Pinzbohr High Precision Boring Tools

PINZBOHR
BORING SYSTEM

BohrSTAR
Boring Kits

Rough and Finish
Boring Heads

Boring Head
Toolholders

Carbide and HSS
Boring Bars

Built for Speed.

Pinzbohr Modular Boring System

Add a Boring Kit to Your Tooling Arsenal!
Range available up to 8.27"

- *Range 0.314" up to 8.27" (8mm to 210mm)*
- *AccuSET graduated dial allows operators to quickly set the head to any cutting diameter in 0.0001" increments*
- *Triangular and rhombic insert kits available*

BohrSTAR 170
Kit Compnents

BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups).

Our boring tools out-perform all others when it comes to accuracy, rigidity, and repeatability.

BohrSTAR components are manufactured from nickle-chrome alloy steel hardened to 58–60 HRC. All moving parts are precision ground for accuracy, wear resistance, and smooth adjustment.

3 kits to choose from

BohrSTAR boring kits include quality, reliability, and ease-of-use features that make setup and adjustment a snap.

BohrSTAR Kit Features

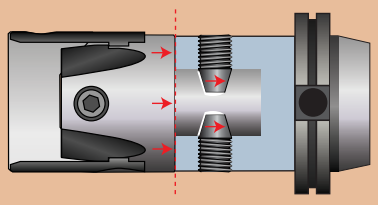
AccuSET Adjustment Dial

Adjustment is This Easy

- *AccuSET design for fast and easy cutting adjustments.*
- *.0001" graduated dial allows operators to quickly set the head to any cutting diameter.*

Modular Coupling System

Allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.



Offset Center Lock Screws

BohrSTAR kits are fully compatible with our 54mm extensions, reducers, and toolholders.

Setup Examples BohrSTAR 210 Kit

(A) 0.314" to 1.692"

(B) 1.496" to 2.322"

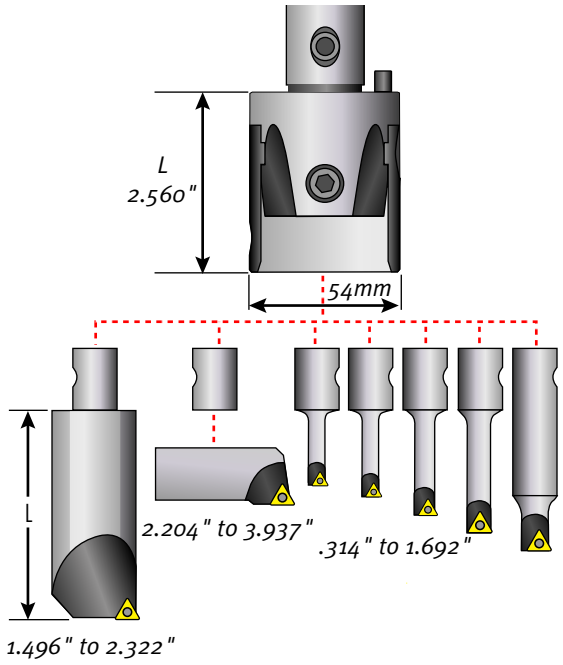
(C) 2.204" to 3.897"

(D) 3.267" to 5.118"

(E) 4.841" to 8.27"

BohrSTAR 100 Triangular Kit – Range: 0.314" to 3.94"

Kit Part No.	Description	Range
6991235	BS-54-KIT-TC-8-100	0.314" – 3.94"



Kit Includes Triangular Inserts:

- *2 Pcs. TCMT 06T1*
- *3 Pcs. TCMT 0902*
- *2 Pcs. TCMT 16T3*

TCMT

BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups). Our boring tools out perform all others when it comes to accuracy, rigidity, and repeatability.

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder to increase accuracy. All connections are easily made using the tools provided.

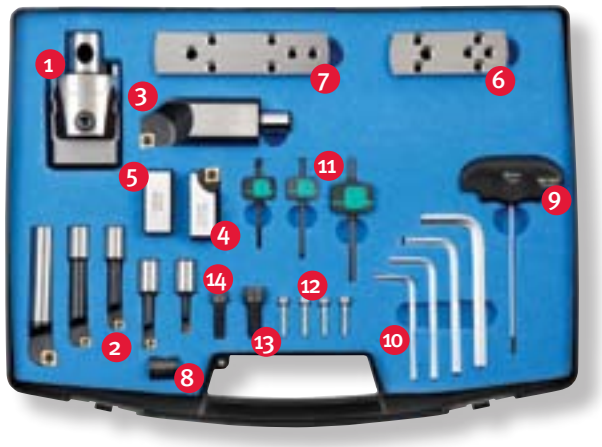
BohrSTAR 100 Kit Includes These Components

	Part No.	Description	Length	Height
1	6951234	BS-54-16-W head	.2560"	-
2	6943333	BS-06-16-T01 6mm bar	.984"	-
	6943334	BS-08-16-T01 8mm bar	1.378"	-
	6943335	BS-10-16-T02 10mm bar	1.772"	-
	6943336	BS-12-16-T02 12mm bar	2.244"	-
	6943337	BS-16-16-T02 16mm bar	2.874"	-
3	6943338	BS-34-16-T04 34mm bar	3.228"	-
4	6922243	BS-2CT-T04 cartridge	51mm	.71"
5	6921239	BS-16-M10 location sleeve		-
6	6962233	H3 hex		-
	6962235	H5 hex		-
	6962236	H6 hex		-
	6962238	H8 hex		-
7	6972236	T6 torx		-
	6972237	T7 torx		-
	6972215	T15 torx		-
8	6921241	CS-10-25 cartridge screw		-

Kit Boring Bar and Insert Specifications

		Bore Range					
Part No.	Boring Bar Description	Min	Max	L	Insert	Insert Screw	Wrench
6943333	BS-06-16-T01	.314"	1.181"	.984"	TCMT 06T1_ _	6811220	T6
6943334	BS-08-16-T01	.394"	1.260"	1.378"	TCMT 06T1_ _	6811235	T6
6943335	BS-10-16-T02	.512"	1.378"	1.772"	TCMT 0902_ _	6811250	T7
6943336	BS-12-16-T02	.630"	1.496"	2.244"	TCMT 0902_ _	6811250	T7
6943337	BS-16-16-T02	.787"	1.692"	2.874"	TCMT 0902_ _	6811260	T7
6943338	BS-34-16-T04	1.496"	2.322"	3.228"	TCMT 16T3_ _	6811260	T15

BohrSTAR 170 Rhombic Kit – Range: 0.314" to 6.69"



Kit Includes Rhombic Inserts:

- *1 Pc. EPMT 0502*
- *3 Pcs. CCMT 0602*
- *3 Pcs. CCMT 09T3*

CCMT

See page 151 to order toolholders.

Kit Part No.	Description	Range
6991230	BS-54-KIT-RC-8-170	0.314" – 6.69"

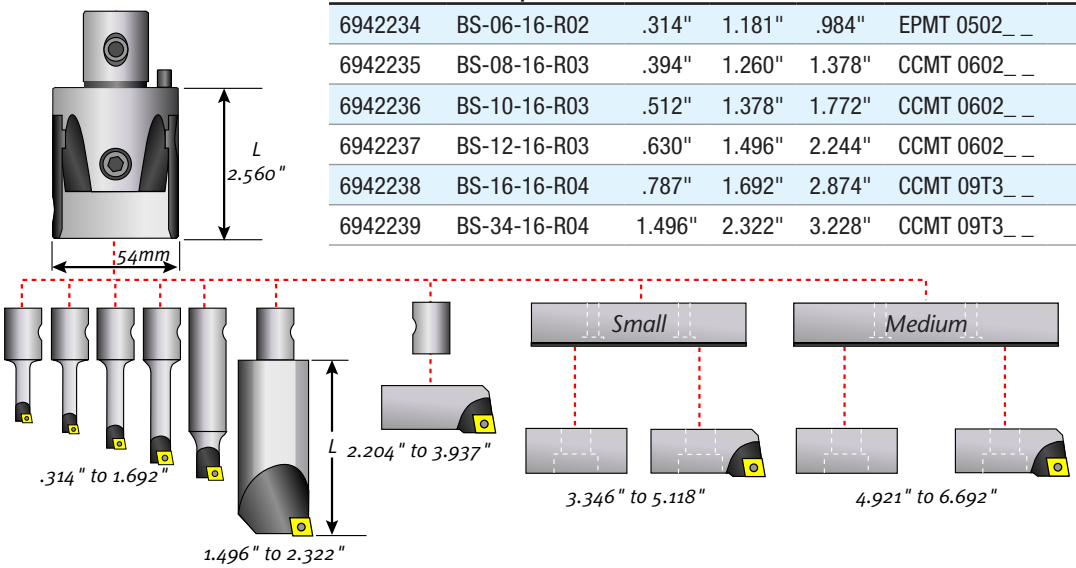
BohrSTAR 170 Kit Includes These Components

	Part No.	Description	Length	Height
1	6951234	BS-54-16-W head	2.560"	-
2	6942234	BS-06-16-R02 6mm bar	.984"	-
	6942235	BS-08-16-R03 8mm bar	1.378"	-
	6942236	BS-10-16-R03 10mm bar	1.772"	-
	6942237	BS-12-16-R03 12mm bar	2.244"	-
	6942238	BS-16-16-R04 16mm bar	2.874"	-
3	6942239	BS-34-16-R04 34mm bar	3.228"	-
4	6921234	BS-2CT-R04 cartridge	51mm	.79"
5	6921235	BS-2CW counterweight	47mm	.73"
6	6921236	BS-SP-83-130 small plate	81mm	.79"
7	6921237	BS-SP-123-170 medium plate	121mm	.79"
8	6921239	BS-16-M10 location sleeve		-

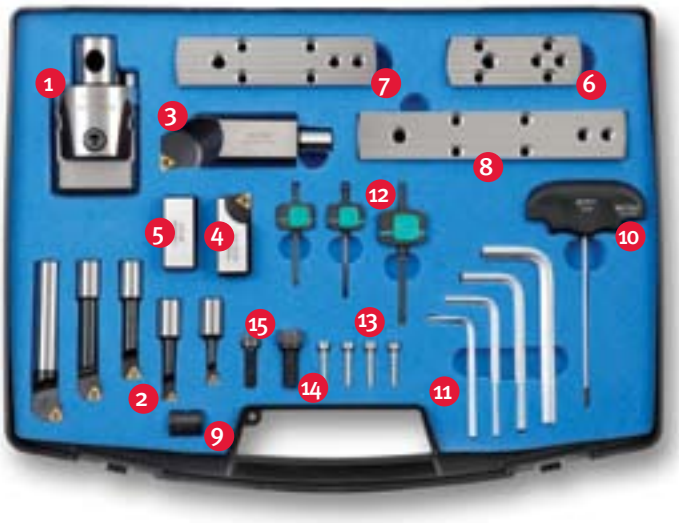
	Part No.	Description
9	6921243	A3 adjusting key
10	6962234	H4 hex
	6962235	H5 hex
	6962236	H6 hex
	6962238	H8 hex
11	6972237	T7 torx
	6972238	T8 torx
	6972215	T15 torx
12	6921240	D-27-21 plate fixing screws
13	6921241	CS-10-25 cartridge screw
14	6921242	CS-08-25 counterweight screw

Kit Boring Bar and Insert Specifications

		Bore Range					
Part No.	Description	Min	Max	L	Insert	Insert Screw	Wrench
6942234	BS-06-16-R02	.314"	1.181"	.984"	EPMT 0502_ _	6811220	T7
6942235	BS-08-16-R03	.394"	1.260"	1.378"	CCMT 0602_ _	6811235	T8
6942236	BS-10-16-R03	.512"	1.378"	1.772"	CCMT 0602_ _	6811250	T8
6942237	BS-12-16-R03	.630"	1.496"	2.244"	CCMT 0602_ _	6811250	T8
6942238	BS-16-16-R04	.787"	1.692"	2.874"	CCMT 09T3_ _	6811260	T15
6942239	BS-34-16-R04	1.496"	2.322"	3.228"	CCMT 09T3_ _	6811260	T15



BohrSTAR 210 Triangular Kit – Range: 0.314" to 8.27"



Kit Includes Triangular Inserts:

- *2 Pcs. TCMT 06T1*
- *3 Pcs. TCMT 0902*
- *2 Pcs. TCMT 16T3*

TCMT

BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups). Our boring tools out perform all others when it comes to accuracy, rigidity, and repeatability.

Kit Part No.	Description	Range
6991240	BS-54-KIT-TC-8-210	0.314" – 8.27"

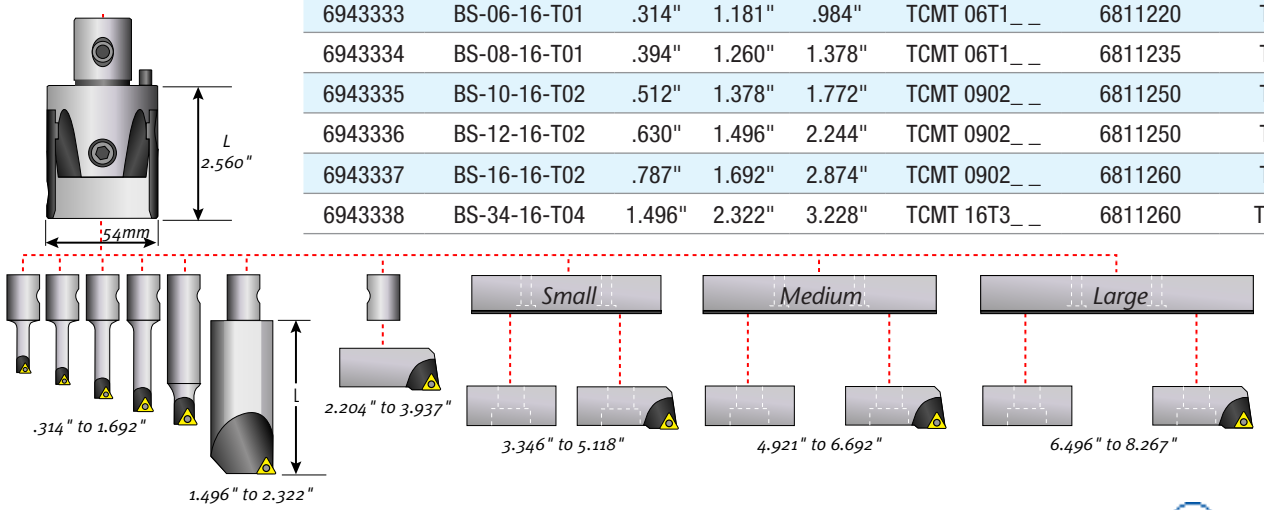
BohrSTAR 210 Kit Includes These Components

	Part No.	Description	Length	Height
1	6951234	BS-54-16-W head	2.560"	-
2	6943333	BS-06-16-T01 6mm bar	.984"	-
	6943334	BS-08-16-T01 8mm bar	1.378"	-
	6943335	BS-10-16-T02 10mm bar	1.772"	-
	6943336	BS-12-16-T02 12mm bar	2.244"	-
	6943337	BS-16-16-T02 16mm bar	2.874"	-
3	6943338	BS-34-16-T04 34mm bar	3.228"	-
4	6922243	BS-2CT-T04 cartridge	51mm	.79"
5	6921235	BS-2CW counterweight	47mm	.73"
6	6921236	BS-SP-83-130 small plate	81mm	.79"
7	6921237	BS-SP-123-170 medium plate	121mm	.79"
8	6921238	BS-SP-165-210 large plate	161mm	.79"

	Part No.	Description
9	6921239	BS-16-M10 location sleeve
10	6921243	A3 adjusting key
11	6962234	H4 hex
	6962235	H5 hex
	6962236	H6 hex
	6962238	H8 hex
12	6972236	T6 torx
	6972237	T7 torx
	6972215	T15 torx
13	6921240	D-27-21 plate fixing screws
14	6921241	CS-10-25 cartridge screw
15	6921242	CS-08-25 counterweight screw

Kit Boring Bar and Insert Specifications

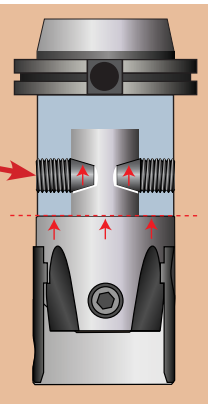
		Bore Range					
Part No.	Description	Min	Max	L	Insert	Insert Screw	Wrench
6943333	BS-06-16-T01	.314"	1.181"	.984"	TCMT 06T1_ _	6811220	T6
6943334	BS-08-16-T01	.394"	1.260"	1.378"	TCMT 06T1_ _	6811235	T6
6943335	BS-10-16-T02	.512"	1.378"	1.772"	TCMT 0902_ _	6811250	T7
6943336	BS-12-16-T02	.630"	1.496"	2.244"	TCMT 0902_ _	6811250	T7
6943337	BS-16-16-T02	.787"	1.692"	2.874"	TCMT 0902_ _	6811260	T7
6943338	BS-34-16-T04	1.496"	2.322"	3.228"	TCMT 16T3_ _	6811260	T15



High Precision Toolholders for BohrSTAR Kits

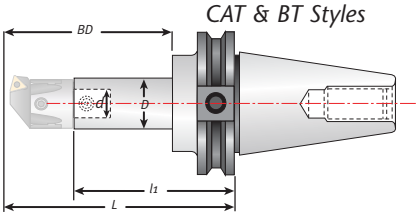
- *CAT40, CAT50, BT40, BT50, HSK63A, HSK100A, Weldon, and R8*
- *Compatible with our 54mm boring heads, adapters, and reducers*
- *Exceed industry standards for taper accuracy and concentricity*

Modular Coupling System

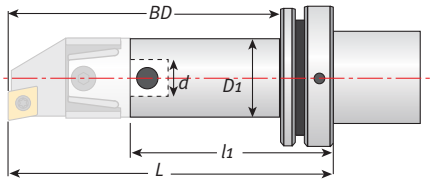


Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder to increase accuracy.

