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**ALLIED MACHINE
& ENGINEERING**

Holemaking Solutions for Today's Manufacturing



Drilling



Reaming



Burnishing



Threading



Boring

► **Criterion Boring Systems**



Specials

CRITERION

The Foundation

Since 1941, Allied Machine & Engineering has been providing dependable and practical holemaking solutions to the world. What was once a small job shop in Ohio is now a worldwide leader in cutting tool technology. With two manufacturing facilities in Ohio, a third in Georgia, and headquarters in both the United States and Europe, Allied Machine is positioned to bring innovative solutions and technical expertise right to the customers' hands.



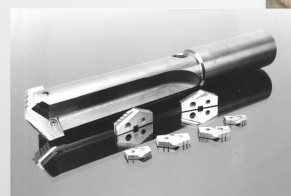
The Beginning



Harold E. Stokey founded Allied Machine & Engineering to aid the war effort, manufacturing taper bearing lock nuts for the production of M1 tanks. Years later, after a sales meeting gone wrong, Stokey possessed a warehouse stocked with spade drill inserts. He set forth into the industry that would become Allied Machine's thriving identity: holemaking.

The T-A®

When Harold's son, William H. Stokey, became the president and CEO, he developed the Throw Away—or T-A®—spade drill insert system. The T-A revolutionized the holemaking industry, launching Allied Machine ahead of the competition. Since then, numerous innovations and advancements have been created from the T-A's inspiration.



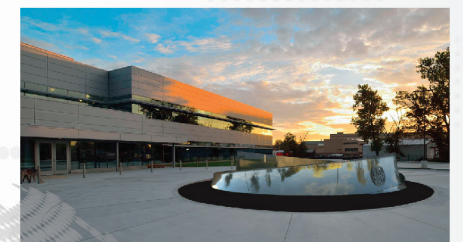
The Innovation

Since the development of the T-A, Allied Machine has expanded its product offering to support a vast range of customer applications, including large diameter and deep hole drilling, boring, reaming, porting, and threading.



The Future

Allied Machine is constantly investing in the brightest and sharpest minds, shaping a future filled with success and quality for customers around the world.



Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President



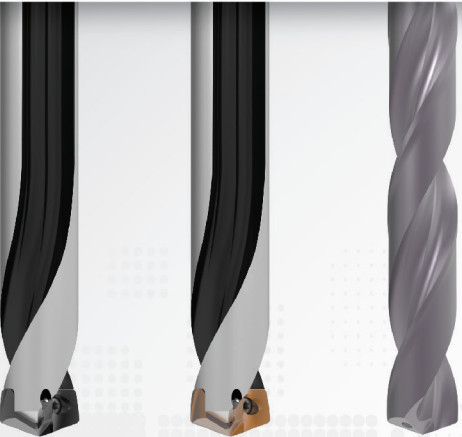
**ALLIED MACHINE
& ENGINEERING**

Holemaking Solutions for Today's Manufacturing

DRILLING

BORING

High Penetration



GEN3SYS® XT Pro

GEN3SYS® XT

ASC 320®

General Purpose

(certain sizes are ideal for deep hole drilling and/or large diameter drilling)



GEN2 T-A®

Original T-A®

High Performance

Universal

Large Diameter



Revolution Drill®

Opening Drill®

Large Diameter / Deep Hole



APX Drill

Deep Hole



BT-A Drill

Guided T-A® Drill
(special)

Porting



AccuPort 432®

Structural Steel



GEN3SYS® XT

T-A®



Cri-Twin®

CB Style

Cri-Bore®

Cri-Tip®

CBER®

REAMING

THREADING



Replaceable Head

Monobloc

Cutting Ring Style

Threadmills USA
Solid Carbide

AccuThread 856®
Solid Carbide

AccuThread 856®
Bolt-in Style Indexable

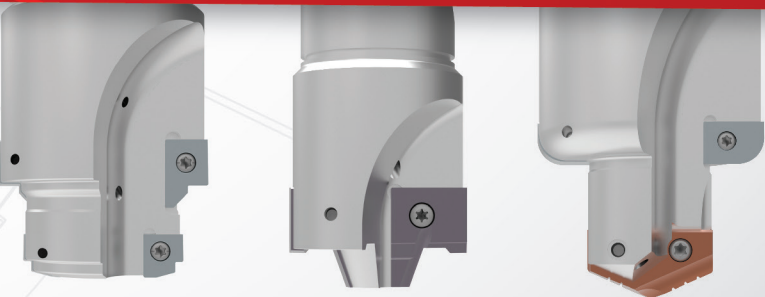
AccuThread 856®
Pin Style Indexable

SPECIALS



Insta-Quote™

Online custom tool builder and quote generator



i-Form

Custom indexable drill / form tool system

Engineered Specials

If your special holmaking needs cannot be met with the Insta-Quote system, Allied Machine can specially engineer ANY product to make your application a success. Simply contact your local FSE or the Allied Machine Application Engineering department for assistance with creating your special tooling. Let Allied Machine ease your difficulties today.

Criterion Modular Boring Systems

[Cri-Twin®](#) | [Cri-Bore®](#) | [Large Cri-Bore®](#) | [CB Style](#) | [CBER®](#) | [Cri-Bar](#) | [Competitor connections](#)



Boring has never been more exciting.
Criterion modular boring systems have everything you need for your rough and/or finish boring applications.

The Cri-Twin® system is designed for either single or double effective cutting so you can rapidly enlarge your bore or reduce the number of passes required.

The Cri-Bore® boring system is designed for finish boring applications. For extremely close tolerance boring, the Cri-Bore micro adjusting boring heads are adjustable in 0.00005” (fifty-millionths).

The CBER® boring heads are designed for use in live tooling spindles, right angle heads, or any standard ER collet holder.

This catalog contains important messages that pertain to proper use of the products shown in this catalog. Always read and follow all precautions that use these words.

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.

Criterion Modular Boring Systems contents

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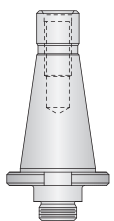
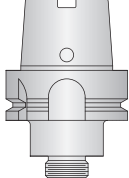
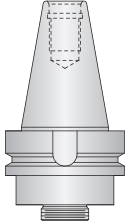
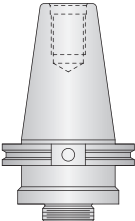
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Criterion modular boring systems

Shanks



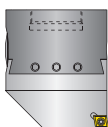
V Flange / DIN 69871BT FlangeHSKNMBT / DIN 2080R8Morse TaperStraight

Adapters



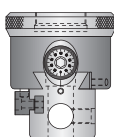
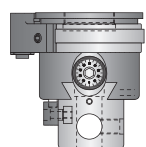
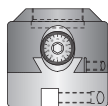
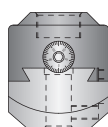
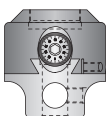
ExtensionReducer

Heads - Insert Holders



Cri-Twin®Cri-Bore®

Heads - Bar Holders



CB StyleSquareSlottedCNC Boring & FacingManual Boring & Facing

Inserts



80° Rhombic80° Trigon60° Triangle

ER Collet Style



CBER®

Adjustable Bars



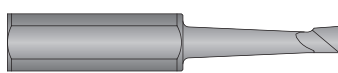
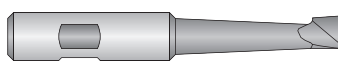
Cri-Bar

TA Insert Boring Bars



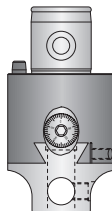
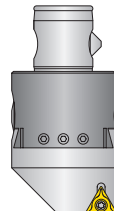
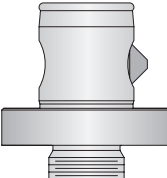
StandardSteelHeavy MetalCarbide ShankCross HoleBoring and Facing

Carbide Boring Bars



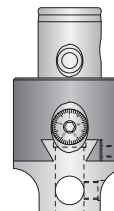
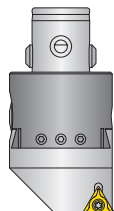
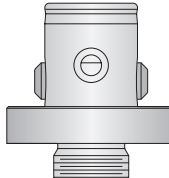
Solid CarbideQualified LengthHelical RakeRound ShankSquare Shank

Komet® ABS® Connections



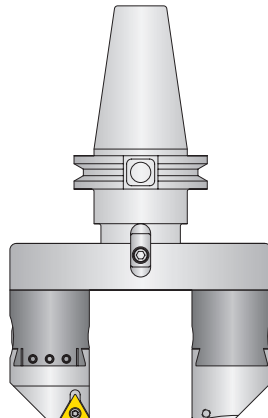
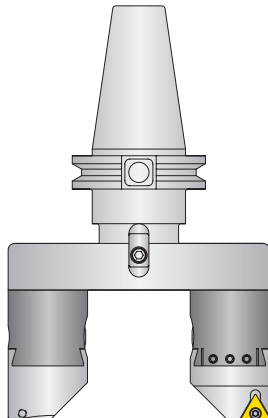
ShankCri-TipCB Style

Big® Kaiser® Connections



ShankCri-TipCB Style

Large Cri-Bore® System

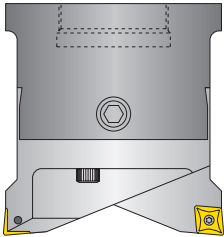


Inner Diameter BoreOuter Diameter Bore

Criterion boring system ranges

Cri-Twin® modular boring system

D ₁ Range	Item Description
<i>Imperial (inch)</i>	
1.100 - 1.500	CT1000
1.400 - 1.900	CT1250
1.600 - 2.500	CT1500
2.100 - 3.100	CT2000
3.100 - 5.000	CT3000
<i>Metric (mm)</i>	
28 - 38	CT025M
36 - 48	CT032M
41 - 63	CT038M
54 - 78	CT050M
79 - 127	CT076M

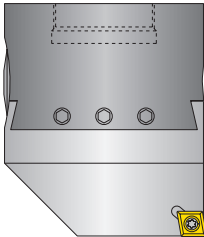


Standard adjusting

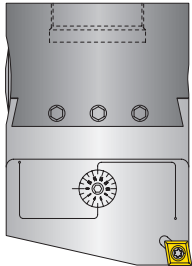
- Highlights:**
- Remove **2x the amount** of material with a standard and short insert holder.
 - Rough and finish in the **same operation** with a standard and short insert holder.
 - Remove material **2x as fast** with two insert holders of the same length.

Cri-Bore® modular boring system

D ₁ Range	Item Description
<i>Imperial (inch)</i>	
1.050 - 1.320	CB1000
1.300 - 1.600	CB1250
1.585 - 2.700	CB1500
2.060 - 3.320	CB2000
3.065 - 5.065	CB3000
4.180 - 7.380	CB4000
<i>Metric (mm)</i>	
27 - 33	CB025M
33 - 41	CB032M
41 - 68	CB038M
53 - 84	CB050M
78 - 128	CB076M
104 - 187	CB101M



Standard adjusting

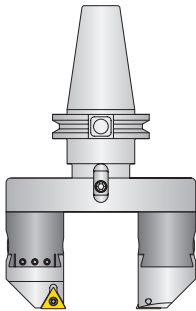


Micro adjusting

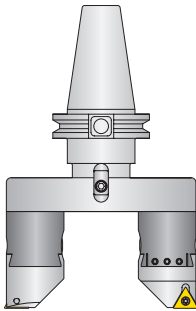
- Highlights:**
- Standard adjusting is excellent for finish boring.
 - Micro adjusting is excellent for close tolerance boring.
 - Total range of micro adjustment is 0.006" (0.150mm) on diameter.

Large Cri-Bore® system

D ₁ Range	Item Description
<i>Imperial (inch)</i>	
0.710 - 7.830	Outer diameter boring
5.000 - 120.125	Inner diameter boring
<i>Metric (mm)</i>	
19 - 198	Outer diameter boring
127 - 307	Inner diameter boring



Outer bore diameter



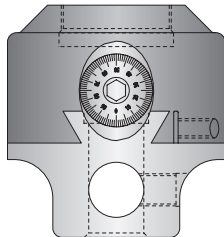
Inner bore diameter

Criterion boring system ranges

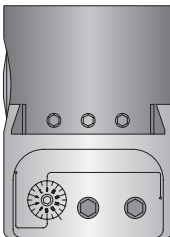
CB Style boring heads

Center Hole	Outboard Hole	Cross Hole*	Item Description
<i>Imperial (inch)</i>			
0.050 - 1.625	-	-	CB-1500B
0.050 - 1.625	1.000 - 2.500	-	CB-2375A
0.050 - 1.750	1.312 - 3.000	2.875 - 6.687	CB-202
0.050 - 3.250	2.000 - 50.125	4.937 - 11.000	CB-203
0.050 - 3.250	3.000 - 7.000	5.625 - 13.437	CB-204
1.750 - 5.750	5.500 - 9.500	9.093 - 21.500	CB-206
0.050 - 1.625	1.000 - 2.500	-	CB-1500MA
0.050 - 1.750	1.312 - 3.000	-	CB-2500MA
0.050 - 3.250	2.375 - 50.125	-	CB-3000MA
<i>Metric (mm)</i>			
3 - 40	-	-	CB-038MB
3 - 40	25 - 62	-	CB-038MA
3 - 40	25 - 62	-	CB-038MC
3 - 44	35 - 76	73 - 169	CB-050M
10 - 70	60 - 130	126 - 292	CB-076M
10 - 113	76 - 178	143 - 341	CB-101M
3 - 42	34 - 73	-	CB-064MBMA
10 - 73	60 - 130	-	CB-076MDMA

***NOTICE:** Cross hole maximum bore diameter is based upon cross hole bars being secured in the bar holder with at least 2 set screws.



Standard adjusting



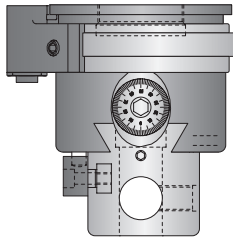
Micro adjusting

Boring and Facing heads

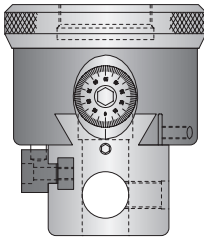
Center Hole	Outboard Hole	Cross Hole*	Item Description
<i>Imperial (inch)</i>			
0.050 - 2.875	2.375 - 4.750	4.937 - 10.625	BFM-300
<i>Metric (mm)</i>			
10 - 76	60 - 120	126 - 288	BFM-076

***NOTICE:** Cross hole maximum bore diameter is based upon cross hole bars being secured in the bar holder with at least 2 set screws.

- Highlights:**
- Ideal for boring, facing, grooving, backfacing, and counterboring operations.
 - Available in 0.003" per revolution (or fine feed 0.0015" per revolution).
 - Clutch automatically disengages the drive when preset stops are contacted.
 - Head feeds in both directions.



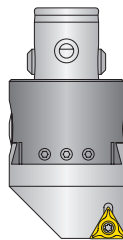
CNC style



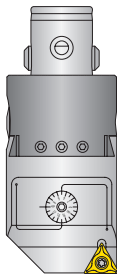
Manual style

Cri-Tip competitor connection boring system

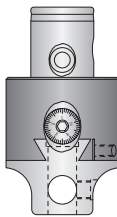
Bore Diameter Range	Item Description
<i>Imperial (inch)</i>	
0.050 - 11.000	Big® Kaiser® connection Komet® ABS® connection
<i>Metric (mm)</i>	
3 - 128	Big® Kaiser® connection Komet® ABS® connection



Standard adjusting



Micro adjusting



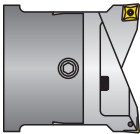
CB style



Criterion modular boring systems nomenclature

Criterion double effective boring heads

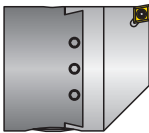
CT	2000	–	1
1	2		3



1. Boring Head Style	2. Body Style	3. Insert Holder Lead Type (Side 1 / Side 2)												
CT = Cri-Twin®	<table><tr><th>Imperial</th><th>Metric</th></tr><tr><td>1000 = 1.000"</td><td>025M = 25mm</td></tr><tr><td>1250 = 1.250"</td><td>032M = 32mm</td></tr><tr><td>1500 = 1.500"</td><td>038M = 38mm</td></tr><tr><td>2000 = 2.000"</td><td>050M = 50mm</td></tr><tr><td>3000 = 3.000"</td><td>076M = 76mm</td></tr></table>	Imperial	Metric	1000 = 1.000"	025M = 25mm	1250 = 1.250"	032M = 32mm	1500 = 1.500"	038M = 38mm	2000 = 2.000"	050M = 50mm	3000 = 3.000"	076M = 76mm	0 = Zero / zero 1 = Standard / standard 2 = Standard / short
Imperial	Metric													
1000 = 1.000"	025M = 25mm													
1250 = 1.250"	032M = 32mm													
1500 = 1.500"	038M = 38mm													
2000 = 2.000"	050M = 50mm													
3000 = 3.000"	076M = 76mm													

Criterion single effective boring heads

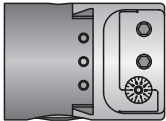
CB	2000	–	TP
1	2		3



1. Boring Head Style	2. Body Style		3. Insert Style
CB = Cri-Bore®	Imperial	Metric	TP = TP
	1000 = 1.000"	025M = 25mm	CP = CP / CC
	1250 = 1.250"	032M = 32mm	TPMA = TP (with micro adjustment)
	1500 = 1.500"	038M = 38mm	CPMA = CP / CC (with micro adjustment)
	2000 = 2.000"	050M = 50mm	
	3000 = 3.000"	076M = 76mm	
	4000 = 4.000"	101M = 101mm	

Criterion boring bar holder heads

CB	–	2000	A
1		2	3

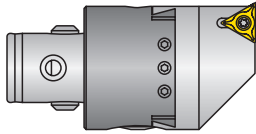


1. Boring Head Style	2. Body Size		3. Tool Hole ID	
CB = CB Style	Imperial	Metric	Imperial	Metric
SQ = Square	002 = 1.500"	025M = 25mm	A = 0.375"	A = 10mm
TMT = Tiny Mite	152 = 1.500"	032M = 32mm	B = 0.500"	B = 12mm
CSL = Slotted	0750 = 0.750"	038M = 38mm	C = 0.625"	C = 16mm
	1000 = 1.000"	050M = 50mm	D = 0.750"	D = 20mm
	1500 = 1.500"	076M = 76mm	E = 1.000"	E = 25mm
	2000 = 2.000"	101M = 101mm	F = 1.500"	
	202 = 2.000"		G = 0.125"	
	3000 = 3.000"		H = 0.250"	
	203 = 3.000"			
	204 = 4.000"			
	206 = 6.000"			

Criterion modular boring systems nomenclature

Criterion competitor connections

CTP	2000	–	A50	TP
1	2		3	4



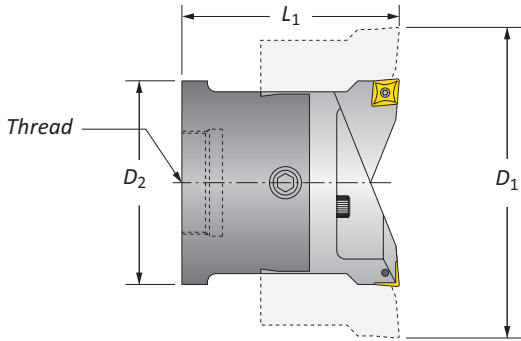
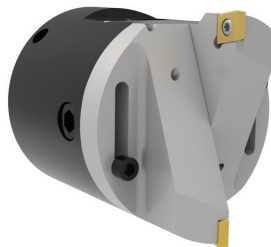
1. Boring Head Style	2. Body Size		3. Adapter Style	
CTP = Cri-Tip	Imperial	Metric	A40 = Komet® ABS40 connection	KA4 = Big® Kaiser® KA4 connection
	1500 = 1.500"	038M = 38mm	A50 = Komet® ABS50 connection	KA5 = Big® Kaiser® KA5 connection
	2000 = 2.000"	050M = 50mm	A80 = Komet® ABS80 connection	KA7 = Big® Kaiser® KA7 connection
	3000 = 3.000"	076M = 76mm		

4. Boring Head Style		
Imperial		Metric
TP = TP	202B = 0.500 tool hole ID	TP = TP
CP = CP / CC	203D = 0.750 tool hole ID	CP = CP / CC
TPMA = TP (with micro adjustment)	300MA = 0.750 tool hole ID (micro adjusting)	TPMA = TP (with micro adjustment)
CPMA = CP (with micro adjustment)	DMA = 0.750 tool hole ID (micro adjusting)	CPMA = CP (with micro adjustment)
002 = 0.500 tool hole ID		B = 12mm tool hole ID
152 = 0.375 tool hole ID		D = 20mm tool hole ID
202A = 0.375 tool hole ID		MDMA = 20mm tool hole ID (micro adjusting)

Reference Icons		
	Boring Heads - Insert Holders Standard and micro adjusting boring heads that use inserts for cutting.	 Inserts For use with insert holder boring heads and boring bars using indexable inserts.
	Boring Heads - Boring Bar Holders Standard and micro adjusting boring heads that use boring bars for cutting.	 Boring Kits Complete boring kits including boring heads, shanks, bars, and adapters.
	Head-to-Shank Adapters Extensions and reducers that attach the boring head to the shank.	 Setup / Assembly Information Detailed instructions and information regarding the corresponding part(s).
	Shanks A variety of shanks for different machines.	 Replacement Parts Quick reference guide of replacement parts needed for each boring head assembly.
	Boring Bar Adapters For use with boring bar holder boring heads and boring bars.	 Recommended Cutting Data Speed and feed recommendations for optimum and safe boring.
	Boring Bars For use with boring bar holder boring heads or lathe and turning center applications.	

Cri-Twin® boring heads

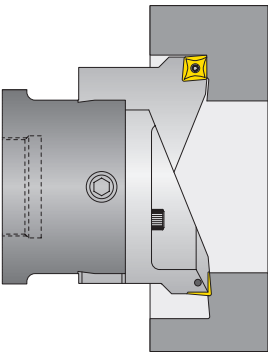
Standard adjusting | Diameter Range: 1.100" - 5.000" (28mm - 127mm)



D ₁ Range	L ₁	Part No.	D ₂	Thread	Inserts			Insert Holder Type				
					I.C.	T ₁	Shape / Style	Side 1	Side 2			
Imperial (inch) .001" adjustment on diameter												
1.100 - 1.500	1.870	CT1000-0	1.00	7/8-20	0.250	0.094	 CP or CC	Zero Lead	Zero Lead			
	1.900	CT1000-1						Standard	Standard			
	1.900	CT1000-2						Standard	Short			
1.400 - 1.900	1.870	CT1250-0	1.25					0.375	0.156	Zero Lead	Zero Lead	
	1.900	CT1250-1								Standard	Standard	
	1.900	CT1250-2								Standard	Short	
1.600 - 2.500	2.570	CT1500-0	1.50		0.375	0.156				Zero Lead	Zero Lead	
	2.600	CT1500-1								Standard	Standard	
	2.600	CT1500-2								Standard	Short	
2.100 - 3.100	2.470	CT2000-0	2.00					1-1/2-18	0.375	0.156	Zero Lead	Zero Lead
	2.500	CT2000-1									Standard	Standard
	2.500	CT2000-2									Standard	Short
3.100 - 5.000	3.170	CT3000-0	3.00	0.375			0.156				Zero Lead	Zero Lead
	3.200	CT3000-1									Standard	Standard
	3.200	CT3000-2									Standard	Short
Metric (mm) .02mm adjustment on diameter												
28 - 38	47	CT025M-0	25		7/8-20	6.35			2.38	 CP or CC	Zero Lead	Zero Lead
	48	CT025M-1									Standard	Standard
	48	CT025M-2		Standard			Short					
36 - 48	47	CT032M-0	32	6.35			2.38				Zero Lead	Zero Lead
	48	CT032M-1									Standard	Standard
	48	CT032M-2						Standard			Short	
41 - 63	65	CT038M-0	38			9.53		3.96	Zero Lead		Zero Lead	
	66	CT038M-1							Standard		Standard	
	66	CT038M-2							Standard		Short	
54 - 78	63	CT050M-0	50	9.53			3.96		Zero Lead		Zero Lead	
	64	CT050M-1							Standard		Standard	
	64	CT050M-2							Standard		Short	
79 - 127	80	CT076M-0	76		1-1/2-18				9.53	3.96	Zero Lead	Zero Lead
	81	CT076M-1									Standard	Standard
	81	CT076M-2									Standard	Short

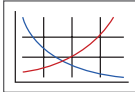
Notes:

- CTXXXX-0 units have a 0° lead angle = produce flat bottom.
- CTXXXX-1 and -2 units have a 5° lead angle.
- CTXXXX-2 units can be offset to remove twice the amount of material (as illustrated).

