A	2	TMAU1063-12	1	**ATKU24-5202**
-32	AS5202-324-150F	2-1/2-12 UNJ-3B	1	454T-61.5	1	AS5202-32-C5A	2	TMAU1063-12	1	**ATKU32-5202**



AccuThread™ Port Specific Solid Carbide Thread Mills

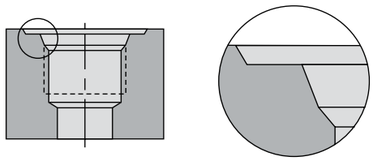
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAU0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAU0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAU0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAU0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAU1063-12**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

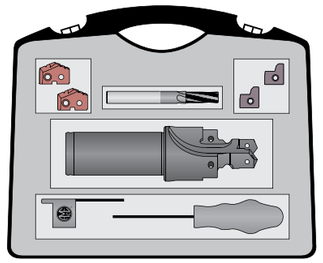
A92: 30 - 37 (Key on A92: 1) A92: 2 - 4 A92: 14 - 15

Port and Thread Finishing Kits

JDS -G173.1 | Ferrous Materials

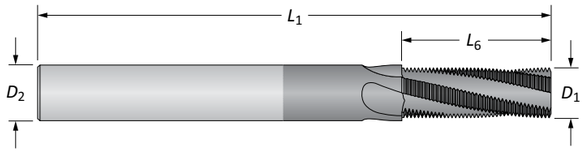


JDS-G173.1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432® Part No.	AccuPort 432® Port Thread Size	AccuPort 432® Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C3 Carbide (AM200®)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	G1731-04Y-16FM	M12 X 1.5	1	45YH-10.5	2	G1731-01-C3H	2	TMMK1000-150M	1	**ATKK04-G1731**
-5	G1731-05Z-16FM	M14 X 1.5	1	45ZH-12.5	2	G1731-01-C3H	2	TMMK1400-150M	1	**ATKK05-G1731**
-6	G1731-060-20FM	M16 X 1.5	1	450H-14.5	2	G1731-02-C3H	2	TMMK1400-150M	1	**ATKK06-G1731**
-8	G1731-080-20FM	M18 X 1.5	1	450H-16.5	2	G1731-02-C3H	2	TMMK1800-150M	1	**ATKK08-G1731**
-10	G1731-101-25FM	M22 X 1.5	1	451H-20.5	2	G1731-02-C3H	2	TMMK1800-150M	1	**ATKK10-G1731**
-12	G1731-122-32FM	M27 X 2	1	452H-25	2	G1731-03-C3H	2	TMMK2000-200M	1	**ATKK12-G1731**
-14	G1731-142-32FM	M30 X 2	1	452H-28	2	G1731-03-C3H	2	TMMK2000-200M	1	**ATKK14-G1731**
-16	G1731-162-32FM	M33 X 2	1	452H-31	2	G1731-04-C3H	2	TMMK2000-200M	1	**ATKK16-G1731**
-18	G1731-183-32FM	M38 X 2	1	453H-36	1	G1731-04-C3H	2	TMMK2000-200M	2	**ATKK18-G1731**
-20	G1731-203-32FM	M42 X 2	1	453H-40	1	G1731-05-C3H	2	TMMK2000-200M	1	**ATKK20-G1731**
-24	G1731-243-32FM	M48 X 2	1	453H-46	1	G1731-05-C3H	2	TMMK2000-200M	1	**ATKK24-G1731**
-32	G1731-324-32FM	M60 X 2	1	454H-58	1	G1731-06-C3H	2	TMMK2000-200M	1	**ATKK32-G1731**



AccuThread™ Port Specific Solid Carbide Thread Mills

Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432® specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 16 - 17

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Recommended Drilling Data | Metric (mm)