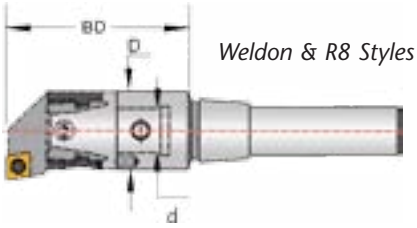
CAT & BT Styles



HSK Styles



Weldon & R8 Styles



Use the drawings to select your toolholder size.

Toolholders for BohSTAR Kits

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6134310	CT-340-54-120	54	28	4.724"	5.60"	3.00"	6811550
6134315	CT-340-54-160	54	28	6.299"	7.17"	4.57"	6811550
6134320	CT-340-54-200	54	28	7.874"	8.74"	6.14"	6811550
6141305	CT-350-54-90	54	28	3.543"	5.04"	2.44"	6811550
6141310	CT-350-54-160	54	28	6.299"	7.80"	5.20"	6811550
6141315	CT-350-54-200	54	28	7.874"	9.37"	6.77"	6811550
6140400	BT-340-54-90	54	28	3.543"	4.72"	2.13"	6811550
6140425	BT-340-54-160	54	28	6.299"	7.48"	4.88"	6811550
6140450	BT-340-54-200	54	28	7.874"	9.06"	6.46"	6811550
6150375	BT-350-54-90	54	28	3.543"	5.16"	2.56"	6811550
6150400	BT-350-54-160	54	28	6.299"	7.91"	5.31"	6811550
6150425	BT-350-54-200	54	28	7.874"	9.49"	6.90"	6811550
6155635	HSK-63A-54-110	54	28	4.331"	5.35"	2.76"	6811550
6155105	HSK-100A-54-110	54	28	4.331"	5.47"	2.76"	6811550
6165343	B-20-54-110-3/4	54	12	4.331"			6811550
6165103	B-25-54-110-1.0	54	15	4.331"			6811550
6165144	B-32-54-110-1-1/4	54	24	4.331"			6811550
6165123	B-40-54-110-1-1/2	54	24	4.331"			6811550
6165805	R8-54-110	54	28	4.331"			6811550

Pinzbohr Modular System

Pinzbohr is a flexible boring system for holes ranging from 0.315" up to 19.685". The system includes all necessary extensions and reducers, rough heads, finish heads and even includes face mill arbors and end mill holder options.

Coupling System

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder. All connections are easily made using the tools provided.

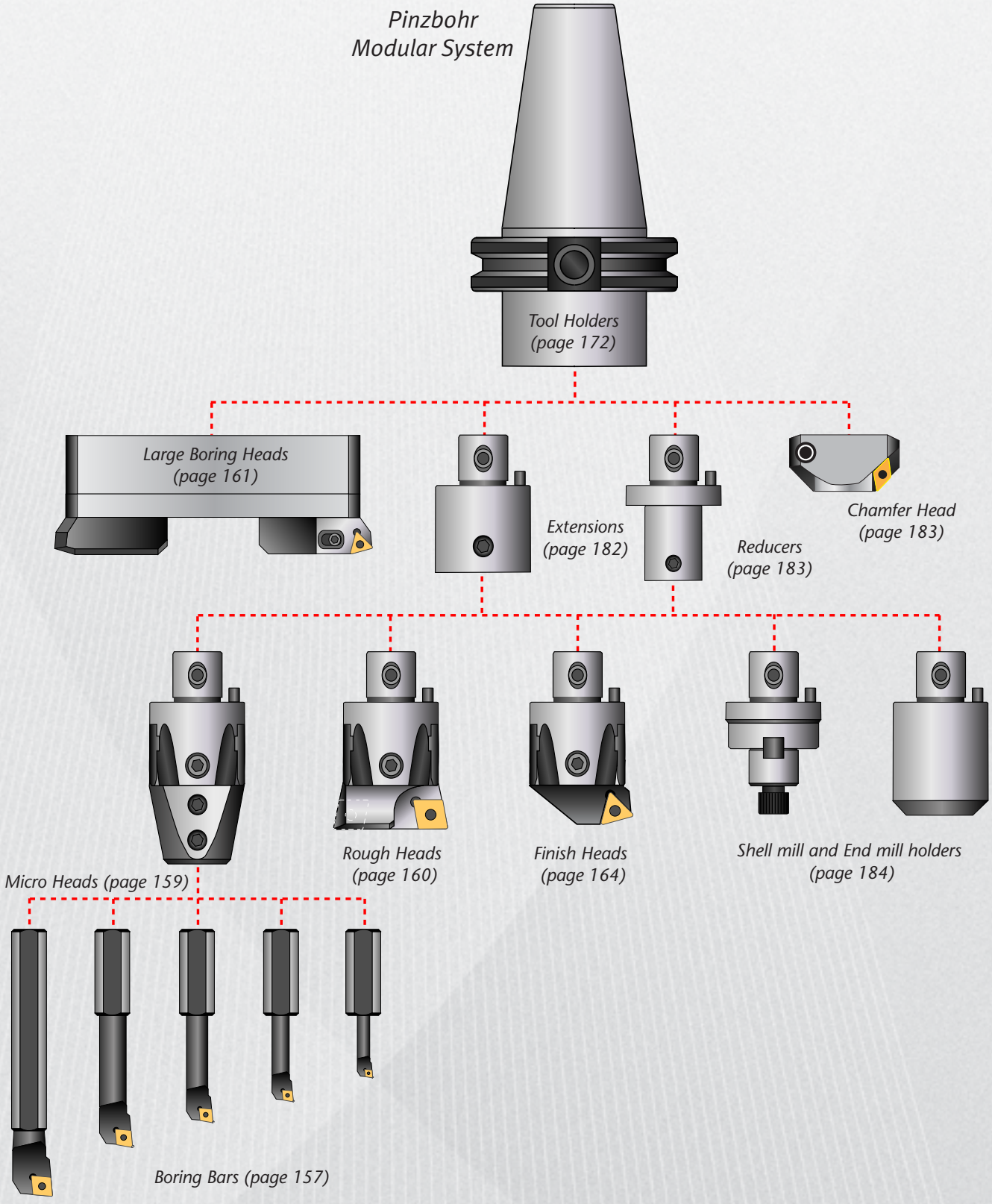
Boring Heads

Carbide & HSS Boring Bars

Toolholders

Extensions & Reducers

modular toolholders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Tool Holders
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Micro Heads (page 159)
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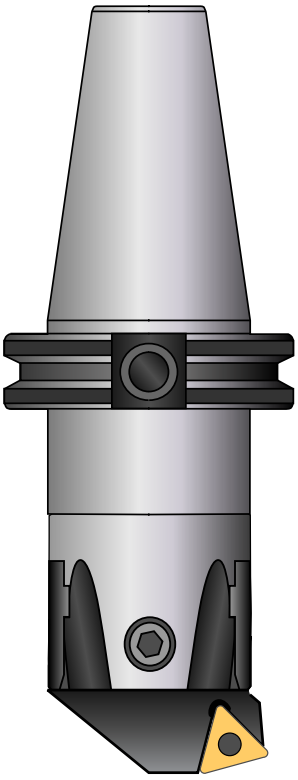
Pinzbohr Design

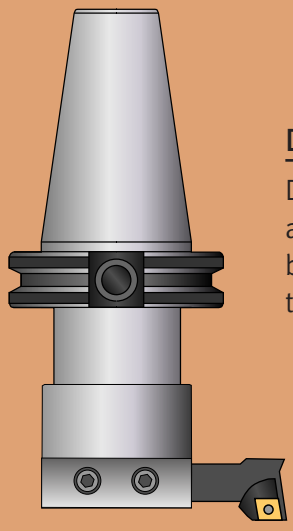
Pinzbohr is More Rigid and Accurate Than Other Manufacturers' Designs



- *Simple and extremely strong design for best reliability, rigidity, and repeatability.*
- *Flexible, modular system reduces tooling inventory.*
- *Top quality steel alloy hardened to 58-60 HRc.*
- *Heads are heat treated to minimize wear.*
- *Precision ground components for highest accuracy.*

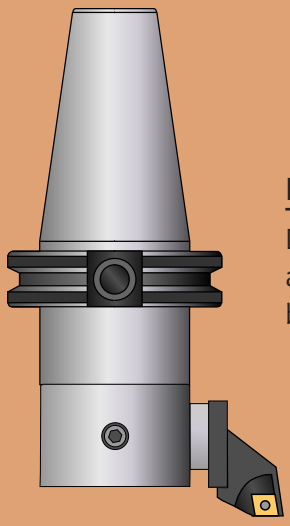
All Pinzbohr heads feature insert pockets that are either integral with the body of the head, or integral cartridges to provide maximum rigidity and accuracy.

Other Manufacturers' Designs



Design #1

Dogleg design relies on an extension out from the body of the head to maintain accuracy.

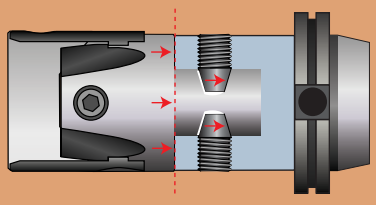


Design #2

Dogleg variation also extends beyond the body of the boring head.

Modular Coupling System

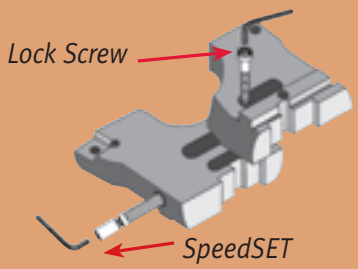
Allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.



Offset Center Lock Screws

Ease-of-Use Features

- *SafetySET feature prevents damage to the adjustment screw.*



- *SpeedSET synchronized adjustment for setting of roughing heads.*

Adjustment is This Easy

- *AccuSET design for fast and easy cutting adjustments.*

- *.0001" graduated dial allows operators to quickly set the head to any cutting diameter.*

Choosing a Pinzbohr Boring Head

Choosing a Boring Head

Use a 75-degree head for thru holes when the hole position is accurate. A 75-degree head will tend to follow a pre-existing hole. A 75-degree head can also be used when there is a lot of stock to be removed. The lead angle will allow higher feed rates.

Use a 90-degree boring head when a hole is off-center, shifted, or off-angle. The 90-degree lead angle will have fewer tendencies to follow the existing hole. It is also used for blind or stepped holes and is the most versatile of our heads.

The diameter of the boring bar should always be less than the diameter of the pre-existing hole to allow proper chip evacuation.

5:1 length-to-diameter ratios can be achieved when roughing with steel bars. 3:1 length-to-diameter ratios can be achieved when finishing with steel bars. 7:1 length-to-diameter ratios can be achieved with carbide bars.

Three Major Influences on Boring

1. **Depth of Cut (D.O.C.)**

   To determine the depth of a cut, take the finish diameter, minus the starting diameter and divide by two (2). The D.O.C. should always be greater than or equal to the nose radius of the insert. This will produce a stable cut with axial cutting forces. When D.O.C. is less than the radius, the forces are radial, and can cause chatter and deflection.

2. **Feed Rate (IPR)**

   Feeds and speeds are always dependent upon material, machine, setup conditions (fixturing) and tool over-hang. The feed rate (IPR) should always be larger than the hone of the insert and at least 25% of the nose radius. This creates full use of the chip breaker. An IPR less than the hone will produce vibration, which will affect the tool life and finish.

3. **Speed (SFPM)**

   Speed is the function of coating, nose radius, and over-hang. Higher speeds typically produce a better finish, shorter cycling times and better chip evacuation. Lower speed reduces the possibility of chatter, but also has higher cycle times and poorer quality finishes. This can also cause a built-up edge and reduce insert life. Sometimes coatings can be used to run higher surface footage, create better finish, and limit built-up edges.

75˚ Lead Angle Rough Head

90˚ Lead Angle Rough Head

Carbide or HSS Boring Bars

Use Micro Heads with Boring Bars

Pinzbohr Boring Tool Selection Guide

Use the questions below to determine your tooling requirements. You can also fill out and fax this information to us if you need assistance with your tooling selection. Fax it to: (317) 803-8001.

Name _____

Company _____

Address _____

City _____ St _____ Zip _____

E-mail _____ Ph _____ Fax _____

1. What is the finish size of the hole? _____
   (Determines size of boring head.)
2. What is the tolerance of the finished hole? _____
   (Determines if you need rough or finish boring head.)
3. Is the starting hole forged, cast, drilled, or reamed? _____
   (Determines whether you need 75 or 90 degree boring head.)
4. What is the design of the bored hole? _____
   (Also determines degree of boring head.)
   a. Stepped bore _____
   b. Thru bore _____
5. What material are you machining? _____
   (Determines insert grade and chip breaker selection.)
6. What spindle type is on the machine? _____
   (Determines holder selection.)
7. How deep is the bore? _____
   (Determines length of holder and extensions.)
8. Do you require any extra reach for fixturing or other reasons? _____
9. Does your machine have coolant-thru capability? _____

Misc: Select coolant option based on connection diameter and bore depth requirements (question #6 above).

Key to boring head descriptions

A 22 75 400 A = finish heads, D = rough heads (see #2 above)
22 = connection diameter (see question #1 above)
75 = approach angle (see question #3 above)
400 = insert style or CT cartridge (see question #5 above)

Key to boring toolholder descriptions

CT 330 or 350 22 100
CT = type of spindle (see question #6 above)
330 = taper size (see question #6 above)
22 = connection diameter (match head connection)
100 = boring depth (BD) (see question #7 above)

HSS Boring Bars – Use With Micro Head A-42-016

Features

- *16mm shanks for A-42-016 micro head*
- *Precision ground accuracy*

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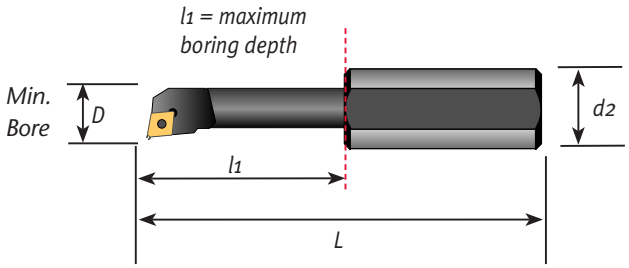
5:1 length-to-diameter ratios can be achieved when roughing with steel bars. 3:1 length-to-diameter ratios can be achieved when finishing with steel bars.

The shortest bar overhang possible should be used to maximize results.



HSS Boring Bars for Micro Head A-42-016

Part No.	Description	Min. Bore	d2 (mm)	L	Max Depth (l1)	Insert	Screw	Wrench
6711225	S06-16SEXPR-04	.315"	16	2.756"	.945"	EPGT 0401_ _L	6811210	T6
6711235	S06-16SEXPR-05	.315"	16	2.756"	1.260"	EPMT 0502_ _	6811220	T6
6722225	S06-16STFCR-06	.315"	16	2.756"	1.260"	TCMT 06T1_ _	6811215	T6
6711245	S08-16SCLCR-06	.394"	16	3.150"	1.575"	CCMT 0602_ _	6811235	T7
6722235	S08-16STFCR-06	.394"	16	3.150"	1.575"	TCMT 06T1_ _	6811215	T6
6711255	S10-16SCLCR-06	.512"	16	3.543"	2.047"	CCMT 0602_ _	6811250	T7
6722245	S10-16STFCR-09	.512"	16	3.543"	2.047"	TCMT 0902_ _	6811230	T7
6711265	S12-16SCLCR-06	.630"	16	3.937"	2.520"	CCMT 0602_ _	6811255	T7
6722255	S12-16STFCR-09	.630"	16	3.937"	2.520"	TCMT 0902_ _	6811230	T7
6711275	S16-16SCLCR-09	.787"	16	4.331"	3.150"	CCMT 09T3_ _	6811260	T15
6722265	S16-16STFCR-09	.787"	16	4.331"	3.150"	TCMT 0902_ _	6811230	T7
6722275	S16-16STFCR-16	.787"	16	4.331"	3.150"	TCMT 16T3_ _	6811260	T15

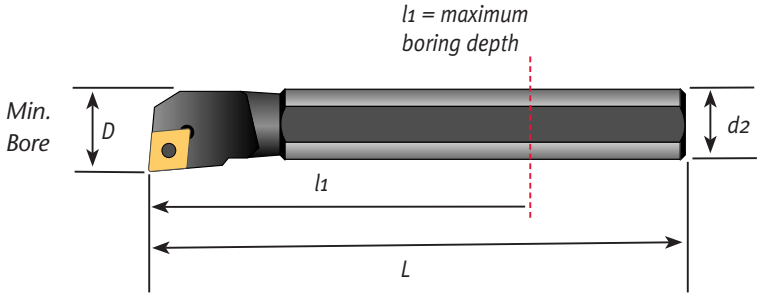
Features

- *Minimum bore .315"*
- *Maximum bore 1.496"*
- *Carbide or HSS*

Usage

- *7:1 length-to-diameter ratios can be achieved with carbide bars*
- *5:1 for roughing with steel bars*
- *3:1 for finishing with steel bars*

Select a boring bar with a "d2" dimension that matches the "d2" of the head.