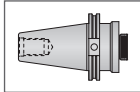


• CTXXXX-2 item illustrated

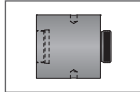
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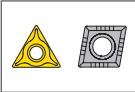
B: 42 - 46



B: 24



B: 60 - 63



B: 82

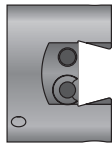


Icon reference key on B: 7

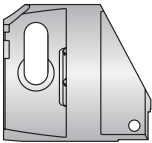
Inserts sold separately.

Cri-Twin® boring head replacement parts

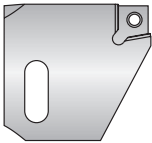
Standard adjusting



1 Body



2 Insert Holder 1



3 Insert Holder 2



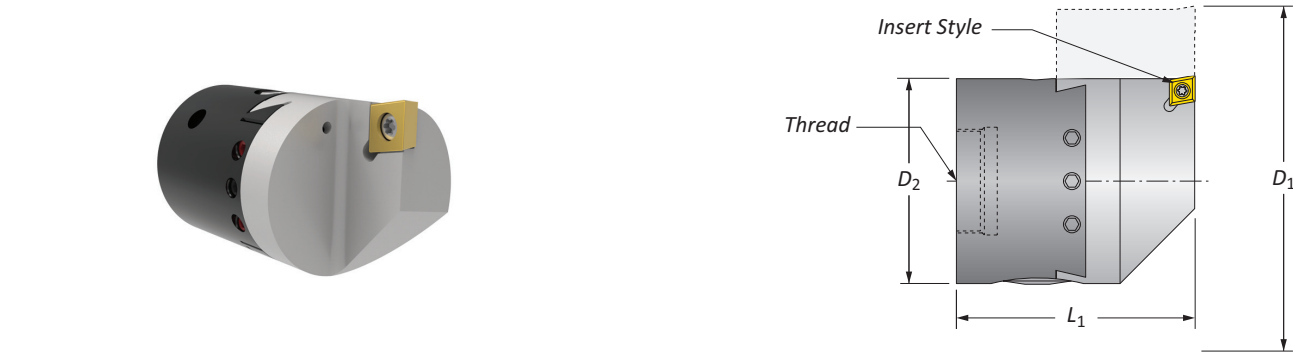
4 Dial Screw

Head Part No.	Hardware Kit	1	2	3	4	 Torx Screw	 Torx Wrench
Imperial (inch)							
CT1000-0	CT1000-HDW	CT1000-BD	CT1000ZRO-IH	CT1000ZRO-IH	DS-MDB0750	TXS-116-1	8T-7FL
CT1000-1	CT1000-HDW	CT1000-BD	CT1000STD-IH	CT1000STD-IH	DS-MDB0750	TXS-116-1	8T-7FL
CT1000-2	CT1000-HDW	CT1000-BD	CT1000STD-IH	CT1000SHT-IH	DS-MDB0750	TXS-116-1	8T-7FL
CT1250-0	CT1250-HDW	CT1250-BD	CT1250ZRO-IH	CT1250ZRO-IH	DS-CT1250	TXS-116-1	8T-7FL
CT1250-1	CT1250-HDW	CT1250-BD	CT1250STD-IH	CT1250STD-IH	DS-CT1250	TXS-116-1	8T-7FL
CT1250-2	CT1250-HDW	CT1250-BD	CT1250STD-IH	CT1250SHT-IH	DS-CT1250	TXS-116-1	8T-7FL
CT1500-0	CT1500-HDW	CT1500-BD	CT1500ZRO-IH	CT1500ZRO-IH	DS-CT1500	TXS-009-1	8T-15
CT1500-1	CT1500-HDW	CT1500-BD	CT1500STD-IH	CT1500STD-IH	DS-CT1500	TXS-009-1	8T-15
CT1500-2	CT1500-HDW	CT1500-BD	CT1500STD-IH	CT1500SHT-IH	DS-CT1500	TXS-009-1	8T-15
CT2000-0	CT2000-HDW	CT2000-BD	CT2000ZRO-IH	CT2000ZRO-IH	DS-CT2000	TXS-009-1	8T-15
CT2000-1	CT2000-HDW	CT2000-BD	CT2000STD-IH	CT2000STD-IH	DS-CT2000	TXS-009-1	8T-15
CT2000-2	CT2000-HDW	CT2000-BD	CT2000STD-IH	CT2000SHT-IH	DS-CT2000	TXS-009-1	8T-15
CT3000-0	CT3000-HDW	CT3000-BD	CT3000ZRO-IH	CT3000ZRO-IH	DS-CT3000	TXS-100-1	8T-15
CT3000-1	CT3000-HDW	CT3000-BD	CT3000STD-IH	CT3000STD-IH	DS-CT3000	TXS-100-1	8T-15
CT3000-2	CT3000-HDW	CT3000-BD	CT3000STD-IH	CT3000SHT-IH	DS-CT3000	TXS-100-1	8T-15
Metric (mm)							
CT025M-0	CT025M-HDW	CT025M-BD	CT025MZRO-IH	CT025MZRO-IH	DS-MDB20M	TXS-116-1	8T-7FL
CT025M-1	CT025M-HDW	CT025M-BD	CT025MSTD-IH	CT025MSTD-IH	DS-MDB20M	TXS-116-1	8T-7FL
CT025M-2	CT025M-HDW	CT025M-BD	CT025MSTD-IH	CT025MSHT-IH	DS-MDB20M	TXS-116-1	8T-7FL
CT032M-0	CT032M-HDW	CT032M-BD	CT032MZRO-IH	CT032MZRO-IH	DS-CT032M	TXS-116-1	8T-7FL
CT032M-1	CT032M-HDW	CT032M-BD	CT032MSTD-IH	CT032MSTD-IH	DS-CT032M	TXS-116-1	8T-7FL
CT032M-2	CT032M-HDW	CT032M-BD	CT032MSTD-IH	CT032MSHT-IH	DS-CT032M	TXS-116-1	8T-7FL
CT038M-0	CT038M-HDW	CT038M-BD	CT038MZRO-IH	CT038MZRO-IH	DS-CT038M	TXS-009-1	8T-15
CT038M-1	CT038M-HDW	CT038M-BD	CT038MSTD-IH	CT038MSTD-IH	DS-CT038M	TXS-009-1	8T-15
CT038M-2	CT038M-HDW	CT038M-BD	CT038MSTD-IH	CT038MSHT-IH	DS-CT038M	TXS-009-1	8T-15
CT050M-0	CT050M-HDW	CT050M-BD	CT050MZRO-IH	CT050MZRO-IH	DS-CT050M	TXS-009-1	8T-15
CT050M-1	CT050M-HDW	CT050M-BD	CT050MSTD-IH	CT050MSTD-IH	DS-CT050M	TXS-009-1	8T-15
CT050M-2	CT050M-HDW	CT050M-BD	CT050MSTD-IH	CT050MSHT-IH	DS-CT050M	TXS-009-1	8T-15
CT076M-0	CT076M-HDW	CT076M-BD	CT076MZRO-IH	CT076MZRO-IH	DS-CT076M	TXS-100-1	8T-15
CT076M-1	CT076M-HDW	CT076M-BD	CT076MSTD-IH	CT076MSTD-IH	DS-CT076M	TXS-100-1	8T-15
CT076M-2	CT076M-HDW	CT076M-BD	CT076MSTD-IH	CT076MSHT-IH	DS-CT076M	TXS-100-1	8T-15

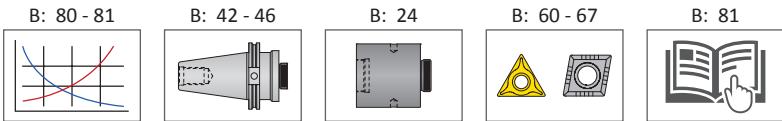
Screws sold in multiples of 10.

Cri-Bore® boring heads

Standard adjusting | Diameter Range: 1.050" - 7.380" (27mm - 187mm)



D ₁ Range	L ₁	Part No.	D ₂	Thread	 Pin Spanner Wrench	Insert		
						I.C.	T ₁	Shape
Imperial (inch) .001" adjustment on diameter								
1.050 - 1.320	1.980	CB1000-TP CB1000-CP	1.000	7/8-20	CB1000-PSW	0.250	0.094	▲ TP ◆ CP or CC
1.300 - 1.600	2.210	CB1250-TP CB1250-CP	1.250		CB1250-PSW	0.250	0.094	▲ TP ◆ CP or CC
1.585 - 2.700	2.480	CB1500-TP CB1500-CP	1.500		CB1500-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
2.060 - 3.320	2.735	CB2000-TP CB2000-CP	2.000		CB2000-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
3.065 - 5.065	3.465	CB3000-TP CB3000-CP	3.000	1-1/2-18	CB3000-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
4.100 - 7.300	3.970	CB4000-TP	4.000		CB4000-PSW	0.375	0.156	▲ TP
4.180 - 7.380						0.500	0.188	◆ CP or CC
Metric (mm) .02mm adjustment on diameter								
27 - 33	50	CB025M-TP CB025M-CP	25	7/8-20	CB1000-PSW	6.35	2.38	▲ TP ◆ CP or CC
33 - 41	56	CB032M-TP CB032M-CP	32		CB1250-PSW	6.35	2.38	▲ TP ◆ CP or CC
41 - 68	63	CB038M-TP CB038M-CP	38		CB1500-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC
53 - 84	69	CB050M-TP CB050M-CP	50		CB2000-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC
78 - 128	88	CB076M-TP CB076M-CP	76	1-1/2-18	CB3000-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC
104 - 185 106 - 187	101	CB101M-TP CB101M-CP	101		CB4000-PSW	9.53 12.70	3.18 4.76	▲ TP ◆ CP or CC

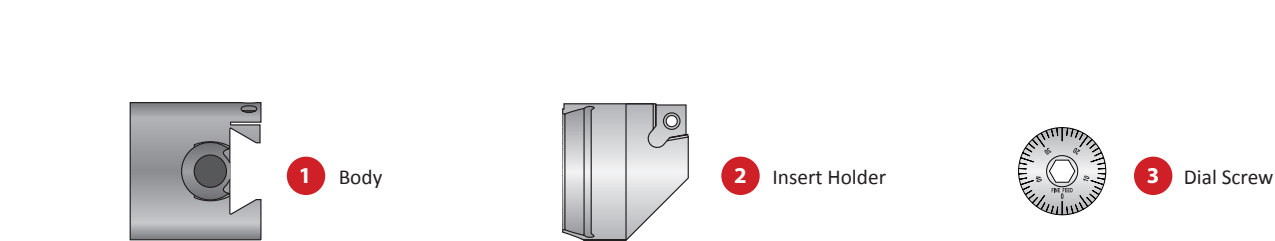


Icon reference key on B: 7

Inserts sold separately.

Cri-Bore® boring head replacement parts

Standard adjusting



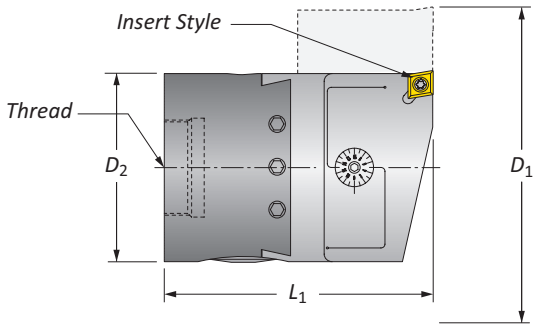
Head Part No.	Hardware Kit	1	2	3	 Torx Screw	 Torx Wrench
Imperial (inch)						
CB1000-TP	CB1000-HDW	CB1000-BD	CB1000TP-IH	DS-MDB1000	TXS-116-1	8T-7
CB1000-CP	CB1000-HDW	CB1000-BD	CB1000CP-IH	DS-MDB1000	TXS-116-1	8T-7
CB1250-TP	CB1250-HDW	CB1250-BD	CB1250TP-IH	DS-MDB1000	TXS-116-1	8T-7
CB1250-CP	CB1250-HDW	CB1250-BD	CB1250CP-IH	DS-MDB1000	TXS-100-1	8T-7
CB1500-TP	CB1500-HDW	CB1500-BD	CB1500TP-IH	DS-CB2	TXS-009-1	8T-20
CB1500-CP	CB1500-HDW	CB1500-BD	CB1500CP-IH	DS-CB2	TXS-100-1	8T-15
CB2000-TP	CB2000-HDW	CB2000-BD	CB2000TP-IH	DS-CB2	TXS-009-1	8T-20
CB2000-CP	CB2000-HDW	CB2000-BD	CB2000CP-IH	DS-CB2	TXS-100-1	8T-15
CB3000-TP	CB3000-HDW	CB3000-BD	CB3000TP-IH	DS-CB3	TXS-009-1	8T-20
CB3000-CP	CB3000-HDW	CB3000-BD	CB3000CP-IH	DS-CB3	TXS-119-1	8T-15
CB4000-TP	CB4000-HDW	CB4000-BD	CB4000TP-IH	DS-CB4	TXS-100-1	8T-15FL
CB4000-CP	CB4000-HDW	CB4000-BD	CB4000CP-IH	DS-CB4	TXS-116-1	8T-20FL
Metric (mm)						
CB025M-TP	CB025M-HDW	CB025M-BD	CB025MTP-IH	DS-MDB25M	TXS-116-1	8T-7
CB025M-CP	CB025M-HDW	CB025M-BD	CB025MCP-IH	DS-MDB25M	TXS-116-1	8T-7
CB032M-TP	CB032M-HDW	CB032M-BD	CB032MTP-IH	DS-MDB32M	TXS-116-1	8T-7
CB032M-CP	CB032M-HDW	CB032M-BD	CB032MCP-IH	DS-MDB32M	TXS-116-1	8T-7
CB038M-TP	CB038M-HDW	CB038M-BD	CB038MTP-IH	DS-CB050M	TXS-100-1	8T-20
CB038M-CP	CB038M-HDW	CB038M-BD	CB038MCP-IH	DS-CB050M	TXS-009-1	8T-15
CB050M-TP	CB050M-HDW	CB050M-BD	CB050MTP-IH	DS-CB050M	TXS-100-1	8T-20
CB050M-CP	CB050M-HDW	CB050M-BD	CB050MCP-IH	DS-CB050M	TXS-009-1	8T-15
CB076M-TP	CB076M-HDW	CB076M-BD	CB076MTP-IH	DS-CB076M	TXS-100-1	8T-20
CB076M-CP	CB076M-HDW	CB076M-BD	CB076MCP-IH	DS-CB076M	TXS-009-1	8T-15
CB101M-TP	CB101M-HDW	CB101M-BD	CB101MTP-IH	DS-CB101M	TXS-119-1	8T-15FL
CB101M-CP	CB101M-HDW	CB101M-BD	CB101MCP-IH	DS-CB101M	TXS-100-1	8T-20FL

Screws sold in multiples of 10.

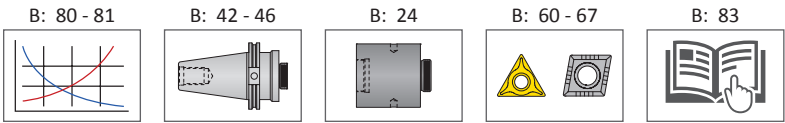


Cri-Bore® boring heads

Micro adjusting | Diameter range: 1.050" - 5.065" (27mm - 128mm)



D ₁ Range	L ₁	Part No.	D ₂	Thread	 Pin Spanner Wrench	Insert		
						I.C.	T ₁	Shape
Imperial (inch) .00005" adjustment on diameter								
1.050 - 1.320	2.580	CB1000-TPMA CB1000-CPMA	1.000	7/8-20	CB1000-PSW	0.250	0.094	▲ TP ◆ CP or CC
1.300 - 1.600	2.810	CB1250-TPMA CB1250-CPMA	1.250		CB1250-PSW	0.250	0.094	▲ TP ◆ CP or CC
1.585 - 2.700	3.180	CB1500-TPMA CB1500-CPMA	1.500		CB1500-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
2.060 - 3.320	3.530	CB2000-TPMA CB2000-CPMA	2.000		CB2000-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
3.065 - 5.065	4.090	CB3000-TPMA CB3000-CPMA	3.000	1-1/2-18	CB3000-PSW	0.375	0.125 0.156	▲ TP ◆ CP or CC
Metric (mm) .001mm adjustment on diameter								
27 - 33	65	CB025M-TPMA CB025M-CPMA	25	7/8-20	CB1000-PSW	6.35	2.38	▲ TP ◆ CP or CC
33 - 41	71	CB032M-TPMA CB032M-CPMA	32		CB1250-PSW	6.35	2.38	▲ TP ◆ CP or CC
41 - 68	81	CB038M-TPMA CB038M-CPMA	38		CB1500-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC
53 - 84	90	CB050M-TPMA CB050M-CPMA	50		CB2000-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC
78 - 128	104	CB076M-TPMA CB076M-CPMA	76	1-1/2-18	CB3000-PSW	9.53 9.53	3.18 3.96	▲ TP ◆ CP or CC

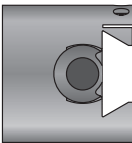


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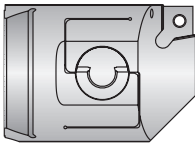
Inserts sold separately.

Cri-Bore® boring head replacement parts

Micro adjusting



1 Body



2 Insert Holder



3 Dial Screw



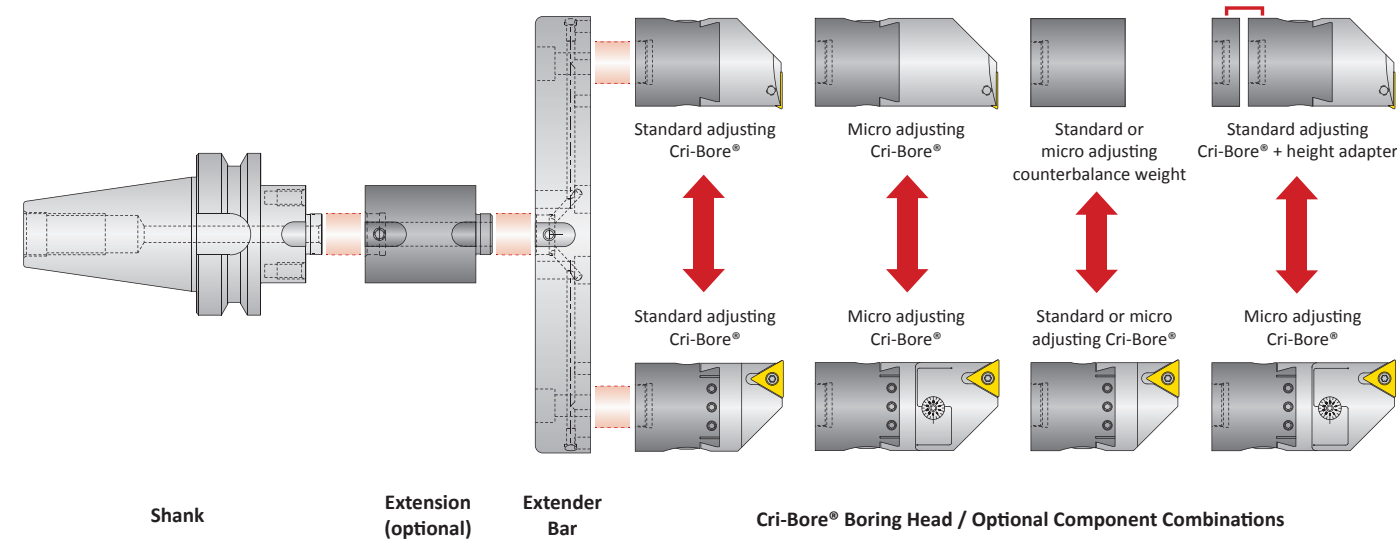
4 Micro Dial Screw

Head Part No.	Hardware Kit	1	2	3	4	Wedge	Torx Screw	Torx Wrench
Imperial (inch)								
CB1000-TPMA	CB1000-HDW	CB1000-BD	CB1000TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CB1000-CPMA	CB1000-HDW	CB1000-BD	CB1000CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CB1250-TPMA	CB1250-HDW	CB1250-BD	CB1250TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CB1250-CPMA	CB1250-HDW	CB1250-BD	CB1250CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-100-1	8T-20
CB1500-TPMA	CB1500-HDW	CB1500-BD	CB1500TPMA-IH	DS-CB2	DS-MA2500	MAW-2000	TXS-100-1	8T-20
CB1500-CPMA	CB1500-HDW	CB1500-BD	CB1500CPMA-IH	DS-CB2	DS-MA2500	MAW-2000	TXS-009-1	8T-15
CB2000-TPMA	CB2000-HDW	CB2000-BD	CB2000TPMA-IH	DS-CB2	DS-MA2500	MAW-2000	TXS-100-1	8T-20
CB2000-CPMA	CB2000-HDW	CB2000-BD	CB2000CPMA-IH	DS-CB2	DS-MA2500	MAW-2000	TXS-009-1	8T-15
CB3000-TPMA	CB3000-HDW	CB3000-BD	CB3000TPMA-IH	DS-CB3	DS-MA2500	MAW-2000	TXS-100-1	8T-20
CB3000-CPMA	CB3000-HDW	CB3000-BD	CB3000CPMA-IH	DS-CB3	DS-MA2500	MAW-2000	TXS-009-1	8T-15
Metric (mm)								
CB025M-TPMA	CB025M-HDW	CB025M-BD	CB025MTPMA-IH	DS-MDB25M	DS-MA038M	MAW-1000	TXS-116-1	8T-7
CB025M-CPMA	CB025M-HDW	CB025M-BD	CB025MCPMA-IH	DS-MDB25M	DS-MA038M	MAW-1000	TXS-116-1	8T-7
CB032M-TPMA	CB032M-HDW	CB032M-BD	CB032MTPMA-IH	DS-MDB32M	DS-MA038M	MAW-1000	TXS-116-1	8T-7
CB032M-CPMA	CB032M-HDW	CB032M-BD	CB032MCPMA-IH	DS-MDB32M	DS-MA038M	MAW-1000	TXS-116-1	8T-7
CB038M-TPMA	CB038M-HDW	CB038M-BD	CB038MTPMA-IH	DS-CB050M	DS-MA064M	MAW-2000	TXS-100-1	8T-20
CB038M-CPMA	CB038M-HDW	CB038M-BD	CB038MCPMA-IH	DS-CB050M	DS-MA064M	MAW-2000	TXS-009-1	8T-15
CB050M-TPMA	CB050M-HDW	CB050M-BD	CB050MTPMA-IH	DS-CB050M	DS-MA064M	MAW-2000	TXS-100-1	8T-20
CB050M-CPMA	CB050M-HDW	CB050M-BD	CB050MCPMA-IH	DS-CB050M	DS-MA064M	MAW-2000	TXS-009-1	8T-15
CB076M-TPMA	CB076M-HDW	CB076M-BD	CB076MTPMA-IH	DS-CB076M	DS-MA064M	MAW-2000	TXS-100-1	8T-20
CB076M-CPMA	CB076M-HDW	CB076M-BD	CB076MCPMA-IH	DS-CB076M	DS-MA064M	MAW-2000	TXS-009-1	8T-15

Screws sold in multiples of 10.