HSS

ISO	Material	Hardness (BHN)	Grade	Speed (M/min) TiN	TiAlN	TiCN	AM200®	Feed Rate (mm/rev) by Tube Size and T-A® Insert Series: Tube No. 4 - 5 / T-A® Series Y - Z	Tube No. 6 - 8 / T-A® Series 0	Tube No. 10 / T-A® Series 1	Tube No. 12 - 16 / T-A® Series 2	Tube No. 20 - 24 / T-A® Series 3	Tube No. 32 / T-A® Series 4
P	**Free Machining Steel**	100 - 150	HSS	61	85	79	92	0.18	0.25	0.33	0.41	0.51	0.58
	1118, 1215, 12L14, etc.	150 - 200	HSS	55	79	72	87	0.18	0.25	0.33	0.41	0.51	0.58
		200 - 250	HSS	49	73	64	81	0.15	0.25	0.33	0.41	0.51	0.58
	Low Carbon Steel	85 - 125	HSS	52	76	67	84	0.15 ❖	0.23	0.30	0.38	0.48	0.58
	1010, 1020, 1025, 1522,	125 - 175	HSS	49	73	64	81	0.15 ❖	0.23	0.30	0.38	0.48	0.58
	1144, etc.	175 - 225	HSS	46	69	59	76	0.13 ❖	0.20	0.25	0.36	0.46	0.53
		225 - 275	HSS	43	64	55	70	0.13 ❖	0.20	0.25	0.36	0.46	0.53
	Medium Carbon Steel	125 - 175	HSS	49	73	64	79	0.15	0.23	0.30	0.38	0.48	0.58
	1030, 1040, 1050, 1527,	175 - 225	HSS	46	69	59	75	0.13	0.20	0.25	0.36	0.46	0.53
	1140, 1151, etc.	225 - 275	HSS	43	64	55	70	0.13	0.20	0.25	0.36	0.46	0.53
		275 - 325	SC	40	59	52	66	0.10	0.18	0.23	0.30	0.41	0.48
	Alloy Steel	125 - 175	HSS	46	64	59	69	0.15	0.20	0.25	0.36	0.43	0.48
	4140, 5140, 8640, etc.	175 - 225	HSS	43	59	55	66	0.13	0.20	0.25	0.36	0.43	0.48
		225 - 275	HSS	40	55	52	60	0.13	0.18	0.25	0.36	0.43	0.48
		275 - 325	SC	37	52	47	56	0.10	0.15	0.23	0.30	0.38	0.43
		325 - 375	SC	34	47	44	55	0.08	0.15	0.23	0.30	0.38	0.43
	High Strength Alloy	225 - 300	SC	24	34	30	37	0.13 ❖	0.18	0.23	0.25	0.36	0.43
	4340, 4330V, 300M, etc.	300 - 350	SC	18	26	24	27	0.10 ❖	0.18	0.23	0.25	0.36	0.43
		350 - 400	SC	15	21	20	23	0.08 ❖	0.15	0.20	0.23	0.30	0.38
	Structural Steel	100 - 150	HSS	43	61	55	67	0.15 ❖	0.25	0.30	0.36	0.46	0.53
	A36, A285, A516, etc.	150 - 250	HSS	37	52	47	56	0.13 ❖	0.23	0.25	0.30	0.41	0.48
		250 - 350	SC	30	43	40	47	0.10 ❖	0.20	0.23	0.25	0.36	0.43
	Tool Steel	150 - 200	SC	24	34	32	37	0.10	0.15	0.20	0.25	0.30	0.38
	H-13, H-21, A-4, 0-2, S-3, etc.	200 - 250	SC	18	27	26	31	0.10	0.15	0.20	0.25	0.30	0.38
S	**High Temp Alloy**	140 - 220	SC	9	12	11	14	0.08 ❖	0.18	0.20	0.25	0.30	0.38
	Hastelloy B, Inconel 600, etc.	220 - 310	SC	8	11	9	12	0.08 ❖	0.15	0.18	0.20	0.25	0.30
M	**Stainless Steel 400 Series**	185 - 275	SC	23	32	29	33	0.15 ❖	0.20	0.23	0.28	0.36	0.41
	416, 420, 303, etc.	275 - 350	SC	18	27	24	29	0.13 ❖	0.18	0.20	0.25	0.30	0.36
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	HSS	52	76	67	82	0.18	0.30	0.41	0.51	0.61	0.69
		150 - 200	HSS	46	69	59	75	0.15	0.28	0.36	0.46	0.56	0.64
		200 - 220	HSS	40	59	52	66	0.15	0.23	0.30	0.41	0.46	0.53
		220 - 260	SC	34	50	44	55	0.13	0.18	0.23	0.30	0.36	0.43
		260 - 320	SC	27	41	37	44	0.10	0.15	0.18	0.23	0.30	0.36
N	**Aluminium**	30	HSS	183	259	229	–	0.20	0.33	0.41	0.51	0.56	0.64
		180	HSS	91	137	122	–	0.20	0.33	0.41	0.46	0.56	0.64