Carbide Shank Boring Bars

Part No.	Description	Micro Head	Min. Bore	d2	L	Max Depth	Insert	Screw	Wrench
6733225	C06F-SEXPR-04	A-27-006	.315"	6mm	3.150"	1.654"	EPGT0401_ _L	6811210	T6
6733230	C06-08H-SELPR-05	A-27-008 or A-32-008	.315"	8mm	3.150"	1.654"	EMPT0502_ _	6811210	T6
6733235	C08G-SCLCR-06	A-27-008 or A-32-008	.394"	8mm	3.543"	2.205"	CCMT0602_ _	6811235	T7
6733245	C10J-SCLCR-06	A-32-010 or A-42-010	.512"	10mm	4.331"	2.756"	CCMT0602_ _	6811250	T7
6733255	C12K-SCLCR-06	A-42-012	.630"	12mm	4.921"	3.307"	CCMT0602_ _	6811255	T7
6733265	C16L-SCLCR-09	A-42-016	.787"	16mm	5.512"	4.409"	CCMT09T3_ _	6811260	T15

HSS Shank Boring Bars

Part No.	Description	Micro Head	Min. Bore	d2	L	Max Depth	Insert	Screw	Wrench
6733227	S06E-SEXPR-04	A-27-006	.315"	6mm	2.756"	1.181"	EPGT0401_ _L	6811210	T6
6733232	S06D-SELP-05	A-27-006	.315"	6mm	2.362"	1.181"	EMPT0502_ _	6811210	T6
6733237	S08F-SCLCR-06	A-27-008 & A32-008	.394"	8mm	3.150"	1.575"	CCMT0602_ _	6811235	T7
6733247	S10G-SCLCR-06	A-32-010 & A42-010	.512"	10mm	3.543"	1.969"	CCMT0602_ _	6811250	T7
6733257	S12H-SCLCR-06	A-42-012	.630"	12mm	3.937"	2.362"	CCMT0602_ _	6811255	T7
6733267	S16J-SCLCR-09	A-42-016	.787"	16mm	4.331"	3.150"	CCMT09T3_ _	6811260	T15

Micro Heads for Carbide or HSS Boring Bars

Features

- *.0001" dial allows fast and easy adjustments*
- *Tapered nose improves clearance*
- *Two offset center lock screws maximize rigidity while still permitting fast tool changes*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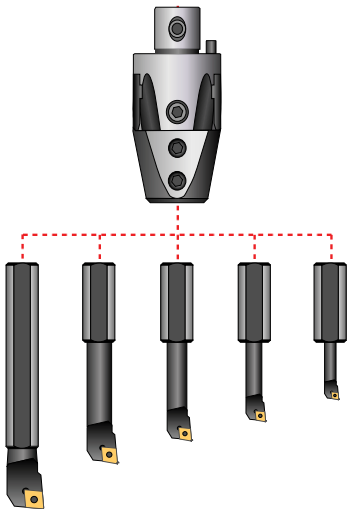
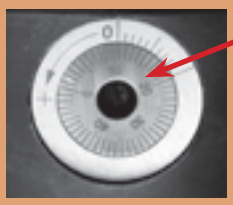
Micro Heads available in 5 shank sizes for carbide and HSS boring bars.



Adjustment Is This Easy



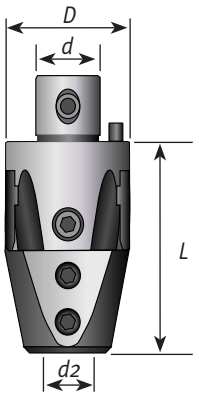
Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw

Select a micro head with a "d2" dimension that matches the "d2" of the boring bar.



AccuSET Micro Heads

Part No.	Description	Range Min	Range Max	D (mm)	d (mm)	d2 (mm)	L
6011000	A-27-006	.315"	.787"	27	15	6	1.97"
6011050	A-27-008	.394"	.827"	27	15	8	1.97"
6011100	A-32-008	.394"	.827"	32	18	8	2.28"
6011150	A-32-010	.512"	.984"	32	18	10	2.28"
6011200	A-42-010	.512"	1.142"	42	24	10	2.76"
6011250	A-42-012	.63"	1.339"	42	24	12	2.76"
6011300	A-42-016	.787"	1.496"	42	24	16	2.76"

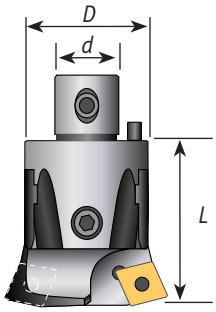
Note: All wrenches are included with each boring head. No special tools are needed.

75° Lead Angle Rough Heads – Range .945" up to 8.661"

Integral pocket type

Features

- *SpeedSET feature adjusts both slides at once and slides won't lose position during adjustment*
- *SafetySET feature prevents accidental damage to adjustment screw*
- *Two insert pockets for faster cutting and better accuracy*



Cartridge type rough head

75° Integral Pocket Rough Heads

Part No.	Description	Range Min	Range Max	(mm) D	(mm) d	L	Insert	Screw
6275100	D-22-75-400	.945"	1.181"	22	12	1.39"	CCMT 0602_	6811250
6275105	D-27-75-409	1.142"	1.575"	27	15	1.65"	CCMT 09T3_	6811260
6275115	D-32-75-409	1.535"	1.969"	32	18	1.77"	CCMT 09T3_	6811260
6275120	D-42-75-300	1.929"	2.559"	42	24	2.20"	TCMT 09T3_	6811262
6275125	D-42-75-402	1.929"	2.559"	42	24	2.20"	CCMT 1204_	6811266
6275130	D-42-75-402N	2.283"	2.559"	42	24	2.20"	CNMG 1204_	6811270
6275135	D-54-75-300	2.48"	3.228"	54	28	2.60"	TCMT 09T3_	6811262
6275140	D-54-75-402	2.48"	3.228"	54	28	2.60"	CCMT 1204_	6811 266
6275145	D-54-75-402N	2.48"	3.228"	54	28	2.60"	CNMG 1204_	6811270

75° Cartridge Type Rough Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6275150	D-68-75-2CT-300	3.15"	4.016"	2CT-75-300	68	36	3.39"	TCMT 09T3_	6811262
6275155	D-68-75-2CT-402	3.15"	4.016"	2CT-75-402	68	36	3.39"	CCMT 1204_	6811266
6275160	D-68-75-2CT-402N	3.15"	4.016"	2CT-75-402N	68	36	3.39"	CNMG 1204_	6811270
6275165	D-85-75-3CT-300	3.937"	4.921"	3CT-75-300	85	50	3.94"	TCMT 16T3_	6811262
6275170	D-85-75-3CT-402	3.937"	4.921"	3CT-75-402	85	50	3.94"	CCMT 1204_	6811266
6275175	D-85-75-3CT-402N	3.937"	4.921"	3CT-75-402N	85	50	3.94"	CNMG 1204_	6811270
6275180	D-100-75-3CT-300	4.921"	6.299"	3CT-75-300	110	60	3.94"	TCMT 16T3_	6811262
6275185	D-100-75-3CT-402	4.921"	6.299"	3CT-75-402	110	60	3.94"	CCMT 1204_	6811266
6275190	D-100-75-3CT-402N	4.921"	6.299"	3CT-75-402N	110	60	3.94"	CNMG 1204_	6811270
6275195	D-200-75-3CT-300	6.299"	8.661"	2CT-75-300	145	60	3.94"	TCMT 16T3_	6811262
6275200	D-200-75-3CT-402	6.299"	8.661"	3CT-75-402	145	60	3.94"	CCMT 1204_	6811266
6275205	D-200-75-3CT-402N	6.299"	8.661"	3CT-75-402N	145	60	3.94"	CNMG 1204_	6811270

AccuSET dial not available on small rough heads due to their design differences.

75° Lead Angle Rough Heads – Range 8.661" up to 19.685"

Features

- *Two AccuSET .0001" dials for setting both inserts independently*
- *Top quality steel alloy hardened to 58-60 HRc.*
- *Precision ground components for accuracy.*

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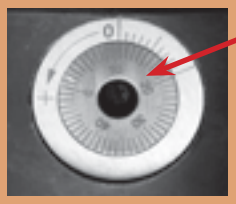
75° lead angle heads tend to self center in the pilot hole, stabilizing the cut and maximizing stock removal rates.

Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See page 179.

Adjustment Is This Easy



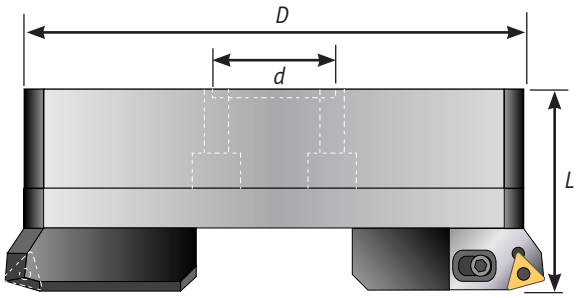
Adjustable in 0.0001" increments

Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



75° Large Rough Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6275210	D-300-75-3CT-300	8.661"	12.598"	3CT-75-300	202	60	3.54"	TCMT 16T3_	6811262
6275215	D-300-75-3CT-402	8.661"	12.598"	3CT-75-402	202	60	3.54"	CCMT 1204_	6811266
6275220	D-300-75-3CT-402N	8.661"	12.598"	3CT-75-402N	202	60	3.54"	CNMG 1204_	6811270
6275225	D-400-75-3CT-300	11.417"	15.748"	3CT-75-300	272	60	3.54"	TCMT 16T3_	6811262
6275230	D-400-75-3CT-402	11.417"	15.748"	3CT-75-402	272	60	3.54"	CCMT 1204_	6811266
6275235	D-400-75-3CT-402N	11.417"	15.748"	3CT-75-402N	272	60	3.54"	CNMG 1204_	6811270
6275240	D-500-75-3CT-300	14.567"	19.685"	3CT-75-300	352	60	3.54"	TCMT 16T3_	6811262
6275245	D-500-75-3CT-402	14.567"	19.685"	3CT-75-402	352	60	3.54"	CCMT 1204_	6811266
6275250	D-500-75-3CT-402N	14.567"	19.685"	3CT-75-402N	352	60	3.54"	CNMG 1204_	6811270

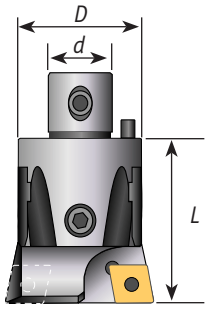
AccuSET, SafetySET, and SpeedSET features not available on large boring heads due to their design differences.

90° Lead Angle Rough Heads – Range .945" up to 8.661"

Integral pocket type

Features

- *SpeedSET feature adjusts both slides at once and slides won't lose position during adjustment*
- *SafetySET feature prevents accidental damage to the adjustment screw*
- *Two insert pockets for faster metal removal*



Cartridge type rough head

90° Integral Pocket Type Rough Heads

Part No.	Description	Range (mm) Min	Max	D	d	L	Insert	Screw
6390100	D-22-90-400	.945"	1.181"	22	12	1.39"	CCMT 0602_	6811250
6390105	D-27-90-409	1.142"	1.575"	27	15	1.65"	CCMT 09T3_	6811260
6390110	D-32-90-409	1.535"	1.969"	32	18	1.77"	CCMT 09T3_	6811260
6390115	D-42-90-300	1.929"	2.559"	42	24	2.20"	TCMT 16T3_	6811262
6390120	D-42-90-402	1.929"	2.559"	42	24	2.20"	CCMT 1204_	6811266
6390125	D-42-90-402N	2.283"	2.559"	42	24	2.20"	CNMG 1204_	6811270
6390130	D-54-90-300	2.48"	3.228"	54	28	2.60"	TCMT 16T3_	6811262
6390135	D-54-90-402	2.48"	3.228"	54	28	2.60"	CCMT 1204_	6811266
6390140	D-54-90-402N	2.48"	3.228"	54	28	2.60"	CNMG 1204_	6811270

90° Cartridge Type Rough Heads

Part No.	Description	Range Min	Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6390145	D-68-90-2CT-300	3.15"	4.016"	2CT-90-300	68	36	3.39"	TCMT 16T3_	6811262
6390150	D-68-90-2CT-402	3.15"	4.016"	2CT-90-402	68	36	3.39"	CCMT 1204_	6811266
6390155	D-68-90-2CT-402N	3.15"	4.016"	2CT-90-402N	68	36	3.39"	CNMG 1204_	6811270
6390160	D-85-90-3CT-300	3.937"	4.921"	3CT-90-300	85	50	3.94"	TCMT 16T3_	6811262
6390165	D-85-90-3CT-402	3.937"	4.921"	3CT-90-402	85	50	3.94"	CCMT 1204_	6811266
6390170	D-85-90-3CT-402N	3.937"	4.921"	3CT-90-402N	85	50	3.94"	CNMG 1204_	6811270
6390175	D-100-90-3CT-300	4.921"	6.299"	3CT-90-300	110	60	3.94"	TCMT 16T3_	6811262
6390180	D-100-90-3CT-402	4.921"	6.299"	3CT-90-402	110	60	3.94"	CCMT 1204_	6811266
6390185	D-100-90-3CT-402N	4.921"	6.299"	3CT-90-402N	110	60	3.94"	CNMG 1204_	6811270
6390190	D-200-90-3CT-300	6.299"	8.661"	2CT-90-300	145	60	3.94"	TCMT 16T3_	6811262
6390200	D-200-90-3CT-402	6.299"	8.661"	3CT-90-402	145	60	3.94"	CCMT 1204_	6811266
6390205	D-200-90-3CT-402N	6.299"	8.661"	3CT-90-402N	145	60	3.94"	CNMG 1204_	6811270

AccuSET dial not available on small rough heads due to their design differences.

90˚ Lead Angle Rough Heads – Range 8.661" up to 19.685"

Features

- *Two AccuSET .0001" dials for setting both inserts independently*
- *Top quality steel alloy hardened to 58-60 HRc.*
- *Precision ground components for accuracy.*

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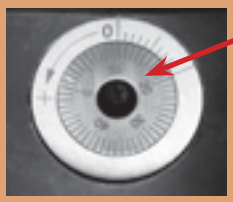
Use 90˚ lead angle heads when performing blind boring, or if the desired hole is not exactly on center with your pilot hole. The 90˚ lead will have less tendency to follow the pilot hole.

Adjustment Is This Easy



Adjustable in 0.0001" increments

Metric dials available

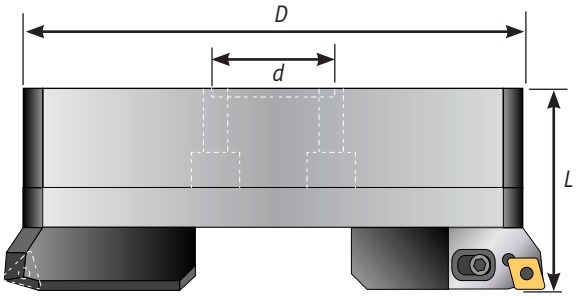
.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw

Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection.

See page 179.



90˚ Large Rough Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6390210	D-300-90-3CT-300	8.661"	12.598"	3CT-90-300	202	60	3.54"	TCMT 16T3_	6811262
6390215	D-300-90-3CT-402	8.661"	12.598"	3CT-90-402	202	60	3.54"	CCMT 1204_	6811266
6390220	D-300-90-3CT-402N	8.661"	12.598"	3CT-90-402N	202	60	3.54"	CNMG 1204_	6811270
6390225	D-400-90-3CT-300	11.417"	15.748"	3CT-90-300	272	60	3.54"	TCMT 16T3_	6811262
6390230	D-400-90-3CT-402	11.417"	15.748"	3CT-90-402	272	60	3.54"	CCMT 1204_	6811266
6390235	D-400-90-3CT-402N	11.417"	15.748"	3CT-90-402N	272	60	3.54"	CNMG 1204_	6811270
6390240	D-500-90-3CT-300	14.567"	19.685"	3CT-90-300	352	60	3.54"	TCMT 16T3_	6811262
6390245	D-500-90-3CT-402	14.567"	19.685"	3CT-90-402	352	60	3.54"	CCMT 1204_	6811266
6390250	D-500-90-3CT-402N	14.567"	19.685"	3CT-90-402N	352	60	3.54"	CNMG 1204_	6811270

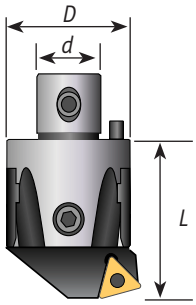
SafetySET, and SpeedSET features not available on large boring heads due to their design differences.

75° Lead Angle Finish Heads – Range .945" up to 8.661"

Integral pocket type

Features

- *AccuSET spring-loaded slide won't lose position during adjustment*
- *.0001" dial allows fast and easy adjustments*
- *Designed for maximum rigidity and accuracy*



Cartridge type

75° Integral Pocket Type Finish Heads

Part No.	Description	Range Min	Range Max	D (mm)	d (mm)	L	Insert	Screw
6275255	A-22-75-400	.945"	1.181"	22	12	1.39"	CCMT 0602_	6811250
6275260	A-27-75-409	1.142"	1.575"	27	15	1.65"	CCMT 09T3_	6811260
6275265	A-32-75-409	1.535"	1.969"	32	18	1.77"	CCMT 09T3_	6811260
6275270	A-42-75-300	1.929"	2.559"	42	24	2.20"	TCMT 16T3_	6811262
6275275	A-54-75-300	2.48"	3.228"	54	28	2.60"	TCMT 16T3_	6811262

75° Cartridge Type Finish Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6275280	A-68-75-2CT-300	3.15"	4.016"	2CT-75-300	68	36	3.39"	TCMT 16T3_	6811262
6275285	A-68-75-2CT-402	3.15"	4.016"	2CT-75-402	68	36	3.39"	CCMT 1204_	6811266
6275290	A-68-75-2CT-402N	3.15"	4.016"	2CT-75-402N	68	36	3.39"	CNMG 1204_	6811270
6275295	A-85-75-3CT-300	3.937"	4.921"	3CT-75-300	85	50	3.94"	TCMT 16T3_	6811262
6275300	A-85-75-3CT-402	3.937"	4.921"	3CT-75-402	85	50	3.94"	CCMT 1204_	6811266
6275305	A-85-75-3CT-402N	3.937"	4.921"	3CT-75-402N	85	50	3.94"	CNMG 1204_	6811270
6275310	A-100-75-3CT-300	4.921"	6.299"	3CT-75-300	110	60	3.94"	TCMT 16T3_	6811262
6275315	A-100-75-3CT-402	4.921"	6.299"	3CT-75-402	110	60	3.94"	CCMT 1204_	6811266
6275320	A-100-75-3CT-402N	4.921"	6.299"	3CT-75-402N	110	60	3.94"	CNMG 1204_	6811270
6275325	A-200-75-3CT-300	6.299"	8.661"	2CT-75-300	145	60	3.94"	TCMT 16T3_	6811262
6275330	A-200-75-3CT-402	6.299"	8.661"	3CT-75-402	145	60	3.94"	CCMT 1204_	6811266
6275335	A-200-75-3CT-402N	6.299"	8.661"	3CT-75-402N	145	60	3.94"	CNMG 1204_	6811270

75° Lead Angle Finish Heads – Range 8.661" up to 19.685"

Features

- *AccuSET .0001" adjustment dial*
- *Designed for maximum rigidity and accuracy*
- *Top quality steel alloy hardened to 58-60 HRc*

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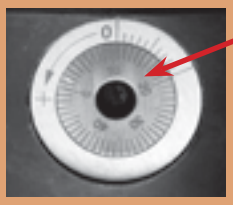
75° lead angle head tends to self-center in the pilot hole, stabilizing the cut and maximizing stock removal rates.

Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See pg. 179

AccuSET Adjustment Dial



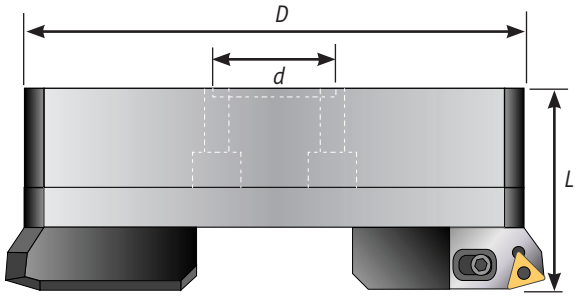
Adjustable in 0.0001" increments

Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



75° Large Finish Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6275340	A-300-75-3CT-300	8.661"	12.598"	3CT.75.300	202	60	3.54"	TCMT 16T3_	6811262
6275345	A-300-75-3CT-402	8.661"	12.598"	3CT.75.402	202	60	3.54"	CCMT 1204_	6811266
6275350	A-300-75-3CT-402N	8.661"	12.598"	3CT.75.402N	202	60	3.54"	CNMG 1204_	6811270
6275355	A-400-75-3CT-300	11.417"	15.748"	3CT.75.300	272	60	3.54"	TCMT 16T3_	6811262
6275360	A-400-75-3CT-402	11.417"	15.748"	3CT.75.402	272	60	3.54"	CCMT 1204_	6811266
6275365	A-400-75-3CT-402N	11.417"	15.748"	3CT.75.402N	272	60	3.54"	CNMG 1204_	6811270
6275370	A-500-75-3CT-300	14.567"	19.685"	3CT.75.300	352	60	3.54"	TCMT 16T3_	6811262
6275375	A-500-75-3CT-402	14.567"	19.685"	3CT.75.402	352	60	3.54"	CCMT 1204_	6811266
6275380	A-500-75-3CT-402N	14.567"	19.685"	3CT.75.402N	352	60	3.54"	CNMG 1204_	6811270

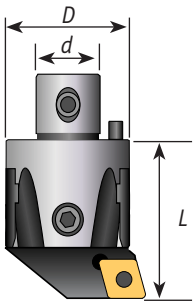
SafetySET, and SpeedSET features not available on large boring heads due to their design differences.

90° Lead Angle Finish Heads – Range .945" up to 8.661"

Integral pocket type

Features

- *AccuSET spring-loaded slide won't lose position during adjustment*
- *.0001" dial allows fast and easy adjustments*
- *Designed for maximum rigidity and accuracy*



Cartridge type

90° Integral Pocket Type Finish Heads

Part No.	Description	Range Min	Range Max	D (mm)	d (mm)	L	Insert	Screw
6390255	A-22-90-400	.945"	1.181"	22	12	1.39"	CCMT 0602_	6811250
6390260	A-27-90-409	1.142"	1.575"	27	15	1.65"	CCMT 09T3_	6811260
6390265	A-32-90-300	1.535"	1.969"	32	18	1.77"	TCMT 16T3_	6811262
6390270	A-32-90-409	1.535"	1.969"	32	18	1.77"	CCMT 09T3_	6811260
6390275	A-42-90-300	1.929"	2.559"	42	24	2.20"	TCMT 16T3_	6811262
6390280	A-42-90-402	1.929"	2.559"	42	24	2.20"	CCMT 1204_	6811266
6390285	A-42-90-402N	2.283"	2.559"	42	24	2.20"	CNMG 1204_	6811270
6390290	A-54-90-300	2.48"	3.228"	54	28	2.60"	TCMT 16T3_	6811262
6390295	A-54-90-402	2.48"	3.228"	54	28	2.60"	CCMT 1204_	6811266
6390300	A-54-90-402N	2.48"	3.228"	54	28	2.60"	CNMG 1204_	6811270

90° Cartridge Type Finish Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6390305	A-68-90-2CT-300	3.15"	4.016"	2CT-90-300	68	36	3.39"	TCMT 16T3_	6811262
6390310	A-68-90-2CT-402	3.15"	4.016"	2CT-90-402	68	36	3.39"	CCMT 1204_	6811266
6390315	A-68-90-2CT-402N	3.15"	4.016"	2CT-90-402N	68	36	3.39"	CNMG 1204_	6811270
6390320	A-85-90-3CT-300	3.937"	4.921"	3CT-90-300	85	50	3.94"	TCMT 16T3_	6811262
6390325	A-85-90-3CT-402	3.937"	4.921"	3CT-90-402	85	50	3.94"	CCMT 1204_	6811266
6390330	A-85-90-3CT-402N	3.937"	4.921"	3CT-90-402N	85	50	3.94"	CNMG 1204_	6811270
6390335	A-100-90-3CT-300	4.921"	6.299"	3CT-90-300	110	60	3.94"	TCMT 16T3_	6811262
6390340	A-100-90-3CT-402	4.921"	6.299"	3CT-90-402	110	60	3.94"	CCMT 1204_	6811266
6390345	A-100-90-3CT-402N	4.921"	6.299"	3CT-90-402N	110	60	3.94"	CNMG 1204_	6811270
6390350	A-200-90-3CT-300	6.299"	8.661"	2CT-90-300	145	60	3.94"	TCMT 16T3_	6811262
6390355	A-200-90-3CT-402	6.299"	8.661"	3CT-90-402	145	60	3.94"	CCMT 1204_	6811266
6390360	A-200-90-3CT-402N	6.299"	8.661"	3CT-90-402N	145	60	3.94"	CNMG 1204_	6811270

90˚ Lead Angle Finish Heads – Range 8.661" up to 19.685"

Features

- *AccuSET .0001" adjustment dial*
- *Designed for maximum rigidity and accuracy*
- *Top quality steel alloy hardened to 58-60 HRc*

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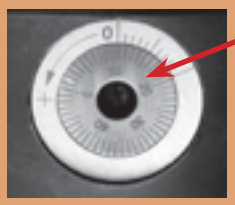
Use 90˚ lead angle heads when performing blind boring, or if the desired hole is not exactly on center with your pilot hole. The 90˚ lead will have less tendency to follow the pilot hole.

Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See page 179.

AccuSET Adjustment Dial

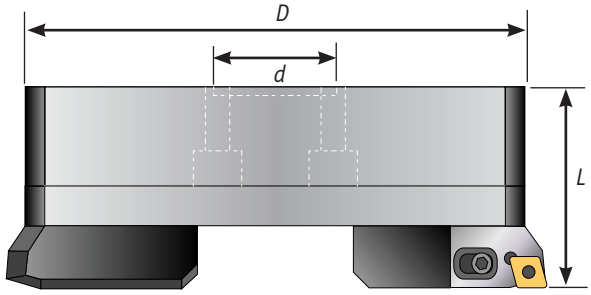


Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



90˚ Large Finish Heads

Part No.	Description	Range Min	Range Max	Cartridge	D (mm)	d (mm)	L	Insert	Screw
6390365	A-300-90-3CT-300	8.661"	12.598"	3CT-90-300	202	60	3.54"	TCMT 16T3_	6811262
6390370	A-300-90-3CT-402	8.661"	12.598"	3CT-90-402	202	60	3.54"	CCMT 1204_	6811266
6390375	A-300-90-3CT-402N	8.661"	12.598"	3CT-90-402N	202	60	3.54"	CNMG 1204_	6811270
6390380	A-400-90-3CT-300	11.417"	15.748"	3CT-90-300	272	60	3.54"	TCMT 16T3_	6811262
6390385	A-400-90-3CT-402	11.417"	15.748"	3CT-90-402	272	60	3.54"	CCMT 1204_	6811266
6390390	A-400-90-3CT-402N	11.417"	15.748"	3CT-90-402N	272	60	3.54"	CNMG 1204_	6811270
6390395	A-500-90-3CT-300	14.567"	19.685"	3CT-90-300	352	60	3.54"	TCMT 16T3_	6811262
6390400	A-500-90-3CT-402	14.567"	19.685"	3CT-90-402	352	60	3.54"	CCMT 1204_	6811266
6390405	A-500-90-3CT-402N	14.567"	19.685"	3CT-90-402N	352	60	3.54"	CNMG 1204_	6811270

SafetySET, and SpeedSET features not available on large boring heads due to their design differences.

Indexable Cartridges 75˚ & 90˚ Lead Angle


75˚ type 300

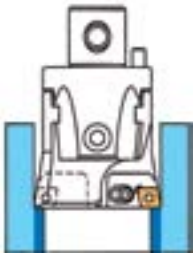

75˚ type 402

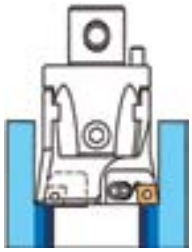

90˚ type 300


90˚ type 402

Features

- *Change lead angle or insert style by simply changing cartridges*
- *Precision ground accuracy*
- *Symmetrical or staggered boring*


symmetrical boring


staggered boring

Staggered boring is possible by substituting a staggered cartridge in place of the regular cartridge. This .020" of axial stagger will accommodate most staggered, or "stepped" boring processes. Note that staggered cartridge descriptions end in "S".

75˚ Lead Angle Cartridges for Symmetrical Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6675125	2CT-75-300	TCMT 16T3_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	T15
6675130	2CT-75-402	CCMT 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	T20
6675135	2CT-75-402N	CNMG 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	2.5
6675140	3CT-75-300	TCMT 16T3_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	T15
6675145	3CT-75-402	CCMT 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	T20
6675150	3CT-75-402N	CNMG 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	2.5

90˚ Lead Angle Cartridges for Symmetrical Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6690125	2CT-90-300	TCMT 16T3_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	T15
6690130	2CT-90-402	CCMT 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	T20
6690135	2CT-90-402N	CNMG 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	2.5
6690140	3CT-90-300	TCMT 16T3_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	T15
6690145	3CT-90-402	CCMT 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	T20
6690150	3CT-90-402N	CNMG 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	2.5

90˚ Lead Angle Cartridges for Staggered Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6690155	2CT-90-300S	TCMT 16T3_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	T15
6690160	2CT-90-402S	CCMT 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	T20
6690165	2CT-90-402NS	CNMG 1204_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	2.5
6690170	3CT-90-300S	TCMT 16T3_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	T15
6690175	3CT-90-402S	CCMT 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	T20
6690180	3CT-90-402NS	CNMG 1204_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	2.5

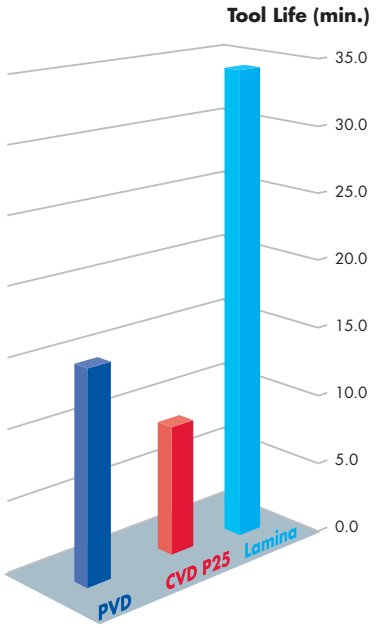
HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

Features
- *3X thicker PVD coating*
- *Unique edge preparations*
- *Even coating thickness on the flank, nose and chip breaker*

Advantages
- *Just one grade*
- *Low inventory*
- *Up to double tool life*

Benefits
- *Increased Productivity*
- *Longer insert life = more parts-per-insert*
- *Less scrap*

Tool Life Case-Study



*Tech-Center test report

Finally, someone makes it simple!

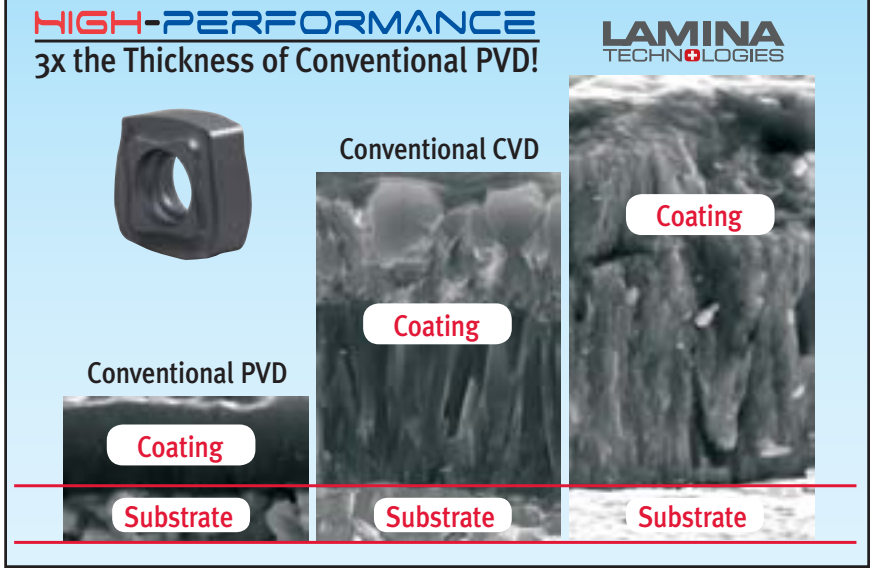
Nexus Tool, in partnership with Lamina, introduces a type of insert technology that allows you to use just one grade for many different types of material. Simply change the feeds and speeds as required for the type of metal you are cutting, and you really can use *just one grade*.

How do we do it? Through many years of experimenting with different coating technologies, Lamina and Nexus have developed a patented, thick PVD coating that eliminates the inconsistencies and imperfections found in previous carbide coating technologies.

This coating technology features the thickest multi-layered PVD in history, and allows you to eliminate many different grades of carbide. Along with our unique edge preparations, this combination doubles tool life in some applications.

High-Performance Inserts

- *Boring Inserts*
- *Milling Inserts*
- *Turning Inserts*



High-Performance Boring Inserts

Features

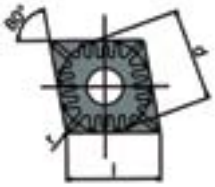
- *ISO standard inserts*
- *TCMT, CCMT, CNMG, EPMT, and DCMT*
- *Lamina high-performance insert for many types of material*

Tech Tips

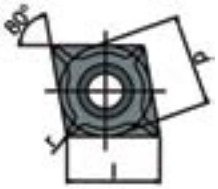
Roughing:
Use the largest available corner radius unless otherwise specified.

Finish boring:
Use the smallest available corner radius to minimize tool deflection.

Best finish:
Generally start with your feed at 25% of insert nose radius. Optimal speeds and feeds depend upon material, tool overhang, and setup conditions.

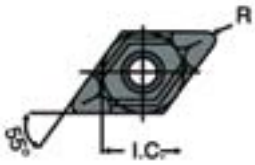


CNMG insert



CCMT insert

TCMT insert



DCMT insert

HIGH-PERFORMANCE

Part No.	Description (ANSI)	Description (ISO)	Grade	Radius	Operation	Material
3631010	CCMT21.50-PF45625	CCMT060202-PF4-5625	5625	0.008	Finishing	P-M-K-S-H
3663336	CCGX21.51-LH-101	CCGX060204-LH-101	101	0.016	General	N
3664411	CCMT21.51NN-LT10	CCMT060204NN-LT10	LT10	0.016	General	P-M-K-S-H
3663399	CCMT21.52-HM-251	CCMT060208-HM-251	251	0.031	General	P-M-K-S-H
3663344	CCMT32.50-HF-251	CCMT09T302-HF-251	251	0.008	Finishing	P-M-K-S-H
3663337	CCGX32.51-LH-101	CCGX09T304-LH-101	101	0.016	General	N
3664413	CCMT32.51NN-LT10	CCMT09T304NN-LT10	LT10	0.016	General	P-M-K-S-H
3663338	CCGX32.52-LH-101	CCGX09T308-LH-101	101	0.031	General	N
3664416	CCMT32.52NN-LT10	CCMT09T308NN-LT10	LT10	0.031	General	P-M-K-S-H
3664421	CCMT431NN-LT10	CCMT120404NN-LT10	LT10	0.016	General	P-M-K-S-H
3664425	CCMT432NN-LT10	CCMT120408NN-LT10	LT10	0.031	General	P-M-K-S-H
3664431	CCMT433NN-LT10	CCMT120412NN-LT10	LT10	0.047	General	P-M-K-S-H
3663339	CCGX432-LH-101	CCGX120408-LH-101	101	0.031	General	N
6607029	CNMG431-NN-LT10	CNMG120404-NN-LT10	LT10	0.016	General	P-M-K-S-H
6607033	CNMG432-NN-LT10	CNMG120408-NN-LT10	LT10	0.031	General	P-M-K-S-H
6607037	CNMG433-NN-LT10	CNMG120412-NN-LT10	LT10	0.047	Roughing	P-M-K-S-H
6607041	CNMP432-NN-LT10	CNMP1204008-NN-LT10	LT10	0.031	General	P-M-K-S-H
6607045	CNMP433-NN-LT10	CNMP120412-NN-LT10	LT10	0.047	Roughing	P-M-K-S-H
6607901	CNGG431-ALU-LT05	CNGG120404-ALU-LT05	LT05	0.016	General	N
6607905	CNGG432-ALU-LT05	CNGG120408-ALU-LT05	LT05	0.031	General	N

CC_ _

CC_ _

CC_ _

CN_ _

***P** = steel, **M** = stainless, **K** = cast iron, **S** = high temp alloys, **H** = hardened material, **N** = aluminum & alloys*