Large Cri-Bore® system

Bore ID range: 5.000" - 120.125" (127.0mm - 307.9mm) | Bore OD range: 0.710" - 7.830" (18.1mm - 198.8mm)



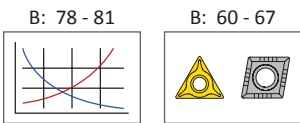
Cri-Bore® boring heads

L ₁	D ₂	Part No.	Thread	Insert		
				I.C.	T ₁	Shape
Imperial (inch) Standard adjusting (0.001" adjustment on diameter)						
2.480	1.500	CB1500-TP CB1500-CP	7/8-20	0.375	0.125 0.156	▲ TP ◆ CP or CC
Imperial (inch) Micro adjusting (0.00005" adjustment on diameter)						
3.180	1.500	CB1500-TPMA CB1500-CPMA	7/8-20	0.375	0.125 0.156	▲ TP ◆ CP or CC
Metric (mm) Standard adjusting (0.001" adjustment on diameter)						
63	38	CB038M-TP CB038M-CP	7/8-20	0.375	0.125 0.156	▲ TP ◆ CP or CC
Metric (mm) Micro adjusting (0.00005" adjustment on diameter)						
81	38	CB038M-TPMA CB038M-CPMA	7/8-20	0.375	0.125 0.156	▲ TP ◆ CP or CC

Large Cri-Bore® extensions

D ₁	L ₁	Part No.
Imperial (inch)		
1.50	1.50	LCB1500-IA1500
	3.00	LCB1500-IA3000
	4.50	LCB1500-IA4500

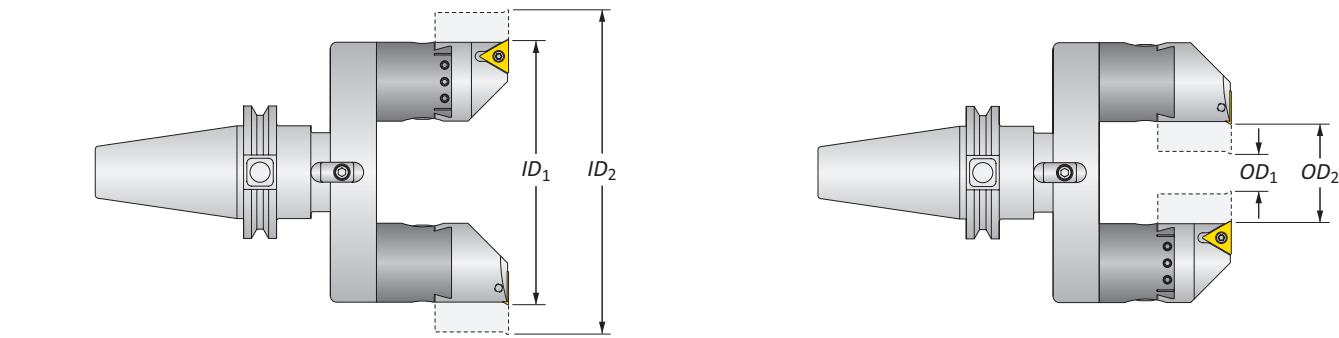
NOTICE: Only one extension can be used per boring head. Extensions cannot be combined.



Icon reference key on B: 7

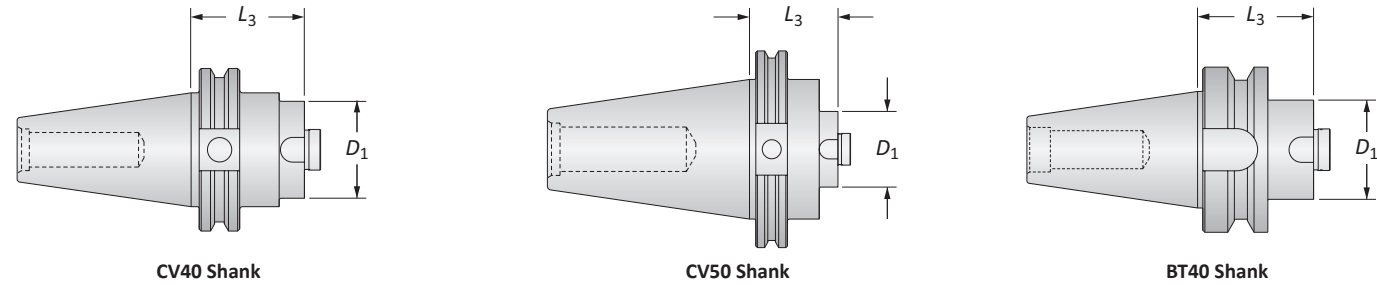
Inserts sold separately.

Large Cri-Bore® system



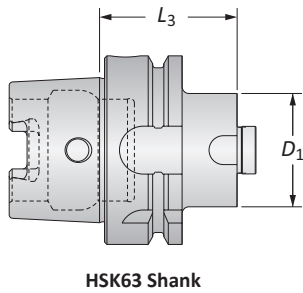
Large Cri-Bore® extender bars

Imperial (Inch)				Metric (mm)				Part No.
ID ₁	ID ₂	OD ₁	OD ₂	ID ₁	ID ₂	OD ₁	OD ₂	
5.000	60.125	0.710	1.830	127.0	155.5	18.1	46.4	LCB1500-56EBK
6.000	70.125	1.710	2.830	152.4	180.9	43.5	71.8	LCB1500-67EBK
7.000	80.125	2.710	3.830	177.8	206.3	68.9	97.2	LCB1500-78EBK
8.000	90.125	3.710	4.830	203.2	231.7	94.3	122.6	LCB1500-89EBK
9.000	100.125	4.710	5.830	228.6	257.1	119.7	148.0	LCB1500-910EBK
10.000	110.125	5.710	6.830	254.0	282.5	145.1	173.4	LCB1500-1011EBK
11.000	120.125	6.710	7.830	279.4	307.9	170.5	198.8	LCB1500-1112EBK



Large Cri-Bore® shanks

Taper	L ₃	Part No.
Imperial (inch)		
40 V-Flange	1.75	LCB1500-CV40
50 V-Flange		LCB1500-CV50
40 BT-Flange		LCB1500-BT40
HSK63A		LCB1500-HSK63A



Large Cri-Bore® optional components

Part No.	Description	Notes
Imperial (inch)		
LCB1500-CBW	Counterbalance weight	Recommended when using a single CB1500 (standard adjusting) boring head.
LCB1500-CBWTa	Counterbalance weight	Recommended when using a single CB1500-MA (micro-adjusting) boring head.
LCB1500-HA	Height adapter	Required when using a CB1500 boring head in combination with a CB1500-MA boring head.

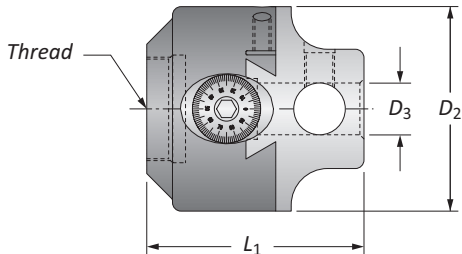
NOTICE: The Large Cri-Bore® (LCB) System can be used with a single Cri-Bore® boring head. This configuration will result in increased imbalance and will affect the tool's performance and/or spindle damage. A counterbalance weight is recommended to balance the tool. Factory technical assistance is available through our Application Engineering department.

A

DRILLING

CB Style boring heads

Standard adjusting | Bore diameter range: 0.050" - 21.500" (3mm - 341mm)



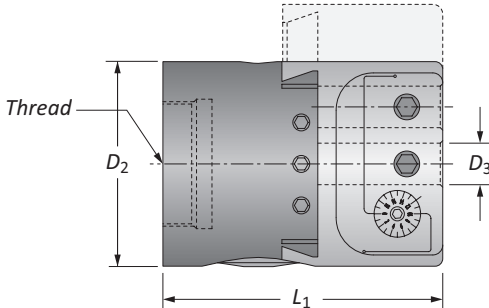
B

BORING

Standard adjusting

Bore Diameter Range			Part No.	D ₂	D ₃	L ₁	Thread	Offset	 Pin Spanner Wrench	 Cross Hole Bar
Center Hole	Outboard Hole	Cross Hole*								
Imperial (inch) .001" adjustment on diameter										
0.050 - 1.625	-	-	CB-2375A CB-1500B	1.500	0.375 0.500	2.500	7/8-20	0.562	CB1500-PSW	-
0.050 - 1.750	1.312 - 3.000	2.875 - 6.687	CB-202A CB-202B	2.000	0.375 0.500	2.406	7/8-20	0.625	CB2000-PSW	CHB-0500
0.050 - 3.250	2.375 - 50.125	4.937 - 11.000	CB-203D	3.000	0.750	3.156	1-1/2-18	1.000	CB3000-PSW	CHB-0750
0.050 - 4.500	3.000 - 7.000	5.625 - 13.437	CB-204E	4.000	1.000	3.867	1-1/2-18	1.625	CB4000-PSW	CHB-1000
1.750 - 5.750	5.500 - 9.500	9.093 - 21.500	CB-206F	6.000	1.500	5.500	2-1/4-10	2.000		CHB-1500
Metric (mm) .02mm adjustment on diameter										
3.00 - 40.00	-	-	CB-038MA CB-038MB	38.00	10.00 12.00	63.00	7/8-20	14.00	CB1500-PSW	-
3.00 - 44.00	35.00 - 76.00 35.00 - 76.00	73.00 - 169.00 73.00 - 169.00	CB-050MA CB-050MB	50.00	10.00 12.00	61.00	7/8-20	16.00	CB2000-PSW	CHB-012M
10.00 - 70.00	60.00 - 130.00	126.00 - 279.00	CB-076MD	76.00	20.00	80.00	1-1/2-18	25.00	CB3000-PSW	CHB-020M
10.00 - 113.00	76.00 - 178.00	143.00 - 341.00	CB-101ME	101.00	25.00	95.00	1-1/2-18	41.00	CB4000-PSW	CHB-025M

*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.

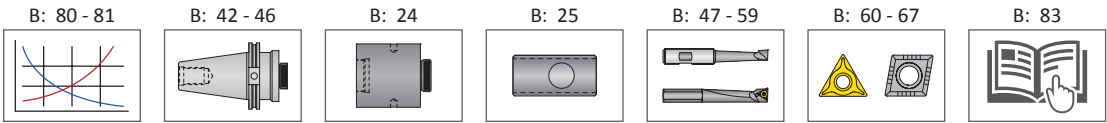


C

REAMING

Micro adjusting

Bore Diameter Range		Part No.	D ₂	D ₃	L ₁	Thread	Offset	 Pin Spanner Wrench
Center Hole	Outboard Hole							
Imperial (inch) .00005" adjustment on diameter								
0.050 - 1.625	1.000 - 2.500	CB-1500AMA	1.500	0.375	3.000	7/8-20	0.562	CB1000-PSW
0.050 - 1.875	1.500 - 3.250	CB-2500BMA	2.500	0.500	3.375	1-1/2-18	0.687	CB2000-PSW
0.050 - 2.375	2.375 - 50.125	CB-3000DMA	3.000	0.750	3.375	1-1/2-18	1.000	CB3000-PSW
Metric (mm) .001mm adjustment on diameter								
3.00 - 42.00	34.00 - 73.00	CB-064MBMA	64.00	12.00	86.00	1-1/2-18	20.00	CB2000-PSW
10.00 - 73.00	60.00 - 130.00	CB-076MDMA	76.00	20.00	86.00	1-1/2-18	25.00	CB3000-PSW



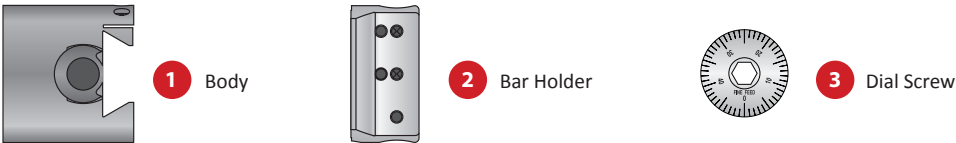
Icon reference key on B: 7

A

DRILLING

CB Style boring head replacement parts

Standard adjusting | Micro adjusting

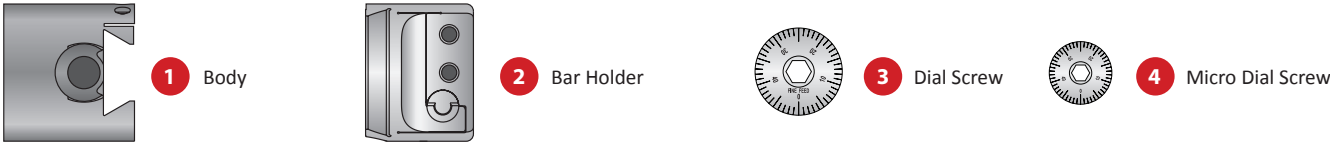


B

BORING

Standard adjusting

Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
CB-1500B	CB1500-HDW	CB1500-BD	MB002-BH	DS-CB2
CB-2375A	CB1500-HDW	CB1500-BD	MB152-BH	DS-CB2
CB-202A	CB2000-HDW	CB2000-BD	CB202A-BH	DS-CB2
CB-202B	CB2000-HDW	CB2000-BD	CB202B-BH	DS-CB2
CB-203D	CB3000-HDW	CB3000-BD	CB203D-BH	DS-CB3
CB-204E	CB4000-HDW	CB4000-BD	CB204E-BH	DS-CB4
CB-206F	CB6000-HDW	CB6000-BD	CB206F-BH	DS-CB206
Metric (mm)				
CB-038MA	CB038M-HDW	CB038M-BD	CB038MA-BH	DS-CB050M
CB-038MB	CB038M-HDW	CB038M-BD	CB038MB-BH	DS-CB050M
CB-038MC	CB038M-HDW	CB038M-BD	CB038MC-BH	DS-CB050M
CB-050MA	CB050M-HDW	CB050M-BD	CB050MA-BH	DS-CB050M
CB-050MB	CB050M-HDW	CB050M-BD	CB050MB-BH	DS-CB050M
CB-076MD	CB076M-HDW	CB076M-BD	CB076MD-BH	DS-CB076M
CB-101ME	CB101M-HDW	CB101M-BD	CB101ME-BH	DS-CB101M



C

REAMING

Micro adjusting

Head Part No.	Hardware Kit	1	2	3	4	 Wedge
Imperial (inch)						
CB-1500AMA	CB1500-HDW	CB1500-BD	CB1500AMA-BH	DS-CR2	DS-MA1500	MAW-1500
CB-2500BMA	CB2000-HDW	CB2500-BD	CB2500BMA-BH	DS-CB25	DS-MA2500	MAW-2500
CB-3000DMA	CB3000-HDW	CB3000-BD	CB3000DMA-BH	DS-CB3	DS-MA2500	MAW-3000
Metric (mm)						
CB-064MBMA	CB050M-HDW	CB064M-BD	CB064MBMA-BH	DS-CB064M	DS-MA064M	MAW-2000
CB-076MDMA	CB076M-HDW	CB076M-BD	CB076MDMA-BH	DS-CB076M	DS-MA064M	MAW-2000



CB Style boring heads

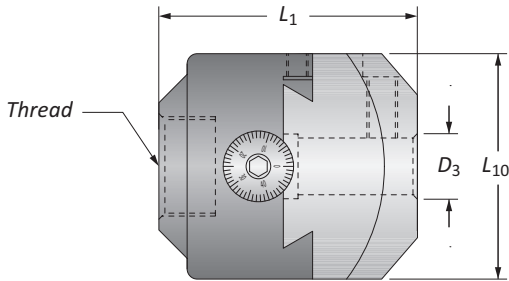
Square style

|

Slotted style

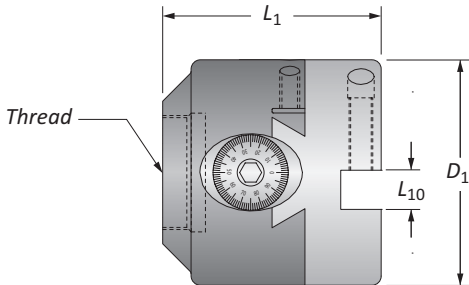
|

Bore diameter range: 0.050" - 4.250"



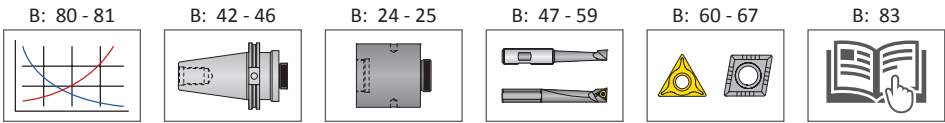
Square style

D ₁ Range	D ₃	L ₁₀	L ₁	Part No.	Thread	Offset
Imperial (inch) .001" adjustment on diameter						
0.050 - 1.625	0.500	1.50 SQ	2.250	SQ-1500B	7/8-20	0.526
0.050 - 2.375	0.500	2.00 SQ	2.250	SQ-2000B	7/8-20	0.938
0.500 - 4.250	0.750	3.00 SQ	2.937	SQ-3000D	1-1/2-18	1.500
0.500 - 4.250	1.000	3.00 SQ	2.937	SQ-3000E	1-1/2-18	1.500



Slotted style

D ₁	L ₁₀	L ₁	Part No.	Thread	Offset
Imperial (inch) .001" adjustment on diameter					
2.00	0.375	2.406	CSL-202	7/8-20	0.625
3.00	0.500	2.875	CSL-203	1-1/2-18	1.000
4.00	0.750	3.375	CSL-204	1-1/2-18	1.625



Icon reference key on B: 7

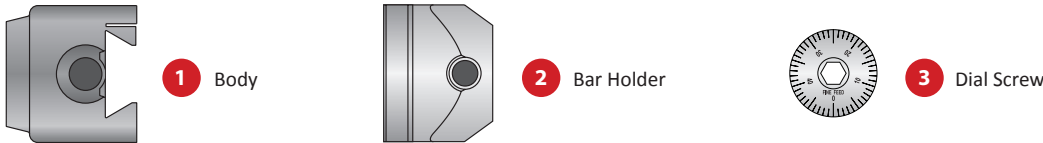


CB Style boring head replacement parts

Square style

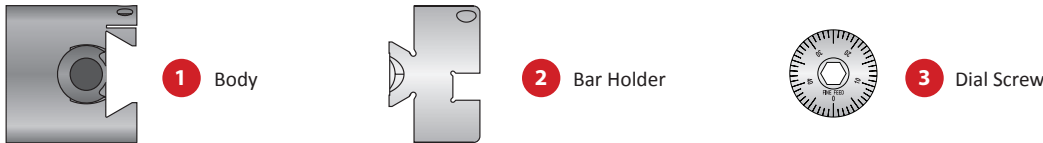
|

Slotted style



Square style

Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
SQ-1500B	S1500-HDW	S1500-BD	S1500B-BH	DS-CB2
SQ-2000B	S2000-HDW	S2000-BD	S2000B-BH	DS-CT3000
SQ-3000D	S3000-HDW	S3000-BD	S3000D-BH	DS-CB4
SQ-3000E	S3000-HDW	S3000-BD	S3000E-BH	DS-CB4



Slotted style

Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
CSL-202	CB2000-HDW	CB2000-BD	SL202-BH	DS-CB2
CSL-203	CB3000-HDW	CB3000-BD	SL203-BH	DS-CB3
CSL-204	CB4000-HDW	CB4000-BD	SL204-BH	DS-CB4

A

Boring and Facing heads

CNC style | Manual style | Bore diameter range: 0.050" - 10.625" (10.0mm - 288.0mm)

DRILLING

B

BORING

C

REAMING

D

BURNISHING

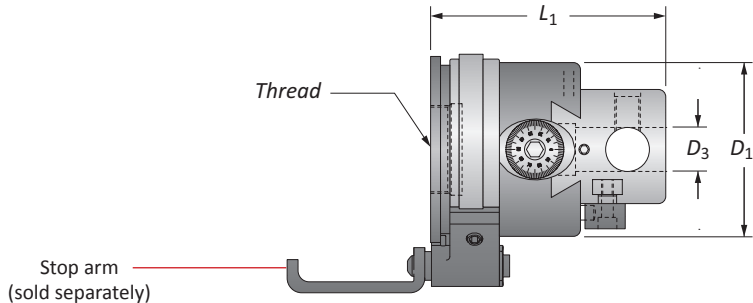
E

THREADING

X

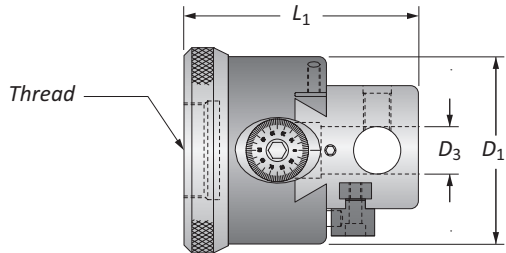
SPECIALS

Standard feed: 0.003" per revolution
Fine feed: 0.0015" per revolution



CNC style									
Bore Diameter			Part No.	D ₁	D ₃	L ₁	Thread	Offset	Feed
Center Hole	Outboard Hole	Cross Hole*							
Imperial (inch) .001" adjustment on diameter									
0.050 - 2.875	2.375 - 4.750	4.937 - 10.625	BFC-300D BFC-300DFF	3.000	0.750	3.875	1-1/2-18	0.812	Standard Fine
Metric (mm) .02mm adjustment on diameter									
10.00 - 76.00	60.00 - 120.00	125.00 - 288.00	BFC-076MD BFC-076MDFF	76.00	20.00	98.00	1-1/2-18	22.00	Standard Fine

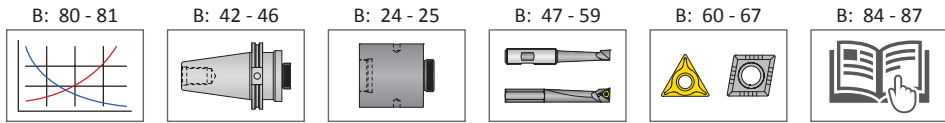
*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.
See stop arm options on following page.
See Boring and Facing boring bar option on following page.



Standard feed: 0.08mm per revolution
Fine feed: 0.04mm per revolution

Bore Diameter			Part No.	D ₁	D ₃	L ₁	Thread	Offset	Feed
Center Hole	Outboard Hole	Cross Hole*							
Imperial (inch) .001" adjustment on diameter									
0.050 - 2.875	2.375 - 4.750	4.937 - 10.625	BFM-300D BFM-300DFF	3.000	0.750	3.875	1-1/2-18	0.812	Standard Fine
Metric (mm) .02mm adjustment on diameter									
10.00 - 76.00	60.00 - 120.00	125.00 - 288.00	BFM-076MD BFM-076MDFF	76.00	20.00	98.00	1-1/2-18	22.00	Standard Fine

*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.
See Boring and Facing boring bar option on following page.



Icon reference key on B: 7

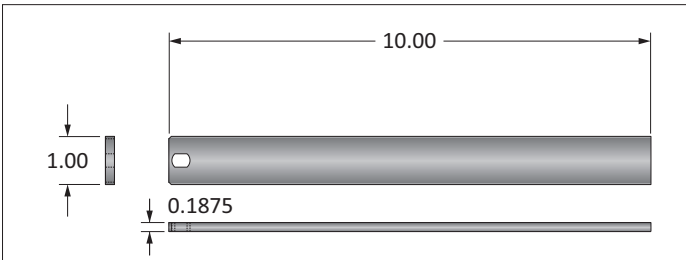
Boring and Facing heads

CNC style | Stop arms

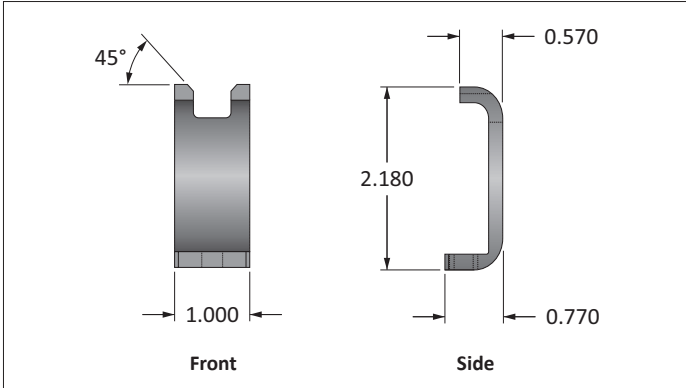
Stop Arms

Machine	Stop Arm Type	Part No.
Imperial (inch)		
-	Blank	BFC-300DSAB
Fadal	V-40	BFC-300DSAFV40
	BT-40	BFC-300DSEBT40
HAAS	V-40	BFC-300DSAHV40
	BT-40	BFC-300DSAHBT40

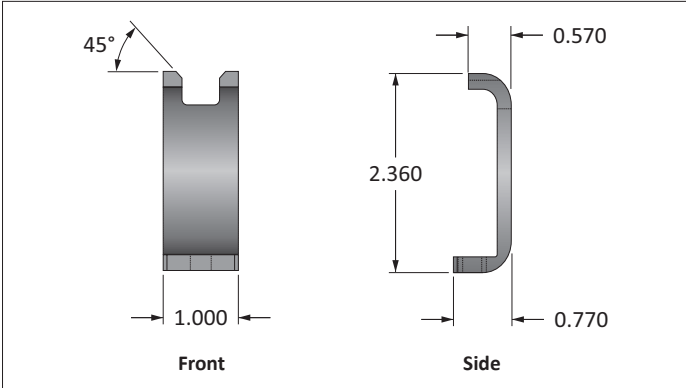
Blank



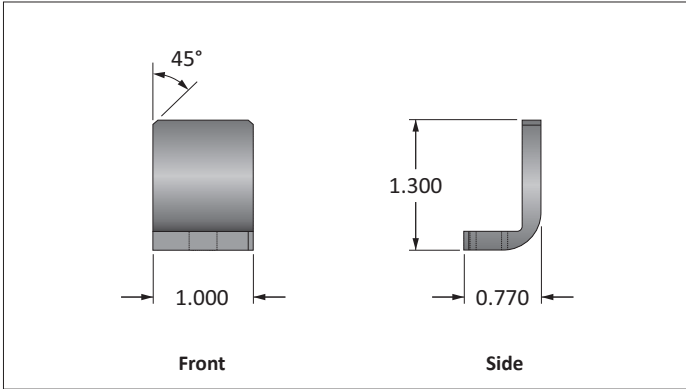
Fadal V-40



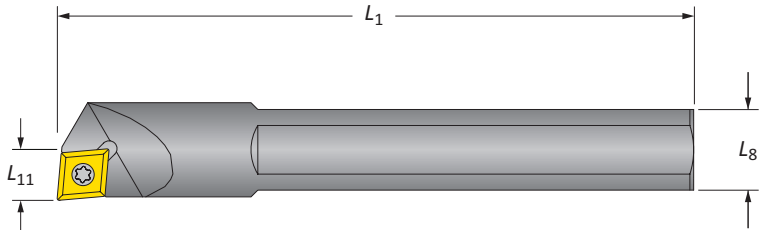
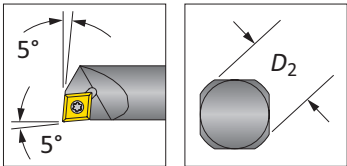
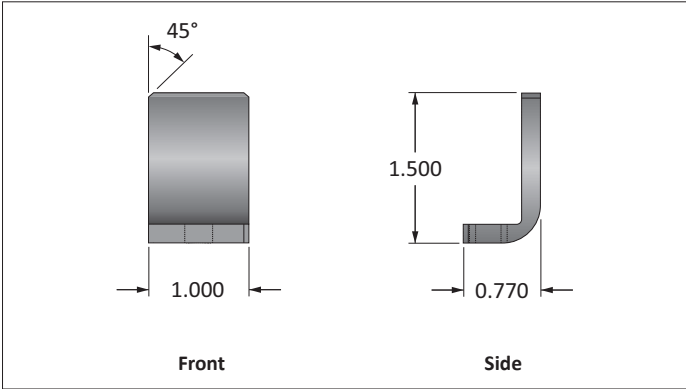
Fadal BT-40



HAAS V-40



HAAS BT-40



Boring and Facing boring bar

L_{11}	L_1	L_8	D_2	Part No.	Insert		
					I.C.	T_1	Shape / Style
Imperial (inch)							
0.406	5.00	0.640	0.750Ø	BFB-075D	0.375	0.156	◇ CP or CC

Inserts sold separately.