Formulas

1.	**RPM**	**= (318.47 • M/min) / DIA**	2.	**M/min**	**= RPM • 0.003 • DIA**	3.	**IPM**	**= RPM • mm/rev**
	where:			*where:*			*where:*	
	RPM	= revolutions per minute (rev/min)		M/min	= speed (M/min)		IPM	= feed rate
	M/min	= speed (M/min)		RPM	= revolutions per minute (rev/min)		RPM	= revolutions per minute (rev/min)
	DIA	= finish diameter of drill (mm)		DIA	= diameter of drill (mm)		mm/rev	= feed rate (mm/rev)

The table and equations on this page are found in the *Machinery's Handbook*. Permission to simplify and print the equations is granted by the Editor of the *Machinery's Handbook*.

IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Metric (mm)

HSS

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 / T-A® Series Y - Z	Tube No. 6 - 8 / T-A® Series 0	Tube No. 10 / T-A® Series 1	Tube No. 12 - 16 / T-A® Series 2	Tube No. 20 - 24 / T-A® Series 3	Tube No. 32 / T-A® Series 4
P	**Free Machining Steel**	BAR	12 - 13	7 - 8	7 - 10	6 - 8	6 - 7	3 - 4
	1118, 1215, 12L14, etc.	LPM	9.5 - 9.8	10.6 - 11.4	16.7 - 19.7	26.5 - 30.3	45.4 - 53.0	114 - 125
	Low Carbon Steel	BAR	11 - 12	5 - 6	5 - 7	4 - 6	4 - 5	2 - 3
	1010, 1020, 1025, 1522, 1144, etc.	LPM	9.1 - 9.5	9.1 - 9.8	14.0 - 15.9	22.7 - 26.5	41.6 - 45.4	98 - 114
	Medium Carbon Steel	BAR	11	5 - 6	5 - 6	4 - 5	3 - 5	2 - 3
	1030, 1040, 1050, 1527, 1140, 1151, etc.	LPM	8.7 - 9.1	8.7 - 9.8	13.6 - 15.5	18.9 - 22.7	37.9 - 45.4	98 - 114
	Alloy Steel	BAR	11	5 - 6	5	3 - 5	3 - 4	2
	4140, 5140, 8640, etc.	LPM	8.7 - 9.1	13.2 - 14.8	8.3 - 9.1	18.9 - 22.7	34.1 - 37.9	87 - 98
	High Strength Alloy	BAR	10 - 11	4 - 5	3 - 4	2	2	2
	4340, 4330V, 300M, etc.	LPM	8.7 - 9.1	7.9 - 8.3	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87
	Structural Steel	BAR	11	5 - 6	5 - 6	3 - 4	3	2
	A36, A285, A516, etc.	LPM	8.7 - 9.1	9.1 - 9.8	13.2 - 14.8	18.9 - 22.7	34.1 - 37.9	87 - 98
	Tool Steel	BAR	4	10 - 11	3	2	2	1 - 2
	H-13, H-21, A-4, 0-2, S-3, etc.	LPM	7.9 - 8.3	8.7 - 9.1	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87
S	**High Temp Alloy**	BAR	10 - 11	4 - 5	3 - 4	2	2	2
	Hastelloy B, Inconel 600, etc.	LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.1	15.1 - 18.9	26.5 - 30.3	87 - 98
M	**Stainless Steel 400 Series**	BAR	11.4 - 11.7	4.8 - 5.8	4.5 - 5.2	2.7 - 3.8	2.7 - 3.4	1.7 - 2
	416, 420, 303, etc.	LPM	9.1 - 9.5	8.7 - 9.8	13.2 - 14	18.9 - 22.7	34.1 - 37.9	87 - 98
K	**Nodular, Grey, Ductile Cast Iron**	BAR	10.7 - 11.0	4.1 - 4.5	3.4 - 4.1	2 - 2.7	2 - 2.4	1.7 - 2
		LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.5	15.1 - 18.9	30.3 - 34.1	87 - 98
N	**Aluminium**	BAR	13.1 - 14.5	9.6 - 12.4	10.3 - 15.8	7.9 - 11	6.2 - 8.6	2.7 - 3.4
		LPM	9.8 - 10.2	12.5 - 14	20.1 - 23.1	30.3 - 34.1	53 - 60.6	114 - 125