High-Performance Boring Inserts

Part No.	Description (ANSI)	Description (ISO)	Grade	Radius	Operation	Material
3764424	DCMT32.51NN-LT10	DCMT11T304NN-LT10	LT10	0.016	General	P-M-K-S-H
3764427	DCMT32.52NN-LT10	DCMT11T308NN-LT10	LT10	0.031	General	P-M-K-S-H
3763337	DCGX32.52-LH-101	DCGX11T308-LH-101	101	0.031	General	N
3732040	DCMT432-PM4-5615	DCMT150408-PM4-5615	5615	0.031	Roughing	P-M-K-S-H
3934020	EPGT1.21.5L-W08-NS530	EPGT040102L-W08-NS530	NS530	0.008	R & F	P-M-K-S-H-N
3934030	EPMT1.53.5-PM5-5625	EPMT050202-PM5-5625	5625	0.008	R & F	P-M-K-S-H-N
3533010	TCMT1.21.5-PF4-5615	TCMT06T102-PF4-5615	5615	0.008	Finishing	P-M-K-S-H
3533020	TCMT1.211-PF4-5625	TCMT06T104-PF4-5625	5625	0.016	Finishing	P-M-K-S-H
3563311	TCMT1.81.50-HF-251	TCMT090202-HF-251	251	0.008	Finishing	P-M-K-S-H
3563388	TCMT1.81.51-HM-251	TCMT090204-HM-251	251	0.016	General	P-M-K-S-H
3533030	TCMT1.81.51-PF4-5625	TCMT090204-PF4-5625	5625	0.016	Finishing	P-M-K-S-H
3563399	TCMT1.81.52-HM-251	TCMT090208-HM-251	251	0.031	General	P-M-K-S-H
3564438	TCMT32.51NN-LT30	TCMT16T304NN-LT10	LT10	0.016	General	P-M-K-S-H
3563337	TCGX32.52-LH	TCGX16T308-LH-101	101	0.031	General	N
3564441	TCMT32.52NN-LT10	TCMT16T308NN-LT10	LT10	0.031	General	P-M-K-S-H

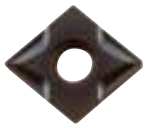
DC_ _

EP_ _

TC_ _

Part No.	Description	Grade	Radius	Operation	Material
3668011	**CCMT21.51NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
3668021	**CCMT32.51NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
3668026	**CCMT32.52NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
6608011	**CNMG431NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
6608016	**CNMG432NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
6608026	**CNMG432NX-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
6608021	**CNMG433NN-LT1000-Insert**	**LT1000**	0.047	Roughing	P-M-K-S-H
6608031	**CNMP432NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
6608036	**CNMP433NN-LT1000-Insert**	**LT1000**	0.047	Roughing	P-M-K-S-H
3768821	**DCMT32.51NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
3768826	**DCMT32.52NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
3568831	**TCMT21.51NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
3568841	**TCMT21.52NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H
3568851	**TCMT32.51NN-LT1000-Insert**	**LT1000**	0.016	Finishing	P-M-K-S-H
3568861	**TCMT32.52NN-LT1000-Insert**	**LT1000**	0.031	General	P-M-K-S-H

CCMT



CNMG

DCMT

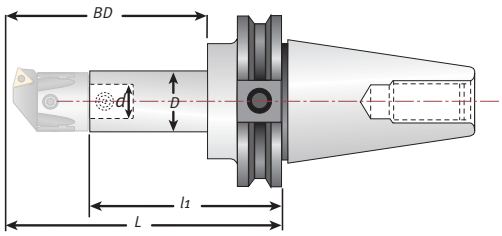
P = *steel*, M = *stainless*, K = *cast iron*, S = *high temp alloys*, H = *hardened material*, N = *aluminum & alloys*

Pinzbohr High Precision CAT40 Toolholders

Match the d dimension on toolholder and boring head for proper selection.

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*

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Retention Knobs pg. 200

CAT40 Boring Toolholders

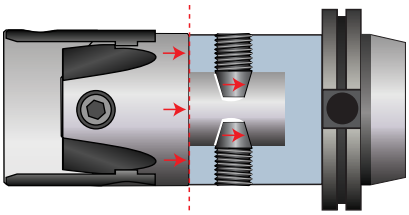
Boring depth (BD) is tool length plus boring head.

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6133250	CT-340-22-80	22	12	3.150"	4.65"	3.31"	6811510
6133255	CT-340-22-100	22	12	3.937"	4.09"	3.94"	6811510
6133260	CT-340-27-55	27	15	2.165"	3.54"	1.89"	6811520
6133265	CT-340-27-100	27	15	3.937"	3.78"	3.94"	6811520
6133270	CT-340-27-130	27	15	5.118"	4.96"	5.12"	6811520
6133275	CT-340-32-60	32	20	2.362"	2.01"	2.36"	6811530
6133280	CT-340-32-100	32	20	3.937"	3.66"	3.94"	6811530
6133285	CT-340-32-130	32	20	5.118"	4.84"	5.12"	6811530
6133290	CT-340-42-75	42	24	2.953"	4.41"	2.20"	6811540
6133295	CT-340-42-120	42	24	4.724"	5.59"	4.72"	6811540
6134300	CT-340-42-160	42	24	6.300"	7.17"	4.96"	6811540
6134305	CT-340-42-200	42	24	7.874"	8.74"	6.54"	6811540
6134310	CT-340-54-120	54	28	4.724"	5.59"	2.99"	6811550
6134315	CT-340-54-160	54	28	6.300"	7.17"	4.57"	6811550
6134320	CT-340-54-200	54	28	7.874"	8.74"	6.14"	6811550
6134325	CT-340-68-160	68	36	6.300"	7.20"	3.82"	6811560
6134330	CT-340-68-200	68	36	7.874"	8.78"	5.39"	6811560
6134335	CT-340-085-200	85	50	7.874"	8.819"	4.88"	6811570
6134340	CT-340-100-200	100	60	7.874"	8.819"	4.88"	6811580

For large head toolholders, see page 180.

Pinzbohr High Precision CAT40 Coolant-Thru Toolholders

Match the "d" dimension on toolholder and boring head for proper selection.

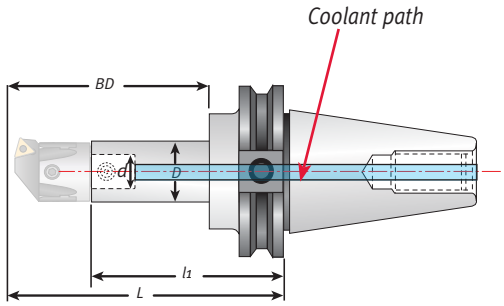


Offset Center Lock Screws

Our **modular coupling system** allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*



Use with coolant-thru extensions - pg. 182

Boring depth (BD) is tool length plus boring head.

CAT40 Coolant-thru

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6133257	CT-340-22-100-R	22	12	3.937"	4.09"	3.94"	6811510
6133252	CT-340-22-80-R	22	12	3.150"	4.65"	3.31"	6811510
6133267	CT-340-27-100-R	27	15	3.937"	3.78"	3.94"	6811520
6133272	CT-340-27-130-R	27	15	5.118"	4.96"	5.12"	6811520
6133262	CT-340-27-55-R	27	15	2.165"	3.54"	1.89"	6811520
6133282	CT-340-32-100-R	32	20	3.937"	3.66"	3.94"	6811530
6133287	CT-340-32-130-R	32	15	5.118"	4.96"	5.12"	6811520
6133277	CT-340-32-60-R	32	20	2.362"	2.01"	2.36"	6811530
6133297	CT-340-42-120-R	42	24	4.724"	5.59"	4.72"	6811540
6134302	CT-340-42-160-R	42	24	6.300"	7.17"	4.96"	6811540
6134307	CT-340-42-200-R	42	24	7.874"	8.74"	6.54"	6811540
6133292	CT-340-42-75-R	42	24	2.953"	4.41"	2.20"	6811540
6134312	CT-340-54-120-R	54	28	4.724"	5.59"	2.99"	6811550
6134317	CT-340-54-160-R	54	28	6.300"	7.17"	4.57"	6811550
6134322	CT-340-54-200-R	54	28	7.874"	8.74"	6.14"	6811550
6134327	CT-340-68-160-R	68	36	6.300"	7.20"	3.82"	6811560
6134332	CT-340-68-200-R	68	36	7.874"	8.78"	5.39"	6811560

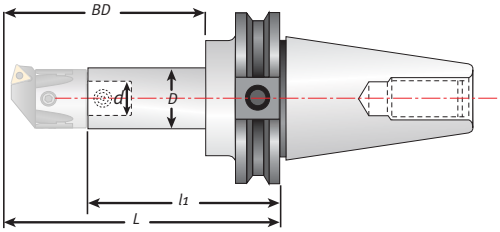
For large head toolholders, see page 180.

Pinzbohr High Precision CAT50 Toolholders

Match the d dimension on toolholder and boring head for proper selection.

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*



Boring depth (BD) is tool length plus boring head.

CAT50 Boring Toolholders

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6141250	CT-350-22-80	22	12	3.150"	4.65"	3.31"	6811510
6141255	CT-350-22-100	22	12	3.937"	5.43"	4.09"	6811510
6141260	CT-350-27-55	27	15	2.165"	3.54"	1.89"	6811520
6141265	CT-350-27-100	27	15	3.937"	5.43"	3.78"	6811520
6141270	CT-350-27-130	27	15	5.118"	6.61"	4.96"	6811520
6141275	CT-350-32-60	32	20	2.362"	3.78"	2.01"	6811530
6141280	CT-350-32-130	32	20	5.118"	6.61"	4.84"	6811530
6141285	CT-350-32-160	32	20	6.299"	7.80"	6.02"	6811530
6141290	CT-350-42-75	42	24	2.953"	4.41"	2.20"	6811540
6141295	CT-350-42-160	42	24	6.299"	7.80"	5.59"	6811540
6141300	CT-350-42-200	42	24	7.874"	9.37"	7.17"	6811540
6141305	CT-350-54-90	54	28	3.543"	5.04"	2.44"	6811550
6141310	CT-350-54-160	54	28	6.299"	7.80"	5.20"	6811550
6141315	CT-350-54-200	54	28	7.874"	9.37"	6.77"	6811550
6141320	CT-350-68-115	68	36	4.528"	5.94"	2.56"	6811560
6141325	CT-350-68-200	68	36	7.874"	8.78"	5.39"	6811560
6141330	CT-350-68-260	68	36	10.236"	11.14"	7.76"	6811560
6141335	CT-350-85-200	85	50	7.874"	8.82"	4.88"	6811570
6141340	CT-350-85-260	85	50	10.236"	11.18"	7.24"	6811570
6141345	CT-350-85-320	85	50	12.598"	13.54"	9.61"	6811570
6141350	CT-350-100-190	100	60	7.480"	8.43"	4.49"	6811580
6141355	CT-350-100-260	100	60	10.236"	11.18"	7.24"	6811580
6141360	CT-350-100-320	100	60	12.598"	13.54"	9.61"	6811580
6166124	CT-550-160*	-	-	4.921"	6.30"	-	6811590

For large head toolholders, see page 180.

Pinzbohr High Precision CAT50 Coolant-Thru Toolholders

Match the d dimension on toolholder and boring head for proper selection.

Boring Heads pg. 160

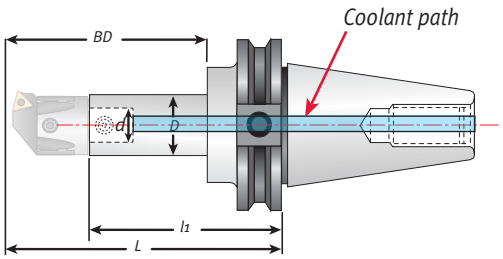
Inserts and Cartridges pg. 168

Extensions & Reducers pg. 182

Retention Knobs pg. 200

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*



Use with coolant-thru extensions - pg. 182

CAT50 Coolant-thru

Boring depth (BD) is tool length plus boring head.

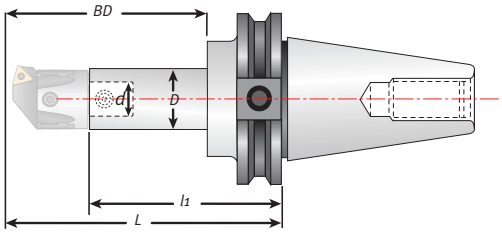
Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6141252	CT-350-22-80-R	22	12	3.150"	4.65"	3.31"	6811510
6141257	CT-350-22-100-R	22	12	3.937"	5.43"	4.09"	6811510
6141262	CT-350-27-55-R	27	15	2.165"	3.54"	1.89"	6811520
6141267	CT-350-27-100-R	27	15	3.937"	5.43"	3.78"	6811520
6141272	CT-350-27-130-R	27	15	5.118"	6.61"	4.96"	6811520
6141277	CT-350-32-60-R	32	20	2.362"	3.78"	2.01"	6811530
6141282	CT-350-32-130-R	32	20	5.118"	6.61"	4.84"	6811530
6141287	CT-350-32-160-R	32	20	6.299"	7.80"	6.02"	6811530
6141292	CT-350-42-75-R	42	24	2.953"	4.41"	2.20"	6811540
6141297	CT-350-42-160-R	42	24	6.299"	7.80"	5.59"	6811540
6141302	CT-350-42-200-R	42	24	7.874"	9.37"	7.17"	6811540
6141307	CT-350-54-90-R	54	28	3.543"	5.04"	2.44"	6811550
6141312	CT-350-54-160-R	54	28	6.299"	7.80"	5.20"	6811550
6141317	CT-350-54-200-R	54	28	7.874"	9.37"	6.77"	6811550
6141322	CT-350-68-115-R	68	36	4.528"	5.94"	2.56"	6811560
6141327	CT-350-68-200-R	68	36	7.874"	8.78"	5.39"	6811560
6141332	CT-350-68-260-R	68	36	10.236"	11.14"	7.76"	6811560
6141337	CT-350-85-200-R	85	50	7.874"	8.82"	4.88"	6811570
6141342	CT-350-85-260-R	85	50	10.236"	11.18"	7.24"	6811570
6141347	CT-350-85-320-R	85	50	12.598"	13.54"	9.61"	6811570
6141352	CT-350-100-190-R	100	60	7.480"	8.43"	4.49"	6811580
6141362	CT-350-100-320-R	100	60	12.598"	13.54"	9.61"	6811580

For large head toolholders, see page 180.

Match the d dimension on toolholder and boring head for proper selection.

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*



Boring depth (BD) is tool length plus boring head.

BT30 Boring Toolholders

Part-No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling-Screw
6130100	BT-330-22-100	22	12	3.937"	4.92"	3.58"	6811510
6130150	BT-330-27-55	27	15	2.165"	3.03"	1.38"	6811520
6130200	BT-330-27-100	27	15	3.937"	4.92"	3.27"	6811520
6130250	BT-330-32-60	32	20	2.362"	3.27"	1.50"	6811530
6130300	BT-330-32-100	32	20	3.937"	4.92"	3.15"	6811530

BT40 Boring Toolholders

Part-No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling-Screw
6140100	BT-340-22-50	22	12	1.969"	3.15"	1.81"	6811510
6140125	BT-340-22-80	22	12	3.150"	4.33"	2.99"	6811510
6140150	BT-340-22-100	22	12	3.937"	5.12"	3.78"	6811510
6140175	BT-340-27-55	27	15	2.165"	3.23"	1.57"	6811520
6140200	BT-340-27-100	27	15	3.937"	5.12"	3.46"	6811520
6140225	BT-340-27-130	27	15	5.118"	6.30"	4.65"	6811520
6140250	BT-340-32-60	32	20	2.362"	3.46"	1.69"	6811530
6140275	BT-340-32-100	32	20	3.937"	5.12"	3.35"	6811530
6140300	BT-340-32-130	32	20	5.118"	6.30"	4.53"	6811530
6140325	BT-340-42-75	42	24	2.953"	4.09"	1.89"	6811540
6140350	BT-340-42-160	42	24	6.299"	7.48"	5.28"	6811540
6140375	BT-340-42-200	42	24	7.874"	9.06"	6.85"	6811540
6140400	BT-340-54-90	54	28	3.543"	4.72"	2.13"	6811550
6140425	BT-340-54-160	54	28	6.299"	7.48"	4.88"	6811550
6140450	BT-340-54-200	54	28	7.874"	9.06"	6.46"	6811550
6140475	BT-340-68-160	68	36	6.299"	7.13"	3.74"	6811560
6140500	BT-340-68-200	68	36	7.874"	8.70"	5.31"	6811560
6140525	BT-340-85-200	85	50	7.874"	8.66"	4.72"	6811570
6140550	BT-340-100-200	100	60	7.874"	8.66"	4.72"	6811580

For large head toolholders, see page 180.

Pinzbohr High Precision BT50 Toolholders

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*
- *Extensions allow more depth*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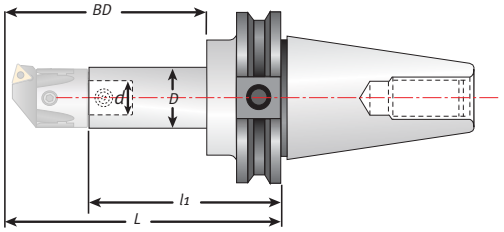
Retention Knobs pg. 200

Match the d dimension on toolholder and boring head for proper selection.



Boring depth (BD) is tool length plus boring head.