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

E

THREADING

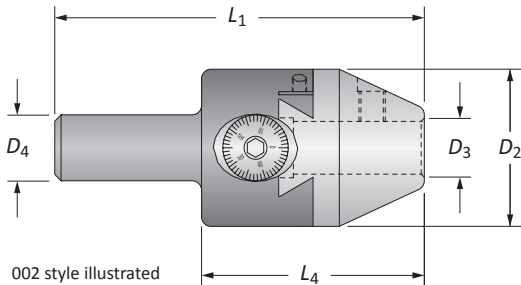
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SPECIALS

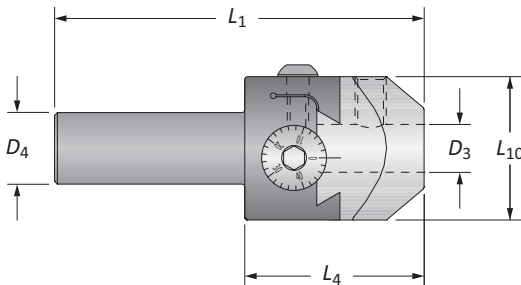


Tiny Mite boring heads

002 and 152 style | TMT style | Bore diameter range: 0.050" - 1.625"



Bore Diameter Range		Part No.	D ₂	D ₃	D ₄	L ₄	L ₁	Offset
Center Hole	Outboard Hole							
Imperial (inch) .001" adjustment on diameter								
0.050 - 1.625	-	MB002-500	1.50	0.500	0.500	2.125	3.500	0.562
		MB002-625			0.625			
		MB002-750			0.750			
	1.000 - 2.500	MB152-500		0.500				
		MB152-625		0.625				
		MB152-750	0.750					



TMT style							
Bore Diameter Range		Part No.	D ₃	L ₁₀	L ₄	L ₁	D ₄
Center Hole	Outboard Hole						
Imperial (inch) .001" adjustment on diameter							
0.050 - 0.580	-	TMT-0750H	0.250Ø	0.750	1.00	2.00	0.375
0.050 - 1.100	0.670 - 1.730	TMT-1000H		1.000			0.500

B: 80 - 81

B: 47 - 59

B: 60 - 67

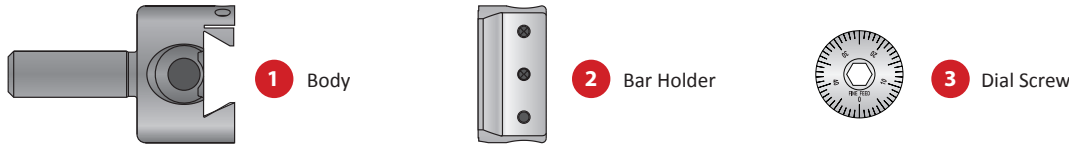
B: 83

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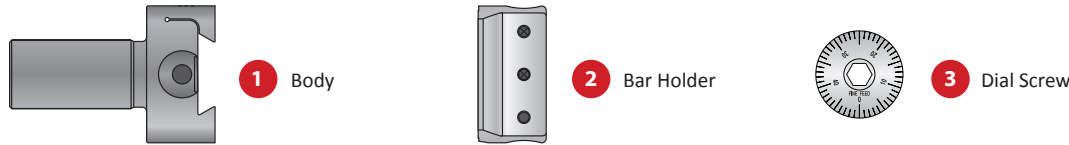


Tiny Mite boring head replacement parts

002 and 152 style | TMT style



Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
MB002-500	CB1500-HDW	MB002-500-BD	MB002-BH	DS-CB2
MB002-625	CB1500-HDW	MB002-625-BD	MB002-BH	DS-CB2
MB002-750	CB1500-HDW	MB002-750-BD	MB002-BH	DS-CB2
MB152-500	CB1500-HDW	MB002-500-BD	MB152-BH	DS-CB2
MB152-625	CB1500-HDW	MB002-625-BD	MB152-BH	DS-CB2
MN152-750	CB1500-HDW	MB002-750-BD	MB152-BH	DS-CB2



Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
TMT-0750H	TMT0750-HDW	TMT0750-BD	TMT0750H-BH	DS-MDB0750
TMT-1000H	TMT0750-HDW	TMT1000-BD	TMT1000H-BH	DS-CT1250

A

CRITERION boring head adapters

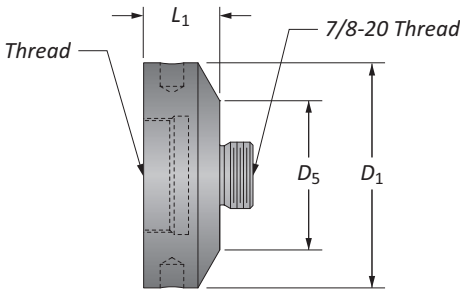
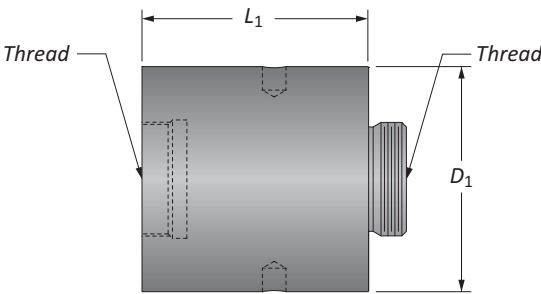
Extensions | Reducers

Extensions

				
<i>D₁</i>	<i>L₁</i>	Part No.	Pin Spanner Wrench	<i>Thread</i>
<i>Imperial (inch) - Extentions</i>				
1.00	1.00 2.00	CB1000-IA1000 CB1000-IA2000	CB1000-PSW	7/8-20
1.25	1.25 2.50	CB1250-IA1250 CB1250-IA2500	CB1250-PSW	
1.50	1.50 3.00	CB1500-IA1500 CB1500-IA3000	CB1500-PSW	
2.00	2.00 4.00	CB2000-IA2000 CB2000-IA4000	CB2000-PSW	
3.00	3.00 6.00	CB3000-IA3000 CB3000-IA6000	CB3000-PSW	1-1/2-18

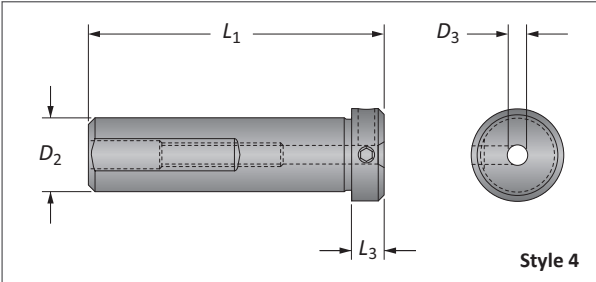
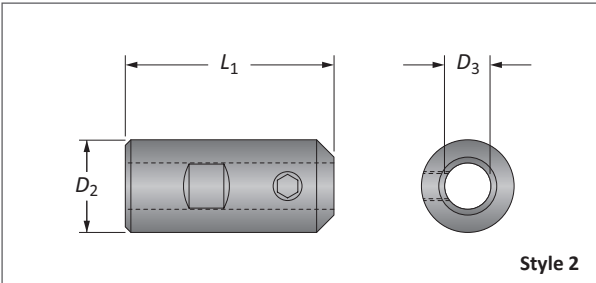
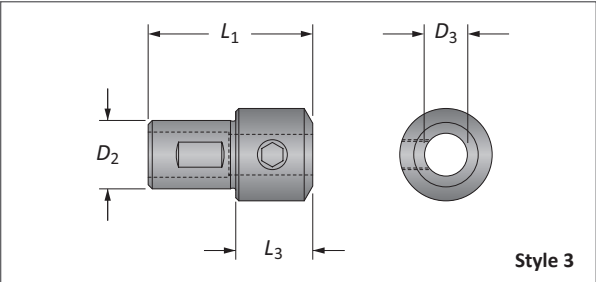
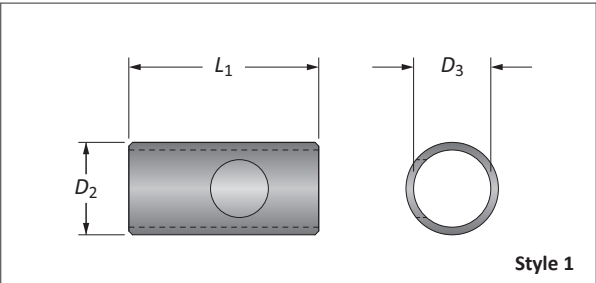
Reducers

					
<i>D₅</i>	<i>D₁</i>	<i>L₁</i>	Part No.	Pin Spanner Wrench	<i>Thread</i>
<i>Imperial (inch) - Reducers</i>					
1.00	1.50	1.00	CB1500-IRCB1000	CB1500-PSW	7/8-20
1.25	1.50	1.00	CB1500-IRCB1250		
1.00	2.00	1.00	CB2000-IRCB1000	CB2000-PSW	
1.25	2.00	1.00	CB2000-IRCB1250		
1.50	2.00	1.00	CB2000-IRCB1500		
1.00	3.00	1.25	CB3000-IRCB1000	CB3000-PSW	1-1/2-18
1.25	3.00	1.25	CB3000-IRCB1250		
1.50	3.00	1.25	CB3000-IRCB1500		
2.00	3.00	1.25	CB3000-IRCB2000		



CB Style boring heads

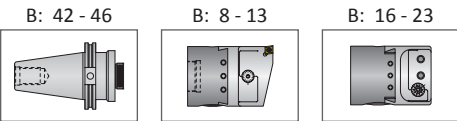
Bar holder adapters



D_3	D_2	L_1	L_3	Part No.	Style
Imperial (inch)					
0.125	0.250	0.695	0.200	BTH-01250250	3
	0.375	2.000	0.220	BTH-01250375	4
	0.500			BTH-01250500	
	0.625			BTH-01250625	
	0.750			BTH-01250750	
0.187	0.375 0.500	1.312	-	BTH-01870375 BTH-01870500	1
0.250	0.375	1.312	-	BTH-02500375	1
	0.500			BTH-02500500	
	0.625	2.000	0.220	BTH-02500625	4
	0.750			BTH-02500750	
0.312	0.375 0.500	1.312	-	BTH-03120375 BTH-03120500	1
0.375	0.750 1.000	2.406 2.250	-	BTH-03750750 BTH-03751000	2
0.500	0.750	2.406	0.910	BTH-05000750	3
	1.000	2.250	-	BTH-05001000	2
0.625	0.750	1.500	-	BTH-06250750	1
	1.000	2.406	1.120	BTH-06251000	3
0.750	1.000	2.406	1.120	BTH-07501000	3
1.000	1.500	3.000	1.000	BTH-10001500	
Metric (mm)					
10	12	32	-	BTH-10M12M	1
	20	65	24	BTH-10M20M	3
	25		-	BTH-10M25M	2
12	20	65	24	BTH-12M20M	3
	25		-	BTH-12M25M	2
20	25	70	28	BTH-20M25M	3

X

SPECIALS



Icon reference key on B: 7

A

DRILLING

B

BORING

C

REAMING

D

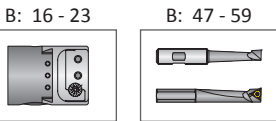
BURNISHING

F

THREADING

X

SPECIALS



Icon reference key on B: 7

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

E

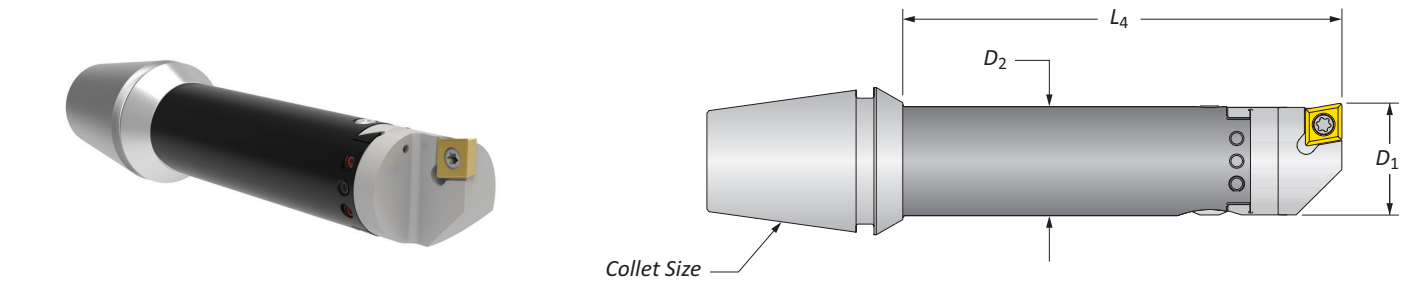
THREADING

X

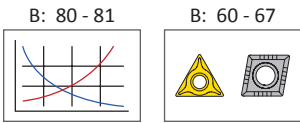
SPECIALS

CBER® boring heads

Standard adjusting | Bore diameter range: 0.672" - 1.600"



D ₁ Range	D ₂	L ₄	Part No.	Collet Size	 Collet Nut	 Collet Nut Wrench	Insert		
							I.C.	T ₁	Shape
Imperial (inch) .001" adjustment on diameter									
0.672 - 0.944	0.625	1.500	CBER16S-CP* CBER16-CP* CBER16S-TP* CBER16-TP*	ER16	-	CBER16-NUTW	0.250	0.094	 CP or CC
		2.500							
		1.500							
		2.500							
		1.500	CBER20S-CP CBER20-CP CBER20S-TP CBER20-TP	ER20	CBER20-NUT	CBER20-NUTW			 CP or CC
		2.500							
		1.500							
		2.500							
0.825 - 1.087	0.750	1.500	CBER25S-CP CBER25-CP CBER25S-TP CBER25-TP	ER25	CBER25-NUT	CBER25-NUTW			 CP or CC
		3.000							
		1.500							
		3.000							
1.050 - 1.320	1.000	2.000	CBER32S-CP CBER32-CP CBER32S-TP CBER32-TP	ER32	CBER32-NUT	CBER32-NUTW			 CP or CC
		4.000							
		2.000							
		4.000							
1.300 - 1.600	1.250	2.500	CBER40S-CP CBER40-CP CBER40S-TP CBER40-TP	ER40	CBER40-NUT	CBER40-NUTW	 CP or CC		
		5.000							
		2.500							
		5.000							
Metric (mm) .02mm adjustment on diameter									
17.1 - 23.9	15.9	38.1	CBER16MS-CP* CBER16M-CP* CBER16MS-TP* CBER16M-TP*	ER16	-	CBER16-NUTW	6.35	2.38	 CP or CC
		63.5							
		38.1							
		63.5							
		38.1	CBER20MS-CP CBER20M-CP CBER20MS-TP CBER20M-TP	ER20	CBER20-NUT	CBER20-NUTW			 CP or CC
		63.5							
		38.1							
		63.5							
20.1 - 27.6	19.05	38.1	CBER25MS-CP CBER25M-CP CBER25MS-TP CBER25M-TP	ER25	CBER25-NUT	CBER25-NUTW			 CP or CC
		76.2							
		38.1							
		76.2							
26.7 - 33.5	25.4	50.8	CBER32MS-CP CBER32M-CP CBER32MS-TP CBER32M-TP	ER32	CBER32-NUT	CBER32-NUTW			 CP or CC
		101.6							
		50.8							
		101.6							
33.1 - 40.6	31.75	63.5	CBER40MS-CP CBER40M-CP CBER40MS-TP CBER40M-TP	ER40	CBER40-NUT	CBER40-NUTW	 CP or CC		
		127							
		63.5							
		127							



Icon reference key on B: 7

Inserts sold separately.

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

E

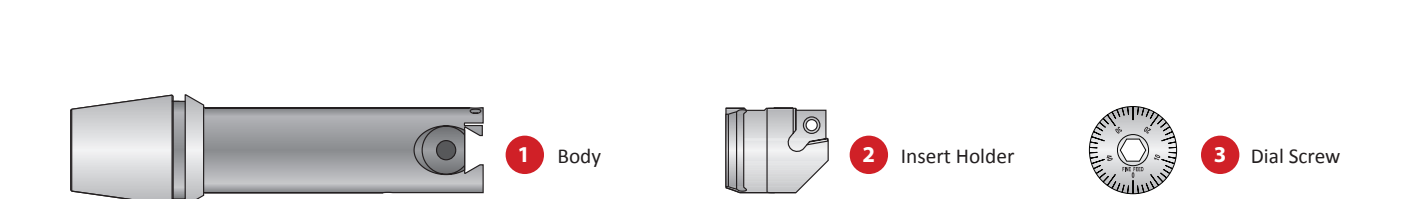
THREADING

X

SPECIALS

CBER® replacement parts

Standard adjusting



Head Part No.	Hardware Kit	1	2	3	 Torx Screw	 Torx Wrench
Imperial (inch)						
CBER16S-CP	CB0625-HDW	CBER16S-BD	CB0625CP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER16-CP	CB0625-HDW	CBER16BD	CB0625CP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER16S-TP	CB0625-HDW	CBER16S-BD	CB0625TP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER16-TP	CB0625-HDW	CBER16BD	CB0625TP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER20S-CP	CB0625-HDW	CBER20S-BD	CB0625CP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER20-CP	CB0625-HDW	CBER20BD	CB0625CP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER20S-TP	CB0625-HDW	CBER20S-BD	CB0625TP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER20-TP	CB0625-HDW	CBER20BD	CB0625TP-IH	DS-MDB0625	TXS-116-1	8T-7
CBER25S-CP	CB0750-HDW	CBER25S-BD	CB0750CP-IH	DS-MDB0750	TXS-116-1	8T-7
CBER25-CP	CB0750-HDW	CBER25BD	CB0750CP-IH	DS-MDB0750	TXS-116-1	8T-7
CBER25S-TP	CB0750-HDW	CBER25S-BD	CB0750TP-IH	DS-MDB0750	TXS-116-1	8T-7
CBER25-TP	CB0750-HDW	CBER25BD	CB0750TP-IH	DS-MDB0750	TXS-116-1	8T-7
CBER32S-CP	CB1000-HDW	CBER32S-BD	CB1000CP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER32-CP	CB1000-HDW	CBER32BD	CB1000CP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER32S-TP	CB1000-HDW	CBER32S-BD	CB1000TP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER32-TP	CB1000-HDW	CBER32BD	CB1000TP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER40S-CP	CB1250-HDW	CBER40S-BD	CB1250CP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER40-CP	CB1250-HDW	CBER40BD	CB1250CP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER40S-TP	CB1250-HDW	CBER40S-BD	CB1250TP-IH	DS-MDB1000	TXS-116-1	8T-7
CBER40-TP	CB1250-HDW	CBER40BD	CB1250TP-IH	DS-MDB1000	TXS-116-1	8T-7
Metric (mm)						
CBER16MS-CP	CB0625-HDW	CBER16MS-BD	CB016MCP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER16M-CP	CB0625-HDW	CBER16M-BD	CB016MCP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER16MS-TP	CB0625-HDW	CBER16MS-BD	CB016MTP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER16M-TP	CB0625-HDW	CBER16M-BD	CB016MTP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER20MS-CP	CB0625-HDW	CBER20MS-BD	CB016MCP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER20M-CP	CB0625-HDW	CBER20M-BD	CB016MCP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER20MS-TP	CB0625-HDW	CBER20MS-BD	CB016MTP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER20M-TP	CB0625-HDW	CBER20M-BD	CB016MTP-IH	DS-MDB16M	TXS-116-1	8T-7
CBER25MS-CP	CB0750-HDW	CBER25MS-BD	CB020MCP-IH	DS-MDB20M	TXS-116-1	8T-7
CBER25M-CP	CB0750-HDW	CBER25M-BD	CB020MCP-IH	DS-MDB20M	TXS-116-1	8T-7
CBER25MS-TP	CB0750-HDW	CBER25MS-BD	CB020MTP-IH	DS-MDB20M	TXS-116-1	8T-7
CBER25M-TP	CB0750-HDW	CBER25M-BD	CB020MTP-IH	DS-MDB20M	TXS-116-1	8T-7
CBER32MS-CP	CB1000-HDW	CBER32MS-BD	CB025MCP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER32M-CP	CB1000-HDW	CBER32M-BD	CB025MCP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER32MS-TP	CB1000-HDW	CBER32MS-BD	CB025MTP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER32M-TP	CB1000-HDW	CBER32M-BD	CB025MTP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER40MS-CP	CB1250-HDW	CBER40MS-BD	CB032MCP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER40M-CP	CB1250-HDW	CBER40M-BD	CB032MCP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER40MS-TP	CB1250-HDW	CBER40MS-BD	CB032MTP-IH	DS-MDB25M	TXS-116-1	8T-7
CBER40M-TP	CB1250-HDW	CBER40M-BD	CB032MTP-IH	DS-MDB25M	TXS-116-1	8T-7

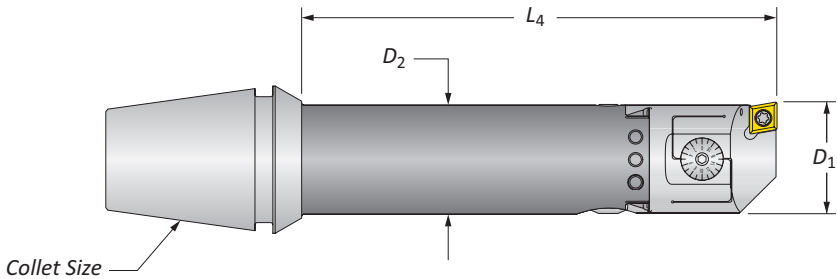
Screws sold in multiples of 10.