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Metric (mm)

Carbide

ISO	Material	Hardness (BHN)	Grade	Speed (M/min) TiN	Speed (M/min) TiAlN	Speed (M/min) AM200®	Feed Rate (mm/rev) by Tube Size and T-A® Insert Series: Tube No. 4 - 5, T-A® Series Y - Z	Tube No. 6 - 8, T-A® Series 0	Tube No. 10, T-A® Series 1	Tube No. 12 - 16, T-A® Series 2	Tube No. 20 - 24, T-A® Series 3
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K35, P40	98	128	146	0.20	0.30	0.38	0.46	0.53
		150 - 200	K35, P40	85	110	126	0.18	0.28	0.36	0.41	0.48
		200 - 250	K35, P40	79	104	119	0.15	0.25	0.33	0.38	0.43
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K35, P40	91	119	137	0.20 ❖	0.25	0.33	0.43	0.48
		125 - 175	K35, P40	79	104	119	0.18 ❖	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	73	94	108	0.15 ❖	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.13 ❖	0.23	0.30	0.38	0.43
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K35, P40	79	104	119	0.18	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	73	94	108	0.15	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
		275 - 325	K35, P40	55	70	81	0.13	0.20	0.28	0.36	0.41
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K35, P40	76	99	114	0.18	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	70	91	105	0.15	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
		275 - 325	K35, P40	61	76	87	0.13	0.20	0.28	0.36	0.41
		325 - 375	K35, P40	52	67	78	0.10	0.18	0.25	0.33	0.38
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K35, P40	49	61	73	0.15 ❖	0.23	0.25	0.30	0.38
		300 - 350	K35, P40	43	55	62	0.13 ❖	0.20	0.23	0.28	0.36
		350 - 400	K35, P40	37	49	56	0.10 ❖	0.18	0.20	0.25	0.30
	Structural Steel A36, A285, A516, etc.	100 - 150	K35, P40	73	94	108	0.20 ❖	0.28	0.36	0.41	0.46
		150 - 250	K35, P40	61	76	87	0.15 ❖	0.25	0.30	0.36	0.41
		250 - 350	K35, P40	55	70	81	0.13 ❖	0.23	0.28	0.30	0.36
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	K35, P40	49	67	78	0.10 ❖	0.18	0.23	0.28	0.33
		200 - 250	K35, P40	37	52	59	0.10 ❖	0.18	0.23	0.28	0.33
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	K20	24	32	36	0.10 ❖	0.18	0.23	0.28	0.33
		220 - 310	K20	18	26	29	0.10 ❖	0.15	0.20	0.25	0.30
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	K20	49	64	73	0.18 ❖	0.23	0.30	0.36	0.41
		275 - 350	K20	37	49	46	0.15 ❖	0.20	0.28	0.30	0.36
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	K20, K10	98	140	152	0.20	0.30	0.38	0.48	0.58
		150 - 200	K20, K10	82	122	146	0.18	0.28	0.33	0.43	0.53
		200 - 220	K20, K10	73	110	131	0.15	0.23	0.30	0.38	0.46
		220 - 260	K20, K10	64	94	113	0.13	0.20	0.28	0.33	0.38
		260 - 320	K20, K10	55	82	102	0.13	0.18	0.25	0.28	0.33
N	**Aluminium**	30	K20	366	457	–	0.25	0.38	0.46	0.51	0.56
		180	K20	244	305	–	0.23	0.33	0.41	0.46	0.51