BT50 Boring Toolholders

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6150100	BT-350-22-80	22	12	3.150"	4.76"	3.43"	6811510
6150125	BT-350-22-100	22	12	3.937"	5.55"	4.21"	6811510
6150150	BT-350-27-55	27	15	2.165"	3.66"	2.01"	6811520
6150175	BT-350-27-100	27	15	3.937"	5.55"	3.90"	6811520
6150200	BT-350-27-130	27	15	5.118"	6.73"	5.08"	6811520
6150225	BT-350-32-60	32	20	2.362"	3.90"	2.13"	6811530
6150250	BT-350-32-130	32	20	5.118"	6.73"	4.96"	6811530
6150275	BT-350-32-160	32	20	6.299"	7.91"	6.14"	6811530
6150300	BT-350-42-75	42	24	2.953"	4.53"	2.32"	6811540
6150325	BT-350-42-160	42	24	6.299"	7.91"	5.71"	6811540
6150350	BT-350-42-200	42	24	7.874"	9.49"	7.28"	6811540
6150375	BT-350-54-90	54	28	3.543"	5.16"	2.56"	6811550
6150400	BT-350-54-160	54	28	6.299"	7.91"	5.31"	6811550
6150425	BT-350-54-200	54	28	7.874"	9.49"	6.89"	6811550
6150450	BT-350-68-115	68	36	4.528"	6.06"	2.68"	6811560
6150475	BT-350-68-200	68	36	7.874"	9.53"	6.14"	6811560
6150500	BT-350-68-260	68	36	10.236"	11.89"	8.50"	6811560
6150525	BT-350-85-200	85	50	7.874"	9.53"	5.59"	6811570
6150550	BT-350-85-260	85	50	10.236"	11.89"	7.95"	6811570
6150575	BT-350-85-320	85	50	12.598"	14.25"	10.31"	6811570
6150600	BT-350-100-170	100	60	6.693"	7.68"	3.74"	6811580
6150625	BT-350-100-260	100	60	10.236"	11.89"	7.95"	6811580
6150650	BT-350-100-320	100	60	12.598"	14.25"	10.31"	6811580
6166123	BT-550-160*	100	-	4.921"	6.30"	2.76"	6811590

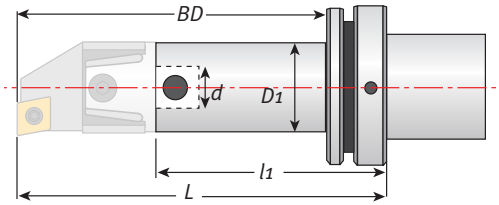
For large head toolholders, see page 180.

Pinzbohr High Precision HSK50A, 63A, 100A Toolholders

Match the d dimension on toolholder and boring head for proper selection.

Features

- *Exceed industry standards for taper accuracy and concentricity*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder*



Boring depth (BD) is tool length plus boring head.

HSK50A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155501	HSK-50A-22-55	22	12	2.165"	3.19"	1.85"	6811510
6155502	HSK-50A-27-65	27	15	2.559"	3.58"	1.93"	6811520
6155503	HSK-50A-32-75	32	20	2.953"	3.98"	2.20"	6811530
6155504	HSK-50A-42-90	42	24	3.543"	4.57"	2.36"	6811540

HSK63A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155631	HSK-63A-22-55	22	12	2.165"	3.19"	1.85"	6811510
6155632	HSK-63A-27-65	27	15	2.559"	3.58"	1.93"	6811520
6155633	HSK-63A-32-75	32	20	2.953"	3.98"	2.20"	6811530
6155634	HSK-63A-42-90	42	24	3.543"	4.57"	2.36"	6811540
6155635	HSK-63A-54-110	54	28	4.331"	5.35"	2.76"	6811550
6155636	HSK-63A-68-145	68	36	5.709"	6.73"	3.35"	6811560

HSK100A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155101	HSK-100A-22-55	22	12	2.165"	3.50"	1.85"	6811510
6155102	HSK-100A-27-65	27	15	2.559"	3.90"	1.93"	6811520
6155103	HSK-100A-32-75	32	20	2.953"	4.09"	2.20"	6811530
6155104	HSK-100A-42-90	42	24	3.543"	4.69"	2.36"	6811540
6155105	HSK-100A-54-110	54	28	4.331"	5.47"	2.76"	6811550
6155106	HSK-100A-68-145	68	36	5.709"	6.85"	3.46"	6811560
6155107	HSK-100A-85-165	85	50	6.496"	7.64"	3.70"	6811570
6155108	HSK-100A-100-185	100	60	7.283"	8.43"	4.49"	6811580

For large head toolholders, see page 180.

Pinzbohr High Precision Weldon & R8 Toolholders

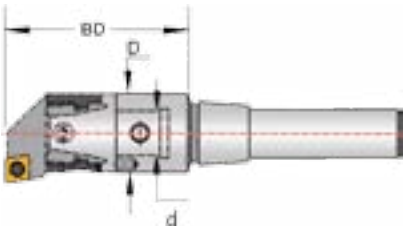
Weldon toolholder

Match the d dimension on toolholder and boring head for proper selection.

Features

- *Convert your end mill holder into a precision boring head holder.*
- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*

Boring depth (BD) is tool length plus boring head.



Weldon 3/4" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165341	B-20-22-50-3/4-SS-WELDON	22	12	1.772"	6811510
6165342	B-20-22-100-3/4-SS-WELDON	22	12	3.937"	6811510
6165343	B-20-54-110-3/4-SS-WELDON	54	28	4.331"	6811550

Weldon 1" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165101	B-25-27-55-1.0-SS-WELDON	27	15	1.969"	6811520
6165102	B-25-27-100-1.0-SS-WELDON	27	15	3.740"	6811520
6165103	B-25-54-110-1.0-SS-WELDON	54	28	4.331"	6811550

Weldon 1-1/4" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165141	B-32-32-60-1-1/4-SS-WELDON	32	20	2.362"	6811530
6165142	B-32-32-100-1-1/4-SS-WELDON	32	20	3.937"	6811530
6165143	B-32-42-90-1-1/4-SS-WELDON	42	24	3.543"	6811540
6165144	B-32-54-110-1-1/4-SS-WELDON	54	28	4.331"	6811550

Weldon 1-1/2" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165121	B-40-42-90-1-1/2-SS-WELDON	42	24	3.543"	6811540
6165122	B-40-42-160-1-1/2-SS-WELDON	42	24	6.299"	6811540
6165123	B-40-54-110-1-1/2-SS-WELDON	54	28	4.331"	6811550

R8 Toolholders

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165801	R8-22-50-R8-WELDON	22	12	1.969"	6811510
6165802	R8-27-60-R8-WELDON	27	15	2.362"	6811520
6165803	R8-32-75-R8-WELDON	32	20	2.953"	6811530
6165804	R8-42-90-R8-WELDON	42	24	3.543"	6811540
6165805	R8-54-110-R8-WELDON	54	28	4.331"	6811550

R8 Tool holder

Toolholders for Large Boring Heads

Features

- *Direct mount system maximizes rigidity and accuracy*
- *For CAT50 and BT50 spindles*
- *Use with large heads pgs. 161, 163, 165, 167*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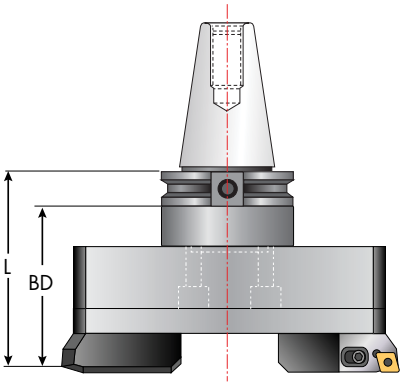
Direct Mount Toolholders for Large Boring Heads

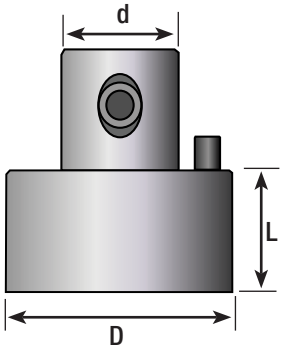
Part No.	Description	BD	L (mm)	Coupling Screw
6166123	BT-550-160	4.921	160	6811590
6166124	CT-550-160	4.921	160	6811590



ADT 100-50 adapter

Features

- *Adapter works with 100mm connection toolholders*
- *CAT, BT, and HSK spindles*
- *Use with large heads pgs. 161, 163, 165, 167*



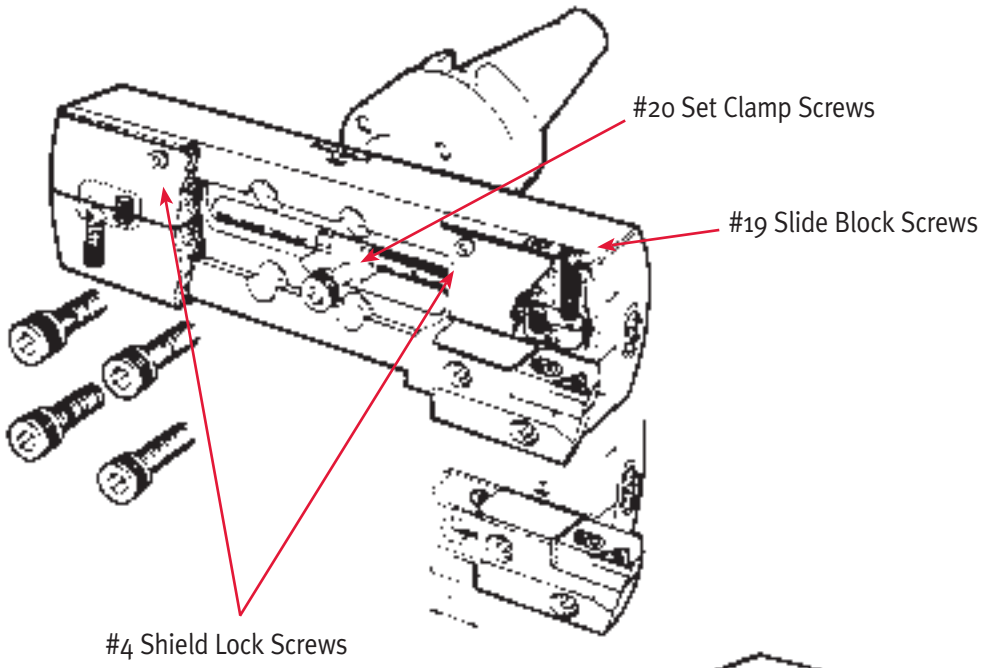
large boring head

Large Head Adapter Mount

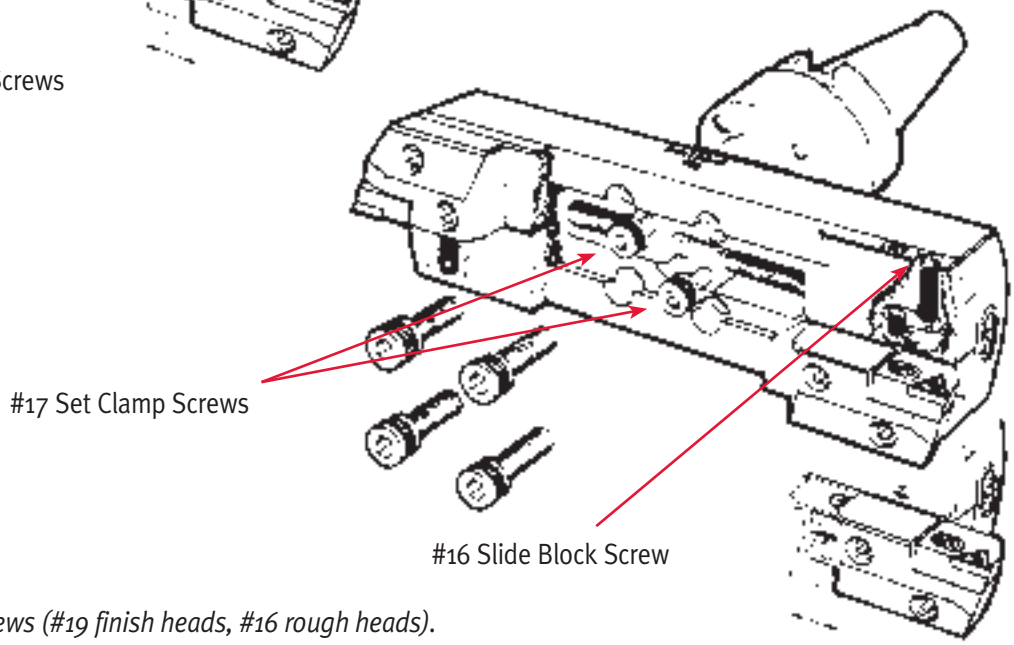
Part No.	Description	D	d	L
6022510	ADT-100-50 Large head adapter	100	60	50

Use with all toolholders that have 100mm connections. Adds 50mm length.

Finish Heads



Rough Heads

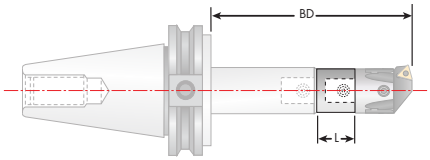


1. *Loosen slide block screws (#19 finish heads, #16 rough heads).*
2. *Remove set clamp screws (#20 finish heads, #17 rough heads).*
3. *On finish boring heads only, remove shield lock screws #4.*
4. *Move slide blocks /shield off-center until the four counter bored bolt holes located in the body below the slide blocks are completely exposed.*
5. *Place taper shank holder or adapter on back side of boring head with pilot completely engaged in pilot cavity.*
6. *Insert 4 socket head cap screws into counter bored holes and tighten to 90 ft-lbs torque.*
7. *Push slide blocks back into position to line up with threaded holes below.*
8. *Insert nut /close shield lock screws and tighten.*
9. *Adjust boring head to desired diameter and tighten slide block lock screws.*

Match the d dimensions on toolholder, extension, and boring head for proper selection.

Features

- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*



Calculate needed extension length (L) to achieve your boring depth (BD)

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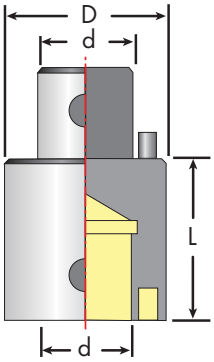
Standard Extensions

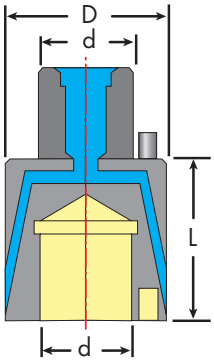
Part No.	Description	D (mm)	d (mm)	L	Coupling Screw
6552220	P-22-20	22	12	0.79"	6811510
6552230	P-22-30	22	12	1.18"	6811510
6552730	P-27-30	27	15	1.18"	6811520
6552745	P-27-45	27	15	1.77"	6811520
6553235	P-32-35	32	20	1.38"	6811530
6553252	P-32-52	32	20	2.05"	6811530
6554240	P-42-40	42	24	1.57"	6811540
6554260	P-42-60	42	24	2.36"	6811540
6555450	P-54-50	54	28	1.97"	6811550
6555475	P-54-75	54	28	2.95"	6811550
6556860	P-68-60	68	36	2.36"	6811560
6556890	P-68-90	68	36	3.54"	6811560
6558570	P-85-70	85	50	2.76"	6811570
6558510	P-85-105	85	50	4.13"	6811570
6551080	P-100-80	100	60	3.15"	6811580
6551012	P-100-120	100	60	4.72"	6811580



Coolant-thru Spindle Extension

Part No.	Description	D (mm)	d (mm)	L	Coupling Screw
6562230	P-22-30R	22	12	1.18"	6811510
6562730	P-27-30R	27	15	1.18"	6811520
6563235	P-32-35R	32	20	1.38"	6811530
6564240	P-42-40R	42	24	1.57"	6811540
6565450	P-54-50R	54	28	1.97"	6811550
6566860	P-68-60R	68	36	2.36"	6811560
6568570	P-85-70R	85	50	2.76"	6811570
6561080	P-100-80R	100	60	3.15"	6811580

Use with coolant-thru toolholders available upon request.



Coolant-thru Spindle Extension

The coolant-thru spindle extension provides coolant to the cutting zone for optimal stock removal rates.

Minimum recommend coolant pressure is 70 psi. Coolant is directed onto cutting edge by adapter.

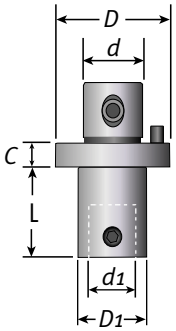
Features

- *Two offset axial tapered locking screws maximize rigidity and allow fast tool changes*
- *Reducers allow different boring heads to be used with the same toolholder / extension combination*

Match the d dimensions on toolholder, reducer, and boring head for proper selection.