A

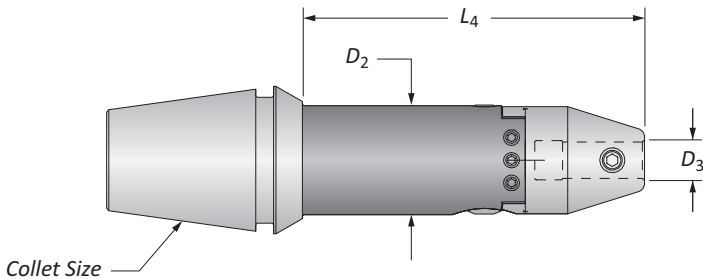
DRILLING

CBER® boring heads

Micro adjusting | SGL style

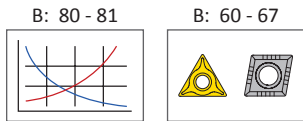


Micro adjusting									
D ₁ Range	D ₂	L ₄	Part No.	Collet Size			Insert		
							I.C.	T ₁	Shape
Imperial (inch) .001" adjustment on diameter									
1.050 - 1.320	1.000	2.700	CBER32S-CPMA	ER32	CBER32-NUT	CBER32-NUTW	0.250	0.094	◇ CP or CC
		4.700	CBER32-CPMA						◇ CP or CC
		2.700	CBER32S-TPMA						▲ TP
		4.700	CBER32-TPMA						▲ TP
1.300 - 1.600	1.250	3.200	CBER40S-CPMA	ER40	CBER40-NUT	CBER40-NUTW	0.250	0.094	◇ CP or CC
		5.700	CBER40-CPMA						◇ CP or CC
		3.200	CBER40S-TPMA						▲ TP
		5.700	CBER40-TPMA						▲ TP
Metric (mm) .025mm adjustment on diameter									
26.7 - 33.5	25.4	68.5	CBER32MS-CPMA	ER32	CBER32-NUT	CBER32-NUTW	6.35	2.38	◇ CP or CC
		119.4	CBER32M-CPMA						◇ CP or CC
		68.5	CBER32MS-TPMA						▲ TP
		119.4	CBER32M-TPMA						▲ TP
33.1 - 40.6	31.75	81.2	CBER40MS-CPMA	ER40	CBER40-NUT	CBER40-NUTW	6.35	2.38	◇ CP or CC
		144.7	CBER40M-CPMA						◇ CP or CC
		81.2	CBER40MS-TPMA						▲ TP
		144.7	CBER40M-TPMA						▲ TP



SGL style							
D ₁ Range	D ₃	D ₂	L ₄	Part No.	Collet Size		
Imperial (inch) .001" adjustment on diameter							
0.050 - 0.380	0.125	0.625	1.500	CBER16S-SG*	ER16	-	CBER16-NUTW
			2.500	CBER16-SG*			
			1.500	CBER20S-SG	ER20	CBER20-NUT	CBER20-NUTW
			2.500	CBER20-SG			
0.050 - 0.470	0.250	0.750	1.687	CBER25S-SG	ER25	CBER25-NUT	CBER25-NUTW
			3.187	CBER25-SG			
0.120 - 0.645	0.375	1.000	2.437	CBER32S-SG	ER32	CBER32-NUT	CBER32-NUTW
			4.437	CBER32-SG			
0.250 - 0.800	0.500	1.250	2.781	CBER40S-SG	ER40	CBER40-NUT	CBER40-NUTW
			5.281	CBER40-SG			

*NOTE: CBER16 style boring system includes the ER16 collet nut with M22x1.5 thread as part of the assembly.



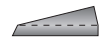
Icon reference key on B: 7

Inserts sold separately.

CBER® replacement parts

Micro adjusting | SGL style



Micro adjusting								
Head Part No.	Hardware Kit	1	2	3	4			
Imperial (inch)								
CBER32S-CPMA	CB1000-HDW	CBER32S-BD	CB1000CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32-CPMA	CB1000-HDW	CBER32BD	CB1000CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32S-TPMA	CB1000-HDW	CBER32S-BD	CB1000TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32-TPMA	CB1000-HDW	CBER32BD	CB1000TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40S-CPMA	CB1250-HDW	CBER40S-BD	CB1250CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40-CPMA	CB1250-HDW	CBER40S-BD	CB1250CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40S-TPMA	CB1250-HDW	CBER40S-BD	CB1250TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40-TPMA	CB1250-HDW	CBER40BD	CB1250TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
Metric (mm)								
CBER32MS-CPMA	CB1000-HDW	CBER32MS-BD	CB025MCPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32M-CPMA	CB1000-HDW	CBER32M-BD	CB025MCPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32MS-TPMA	CB1000-HDW	CBER32MS-BD	CB025MTPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER32M-TPMA	CB1000-HDW	CBER32M-BD	CB025MTPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40MS-CPMA	CB1250-HDW	CBER40MS-BD	CB032MCPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40M-CPMA	CB1250-HDW	CBER40M-BD	CB032MCPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40MS-TPMA	CB1250-HDW	CBER40MS-BD	CB032MTPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBER40M-TPMA	CB1250-HDW	CBER40M-BD	CB032MTPMA-IH	DS-MDB25M	DS-MA1500	MAW-1000	TXS-116-1	8T-7



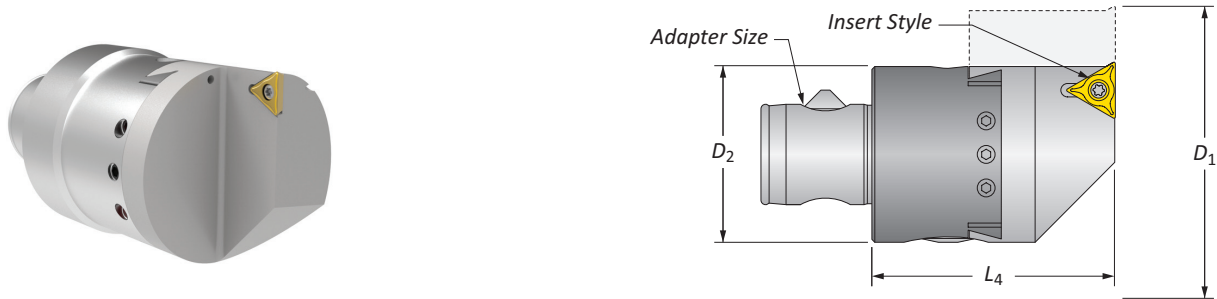
SGL style				
Head Part No.	Hardware Kit	1	2	3
Imperial (inch)				
CBER16S-SG	CB0625-HDW	CBER16S-BD	SGL0625G-BH	DS-MDB0625
CBER16-SG	CB0625-HDW	CBER16BD	SGL0625G-BH	DS-MDB0625
CBER20S-SG	CB0625-HDW	CBER20S-BD	SGL0625G-BH	DS-MDB0625
CBER20-SG	CB0625-HDW	CBER20BD	SGL0625G-BH	DS-MDB0625
CBER25S-SH	CB0750-HDW	CBER25S-BD	SGL0750H-BH	DS-MDB0750
CBER25-SH	CB0750-HDW	CBER25BD	SGL0750H-BH	DS-MDB0750
CBER32S-SA	CB1000-HDW	CBER32S-BD	SGL1000A-BH	DS-MDB1000
CBER32-SA	CB1000-HDW	CBER32BD	SGL1000A-BH	DS-MDB1000
CBER40S-SB	CB1250-HDW	CBER40S-BD	SGL1250B-BH	DS-MDB1000
CBER40-SB	CB1250-HDW	CBER40BD	SGL1250B-BH	DS-MDB1000

Screws sold in multiples of 10.

A

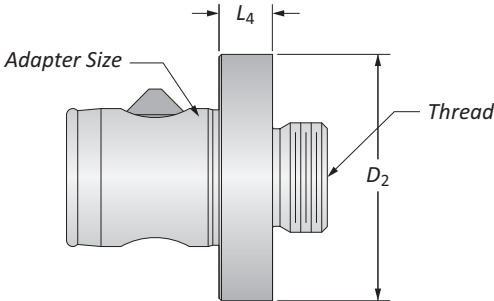
Cri-Tip® boring heads - Komet® ABS® connection

Standard adjusting | Bore diameter range: 1.585" - 5.065"

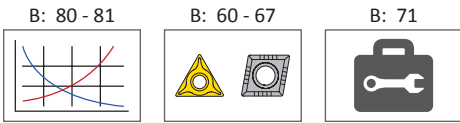


D ₁ Range	D ₂	L ₄	Adapter Size	Part No.	Insert		
					I.C.	T ₁	Shape
Imperial (inch) .001" adjustment on diameter							
1.585 - 2.700	1.500	2.550	A40	CTP1500-A40TP CTP1500-A40CP	0.375	0.125	▲ TP
		2.800*	A50	CTP1500-A50TP CTP1500-A50CP CTP2000-A50TP CTP2000-A50CP		0.156	◆ CP or CC
0.125	▲ TP						
0.156	◆ CP or CC						
0.125	▲ TP						
2.060 - 3.320	2.000	2.925	A80	CTP3000-A80TP CTP3000-A80CP		0.156	◆ CP or CC
3.065 - 5.065	3.000	4.250			0.125	▲ TP	
					0.156	◆ CP or CC	
Metric (mm) .02mm adjustment on diameter							
41.00 - 68.00	38.00	64.00	A40	CTP038M-A40TP CTP038M-A40CP	9.53	3.18	▲ TP
		71.00*	A50	CTP038M-A50TP CTP038M-A50CP CTP050M-A50TP CTP050M-A40CP		3.96	◆ CP or CC
3.18	▲ TP						
3.96	◆ CP or CC						
3.18	▲ TP						
53.00 - 84.00	50.00	74.00	A80	CTP076M-A80TP CTP076M-A80CP		3.96	◆ CP or CC
78.00 - 128.00	76.00	100.00			3.18	▲ TP	
			3.96	◆ CP or CC			

*Max bore depth is 2.087" (53mm).



Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.430	A40	CTP1500-A400875	7/8-20
2.000	0.430	A50	CTP2000-A500875	7/8-20
3.000	1.050	A80	CTP3000-A801500	1-1/2-18

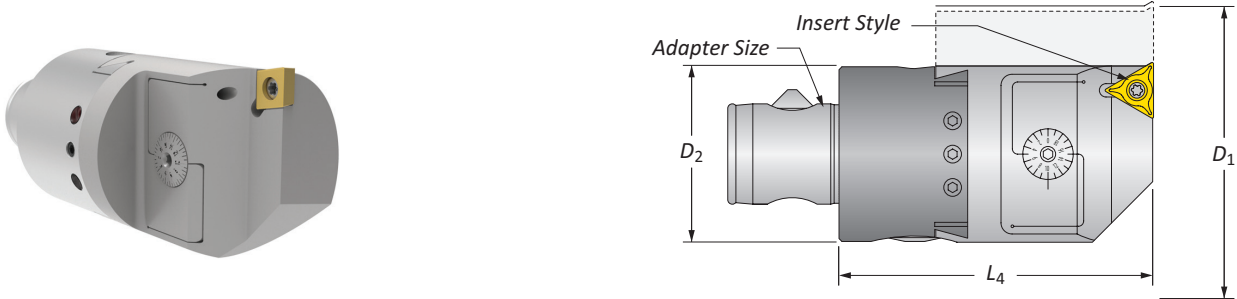


Icon reference key on B: 7

Inserts sold separately.

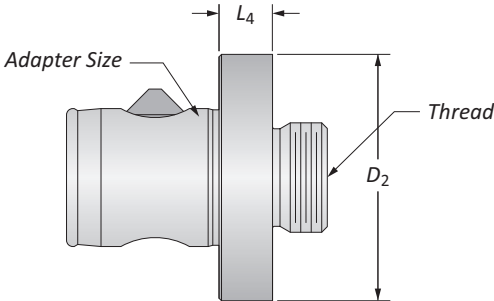
Cri-Tip® boring heads - Komet® ABS® connection

Micro adjusting | Bore diameter range: 0.250" - 1.250" (17.1mm - 40.6mm)

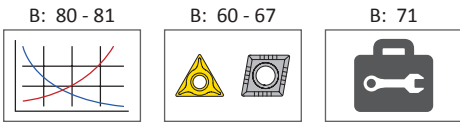


D ₁ Range	D ₂	L ₄	Adapter Size	Part No.	Insert			
					I.C.	T ₁	Shape	
Imperial (inch) .00005" adjustment on diameter								
1.585 - 2.700	1.500	3.250	A40	CTP1500-A40TPMA CTP1500-A40CPMA	0.375	0.125	▲ TP	
		3.500*	A50	CTP1500-A50TPMA CTP1500-A50CPMA		0.156	◆ CP or CC	
2.060 - 3.320	2.000	3.750		CTP2000-A50TPMA CTP2000-A40CPMA		0.125	▲ TP	
3.065 - 5.065	3.000	4.875		A80		CTP3000-A80TPMA CTP3000-A80CPMA	0.156	◆ CP or CC
			0.125			▲ TP		
Metric (mm) .001mm adjustment on diameter								
41.00 - 68.00	38.00	82.00	A40	CTP038M-A40TPMA CTP038M-A40CPMA		9.53	3.18	▲ TP
		88.00*	A50	CTP038M-A50TPMA CTP038M-A50CPMA	3.96		◆ CP or CC	
53.00 - 84.00	50.00	95.00		CTP050M-A50TPMA CTP050M-A40CPMA	3.18		▲ TP	
78.00 - 128.00	76.00	123.00		A80	CTP076M-A80TPMA CTP076M-A80CPMA		3.96	◆ CP or CC
			3.18		▲ TP			

*Max bore depth is 2.087" (53mm).



Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.430	A40	CTP1500-A400875	7/8-20
2.000	0.430	A50	CTP2000-A500875	7/8-20
3.000	1.050	A80	CTP3000-A801500	1-1/2-18

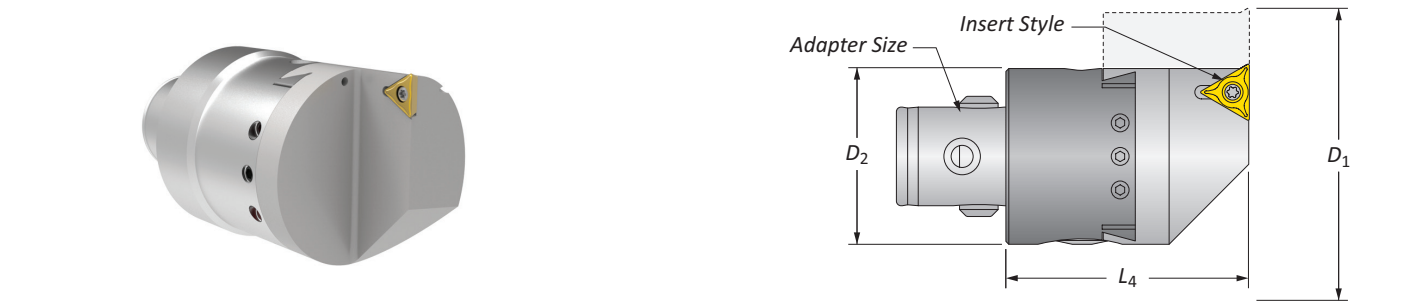


Icon reference key on B: 7

Inserts sold separately.

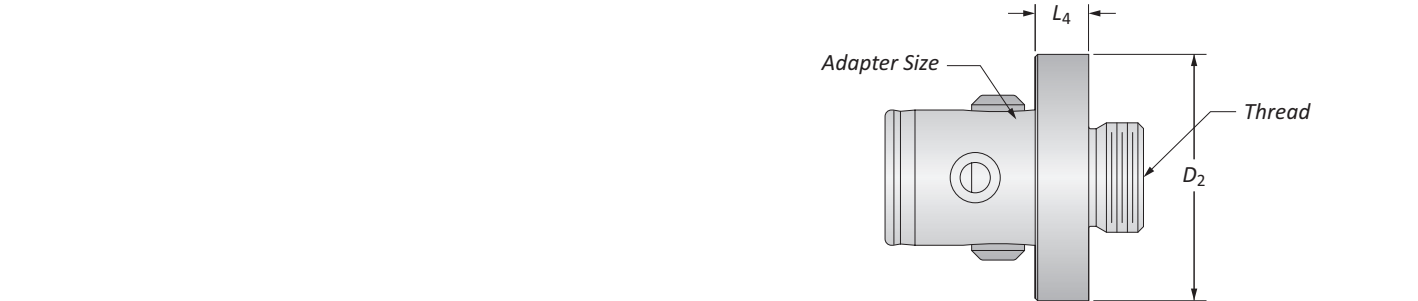
Cri-Tip® boring heads - Big® Kaiser® connection

Standard adjusting | Bore diameter range: 1.585" - 5.065" (41mm - 128mm)

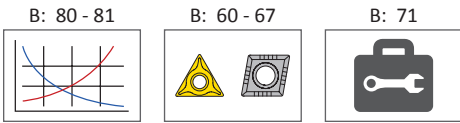


D ₁ Range	D ₄	L ₄	Adapter Size	Part No.	Insert		
					I.C.	T ₁	Shape
Imperial (inch) .001" adjustment on diameter							
1.585 - 2.700	1.500	2.305	KA4	CTP1500-K4TP CTP1500-K4CP	0.375	0.125	▲ TP
		2.550*	KA5	CTP1500-K5TP CTP1500-K5CP		0.156	◇ CP or CC
0.125	▲ TP						
0.156	◇ CP or CC						
0.125	▲ TP						
2.060 - 3.320	2.000	2.740	CTP2000-K5TP CTP2000-K5CP	0.156		◇ CP or CC	
3.065 - 5.065	3.000	3.940	KA7	CTP3000-K7TP CTP3000-K7CP	0.125	▲ TP	
					0.156	◇ CP or CC	
Metric (mm) .02mm adjustment on diameter							
41.00 - 68.00	38.00	58.00	KA4	CTP038M-K4TP CTP038M-K4CP	9.53	3.18	▲ TP
		64.00*	KA5	CTP038M-K5TP CTP038M-K5CP		3.96	◇ CP or CC
3.18	▲ TP						
3.96	◇ CP or CC						
3.18	▲ TP						
53.00 - 84.00	50.00	69.00	CTP050M-K5TP CTP050M-K5CP	3.96		◇ CP or CC	
78.00 - 128.00	76.00	100.00	KA7	CTP076M-K7TP CTP076M-K7CP	3.18	▲ TP	
					3.96	◇ CP or CC	

*Max bore depth is 2.087" (53mm).



Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.500	KA4	CTP1500-K408752	7/8-20
2.000	0.500	KA5	CTP2000-K508752	7/8-20
3.000	0.750	KA7	CTP3000-K715001	1-1/2-18

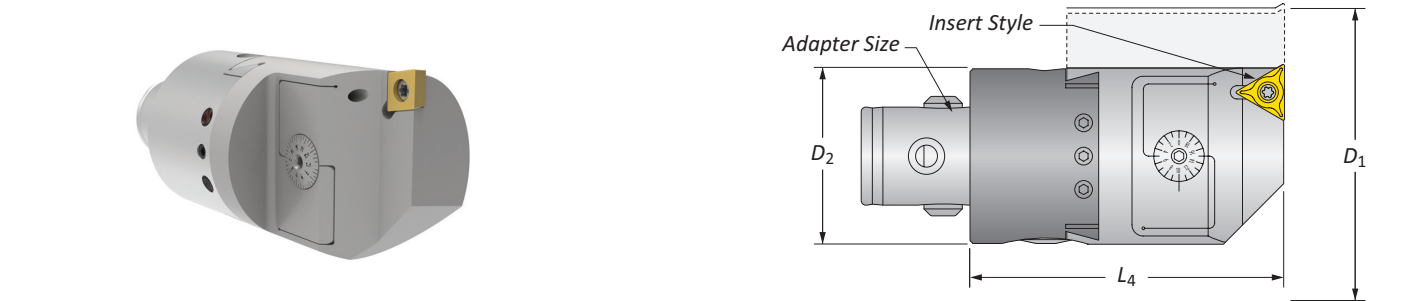


Icon reference key on B: 7

Inserts sold separately.

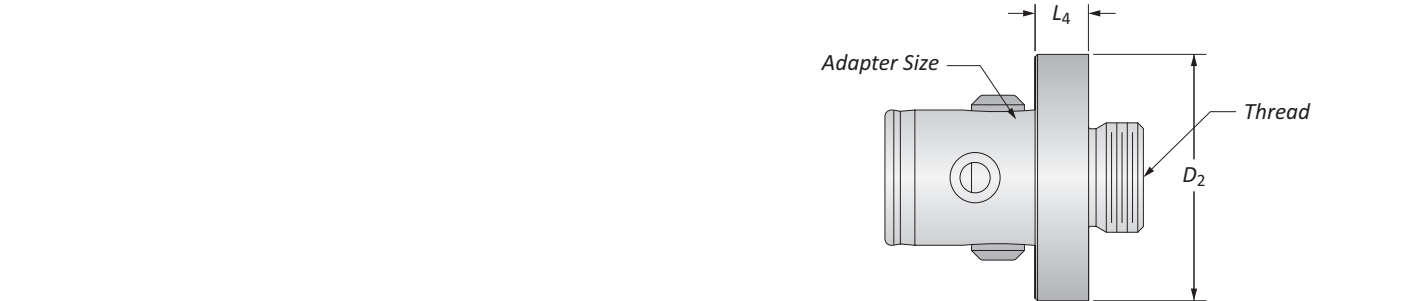
Cri-Tip® boring heads - Big® Kaiser® connection

Micro adjusting | Bore diameter range: 1.585" - 5.065" (41mm - 128mm)

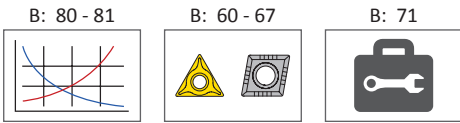


D ₁ Range	D ₄	L ₄	Adapter Size	Part No.	Insert		
					I.C.	T ₁	Shape
Imperial (inch) .00005" adjustment on diameter							
1.585 - 2.700	1.500	3.000	KA4	CTP1500-K4TPMA CTP1500-K4CPMA	0.375	0.125	▲ TP
		3.250*	KA5	CTP1500-K5TPMA CTP1500-K5CPMA		0.156	◆ CP or CC
2.060 - 3.320	2.000	3.560		CTP2000-K5TPMA CTP2000-K5CPMA		0.125	▲ TP
3.065 - 5.065	3.000	4.560	KA7	CTP3000-K7TPMA CTP3000-K7CPMA		0.156	◆ CP or CC
				0.125		▲ TP	
				0.156		◆ CP or CC	
Metric (mm) .001mm adjustment on diameter							
41.00 - 68.00	38.00	76.00	KA4	CTP038M-K4TPMA CTP038M-K4CPMA	9.53	3.18	▲ TP
		82.00*	KA5	CTP038M-K5TPMA CTP038M-K5CPMA		3.96	◆ CP or CC
53.00 - 84.00	50.00	90.00		CTP050M-K5TPMA CTP050M-K5CPMA		3.18	▲ TP
78.00 - 128.00	76.00	115.00	KA7	CTP076M-K7TPMA CTP076M-K7CPMA		3.96	◆ CP or CC
				3.18		▲ TP	
				3.96		◆ CP or CC	

*Max bore depth is 2.087" (53mm).



Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.500	KA4	CTP1500-K408752	7/8-20
2.000	0.500	KA5	CTP2000-K508752	7/8-20
3.000	0.750	KA7	CTP3000-K715001	1-1/2-18

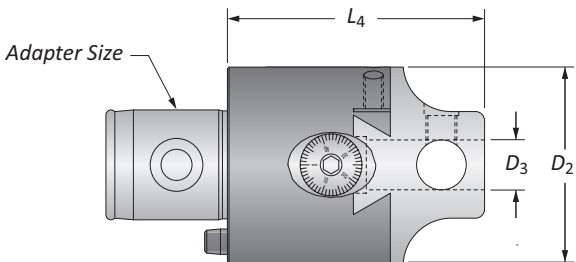


Icon reference key on B: 7

Inserts sold separately.

Cri-Tip® boring heads - Komet® ABS® connection

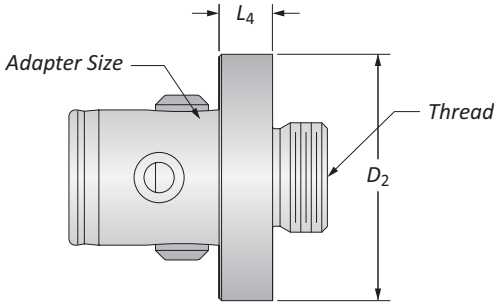
CB Style standard adjusting | Bore diameter range: 0.050" - 11.000" (3mm - 279mm)



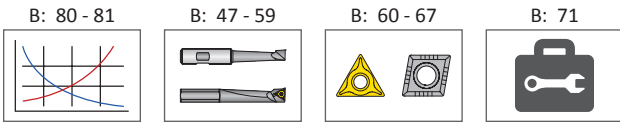
Bore Diameter			Part No.	D ₃	D ₂	L ₄	Adapter Size	Offset	
Center Hole	Outboard Hole	Cross Hole*							
Imperial (inch) .001" adjustment on diameter									
0.050 - 1.625	-	-	CTP1500-A40002	0.500	1.500	2.530	A40	0.562	
	1.000 - 2.500	-	CTP1500-A40152	0.375		2.780	A50		
	-	-	CTP1500-A50002	0.500					
	1.000 - 2.500	-	CTP1500-A50152	0.375					
0.050 - 1.750	1.312 - 3.000	2.875 - 6.687	CTP2000-A50202A	0.375	2.000			2.600	A80
			CTP2000-A50202B	0.500					
0.050 - 3.250	2.375 - 50.125	4.937 - 11.000	CTP3000-A80203D	0.750	3.000	3.945	1.000		
0.050 - 3.250		-	**CTP3000-A8030MA	0.750					
Metric (mm) .025mm adjustment on diameter									
3.00 - 40.00	-	-	CTP038M-A40B	12.00	38.00	64.00		A40	14
			CTP038M-A50B			71.00	A50	14	
3.00 - 44.00	35.00 - 76.00	73.00 - 169.00	CTP050M-A50B	12.00	50.00	66.00	A50	16	
10.00 - 70.00	60.00 - 130.00	126.00 - 279.00	CTP076M-A80B	20.00	76.00	100.00	A80	25	
		-	**CTP076M-A80DMA			106.00		25	

*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.