Formulas

1.	**RPM = (318.47 • M/min) / DIA**	2.	**M/min = RPM • 0.003 • DIA**
	where:		*where:*
	RPM = revolutions per minute (rev/min)		M/min = speed (M/min)
	M/min = speed (M/min)		RPM = revolutions per minute (rev/min)
	DIA = finish diameter of drill (mm)		DIA = diameter of drill (mm)

3.	**IPM = RPM • mm/rev**	
	where:	
	IPM	= feed rate
	RPM	= revolutions per minute (rev/min)
	mm/rev	= feed rate (mm/rev)

The table and equations on this page are found in the *Machinery's Handbook*. Permission to simplify and print the equations is granted by the Editor of the *Machinery's Handbook*.

IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Metric (mm)

Carbide

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5, T-A® Series Y - Z	Tube No. 6 - 8, T-A® Series 0	Tube No. 10, T-A® Series 1	Tube No. 12 - 16, T-A® Series 2	Tube No. 20 - 24, T-A® Series 3
P	**Free Machining Steel**	BAR	20	16	17	15	12
	1118, 1215, 12L14, etc.	LPM	12.2	16.3	25.3	41.5	71.9
	Low Carbon Steel	BAR	18	11	11	12	9
	1010, 1020, 1025, 1522, 1144, etc.	LPM	11.4	13.3	20.6	36.5	62
	Medium Carbon Steel	BAR	17	10	10	10	8
	1030, 1040, 1050, 1527, 1140, 1151, etc.	LPM	11.3	12.5	20	33.8	57
	Alloy Steel	BAR	17	9	10	8	7
	4140, 5140, 8640, etc.	LPM	11.1	23	19.3	30	56
	High Strength Alloy	BAR	15	5	4	3	3
	4340, 4330V, 300M, etc.	LPM	10.4	9.1	12.6	18.8	33.6
	Structural Steel	BAR	16	9	8	7	5
	A36, A285, A516, etc.	LPM	10.8	12	17.5	27.8	47.1
	Tool Steel	BAR	15	5	5	3	3
	H-13, H-21, A-4, 0-2, S-3, etc.	LPM	10.4	9.1	13.6	19.7	36.5
S	**High Temp Alloy**	BAR	17	11.4	12.4	11	9
	Hastelloy B, Inconel 600, etc.	LPM	11.1	13.5	21.9	35.4	62
M	**Stainless Steel 400 Series**	BAR	22.7	16.5	17.9	17.2	13.1
	416, 420, 303, etc.	LPM	13	16.3	26.3	44.2	75
K	**Nodular, Grey, Ductile Cast Iron**	BAR	15.5	7.2	6.2	6.2	5.5
		LPM	10.7	10.8	15.4	26.5	48.7
N	**Aluminium**	BAR	24.1	22	21.7	19.6	13.8
		LPM	13.4	18.8	29	47.2	77

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Imperial (inch)