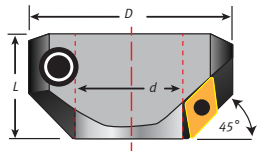
Reducers

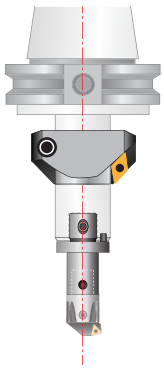
Part No.	Description	D (mm)	d (mm)	D1 (mm)	d1 (mm)	L	c	Coupling Screw
6442236	R--27-22-36	27	15	22	12	1.02"	.39"	6811510
6442240	R--32-22-40	32	20	22	12	1.18"	.39"	6811510
6442258	R--42-22-58	42	24	22	12	1.89"	.39"	6811510
6442286	R--54-22-86	54	28	22	12	2.99"	.39"	6811510
6442210	R-68-22-102	68	36	22	12	3.54"	.47"	6811510
6442734	R-32-27-34	32	20	27	15	0.94"	.39"	6811520
6442750	R-42-27-50	42	24	27	15	1.57"	.39"	6811520
6442780	R-54-27-80	54	28	27	15	2.76"	.39"	6811520
6442795	R-68-27-95	68	36	27	15	3.27"	.47"	6811520
6443246	R-42-32-46	42	24	32	20	1.42"	.39"	6811530
6443276	R-54-32-76	54	28	32	20	2.60"	.39"	6811530
6443290	R-68-32-90	68	36	32	20	3.07"	.47"	6811530
6444270	R-54-42-70	54	28	42	24	2.36"	.39"	6811540
6444282	R-68-42-82	68	36	42	24	2.76"	.47"	6811540
6444295	R-85-42-95	85	50	42	24	3.27"	.47"	6811540
6445472	R-68-54-72	68	36	54	28	2.36"	.47"	6811550
6445490	R-85-54-90	85	50	54	28	3.07"	.47"	6811550
6446810	R-85-68-100	85	50	68	36	3.46"	.47"	6811560
6448510	R-100-85-100	100	60	85	50	3.46"	.47"	6811570



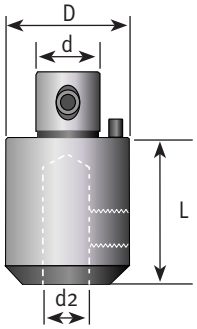
45° Chamfering Heads

Part No.	Desc.	D (mm)	d (mm)	L	Insert	Insert Screw	Wrench	Locking Key
6033311	CH-22	43	22	0.94"	DCMT 11T3_	6811260	T15	4 hex
6033322	CH-27	48	27	0.94"	DCMT 11T3_	6811260	T15	4 hex
6033333	CH-32	62	32	1.18"	DCMT 11T3_	6811260	T15	5 hex
6033344	CH-42	72	42	1.18"	DCMT 11T3_	6811260	T15	5 hex
6033355	CH-54	94	54	1.57"	DCMT 150408	6811266	T20	6 hex
6033366	CH-68	110	68	1.57"	DCMT 150408	6811266	T20	8 hex
6033377	CH-85	145	85	2.17"	DCMT 150408	6811266	T20	10 hex
6033388	CH-100	170	100	2.36"	DCMT 150408	6811266	T20	14 hex
6033399	CH-200	200	100	2.36"	DCMT 150408	6811266	T20	14 hex





High Precision End Mill Holders & Face Mill Arbors



Features

- *For 1/4" up to 3/4" end mills*
- *Use with extra-long toolholders and extensions for extended length applications*
- *Two offset center lock screws maximize rigidity while still permitting fast tool changes*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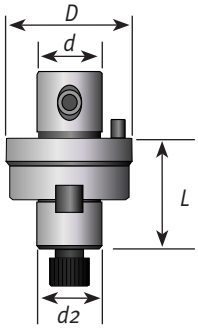
End Mill Holders

Part No.	Description	D (mm)	d (mm)	L	d2
6123300	ADM-42-1/4	42	24	1.38"	1/4"
6123305	ADM-42-3/8	42	24	1.50"	3/8"
6123310	ADM-42-1/2	42	24	2.17"	1/2"
6123315	ADM-42-3/4	42	28	2.83"	3/4"
6123320	ADM-54W-3/4	54	28	2.85"	3/4"

Features

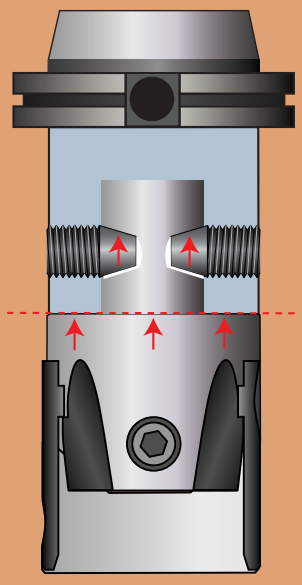
- *For 3/4" up to 1-1/4" face mills*
- *Two offset center lock screws maximize rigidity while still permitting fast tool changes*
- *Use with extra-long toolholders and extensions for extended length applications*



Face Mill Arbor

Part No.	Description	D (mm)	d (mm)	L	d2
6133300	ADM-54-34	54	28	1.97"	3/4"
6133305	ADM-54-10	54	28	1.97"	1.0"
6133310	ADM-68-10	68	36	1.97"	1.0"
6133315	ADM-68-114	68	36	1.97"	1-1/4"

Modular Coupling System



Offset Center Lock Screws

Pin and taper coupling system allows tools to be changed without removing from the spindle. Two offset center lock screws apply maximum tightening force between the tool and the toolholder. This increases rigidity and enhances vibration damping characteristics.

Pinzbohr Speeds & Feeds Guidelines

Optimal speeds & feeds depend upon material, machine, tool overhang, and setup. These guidelines may not be correct for your application, but can serve as a useful starting point.

Rough Boring with Dual Inserts

Material: Plain Carbon Steel

Dia. Range (inch)	Head Size	Max. Stock Removal on Dia.	Suggested Speeds & Feeds Speed SFM	Feed IPR
.944 - 1.181	22	0.38	320 - 420	.006 - .010
1.141 - 1.574	27	0.47	350 - 450	.006 - .012
1.535 - 1.968	32	0.56	350 - 500	.008 - .012
1.929 - 4.015	42, 54, 68	0.75	350 - 500	.010 - .014
3.935 - 20.00	85, 100, 200	0.84	350 - 500	.012 - .016
	300, 400, 500		350 - 500	.012 - .016

Material: Alloy Steels

.944 - 1.181	22	0.38	300 - 390	.006 - .010
1.141 - 1.574	27	0.47	320 - 420	.006 - .012
1.535 - 1.968	32	0.56	320 - 420	.008 - .012
1.929 - 4.015	42, 54, 68	0.75	320 - 420	.010 - .014
3.935 - 20.00	85, 100, 200	0.84	320 - 420	.012 - .016
	300, 400, 500		320 - 420	.012 - .016

Material: Stainless Steels

.944 - 1.181	22	0.38	200 - 300	.005 - .008
1.141 - 1.574	27	0.47	220 - 320	.006 - .010
1.535 - 1.968	32	0.56	220 - 320	.006 - .010
1.929 - 4.015	42, 54, 68	0.75	220 - 320	.008 - .012
3.935 - 20.00	85, 100, 200	0.84	220 - 320	.010 - .014
	300, 400, 500		220 - 320	.010 - .014

Material: Cast Iron

.944 - 1.181	22	0.38	200 - 350	.008 - .012
1.141 - 1.574	27	0.47	220 - 350	.010 - .014
1.535 - 1.968	32	0.56	220 - 350	.010 - .014
1.929 - 4.015	42, 54, 68	0.75	220 - 350	.012 - .016
3.935 - 20.00	85, 100, 200	0.84	220 - 350	.012 - .018
	300, 400, 500		220 - 350	.012 - .018

Material: Aluminum and Aluminum Alloys

.944 - 1.181	22	0.38	400 - 1000	.008 - .012
1.141 - 1.574	27	0.47	500 - 1200	.010 - .014
1.535 - 1.968	32	0.56	500 - 1200	.010 - .014
1.929 - 4.015	42, 54, 68	0.75	500 - 1200	.012 - .016
3.935 - 20.00	85, 100, 200	0.84	500 - 1200	.012 - .018
	300, 400, 500		500 - 1200	.012 - .018

Material: Titanium and High Temperature Alloys

.944 - 1.181	22	0.25	90 - 120	.005 - .008
1.141 - 1.574	27	0.32	100 - 130	.006 - .010
1.535 - 1.968	32	0.38	100 - 130	.006 - .010
1.929 - 4.015	42, 54, 68	0.50	100 - 130	.008 - .012
3.935 - 20.00	85, 100, 200	0.56	100 - 130	.008 - .014
	300, 400, 500		100 - 130	.008 - .014

Finish Boring with Single Inserts

Material: Plain Carbon Steel

Dia. Range (inch)	Max. Stock Head Size	Suggested Speeds & Feeds Removal on Dia.	Speed SFM	Feed IPR
.944 - 1.181	22	.004 - .024	350 - 450	.002 - .006
1.141 - 1.574	27	.004 - .024	380 - 500	.002 - .006
1.535 - 1.968	32	.005 - .030	380 - 500	.002 - .006
1.929 - 4.015	42, 54, 68	.005 - .030	380 - 500	.004. - .008
3.935 - 20.00	85, 100, 200	.006 - .040	380 - 500	.004. - .008
	300, 400, 500	.006 - .040	380 - 500	.004. - .008

Material: Alloy Steels

.944 - 1.181	22	.004 - .024	320 - 420	.002 - .006
1.141 - 1.574	27	.004 - .024	350 - 450	.002 - .006
1.535 - 1.968	32	.005 - .030	350 - 480	.002 - .006
1.929 - 4.015	42, 54, 68	.005 - .030	350 - 480	.004. - .008
3.935 - 20.00	85, 100, 200	.006 - .040	350 - 480	.004. - .008
	300, 400, 500	.006 - .040	350 - 480	.004. - .008

Material: Stainless Steels

.944 - 1.181	22	.010 - .030	220 - 320	.003 - .006
1.141 - 1.574	27	.010 - .030	250 - 350	.003 - .006
1.535 - 1.968	32	.015 - .040	250 - 350	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	250 - 350	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	250 - 350	.005 - .008
	300, 400, 500	.020 - .050	250 - 350	.005 - .008

Material: Cast Iron

.944 - 1.181	22	.010 - .030	220 - 350	.003 - .006
1.141 - 1.574	27	.010 - .030	250 - 380	.003 - .006
1.535 - 1.968	32	.015 - .040	250 - 380	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	250 - 380	.005 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	250 - 380	.005 - .008
	300, 400, 500	.020 - .050	250 - 380	.005 - .008

Material: Aluminum and Aluminum Alloys

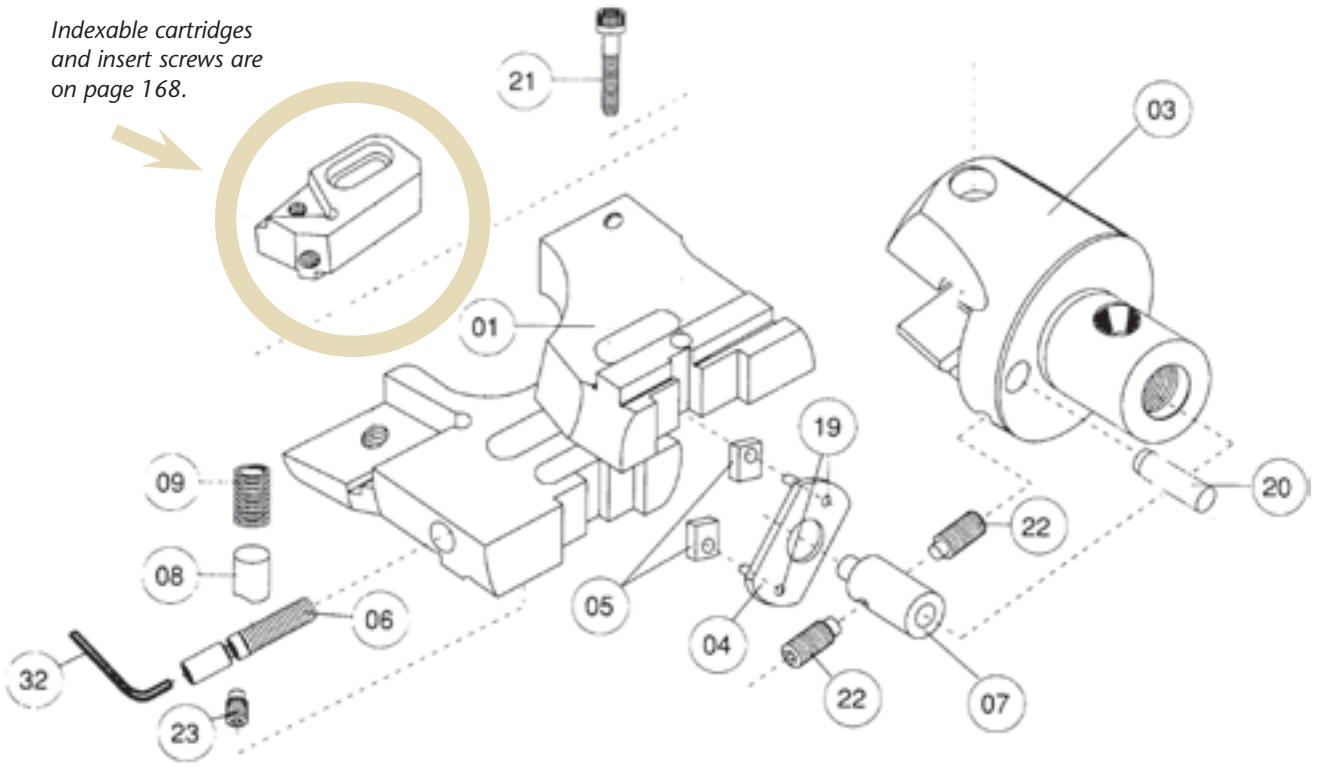
.944 - 1.181	22	.010 - .030	500 - 1000	.002 - .006
1.141 - 1.574	27	.010 - .030	500 - 1200	.004 - .008
1.535 - 1.968	32	.015 - .040	500 - 1200	.004 - .008
1.929 - 4.015	42, 54, 68	.015 - .040	500 - 1200	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	500 - 1200	.004 - .010
	300, 400, 500	.020 - .050	500 - 1200	.004 - .010

Material: Titanium and High Temperature Alloys

.944 - 1.181	22	.010 - .030	100 - 130	.003 - .006
1.141 - 1.574	27	.010 - .030	100 - 150	.003 - .006
1.535 - 1.968	32	.015 - .040	100 - 150	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	100 - 150	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	100 - 150	.004 - .008
	300, 400, 500	.020 - .050	100 - 150	.004 - .008

Parts for Rough Heads

Indexable cartridges and insert screws are on page 168.

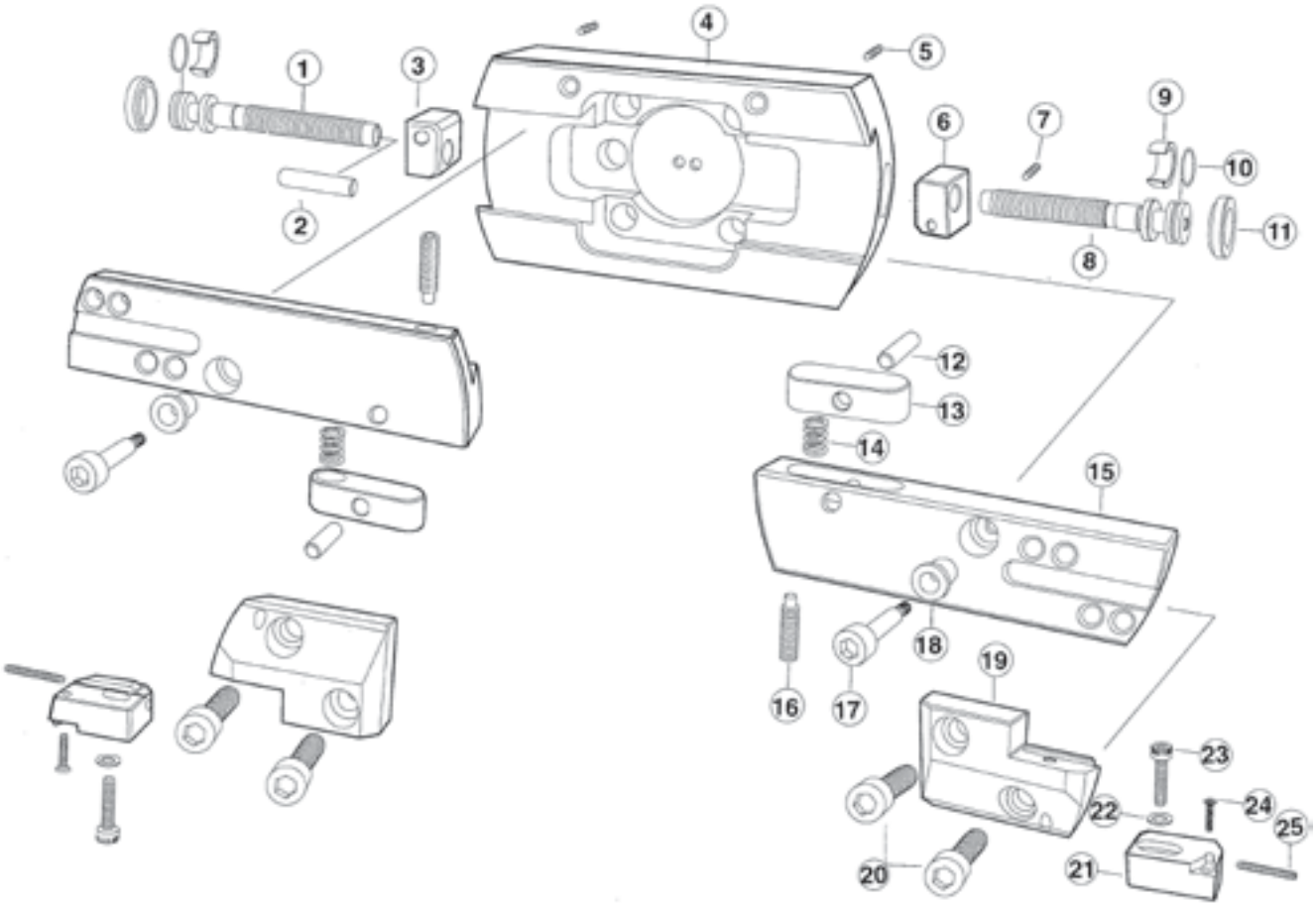


Rough Boring Heads - Integral Pocket

Boring Heads	01	03	04	05	06	07	08	09	19	20	21	22	23
D 22.75_ _ _	D22.75.01._ _ _	D22 03	D22 04		D22 06	D22 07	D22 08	D22 09	D22 19	D22 20	D22 21	D22 22	D22 23
D 22.90_ _ _	D22.90.01._ _ _	D22 03	D22 04		D22 06	D22 07	D22 08	D22 09	D22 19	D22 20	D22 21	D22 22	D22 23
D 27.75_ _ _	D27.75.01._ _ _	D27 03	D27 04		D27 06	D22 07	D22 08	D27 09	D22 19	D27 20	D27 21	D27 22	D27 23
D 27.90_ _ _	D27.90.01._ _ _	D27 03	D27 04		D27 06	D22 07	D22 08	D27 09	D22 19	D27 20	D27 21	D27 22	D27 23
D 32.75_ _ _W	D32.75.01._ _ _	D32 03W	D32 04		D32 06	D32 07	D32 08	D32 09	D32 19	D32 20	D32 21	D32 22	D32 23
D 32.90_ _ _W	D32.90.01._ _ _	D32 03W	D32 04		D32 06	D32 07	D32 08	D32 09	D32 19	D32 20	D32 21	D32 22	D32 23
D 42.75_ _ _	D42.75.01._ _ _	D42 03	D42 04	D42 05	D42 06	D42 07	D42 08	D42 09	D22 20	D42 20	D42 21	D42 22	D42 23
D 42.90_ _ _	D42.90.01._ _ _	D42 03	D42 04	D42 05	D42 06	D42 07	D42 08	D42 09	D22 20	D42 20	D42 21	D42 22	D42 23
D 54.75_ _ _	D54.75.01._ _ _	D54 03	D54 04	D42 05	D54 06	D54 07	D54 08	D42 09	D22 20	D54 20	D54 21	D54 22	D42 23
D 54.90_ _ _	D54.90.01._ _ _	D54 03	D54 04	D42 05	D54 06	D54 07	D54 08	D42 09	D22 20	D54 20	D54 21	D54 22	D42 23