**Micro adjusting (0.00005" adjustment on diameter).



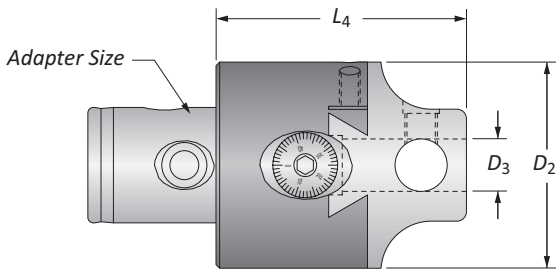
Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.430	A40	CTP1500-A400875	7/8-20
2.000	0.430	A50	CTP2000-A500875	7/8-20
3.000	1.050	A80	CTP3000-A801500	1-1/2-18



Icon reference key on B: 7

Cri-Tip® boring heads - Big® Kaiser® connection

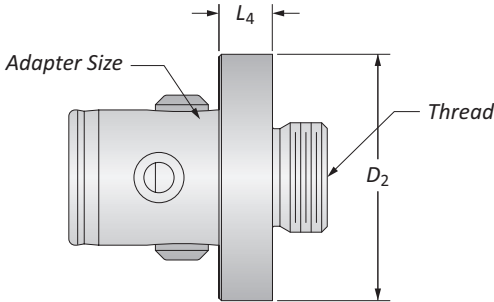
CB Style standard adjusting | Bore diameter range: 0.050" - 11.000" (3mm - 279mm)



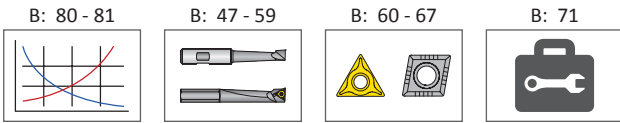
Bore Diameter			Part No.	D ₃	D ₂	L ₄	Adapter Size	Offset
Center Hole	Outboard Hole	Cross Hole*						
Imperial (inch) .001" adjustment on diameter								
0.050 - 1.625	-	-	CTP1500-K4002	0.500	1.500	2.280	KA4	0.562
	1.000 - 2.500	-	CTP1500-K4152	0.375		2.530	KA5	
	-	-	CTP1500-K5002	0.500				
	1.000 - 2.500	-	CTP1500-K5152	0.375				
0.050 - 1.750	1.312 - 3.000	2.875 - 6.687	CTP2000-K5202A	0.375	2.000	2.405	KA5	0.625
			CTP2000-K5202B	0.500				
0.050 - 3.250	2.375 - 50.125	4.937 - 11.000	CTP3000-K7203D	0.750	3.000	3.625	KA7	1.000
0.050 - 3.250		-	**CTP3000-K7300MA	0.750				
Metric (mm) .02mm adjustment on diameter								
3.00 - 40.00	-	-	CTP038M-K4B	12.00	38.00	58.00	KA4	14
			CTP038M-K5B			64.00	KA5	14
3.00 - 44.00	35.00 - 76.00	73.00 - 169.00	CTP050M-K5B	12.00	50.00	61.00	KA5	16
10.00 - 70.00	60.00 - 130.00	126.00 - 279.00	CTP076M-K7D	20.00	76.00	92.00	KA7	25
		-	**CTP076M-K7DMA			98.00		25

*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.

**Micro adjusting (0.00005" adjustment on diameter).



Shanks				
D ₂	L ₄	Adapter Size	Part No.	Thread
1.500	0.500	KA4	CTP1500-K408752	7/8-20
2.000	0.500	KA5	CTP2000-K508752	7/8-20
3.000	0.750	KA7	CTP3000-K715001	1-1/2-18



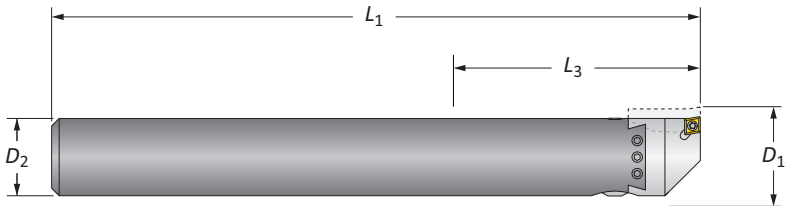
Icon reference key on B: 7

A

DRILLING

Cri-Bar adjustable boring bars

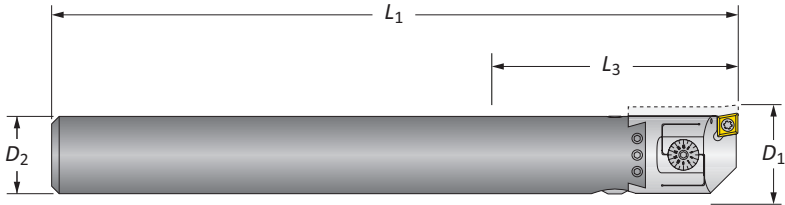
Round shank | Bore diameter range: 0.050" - 1.600"



Standard adjusting

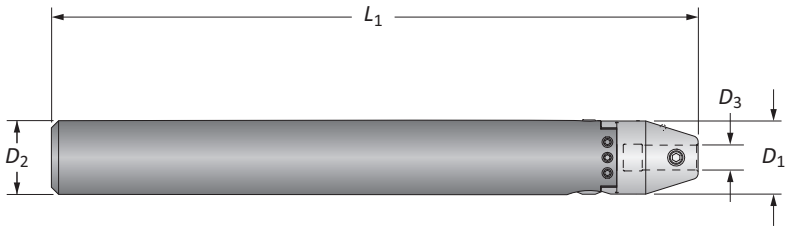
D ₁ Range	Part No.	L ₁	L ₃	D ₂	Insert		
					I.C.	T ₁	Shape / Style
Imperial (inch) Standard adjusting (0.001" adjustment on diameter)							
0.672 - 0.944	* CBR-0625CP CBR-0625TP	5.25	3.000	0.625	0.250	0.094	 CP or CC  TP
0.825 - 1.087	CBR-0750CP CBR-0750TP	6.31	4.000	0.750			 CP or CC  TP
1.050 - 1.320	CBR-1000CP CBR-1000TP	8.25	5.000	1.000			 CP or CC  TP
1.300 - 1.600	CBR-1250CP CBR-1250TP	10.31	6.500	1.250			 CP or CC  TP

*CBR-0625 style boring system has a minimum bore diameter of 0.750" when using a CC style insert.



Micro adjusting

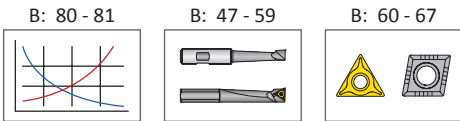
D ₁ Range	Part No.	L ₁	L ₃	D ₂	Insert		
					I.C.	T ₁	Shape / Style
Imperial (inch) Micro adjusting (0.00005" adjustment on diameter)							
1.050 - 1.320	CBR-1000CPMA	8.95	3.000	1.000	0.250	0.094	◇ CP or CC
	CBR-1000TPMA		4.000				△ TP
1.300 - 1.600	CBR-1250CPMA	11.00	5.000	1.250			◇ CP or CC
	CBR-1250TPMA		6.500				△ TP



SGL style

D ₁ Range	D ₃	Part No.	L ₁	D ₂
Imperial (inch) - SGL style				
0.050 - 0.380	0.125	CBR-0625SG	5.25	0.625
0.050 - 0.470	0.250	CBR-0750SH	6.50	0.750
0.120 - 0.640	0.375	CBR-1000SA	8.69	1.000
0.250 - 0.800	0.500	CBR-1250SB	10.60	1.250

The total range of the micro adjustment is 0.006" (0.150mm) on diameter.



Icon reference key on B: 7

Inserts sold separately.

Cri-Bar adjustable boring bar replacement parts

Round shank



1 Body



2 Insert Holder



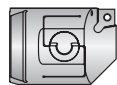
3 Dial Screw

Standard adjusting

Bar Part No.	Hardware Kit	1	2	3	Torx Screw (10)	Torx Wrench
Imperial (inch)						
CBR-0625CP	CB0625-HDW	CBR0625-BD	DS-MDB0750	CB0750CP-IH	TXS-116-1	8T-7
CBR-0625TP	CB0625-HDW	CBR0625-BD	DS-MDB0750	CB0750TP-IH	TXS-116-1	8T-7
CBR-0750CP	CB0750-HDW	CBR0750-BD	DS-MDB0750	CB0750CP-IH	TXS-116-1	8T-7
CBR-0750TP	CB0750-HDW	CBR0750-BD	DS-MDB0750	CB0750TP-IH	TXS-116-1	8T-7
CBR-1000CP	CB1000-HDW	CBR1000-BD	DS-MDB1000	CB1000CP-IH	TXS-116-1	8T-7
CBR-1000TP	CB1000-HDW	CBR1000-BD	DS-MDB1000	CB1000TP-IH	TXS-116-1	8T-7
CBR-1250CP	CB1250-HDW	CBR1250-BD	DS-MDB1000	CB1250CP-IH	TXS-116-1	8T-7
CBR-1250TP	CB1250-HDW	CBR1250-BD	DS-MDB1000	CB1250TP-IH	TXS-116-1	8T-7



1 Body



2 Insert Holder



3 Dial Screw



4 Micro Dial Screw

Micro adjusting

Head Part No.	Hardware Kit	1	2	3	4	Wedge	Torx Screw (10)	Torx Wrench
Imperial (inch)								
CBR-1000CPMA	CB1000-HDW	CBR1000-BD	CB1000CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBR-1000TPMA	CB1000-HDW	CBR1000-BD	CB1000TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBR-1250CPMA	CB1250-HDW	CBR1250-BD	CB1250CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBR-1250TPMA	CB1250-HDW	CBR1250-BD	CB1250TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7



1 Body



2 Bar Holder



3 Dial Screw

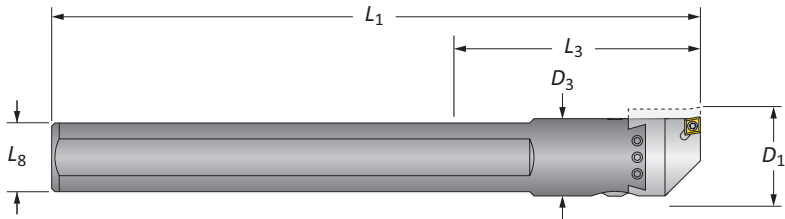
SGL style

Bar Part No.	Hardware Kit	1	2	3
Imperial (inch)				
CBR-0625SG	CB0625-HDW	CBR0625-BD	SGL0625G-BH	DS-MDB0750
CBR-0750SH	CB0750-HDW	CBR0750-BD	SGL0750H-BH	DS-MDB0750
CBR-1000SA	CB1000-HDW	CBR1000-BD	SGL1000A-BH	DS-MDB1000
CBR-1250SB	CB1250-HDW	CBR1250-BD	SGL1250B-BH	DS-MDB1000

Screws sold in multiples of 10.

Cri-Bar adjustable boring bars

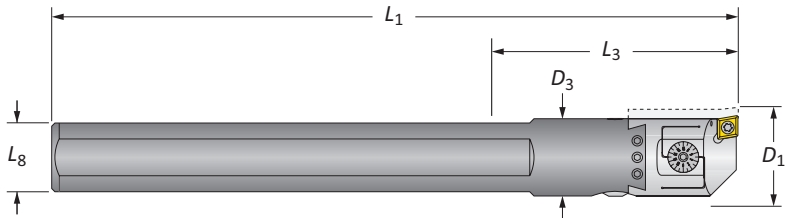
Square shank | Bore diameter range: 0.050" - 1.600"



Standard adjusting

D ₁ Range	D ₃	Part No.	L ₁	L ₃	L ₈	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) Standard adjusting (0.001" adjustment on diameter)								
0.672 - 0.944	0.625	* CBS-0625CP CBS-0625TP	5.25	3.000	0.541	0.250	0.094	◇ CP or CC ▲ TP
0.825 - 1.087	0.750	CBS-0750CP CBS-0750TP	6.31	4.000	0.660			◇ CP or CC ▲ TP
1.050 - 1.320	1.000	CBS-1000CP CBS-1000TP	8.25	5.000	0.883			◇ CP or CC ▲ TP
1.300 - 1.600	1.250	CBS-1250CP CBS-1250TP	10.31	6.500	1.100			◇ CP or CC ▲ TP

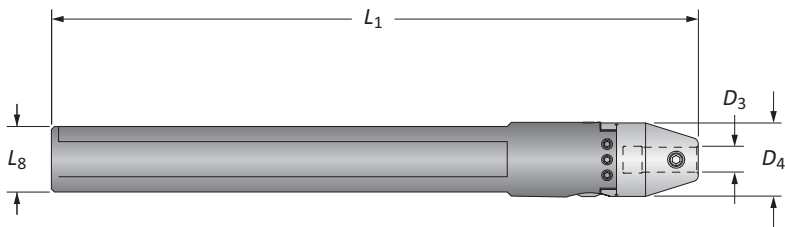
*CBS-0625 style boring system has a minimum bore diameter of 0.750" when using a CC style insert.



Micro adjusting

D ₁ Range	D ₃	Part No.	L ₁	L ₃	L ₈	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) Micro adjusting (0.00005" adjustment on diameter)								
1.050 - 1.320	1.000	CBS-1000CPMA CBS-1000TPMA	8.95	3.000 4.000	0.883	0.250	0.094	◇ CP or CC ▲ TP
1.300 - 1.600	1.250	CBS-1250CPMA CBS-1250TPMA	11.00	5.000 6.500	1.100			◇ CP or CC ▲ TP

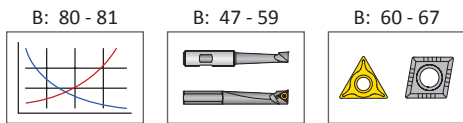
*CBS-0625 style boring system has a minimum bore diameter of 0.750" when using a CC style insert.



SGL style

D ₁ Range	D ₃	D ₄	Part No.	L ₁	L ₈
Imperial (inch) - SGL style					
0.050 - 0.380	0.125	0.625	CBS-0625SG	5.25	0.541
0.050 - 0.470	0.250	0.750	CBS-0750SH	6.50	0.660
0.120 - 0.640	0.375	1.000	CBS-1000SA	8.69	0.883
0.250 - 0.800	0.500	1.250	CBS-1250SB	10.60	1.100

The total range of the micro adjustment is 0.006" (0.150mm) on diameter.



Icon reference key on B: 7

Inserts sold separately.

Cri-Bar adjustable boring bar replacement parts

Square shank



1 Body



2 Insert Holder



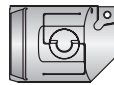
3 Dial Screw

Standard adjusting

Bar Part No.	Hardware Kit	1	2	3	Torx Screw (10)	Torx Wrench
Imperial (inch)						
CBS-0625CP	CB0625-HDW	CBS0625-BD	DS-MDB0750	CB0750CP-IH	TXS-116-1	8T-7
CBS-0625TP	CB0625-HDW	CBS0625-BD	DS-MDB0750	CB0750TP-IH	TXS-116-1	8T-7
CBS-0750CP	CB0750-HDW	CBS0750-BD	DS-MDB0750	CB0750CP-IH	TXS-116-1	8T-7
CBS-0750TP	CB0750-HDW	CBS0750-BD	DS-MDB0750	CB0750TP-IH	TXS-116-1	8T-7
CBS-1000CP	CB1000-HDW	CBS1000-BD	DS-MDB1000	CB1000CP-IH	TXS-116-1	8T-7
CBS-1000TP	CB1000-HDW	CBS1000-BD	DS-MDB1000	CB1000TP-IH	TXS-116-1	8T-7
CBS-1250CP	CB1250-HDW	CBS1250-BD	DS-MDB1000	CB1250CP-IH	TXS-116-1	8T-7
CBS-1250TP	CB1250-HDW	CBS1250-BD	DS-MDB1000	CB1250TP-IH	TXS-116-1	8T-7



1 Body



2 Insert Holder



3 Dial Screw



4 Micro Dial Screw

Micro standard

Head Part No.	Hardware Kit	1	2	3	4	Wedge	Torx Screw (10)	Torx Wrench
Imperial (inch)								
CBS-1000CPMA	CB1000-HDW	CBS1000-BD	CB1000CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBS-1000TPMA	CB1000-HDW	CBS1000-BD	CB1000TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBS-1250CPMA	CB1250-HDW	CBS1250-BD	CB1250CPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7
CBS-1250TPMA	CB1250-HDW	CBS1250-BD	CB1250TPMA-IH	DS-MDB1000	DS-MA1500	MAW-1000	TXS-116-1	8T-7



1 Body



2 Bar Holder



3 Dial Screw

SGL style

Bar Part No.	Hardware Kit	1	2	3
Imperial (inch)				
CBS-0625SG	CB0625-HDW	CBS0625-BD	SGL0625G-BH	DS-MDB0750
CBS-0750SH	CB0750-HDW	CBS0750-BD	SGL0750H-BH	DS-MDB0750
CBS-1000SA	CB1000-HDW	CBS1000-BD	SGL1000A-BH	DS-MDB1000
CBS-1250SB	CB1250-HDW	CBS1250-BD	SGL1250B-BH	DS-MDB1000

Screws sold in multiples of 10.

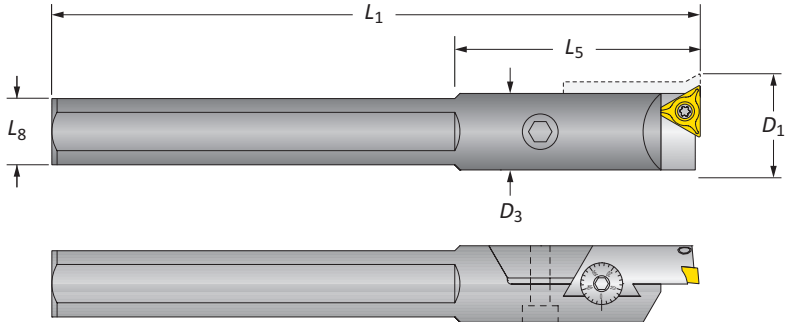
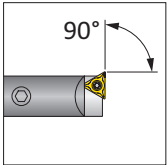


MD adjustable boring bars

Square shank

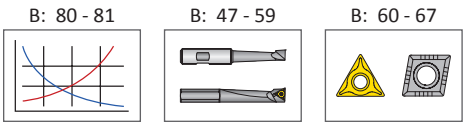
|

Bore diameter range: 0.250" - 1.250"



D ₁ Range	D ₃	Part No.	L ₁	L ₅	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) 0.001" adjustment on diameter								
0.700 - 0.960	0.625	* MDB-0625CP	5.25	3.000	0.541	0.250	0.094	◇ CP or CC
0.710 - 0.960		MDB-0625TP						△ TP
0.850 - 1.200	0.750	MDB-0750CP	6.31	4.000	0.660	0.375	0.156	◇ CP or CC
0.890 - 1.280		MDB-0750TP					0.125	△ TP
1.100 - 1.670	1.000	MDB-1000CP	8.25	5.000	0.156		◇ CP or CC	
1.130 - 1.650		MDB-1000TP			0.125		△ TP	
1.370 - 2.330	1.250	MDB-1250CP	10.31	6.500	1.100		0.156	◇ CP or CC
1.400 - 2.370		MDB-1250TP					0.125	△ TP
Metric (mm) 0.02" adjustment on diameter								
18 - 27	16	MDB-16MT	133	3.000	14	6.35	2.38	△ TP
22 - 33	20	MDB-20MT	160	4.000	18	9.53	3.96	
27 - 42	25	MDB-25MT	210	5.000	23			
33 - 60	32	MDB-32MT	260	6.500	28			

*[MDB-0625CP](#) style boring system has a minimum bore diameter of 0.750" when using a CC style insert.



Icon reference key on B: 7

Inserts sold separately.



MD adjustable boring bar replacement parts

Square shank



1

Body



2

Insert Holder



3

Dial Screw

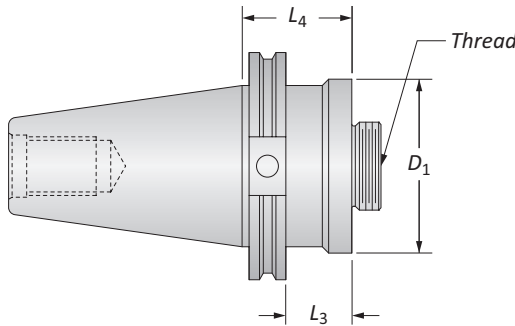
Standard adjusting

Bar Part No.	1	2	3	Wedge	Torx Screw (10)	Torx Wrench
Imperial (inch)						
MDB-0625CP	MDB0625-BD	MD0625CP-IH	DS-MDB0625	MDB0625-WEDGE	TXS-116-1	8T-7
MDB-0625TP	MDB0625-BD	MD0625TP-IH	DS-MDB0625	MDB0625-WEDGE	TXS-116-1	8T-7
MDB-0750CP	MDB0750-BD	MD0750CP-IH	DS-MDB0750	MDB0750-WEDGE	TXS-009-1	8T-15
MDB-0750TP	MDB0750-BD	MD0750TP-IH	DS-MDB0750	MDB0750-WEDGE	TXS-100-1	8T-20
MDB-1000CP	MDB1000-BD	MD1000CP-IH	DS-MDB1000	MDB1000-WEDGE	TXS-009-1	8T-15
MDB-1000TP	MDB-1000BD	MD1000TP-IH	DS-MDB1000	MDB1000-WEDGE	TXS-100-1	8T-20
MDB-1250CP	MDB1250-BD	MD1250CP-IH	DS-MDB1250	MDB1250-WEDGE	TXS-009-1	8T-15
MDB-1250TP	MDB1250-BD	MD1250TP-IH	DS-MDB1250	MDB1250-WEDGE	TXS-100-1	8T-20
Metric (mm)						
MDB-16MT	MDB16M-BD	MD16MTP-IH	DS-MDB16M	MDB16M-WEDGE	TXS-116-1	8T-7
MDB-20MT	MDB20M-BD	MD20MTP-IH	DS-MDB20M	MDB20M-WEDGE	TXS-100-1	8T-20
MDB-25MT	MDB25M-BD	MD25MTP-IH	DS-MDB25M	MDB25M-WEDGE	TXS-100-1	8T-20
MDB-32MT	MDB32M-BD	MD32MTP-IH	DS-MDB32M	MDB32M-WEDGE	TXS-100-1	8T-20

Screws sold in multiples of 10.

Criterion shanks

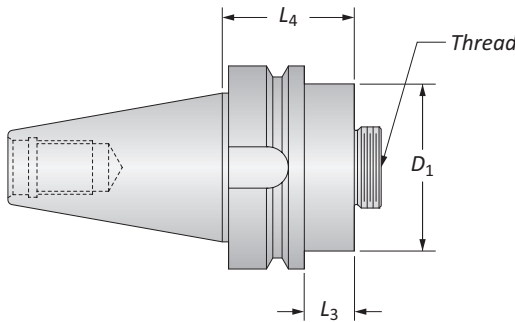
V Flange | BT Flange



V-Flange

<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>CAT40 (CV40) flange</i>				
1.50	0.350	1.75	CB1500-CV40	7/8-20
2.00	1.000	1.88	CB2000-CV40	7/8-20
2.50	1.000	1.88	CB2500-CV40	1-1/2-18
3.00	1.750	1.88	CB3000-CV40	1-1/2-18
<i>CAT50 (CV50) flange</i>				
1.50	0.350	1.75	CB1500-CV50	7/8-20
2.00	1.000	1.88	CB2000-CV50	7/8-20
2.50	1.000	1.88	CB2500-CV50	1-1/2-18
3.00	1.750	1.88	CB3000-CV50	1-1/2-18
3.38	1.250	2.13	CB6000-CV50	2-1/4-10

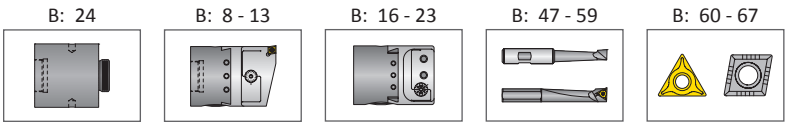
NOTE: Taper ground to AT3 tolerance.