HSS

ISO	Material	Hardness (BHN)	Grade	Speed (SFM) TiN	TiAlN	TiCN	AM200®	Feed Rate (IPR) by Tube Size and T-A® Insert Series: Tube No. 4 - 5 / T-A® Series Y - Z	Tube No. 6 - 8 / T-A® Series 0	Tube No. 10 / T-A® Series 1	Tube No. 12 - 16 / T-A® Series 2	Tube No. 20 - 24 / T-A® Series 3	Tube No. 32 / T-A® Series 4
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	200	280	260	325	0.007	0.010	0.013	0.016	0.020	0.023
		150 - 200	HSS	180	260	235	300	0.007	0.010	0.013	0.016	0.020	0.023
		200 - 250	HSS	160	240	210	280	0.006	0.010	0.013	0.016	0.020	0.023
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	170	250	220	290	0.006 ❖	0.009	0.012	0.015	0.019	0.023
		125 - 175	HSS	160	240	210	275	0.006 ❖	0.009	0.012	0.015	0.019	0.023
		175 - 225	HSS	150	225	195	260	0.005 ❖	0.008	0.010	0.014	0.018	0.021
		225 - 275	HSS	140	210	180	240	0.005 ❖	0.008	0.010	0.014	0.018	0.021
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	160	240	210	275	0.006	0.009	0.012	0.015	0.019	0.023
		175 - 225	HSS	150	225	195	260	0.005	0.008	0.010	0.014	0.018	0.021
		225 - 275	HSS	140	210	180	240	0.005	0.008	0.010	0.014	0.018	0.021
		275 - 325	SC	130	195	170	225	0.004	0.007	0.009	0.012	0.016	0.019
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	150	210	195	240	0.006	0.008	0.010	0.014	0.017	0.019
		175 - 225	HSS	140	195	180	225	0.005	0.008	0.010	0.014	0.017	0.019
		225 - 275	HSS	130	180	170	210	0.005	0.007	0.010	0.014	0.017	0.019
		275 - 325	SC	120	170	155	195	0.004	0.006	0.009	0.012	0.015	0.017
		325 - 375	SC	110	155	145	180	0.003	0.006	0.009	0.012	0.015	0.017
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	80	110	100	125	0.005 ❖	0.007	0.009	0.010	0.014	0.017
		300 - 350	SC	60	85	80	100	0.004 ❖	0.007	0.009	0.010	0.014	0.017
		350 - 400	SC	50	70	65	80	0.003 ❖	0.006	0.008	0.009	0.012	0.015
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	140	200	180	235	0.006 ❖	0.010	0.012	0.014	0.018	0.021
		150 - 250	HSS	120	170	155	190	0.005 ❖	0.009	0.010	0.012	0.016	0.019
		250 - 350	SC	100	140	130	160	0.004 ❖	0.009	0.009	0.010	0.014	0.017
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	SC	80	110	105	125	0.004 ❖	0.006	0.008	0.010	0.014	0.015
		200 - 250	SC	60	90	85	105	0.004 ❖	0.006	0.008	0.010	0.012	0.015
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	SC	30	40	35	45	0.003 ❖	0.007	0.008	0.010	0.012	0.015
		220 - 310	SC	25	35	30	40	0.003 ❖	0.006	0.007	0.008	0.010	0.012
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	SC	75	105	95	110	0.006 ❖	0.008	0.009	0.011	0.012	0.016
		275 - 350	SC	60	90	80	100	0.005 ❖	0.007	0.008	0.010	0.012	0.014
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	HSS	170	250	220	290	0.007	0.012	0.016	0.020	0.024	0.027
		150 - 200	HSS	150	225	195	260	0.006	0.011	0.014	0.018	0.022	0.025
		200 - 220	HSS	130	195	170	225	0.006	0.009	0.012	0.016	0.018	0.021
		220 - 260	SC	110	165	145	190	0.005	0.007	0.009	0.012	0.014	0.017
		260 - 320	SC	90	135	120	155	0.004	0.006	0.007	0.009	0.012	0.014
N	**Aluminium**	30	HSS	600	850	750	–	0.008	0.013	0.016	0.020	0.022	0.025
		180	HSS	300	450	400	–	0.008	0.013	0.016	0.018	0.022	0.025

Formulas

1.	**RPM**	**= (3.82 • SFM) / DIA**	2.	**SFM**	**= RPM • 0.262 • DIA**	3.	**IPM**	**= RPM • IPR**
	where:			*where:*			*where:*	
	RPM	= revolutions per minute (rev/min)		SFM	= speed (ft/min)		IPM	= Feed rate
	SFM	= speed (ft/min)		RPM	= revolutions per minute (rev/min)		RPM	= revolutions per minute (rev/min)
	DIA	= finish diameter of drill (inch)		DIA	= diameter of drill (inch)		IPR	= feed rate (in/rev)

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IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Imperial (inch)