Rough Boring Heads - Cartridge Type

Boring Heads	01	03	04	05	06	07	08	09	19	20	21	22	23
D 68.2CT_ _ _	D68 01 2CT	D68 03	D68 04	D68 05	D68 06	D68 07	D68 08	D68 09	D68 19	D68 20	D68 21	D68 22	D68 23
D 85.3CT_ _ _	D85 01 3CT	D85 03	D85 04	D85 05	D85 06	D85 07	D85 08	D85 09	D85 19	D85 20	D85 21	D85 22	D85 23
D 100.3CT_ _ _	D100 01 3CT	D100 03	D100 04	D85 05	D100 06	D100 07	D100 08	D85 09	D85 19	D100 20	D100 21	D85 22	D85 23
D 200.3CT_ _ _	D200 01 3CT	D200 03	D100 04	D85 05	D200 06	D100 07	D100 08	D85 09	D85 19	D100 20	D100 21	D85 22	D85 23

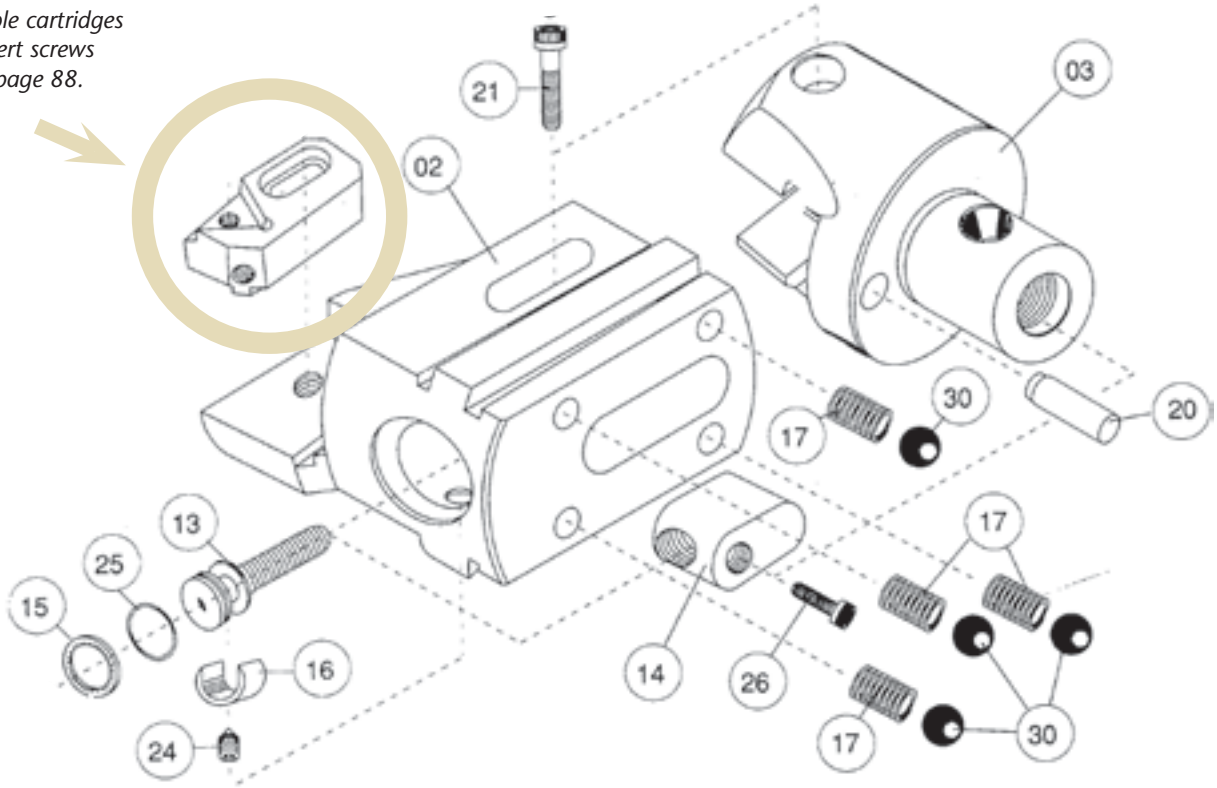


Large Rough Boring Heads

Spare Part	Rough Head Reference Number		
	D 300W	D 400W	D 500W
1	D300.51IW	D400.51IW	D500.51IW
2	D300.69	D300.69	D300.69
3	D300.55I	D300.55I	D300.55I
4	D300.03	D400.03	D500.03
5	D68.23	D68.23	D68.23
6	D300.54D	D300.54D	D300.54D
7	D300.68	D300.68	D300.68
8	D300.50DW	D400.50DW	D500.50DW
9	A68.16	A68.16	A68.16
10	A68.25	A68.25	A68.25
11	A68.15	A68.15	A68.15
12	D300.60	D300.60	D300.60
13	D300.56	D300.56	D300.56

Spare Part	Rough Head Reference Number		
	D 300W	D 400W	D 500W
14	D300.59	D300.59	D300.59
15	D300.001	D400.001	D500.001
16	D300.58	D300.58	D300.58
17	D300.57	D300.57	D300.57
18	D300.62	D300.62	D300.62
19	D300.49	D300.49	D300.49
20	D300.61	D300.61	D300.61
21	3CT._ _._ _ _	3CT._ _._ _ _	3CT._ _._ _ _
22	D68.28	D68.28	D68.28
23	D85.27	D85.27	D85.27
24	TT_ _ _ _ _	TT_ _ _ _ _	TT_ _ _ _ _
25	D85.29	D85.29	D85.29

Indexable cartridges and insert screws are on page 88.

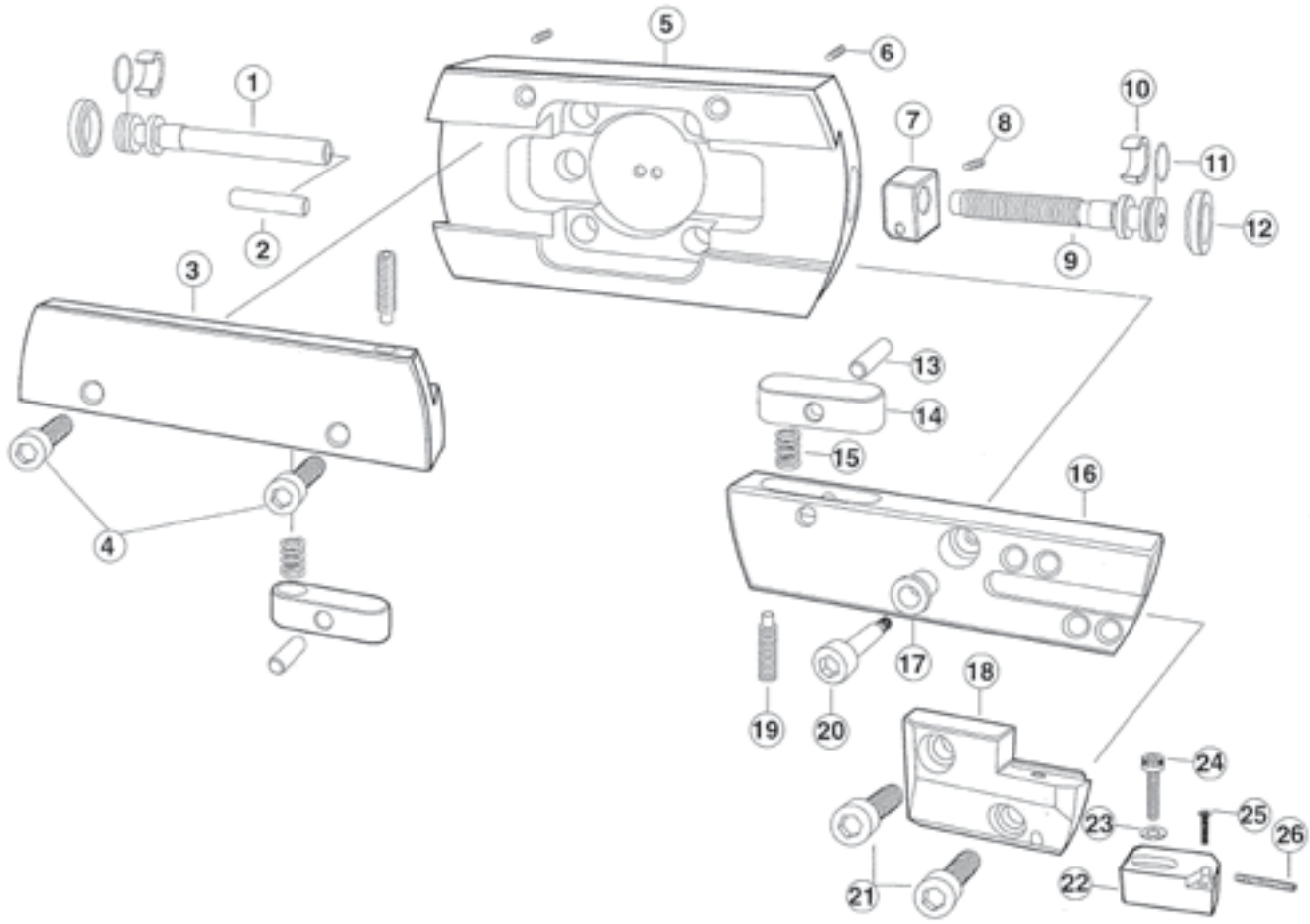


Finish boring heads - Integral Pocket

Boring Head	02	03	13	14	15	16	17	20	21	25	26	30
A 22.75_ _ _W	A22.75.02._ _ _	A22 03	A22 13W	A22 14W	A22 15W	A22 16	A22 17	D22 20	D22 21	A22 25	A22 26	A22 30
A 22.90_ _ _W	A22.90.02._ _ _	A22 03	A22 13W	A22 14W	A22 15W	A22 16	A22 17	D22 20	D22 21	A22 25	A22 26	A22 30
A 27.75_ _ _W	A27.75.02._ _ _	A27 03	A27 13W	A22 14W	A22 15W	A22 16	A27 17	D27 20	D27 21	A22 25	A27 26	A27 30
A 27.90_ _ _W	A27.90.02._ _ _	A27 03	A27 13W	A22 14W	A22 15W	A22 16	A27 17	D27 20	D27 21	A22 25	A27 26	A27 30
A 32.75_ _ _W	A32.75.02._ _ _	A32 03W	A32 13W	A32 14W	A32 15W	A32 16	A27 17	D32 20	D32 21	A22 25	A32 26	A27 30
A 32.90_ _ _W	A32.90.02._ _ _	A32 03W	A32 13W	A32 14W	A32 15W	A32 16	A27 17	D32 20	D32 21	A22 25	A32 26	A27 30
A 42.75_ _ _W	A42.75.02._ _ _	A42 03	A42 13W	A42 14W	A42 15W	A42 16	A42 17	D42 20	D42 21	A42 25	A42 26	A42 30
A 42.90_ _ _W	A42.90.02._ _ _	A42 03	A42 13W	A42 14W	A42 15W	A42 16	A42 17	D42 20	D42 21	A42 25	A42 26	A42 30
A 54.75_ _ _W	A54.75.02._ _ _	A54 03	A54 13W	A54 14W	A42 15W	A42 16	D54 09	D54 20	D54 21	A42 25	A42 26	A54 30

Finish boring heads - Cartridge Type

Boring Head	02	03	13	14	15	16	17	20	21	25	26	30
A 68.2CT_ _ _W	A68 02 2CT	A68 03	A68 13W	A68 14W	A68 15W	A68 16	A68 17	D68 20	D68 21	A68 25	A68 26	A68 30
A 85.3CT_ _ _W	A85 02 3CT	A85 03	A85 13W	A85 14W	A85 15W	A85 16	D85 09	D85 20	D85 21	A85 25	A85 26	A85 30
A 100.3CT_ _ _W	A100 02 3CT	A100 03	A85 13W	A85 14W	A85 15W	A85 16	D85 09	D100 20	D100 21	A85 25	A85 26	A85 30
A 200.3CT_ _ _W	A200 02 3CT	A200 03	A200 13W	A85 14W	A85 15W	A85 16	D85 09	D100 20	D100 21	A85 25	A85 26	A85 30



Large Finish Boring Heads

Spare Part	Finish Head Reference Number		
	A 300W	A 400W	A 500W
1	A300.52N	A400.52N	A500.52N
2	D 300.69	D 300.69	D 300.69
3	A 300.002	A400.002	A500.002
4	A300.68	A300.68	A300.68
5	D300.03	D400.03	D500.03
6	D68.23	D68.23	D68.23
7	D300.54D	D300.54D	D300.54D
8	D300.68	D300.68	D300.68
9	D300.50DW	D400.50DW	D500.50DW
10	A68.16	A68.16	A68.16
11	A68.25	A68.25	A68.25
12	A68.15	A68.15	A68.15
13	D300.60	D300.60	D300.60

Spare Part	Finish Head Reference Number		
	A 300W	A 400W	A 500W
14	D300.56	D300.56	D300.56
15	D300.59	D300.59	D300.59
16	D300.001	D400.001	D500.001
17	D300.62	D300.62	D300.62
18	D300.49	D300.49	D300.49
19	D300.58	D300.58	D300.58
20	D300.57	D300.57	D300.57
21	D300.61	D300.61	D300.61
22	3CT._ _._ _ _	3CT._ _._ _ _	3CT._ _._ _ _
23	D68.28	D68.28	D68.28
24	D85.27	D85.27	D85.27
25	TT_ _ _ _ _	TT_ _ _ _ _	TT_ _ _ _ _
26	D85.29	D85.29	D85.29

Measurement Guide for Special Order Toolholders

V-flange CNC machine make, model and spindle

v-flange tool #1 dimensions

D = _____

F = _____

W = _____

A = _____

N = _____

v-flange tool #2 dimensions

D = _____

F = _____

W = _____

A = _____

N = _____

HSK CNC machine make, model and spindle

HSK tool #1 dimensions

D = _____

F = _____

W = _____

A = _____

N = _____

HSK tool #2 dimensions

D = _____

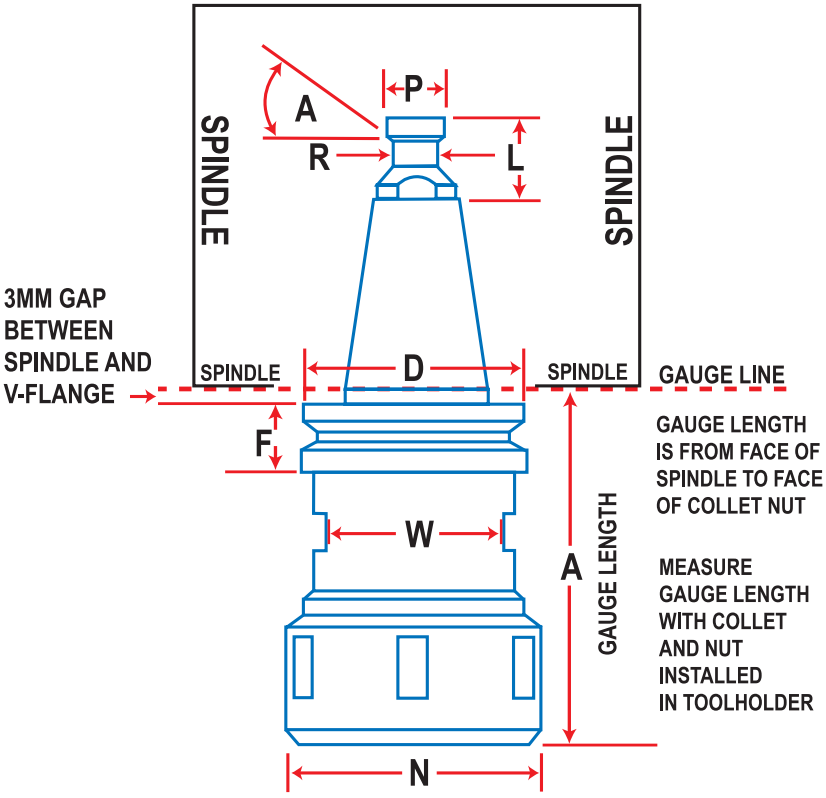
F = _____

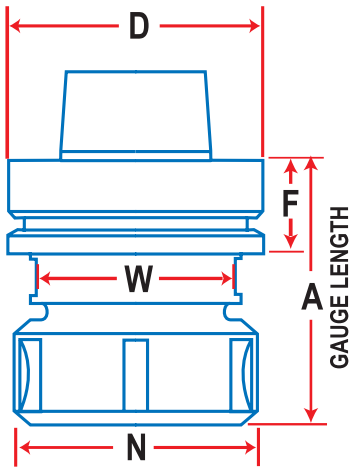
W = _____

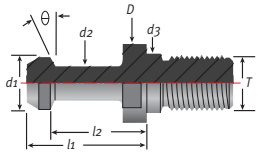
A = _____

N = _____

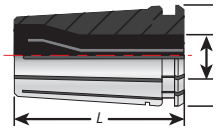
Fill in all the required dimensions (left).
Then, fax or phone in your order for a fast quote.







For special order retention knobs call (800) 597-3921



For special order collets call (800) 597-3921