BT-Flange

<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>BT30 flange</i>				
1.50	0.859	1.75	CB1500-BT30	7/8-20
<i>BT40 flange</i>				
1.50	0.422	1.75	CB1500-BT40	7/8-20
2.00	1.900	1.56	CB2000-BT40	7/8-20
2.50	1.900	2.06	CB2500-BT40	1-1/2-18
3.00	1.900	2.06	CB3000-BT40	1-1/2-18
<i>BT50 flange</i>				
1.50	0.236	1.75	CB1500-BT50	7/8-20
2.00	0.040	1.56	CB2000-BT50	7/8-20
3.00	1.900	2.06	CB3000-BT50	1-1/2-18
3.38	0.625	2.13	CB6000-BT50	2-1/4-10

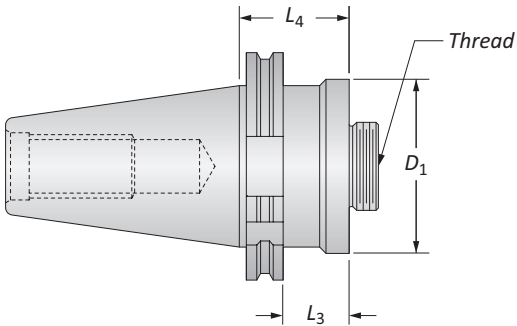
NOTE: Taper ground to AT3 tolerance.



Icon reference key on B: 7

Criterion shanks

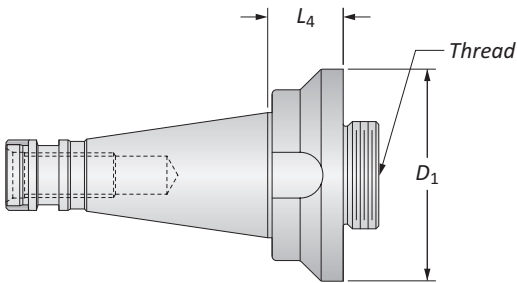
DIN 69871A | DIN 2080



DIN 69871A

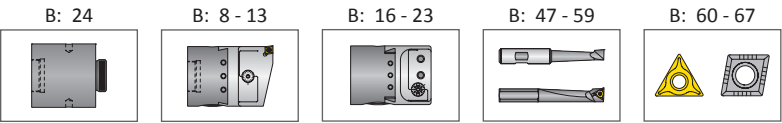
<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>DIN 40</i>				
38.00mm	19mm	38.4mm	CB038M-DIN40	7/8-20
50.00mm	22mm	41.5mm	CB050M-DIN40	7/8-20
76.00mm	45mm	48.0mm	CB076M-DIN40	1-1/2-18
<i>DIN 50</i>				
38.00mm	19mm	38.4mm	CB038M-DIN50	7/8-20
50.00mm	22mm	41.5mm	CB050M-DIN50	7/8-20
76.00mm	22mm	48.0mm	CB076M-DIN50	1-1/2-18

NOTE: Taper ground to AT3 tolerance.



DIN 2080

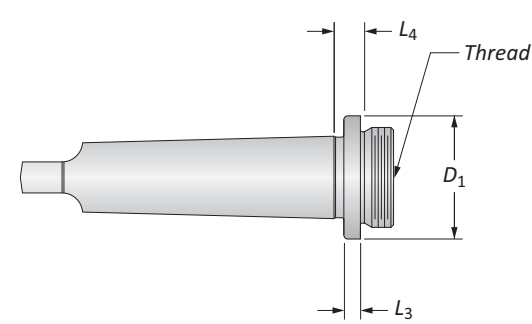
<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>SK-30</i>				
38.00mm	11mm	19.6mm	CB038M-ISO30	7/8-20
50.00mm	17mm	25.7mm	CB050M-ISO30	7/8-20
<i>SK-40</i>				
38.00mm	11mm	21.1mm	CB038M-ISO40	7/8-20
50.00mm	11mm	27.7mm	CB050M-ISO40	7/8-20
76.00mm	22mm	27.7mm	CB076M-ISO40	1-1/2-18
<i>SK-50</i>				
38.00mm	11mm	39.4mm	CB038M-ISO50	7/8-20
50.00mm	11mm	39.4mm	CB050M-ISO50	7/8-20
76.00mm	36mm	39.4mm	CB076M-ISO50	1-1/2-18



Icon reference key on B: 7

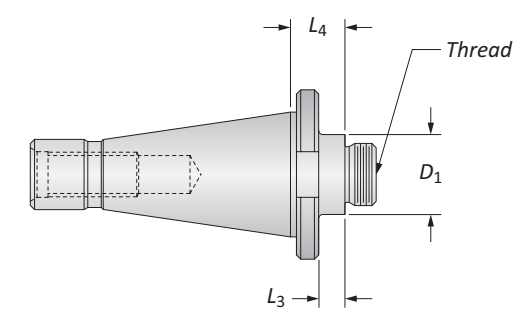
Criterion shanks

Morse Taper | NMTB Taper



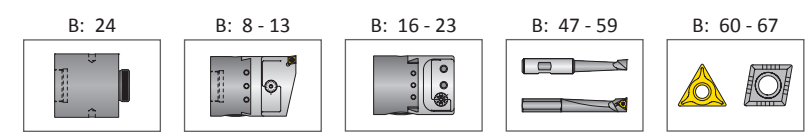
Morse Taper

<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>2 Taper</i>				
1.11	0.250	0.44	*MT2-375THD87520	7/8-20
	0.250		MT2-087520	
<i>3 Taper</i>				
1.11	-	0.44	MT3-087520	7/8-20
1.86	0.250		MT3-150018	1-1/2-18
<i>4 Taper</i>				
1.11	0.250	0.25	MT4-087520	7/8-20
1.86	0.250	0.50	MT4-150018	1-1/2-18
<i>5 Taper</i>				
1.86	0.250	0.62	MT5-150018	1-1/2-18



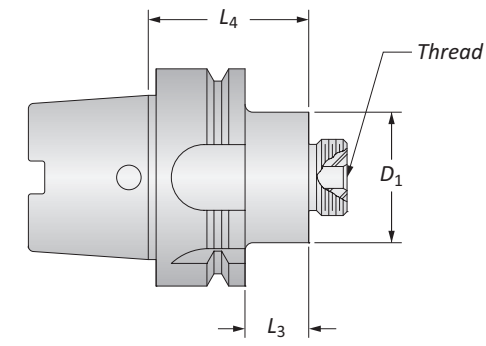
NMTB Taper

<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>NMTB 30</i>				
1.11	0.300	0.78	NMBT30-087520	7/8-20
1.86	0.900	1.05	NMBT30-150018	1-1/2-18
<i>NMTB 40</i>				
1.11	0.300	0.77	NMBT40-087520	7/8-20
1.86	0.625	1.04	NMBT40-150018	1-1/2-18
<i>NMTB 50</i>				
1.11	0.500	1.25	NMBT50-087520	7/8-20
1.86	0.500	1.25	NMBT50-150018	1-1/2-18
3.38	0.500	1.25	NMBT50-225010	2-1/4-10

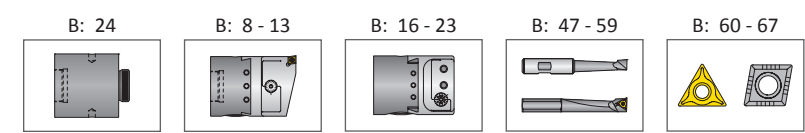


Criterion shanks

HSK



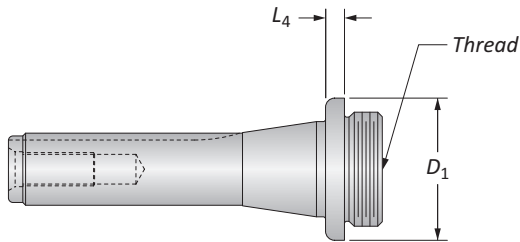
<i>D₁</i>	<i>L₃</i>	<i>L₄</i>	Part No.	<i>Thread</i>
<i>HSK63</i>				
1.50	0.700	1.75	CB1500-HSK63A	7/8-20
2.00	0.700	1.75	CB2000-HSK63A	7/8-20
3.00	2.000	2.25	CB3000-HSK63A	1-1/2-18
<i>HSK100</i>				
1.50	0.500	1.75	CB1500-HSK100A	7/8-20
2.00	0.500	2.25	CB2000-HSK100A	7/8-20
3.00	0.500	2.25	CB3000-HSK100A	1-1/2-18



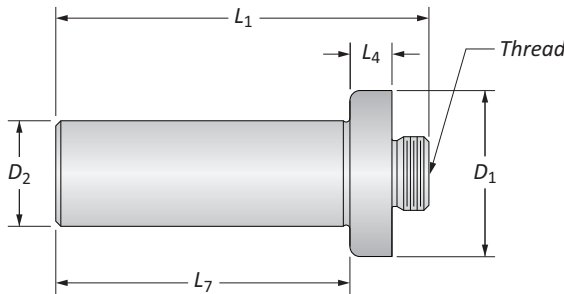
Icon reference key on B: 7

Criterion shanks

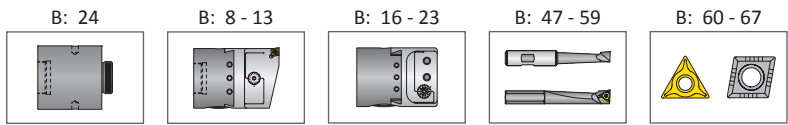
R-8 | Straight



R-8					
D_1	L_4	Part No.	Thread		
1.11	0.47	R8-087520	7/8-20		
1.86	0.37	R8-150018	1-1/2-18		



Straight						
D_1	D_2	L_4	L_7	L_1	Part No.	Thread
Straight						
1.11	0.500	0.250	2.000	2.250	SS0500-087520	7/8-20
	0.625	0.250	2.370	2.630	SS0625-087520	
	0.750	0.250	2.750	3.000	SS0750-087520	
	1.000	0.250	3.120	3.370	SS1000-087520	
1.86	0.750	0.250	3.120	3.370	SS0750-150018	1-1/2-18
	1.000	0.250	3.120	3.370	SS1000-150018	
	1.250	0.250	3.870	4.130	SS1250-150018	
	1.500	0.250	4.630	4.880	SS1500-150018	
	2.000	-	6.380	6.380	SS2000-150018	



Icon reference key on B: 7

Criterion boring bars nomenclature

Criterion boring bars

CBT	00800500	G	QL
1	2	3	4

1. Boring Bar Style	2. Max Bore Depth	3. Shank Diameter	4.																		
CBT = Solid carbide boring tool SBT = Steel shank brazed carbide boring tool TA = Triangle insert boring tool (standard bore depth) TAS = Triangle insert boring tool (short bore depth)		<table><tr><th>Imperial</th><th>Metric</th></tr><tr><td>A = 0.375</td><td>A = 10mm</td></tr><tr><td>B = 0.500</td><td>B = 12mm</td></tr><tr><td>C = 0.625</td><td>C = 16mm</td></tr><tr><td>D = 0.750</td><td>D = 20mm</td></tr><tr><td>E = 1.000</td><td>E = 25mm</td></tr><tr><td>F = 1.500</td><td></td></tr><tr><td>G = 0.125</td><td></td></tr><tr><td>H = 0.250</td><td></td></tr></table>	Imperial	Metric	A = 0.375	A = 10mm	B = 0.500	B = 12mm	C = 0.625	C = 16mm	D = 0.750	D = 20mm	E = 1.000	E = 25mm	F = 1.500		G = 0.125		H = 0.250		QL = Qualified length HB = Helical back rake S = Square shank
Imperial	Metric																				
A = 0.375	A = 10mm																				
B = 0.500	B = 12mm																				
C = 0.625	C = 16mm																				
D = 0.750	D = 20mm																				
E = 1.000	E = 25mm																				
F = 1.500																					
G = 0.125																					
H = 0.250																					

Criterion boring bars

CFX	500	CS
1	2	3

1. Boring Bar Style	2. Shank Diameter		3. Material
CFX = 80° rhombic insert (long bore depth) TFX = Triangle insert (long bore depth) CHB = Cross hole boring bar BFB = Boring and facing bar	Imperial 0375 = 0.375 0500 = 0.500 0625 = 0.625 0750 = 0.750 1000 = 1.000 1500 = 1.500	Metric 012M = 12mm 020M = 20mm 025M = 25mm	CS = Carbide shank HM = Heavy metal



Standard



Solid Carbide



Steel



Qualified Length



Heavy Metal



Helical Rake



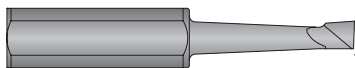
Carbide Shank



Round Shank



Cross Hole



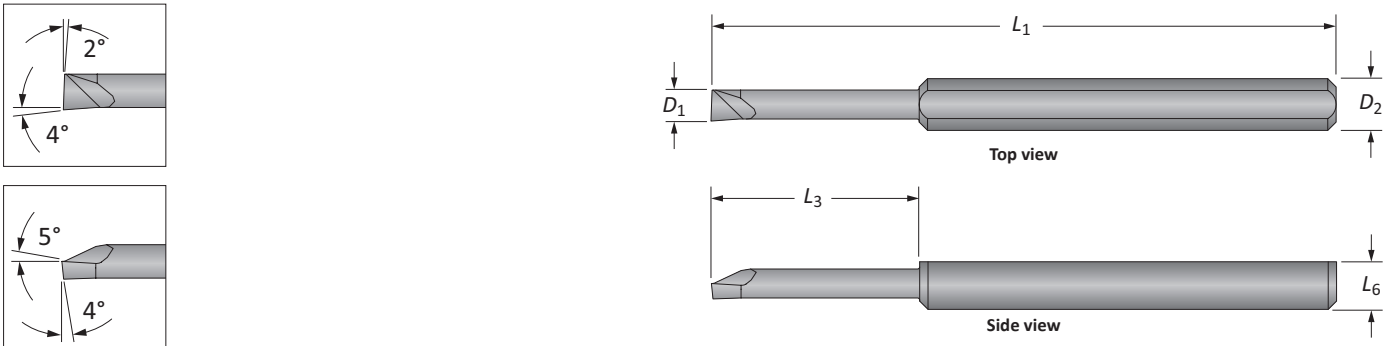
Square Shank



Boring and Facing

Criterion boring bars

Carbide | Solid Carbide

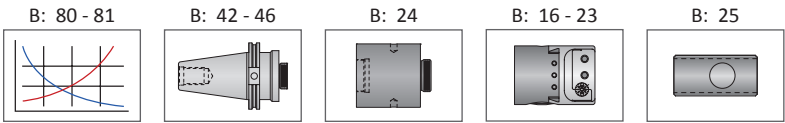


D_1	L_3	Part No.	L_1	L_6	D_2
Imperial (inch)					
0.050	0.150	CBT-00500150G	1.500	0.115	0.125
	0.300	CBT-00500300G			
	0.400	CBT-00500400G			
0.060	0.150	CBT-00600150G			
	0.300	CBT-00600300G			
	0.500	CBT-00600500G			
0.080	0.150	CBT-00800150G			
	0.300	CBT-00800300G			
	0.500	CBT-00800500G			
0.100	0.200	CBT-01000200G			
	0.400	CBT-01000400G			
	0.600	CBT-01000600G			
0.110	0.700	CBT-01000700G			
	0.200	CBT-01100200G			
	0.400	CBT-01100400G			
	0.600	CBT-01100600G			
	0.700	CBT-01100700G			

Adapters

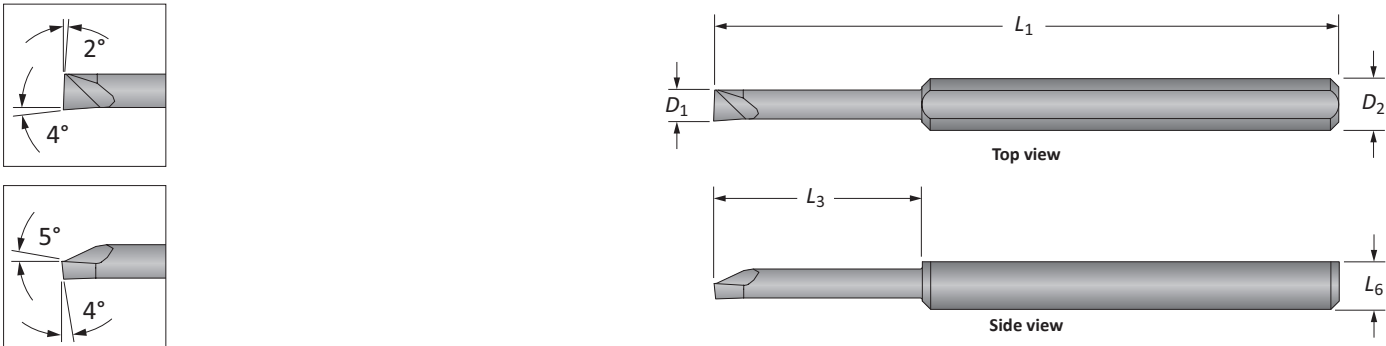
D_1	 Style 1	 Style 2	 Style 3	 Style 4
Imperial (inch)				
0.125	-	-	BTH-01250250	BTH-01250375 BTH-01250500 BTH-01250625 BTH-01250750

For complete adapter details, see page B: 25.



Criterion boring bars

Carbide | Solid Carbide

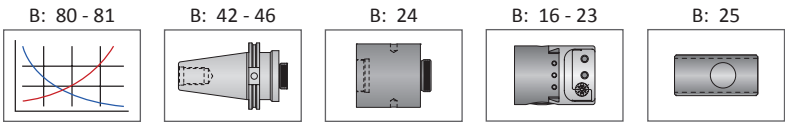


D_1	L_3	Part No.	L_1	L_6	D_2
Imperial (inch)					
0.120	0.250	CBT-01200250H	2.500	0.230	0.250
	0.375	CBT-01200375H			
	0.500	CBT-01200500H			
	0.625	CBT-01200625H			
	0.750	CBT-01200750H			
0.140	0.250	CBT-01400250H			
	0.375	CBT-01400375H			
	0.500	CBT-01400500H			
	0.625	CBT-01400625H			
	0.750	CBT-01400750H			
0.160	0.375	CBT-01600375H			
	0.500	CBT-01600500H			
	0.625	CBT-01600625H			
	0.750	CBT-01600750H			
	0.875	CBT-01600875H			
0.180	0.500	CBT-01800500H			
	0.625	CBT-01800625H			
	0.750	CBT-01800750H			
	0.875	CBT-01800875H			
	1.000	CBT-01801000H			
0.200	10.125	CBT-01801125H			
	0.500	CBT-02000500H			
	0.625	CBT-02000625H			
	0.750	CBT-02000750H			
	0.875	CBT-02000875H			
	1.000	CBT-02001000H			
	1.250	CBT-02001250H			

Adapters

D_1	 Style 1	 Style 2	 Style 3	 Style 4
Imperial (inch)				
0.250	BTH-02500375 BTH-02500500	-	-	BTH-02500625 BTH-02500750

For complete adapter details, see page B: 25.

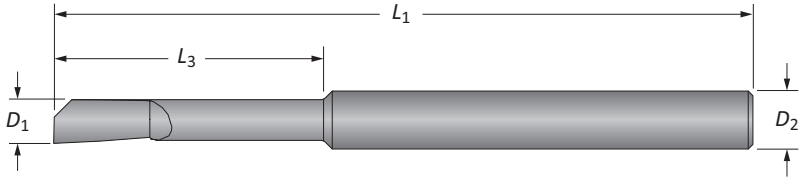


Icon reference key on B: 7



Criterion boring bars

Carbide | Helical rake

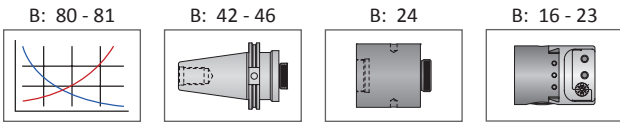
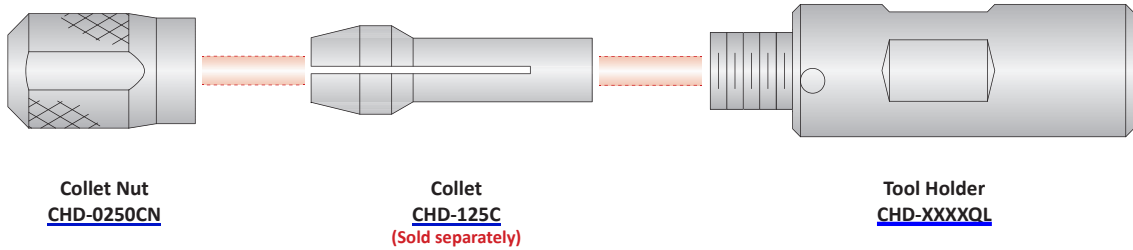
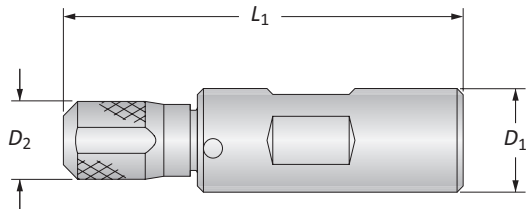


D_1	L_3	Part No.	L_1	D_2
Imperial (inch)				
0.035	0.125	CBT-00350125GHB	1.500	0.125Ø
	0.187	CBT-00350187GHB		
0.040	0.187	CBT-00400187GHB		
	0.250	CBT-00400250GHB		
0.050	0.312	CBT-00500312GHB		
0.060	0.375	CBT-00600375GHB		
0.070	0.437	CBT-00700437GHB		
0.080	0.500	CBT-00800500GHB		
0.090	0.500	CBT-00900500GHB		
0.100	0.562	CBT-01000562GHB		
0.120	0.625	CBT-01200625GHB		
	1.000	CBT-01201000GHB		

Tool holders

D_1	D_2	L_1	Part No.
Imperial (inch)			
0.250	0.410Ø	1.275	CHD-0250QL
0.375		1.970	CHD-0375QL
0.500		1.970	CHD-0500QL
0.625		2.300	CHD-0625QL
0.750		2.300	CHD-0750QL

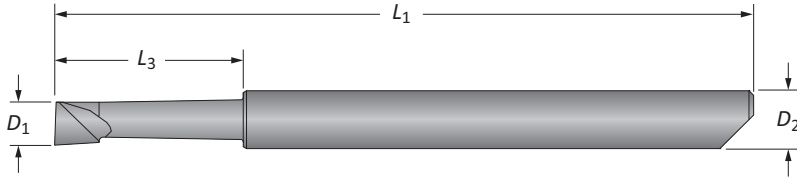
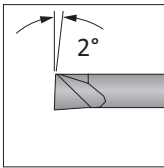
Tool holder comes with collet nut ([CHD-0250CN](#)) and wrench ([CHD-125CNW](#)).
Collet sold separately.



Icon reference key on B: 7

Criterion boring bars

Carbide | Qualified length

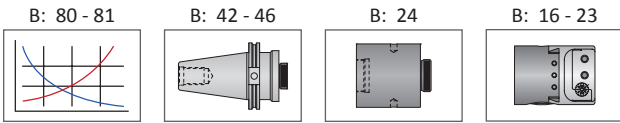
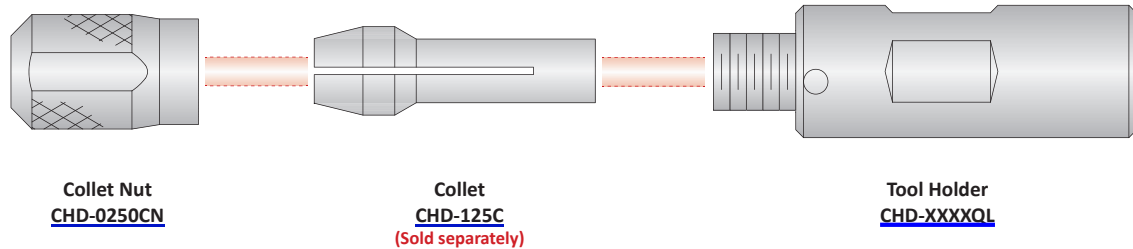
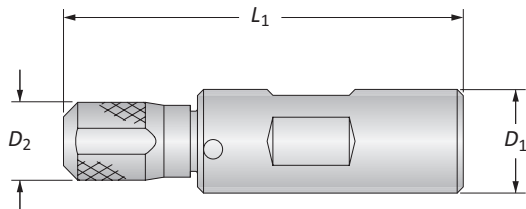


D_1	L_3	Part No.	L_1	D_2
Imperial (inch)				
0.050	0.150	CBT-00500150GQL	1.500	0.125Ø
	0.300	CBT-00500300GQL		
0.060	0.400	CBT-00500400GQL		
	0.150	CBT-00600150GQL		
	0.300	CBT-00600300GQL		
0.080	0.500	CBT-00600500GQL		
	0.150	CBT-00800150GQL		
	0.300	CBT-00800300GQL		
0.100	0.500	CBT-00800500GQL		
	0.200	CBT-01000200GQL		
0.110	0.400	CBT-01000400GQL		
	0.600	CBT-01000600GQL		
	0.700	CBT-01000700GQL		
	0.200	CBT-01100200GQL		
	0.400	CBT-01100400GQL		
	0.600	CBT-01100600GQL		
	0.700	CBT-01100700GQL		

Tool holders

D_1	D_2	L_1	Part No.
Imperial (inch)			
0.250	0.410Ø	1.275	CHD-0250QL
0.375		1.970	CHD-0375QL
0.500		1.970	CHD-0500QL
0.625		2.300	CHD-0625QL
0.750		2.300	CHD-0750QL

Tool holder comes with collet nut ([CHD-0250CN](#)) and wrench ([CHD-125CNW](#)).
Collet sold separately.