HSS

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 / T-A® Series Y - Z	Tube No. 6 - 8 / T-A® Series 0	Tube No. 10 / T-A® Series 1	Tube No. 12 - 16 / T-A® Series 2	Tube No. 20 - 24 / T-A® Series 3	Tube No. 32 / T-A® Series 4
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	PSI	175 - 185	100 - 120	105 - 140	80 - 115	75 - 100	40 - 50
		GPM	2.5 - 2.6	2.8 - 3.0	4.4 - 5.2	7 - 8	12 - 14	30 - 33
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	PSI	165 - 170	75 - 90	75 - 95	60 - 80	55 - 75	30 - 40
		GPM	2.4 - 2.5	2.4 - 2.6	3.7 - 4.2	6 - 7	11 - 12	26 - 30
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	PSI	160 - 165	70 - 85	70 - 90	55 - 75	50 - 70	30 - 40
		GPM	2.3 - 2.4	2.3 - 2.6	3.7 - 4.2	5 - 6	10 - 12	26 - 30
	Alloy Steel 4140, 5140, 8640, etc.	PSI	160 - 165	65 - 75	65 - 80	50 - 70	45 - 60	30 - 35
		GPM	2.3 - 2.4	2.2 - 2.4	3.5 - 3.9	5 - 6	10 - 11	26 - 28
	High Strength Alloy 4340, 4330V, 300M, etc.	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25
		GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23
	Structural Steel A36, A285, A516, etc.	PSI	160 - 165	75 - 85	65 - 80	40 - 55	40 - 50	25 - 30
		GPM	2.3 - 2.4	2.4 - 2.6	3.5 - 3.9	5 - 6	9 - 10	23 - 26
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25
		GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30	25 - 30
		GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8	23 - 26
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	PSI	171	86	75	55	51	29
		GPM	3	3	4	6	10	26
K	**Nodular, Grey, Ductile Cast Iron**	PSI	160	65	61	41	35	29
		GPM	2	2	3	5	9	26
N	**Aluminium**	PSI	210	180	230	159	125	51
		GPM	3	4	6	9	16	33

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Imperial (inch)

Carbide

ISO	Material	Hardness (BHN)	Grade	Speed (SFM) TiN	Speed (SFM) TiAlN	Speed (SFM) AM200®	Feed Rate (IPR) Tube No. 4 - 5 T-A® Series Y - Z	Feed Rate (IPR) Tube No. 6 - 8 T-A® Series 0	Feed Rate (IPR) Tube No. 10 T-A® Series 1	Feed Rate (IPR) Tube No. 12 - 16 T-A® Series 2	Feed Rate (IPR) Tube No. 20 - 24 T-A® Series 3
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	C1, C5	320	420	480	0.008	0.012	0.015	0.018	0.021
		150 - 200	C1, C5	280	360	415	0.007	0.011	0.014	0.016	0.019
		200 - 250	C1, C5	260	340	390	0.006	0.010	0.013	0.015	0.017
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	C1, C5	300	390	450	0.008 ❖	0.010	0.013	0.017	0.019
		125 - 175	C1, C5	260	340	390	0.007 ❖	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	240	310	355	0.006 ❖	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.005 ❖	0.009	0.012	0.015	0.017
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	C1, C5	260	340	390	0.007	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	240	310	355	0.006	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.006	0.009	0.012	0.015	0.017
		275 - 325	C1, C5	180	230	265	0.005	0.008	0.011	0.014	0.016
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	C1, C5	250	325	375	0.007	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	230	300	345	0.006	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.006	0.009	0.012	0.015	0.017
		275 - 325	C1, C5	200	250	285	0.005	0.008	0.011	0.014	0.016
		325 - 375	C1, C5	170	220	255	0.004	0.007	0.010	0.013	0.015
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	C1, C5	160	200	230	0.006 ❖	0.009	0.010	0.012	0.015
		300 - 350	C1, C5	140	180	205	0.005 ❖	0.008	0.009	0.011	0.014
		350 - 400	C1, C5	120	160	185	0.004 ❖	0.007	0.008	0.010	0.012
	Structural Steel A36, A285, A516, etc.	100 - 150	C1, C5	240	310	355	0.008 ❖	0.011	0.014	0.016	0.018
		150 - 250	C1, C5	200	250	285	0.006 ❖	0.010	0.012	0.014	0.016
		250 - 350	C1, C5	180	230	265	0.005 ❖	0.009	0.011	0.012	0.014
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	C1, C5	160	220	255	0.004 ❖	0.007	0.009	0.011	0.013
		200 - 250	C1, C5	120	170	195	0.004 ❖	0.007	0.009	0.011	0.013
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	C2	80	105	120	0.004 ❖	0.007	0.009	0.011	0.013
		220 - 310	C2	60	85	95	0.004 ❖	0.006	0.008	0.010	0.012
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	C2	160	210	240	0.007 ❖	0.009	0.012	0.014	0.016
		275 - 350	C2	120	160	185	0.006 ❖	0.008	0.011	0.012	0.014
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	C2, C3	320	460	500	0.008	0.012	0.015	0.019	0.023
		150 - 200	C2, C3	270	400	480	0.007	0.011	0.013	0.017	0.021
		200 - 220	C2, C3	240	360	430	0.006	0.009	0.012	0.015	0.018
		220 - 260	C2, C3	210	310	370	0.005	0.008	0.011	0.013	0.015
		260 - 320	C2, C3	180	270	335	0.005	0.007	0.010	0.011	0.013
N	**Aluminium**	30	C2	1200	1500	–	0.010	0.015	0.018	0.020	0.022
		180	C2	800	1000	–	0.009	0.013	0.016	0.018	0.020

Formulas

1.	**RPM**	**= (3.82 • SFM) / DIA**	2.	**SFM**	**= RPM • 0.262 • DIA**	3.	**IPM**	**= RPM • IPR**
	where:			*where:*			*where:*	
	RPM	= revolutions per minute (rev/min)		SFM	= speed (ft/min)		IPM	= Feed rate
	SFM	= speed (ft/min)		RPM	= revolutions per minute (rev/min)		RPM	= revolutions per minute (rev/min)
	DIA	= finish diameter of drill (inch)		DIA	= diameter of drill (inch)		IPR	= feed rate (in/rev)

The table and equations on this page are found in the *Machinery's Handbook*. Permission to simplify and print the equations is granted by the Editor of the *Machinery's Handbook*.

IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Imperial (inch)

Carbide

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 T-A® Series Y - Z	Tube No. 6 - 8 T-A® Series 0	Tube No. 10 T-A® Series 1	Tube No. 12 - 16 T-A® Series 2	Tube No. 20 - 24 T-A® Series 3
P	**Free Machining Steel**	PSI	195	140	160	140	155
	1118, 1215, 12L14, etc.	GPM	2.6	3.3	5.5	9	18
	Low Carbon Steel	PSI	180	105	105	110	115
	1010, 1020, 1025, 1522, 1144, etc.	GPM	2.5	2.9	4.4	8	15
	Medium Carbon Steel	PSI	175	100	90	100	75
	1030, 1040, 1050, 1527, 1140, 1151, etc.	GPM	2.5	2.8	4.1	7	13
	Alloy Steel	PSI	165	85	100	75	70
	4140, 5140, 8640, etc.	GPM	2.4	2.6	4.3	6	12
	High Strength Alloy	PSI	160	65	55	40	35
	4340, 4330V, 300M, etc.	GPM	2.4	2.3	3.2	5	8
	Structural Steel	PSI	175	115	105	75	70
	A36, A285, A516, etc.	GPM	2.5	3	4.4	6	12
	Tool Steel	PSI	155	60	55	40	35
	H-13, H-21, A-4, 0-2, S-3, etc.	GPM	2.4	2.2	3.2	5	8
S	**High Temp Alloy**	PSI	239	165	180	159	130
	Hastelloy B, Inconel 600, etc.	GPM	3	4	6	9	16
M	**Stainless Steel 400 Series**	PSI	329	239	260	250	190
	416, 420, 303, etc.	GPM	3	4	7	12	20
K	**Nodular, Grey, Ductile Cast Iron**	PSI	225	104	90	90	80
		GPM	3	3	4	7	13
N	**Aluminium**	PSI	350	319	315	284	200
		GPM	4	5	8	12	20

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Notes

DRILLING | AccuPort 432® Port Contour Cutters

Notes

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

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