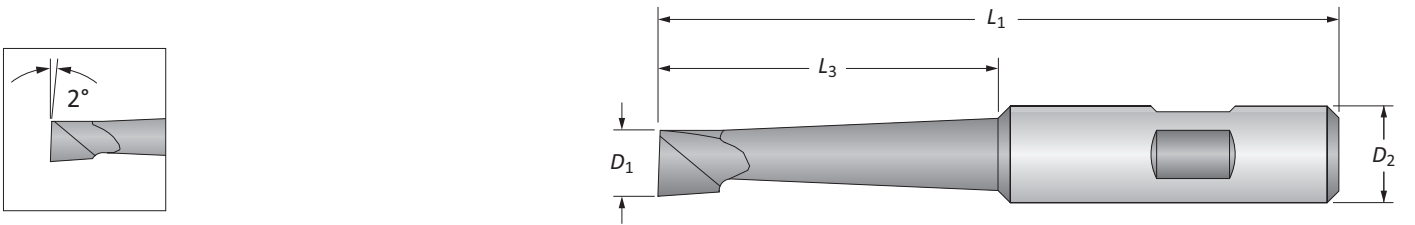


Icon reference key on B: 7



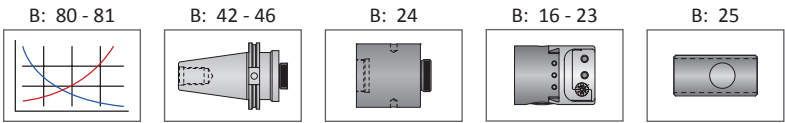
Criterion boring bars

Brazed carbide | Round shank



<i>D</i> ₁	<i>L</i> ₃	Part No.	<i>L</i> ₁	<i>D</i> ₂
<i>Imperial (inch)</i>				
0.062	0.250	SBT-00620250A	1.590	0.375
0.093	0.375	SBT-00930375A	1.750	
0.125	0.500	SBT-01250500A	1.875	
0.187	0.812	SBT-01870812A	2.156	
0.250	10.125	SBT-02501125A	2.468	
0.312	1.500	SBT-03121500A	2.812	
0.375	1.875	SBT-03751875A	3.187	
0.500	2.312	SBT-05002312A	3.500	
0.062	0.250	SBT-00620250B	1.590	0.500
0.093	0.375	SBT-00930375B	1.750	
0.125	0.250	SBT-01250250B	1.656	
0.125	0.500	SBT-01250500B	1.875	
0.187	0.312	SBT-01870312B	1.812	
0.187	0.812	SBT-01870812B	2.156	
0.250	0.437	SBT-02500437B	2.000	
0.250	10.125	SBT-02501125B	2.468	
0.312	0.562	SBT-03120562B	2.187	
0.312	1.500	SBT-03121500B	2.812	
0.375	0.687	SBT-03750687B	2.375	
0.375	1.750	SBT-03751750B	3.187	
0.500	0.812	SBT-05000812B	2.562	
0.500	2.187	SBT-05002187B	3.500	
0.125	0.500	SBT-01250500C	2.250	0.625
0.187	0.812	SBT-01870812C	2.562	
0.250	10.125	SBT-02501125C	2.875	
0.375	1.750	SBT-03751750C	3.500	
0.500	20.125	SBT-05002125C	3.812	
0.625	2.500	SBT-06252500C	40.125	0.750
0.500	1.312	SBT-05001312D	2.937	
0.500	2.187	SBT-05002187D	3.945	
0.625	2.750	SBT-06252750D	4.468	
0.750	1.531	SBT-07501531D	3.156	
0.750	3.000	SBT-07503000D	4.687	
1.000	1.750	SBT-10001750D	3.375	
1.000	3.500	SBT-10003500D	50.125	1.000
1.250	4.000	SBT-12504000D	5.562	
0.500	2.375	SBT-05002375E	4.250	
0.625	2.625	SBT-06252625E	4.468	
0.750	2.875	SBT-07502875E	4.687	
1.000	1.750	SBT-10001750E	3.375	
1.000	3.500	SBT-10003500E	50.125	
1.250	1.968	SBT-12501968E	3.593	
1.250	3.875	SBT-12503875E	5.562	

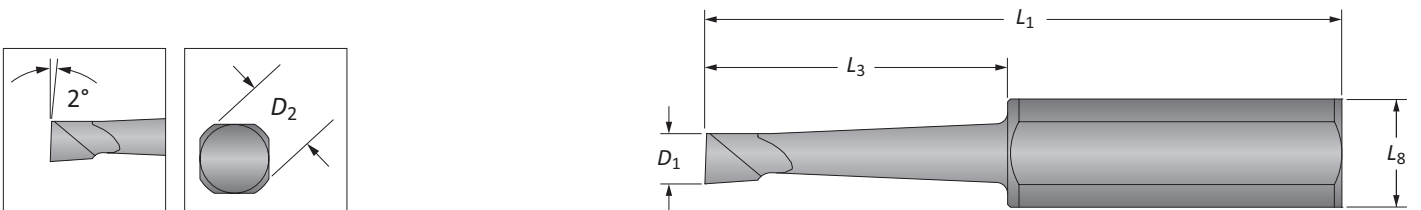
See adapter options on following page.



Icon reference key on B: 7

Criterion boring bars

Brazed carbide | Square shank



D ₁	L ₃	Part No.	L ₁	L ₈	D ₂
Imperial (inch)					
0.062	0.250	SBT-00620250BS	1.590	0.437	0.500
0.093	0.375	SBT-00930375BS	1.750		
0.125	0.250	SBT-01250250BS	1.656		
0.125	0.500	SBT-01250500BS	1.875		
0.187	0.312	SBT-01870312BS	1.812		
0.187	0.812	SBT-01870812BS	2.156		
0.250	0.437	SBT-02500437BS	2.000		
0.250	10.125	SBT-02501125BS	2.468		
0.312	0.562	SBT-03120562BS	2.187		
0.312	1.500	SBT-03121500BS	2.812		
0.375	0.687	SBT-03750687BS	2.375		
0.375	1.750	SBT-03751750BS	3.187		
0.500	0.812	SBT-05000812BS	2.562		
0.500	2.187	SBT-05002187BS	3.500		
Metric (mm)					
3	12	SBT-03012MA	48	8	10
4	20	SBT-04020MA	55		
6	28	SBT-06028MA	62		
8	37	SBT-08037MA	71		
10	48	SBT-10048MA	81		
12	55	SBT-12055MA	90		
3	12	SBT-03012MB	48	10	12
4	20	SBT-04020MB	55		
6	28	SBT-06028MB	62		
8	37	SBT-08037MB	71		
10	48	SBT-10048MB	81		
12	55	SBT-12055MB	90		
12	63	SBT-12063MD	107	18	20
16	71	SBT-16071MD	113		
19	78	SBT-19078MD	119		
25	90	SBT-25090MD	130		
32	100	SBT-32100MD	141		
12	60	SBT-12060ME	107	22	25
16	67	SBT-16067ME	113		
19	74	SBT-19074ME	119		
25	89	SBT-25089ME	130		
32	100	SBT-32100ME	141		

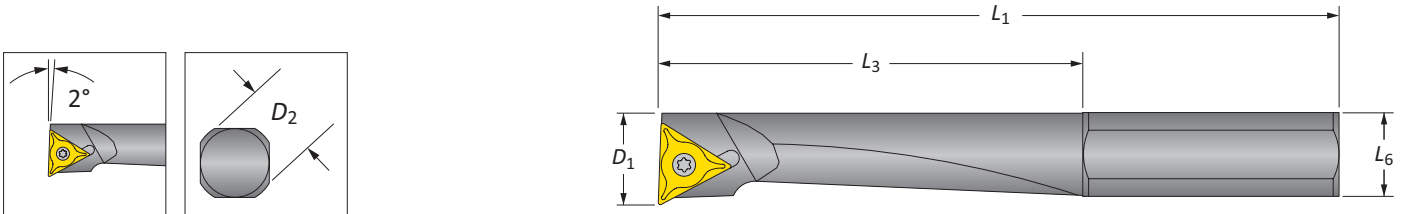
Adapters

<i>D</i> ₁				
<i>Imperial (inch)</i>				
0.500	-	BTH-05001000	BTH-05000750	-
<i>Metric (mm)</i>				
10	BTH10M12M	BTH10M25M	BTH10M20M	-
12	-	BTH12M25M	BTH12M20M	-
20	-	-	BTH20M25M	-

For complete adapter details, see page B: 25.

Criterion boring bars

TA insert | Imperial

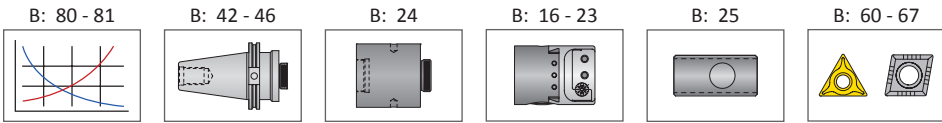


D ₁	L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch)								
.250	1.062	TA-02501062A	2.437	0.310	0.375	0.156	0.063	△ WCMT
.312	1.437	TA-03121437A	2.750			0.156	0.078	△ TC
.375	1.750	TA-03751750A	3.062			0.156	0.078	△ TC
.250	1.062	TA-02501062B	2.437	0.437	0.500	0.156	0.063	△ WCMT
.312	1.437	TA-03121437B	2.750			0.156	0.078	△ TC
.375	1.750	TA-03751750B	3.062			0.156	0.078	△ TC
.437	2.062	TA-04372062B	3.375			0.250	0.094	△ TP
.500	2.187	TA-05002187B	3.500	0.531	0.625	0.250	0.094	△ TP
.375	1.750	TA-03751750C	3.062			0.156	0.078	△ TC
.500	2.187	TA-05002187C	3.500			0.250	0.094	△ TP
.625	2.750	TA-06252750C	4.390			0.250	0.094	△ TP
.500	2.500	TA-05002500D	4.250	0.641	0.750	0.250	0.094	△ TP
.750	3.000	TA-07503000D	4.687			0.375	0.125	△ TP
1.000	3.500	TA-10003500D	50.125			0.375	0.125	△ TP
1.250	4.000	TA-12504000D	5.562			0.375	0.125	△ TP
.500	2.375	TA-05002375E	4.250	0.859	1.000	0.250	0.094	△ TP
.750	2.875	TA-07502875E	4.687			0.375	0.125	△ TP
1.000	3.500	TA-10003500E	50.125			0.375	0.125	△ TP
1.250	3.875	TA-12503875E	5.562			0.375	0.125	△ TP

Adapters

D ₁	 Style 1	 Style 2	 Style 3	 Style 4
Imperial (inch)				
0.375	BTH03750500	BTH-03750750 BTH-03751000	-	-
0.500	-	BTH-05001000	BTH-05000750	-
0.750	-	-	BTH-07501000	-

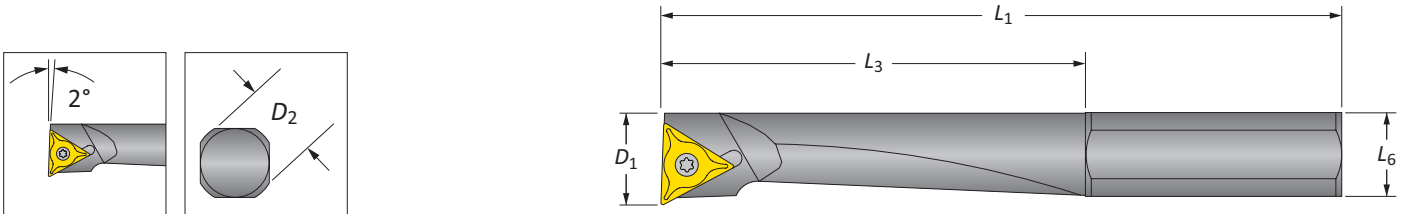
For complete adapter details, see page B: 25.



Icon reference key on B: 7 Inserts sold separately.

Criterion boring bars

TA insert | Metric



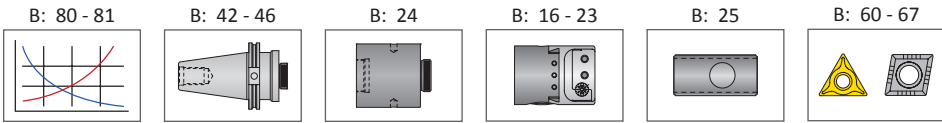
D ₁	L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Metric (mm)								
6	12	TAS-06M012A	47	8	10	3.97	1.60	▲ WCMT
6	27	TA-06M027A	62			3.97	1.60	▲ WCMT
8	16	TAS-08M016A	50			3.97	1.98	▲ TC
8	36	TA-08M036A	70			3.97	1.98	▲ TC
10	20	TAS-10M020A	54			3.97	1.98	▲ TC
10	45	TA-10M045A	78			3.97	1.98	▲ TC
6	12	TAS-06M012B	47	10	12	3.97	1.60	▲ WCMT
6	27	TA-06M027B	63			3.97	1.60	▲ WCMT
8	16	TAS-08M016B	50			3.97	1.98	▲ TC
8	36	TA-08M036B	71			3.97	1.98	▲ TC
10	20	TAS-10M020B	54			3.97	1.98	▲ TC
10	45	TA-10M045B	80			3.97	1.98	▲ TC
12	24	TAS-12M024B	57			6.35	2.38	▲ TC
12	54	TA-12M054B	86			6.35	2.38	▲ TC
10	20	TAS-10M020D	67			3.97	1.98	▲ TC
10	45	TA-10M045D	92			3.97	1.98	▲ TC
12	24	TAS-12M024D	70	18	20	6.35	2.38	▲ TC
12	54	TA-12M054D	100			6.35	2.38	▲ TC
16	32	TAS-16M032D	76			9.53	3.96	▲ TC
16	72	TA-16M072D	116			6.35	2.38	▲ TC
20	40	TAS-20M040D	82			6.35	2.38	▲ TC
20	90	TA-20M090D	131			9.53	3.96	▲ TC
10	20	TAS-10M020E	69			3.97	1.98	▲ TC
10	45	TA-10M045E	94			3.97	1.98	▲ TC
12	24	TAS-12M024E	73			6.35	2.38	▲ TC
12	54	TA-12M054E	102			6.35	2.38	▲ TC
16	32	TAS-16M032E	78	23	25	9.53	3.96	▲ TC
16	72	TA-16M072E	118			9.53	3.96	▲ TC
20	40	TAS-20M040E	85			9.53	3.96	▲ TC
20	90	TA-20M090E	135			9.53	3.96	▲ TC
25	50	TAS-25M050E	92			9.53	3.96	▲ TC
25	113	TA-25M113E	155			9.53	3.96	▲ TC

See adapter options on previous page.

Adapters

D ₁	 Style 1	 Style 2	 Style 3	 Style 4
Metric (mm)				
10	BTH-10M12M	BTH-10M25M	BTH-10M20M	-
12	-	BTH-12M25M	BTH-12M20M	-
20	-	-	BTH-20M-25M	-

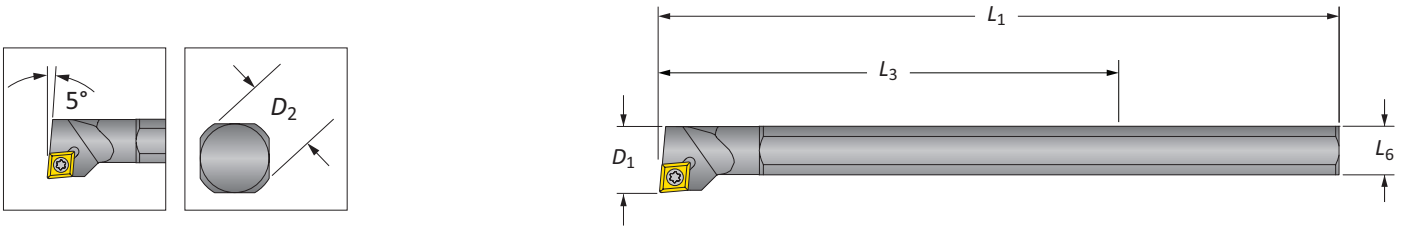
For complete adapter details, see page B: 25.



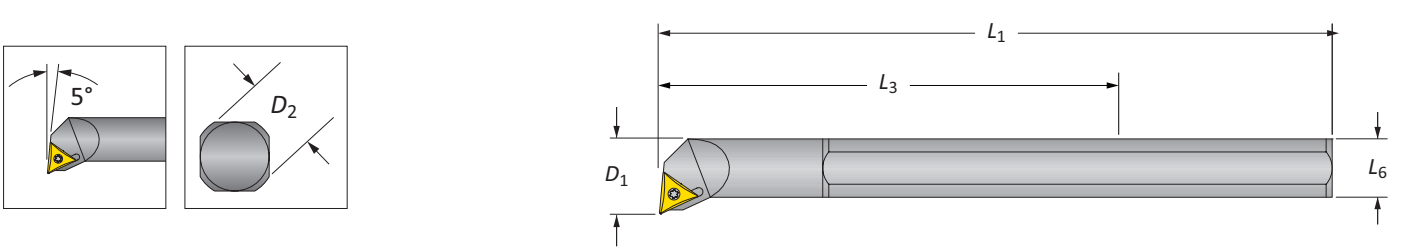
Icon reference key on B: 7 Inserts sold separately.

Criterion boring bars

Steel CFX / TFX



D ₁	L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) - CFX								
0.75	2.500	CFX-0500	6.00	0.43	0.500	0.250	0.094	◇ CP or CC
1.00	4.000	CFX-0750	8.00	0.66	0.750	0.375	0.156	◇ CP or CC
1.38	5.000	CFX-1000	10.00	0.88	1.000	0.375	0.156	◇ CP or CC
1.76	6.750	CFX-1500	10.60	1.31	1.500	0.500	0.188	◇ CC

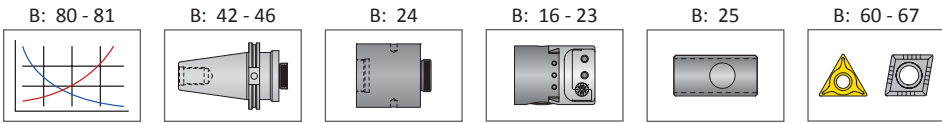


D ₁	L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) - TFX								
0.75	2.500	TFX-0500	6.00	0.43	0.500	0.250	0.094	▲ TP
1.00	4.000	TFX-0750	8.00	0.66	0.750	0.375	0.125	▲ TP
1.38	5.000	TFX-1000	10.00	0.88	1.000	0.375	0.125	▲ TP

Adapters

D ₁				
Imperial (inch)				
0.500	-	BTH-05000100	BTH-050000750	-
0.750	-	-	BTH-07501000	-
1.000	-	-	BTH-10001500	-

For complete adapter details, see page B: 25.

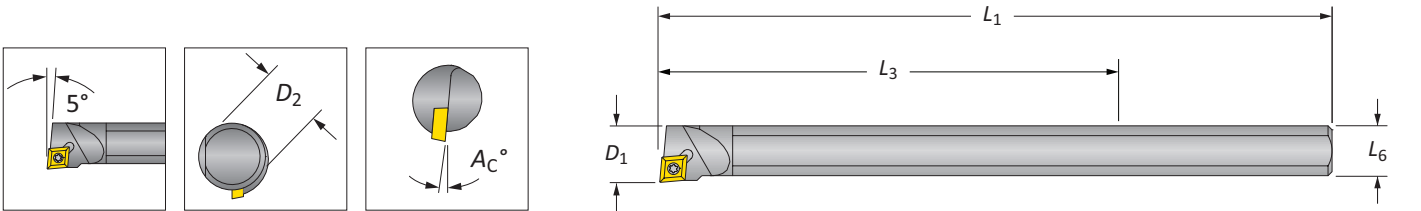


Icon reference key on B: 7

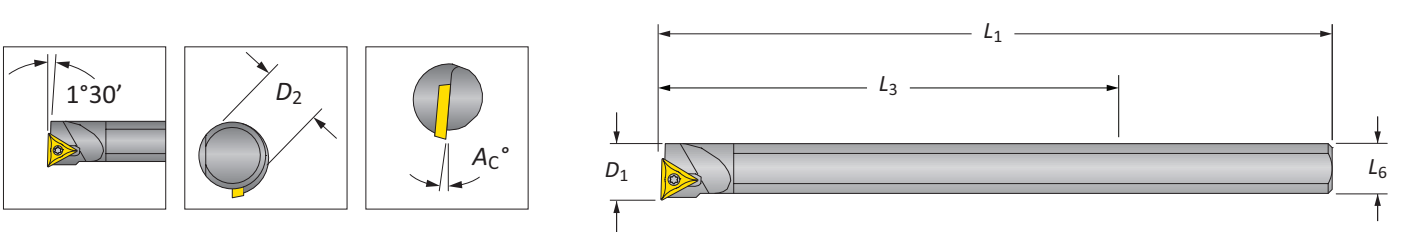
Inserts sold separately.

Criterion boring bars

Heavy metal CFX / TFX



D ₁ Range	L ₃	Angle	Part No.	L ₁	L ₆	D ₂	Insert		
							I.C.	T ₁	Shape / Style
Imperial (inch) - CFX									
0.197 - 1.500	1.500	0°	CFX-0187HM	3.00	0.180	0.187	0.156	0.040	◇ CD
0.260 - 1.500	1.500	0°	CFX-0250HM	3.00	0.230	0.250	0.156	0.040	◇ CD
0.365 - 2.250	2.250	10°	CFX-0312HM	4.00	0.290	0.312	0.250	0.094	◇ CP or CC
0.425 - 2.250	2.250	10°	CFX-0375HM	4.00	0.340	0.375	0.250	0.094	◇ CP or CC
0.550 - 3.250	3.250	5°	CFX-0500HM	6.00	0.455	0.500	0.250	0.094	◇ CP or CC
0.688 - 4.250	4.250	8°	CFX-0625HM	8.00	0.565	0.625	0.375	0.156	◇ CP or CC
0.832 - 4.250	4.750	8°	CFX-0750HM	10.00	0.680	0.750	0.375	0.156	◇ CP or CC

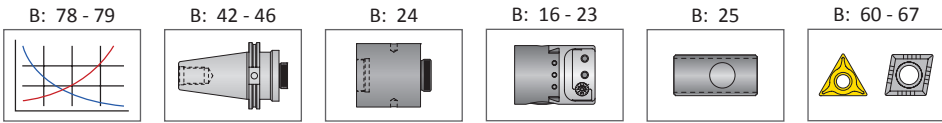


D ₁	L ₃	Angle	Part No.	L ₁	L ₆	D ₂	Insert		
							I.C.	T ₁	Shape / Style
Imperial (inch) - TFX									
0.425 - 2.250	2.250	8°	TFX-0375HM	4.00	0.340	0.375	0.219	0.094	▲ TC
0.550 - 3.250	3.250	5°	TFX-0500HM	6.00	0.455	0.500	0.250	0.094	▲ TC

Adapters

D ₁				
Imperial (inch)				
0.187	BTH-01870375 BTH-01870500	-	-	-
0.250	BTH-02500375 BTH-02500500 BTH-02500625	-	-	BTH-02500625 BTH-02500750
0.312	BTH-03120375 BTH-03120500	-	-	-
0.375	BTH-03750500	BTH-03750750 BTH-03751000	-	-
0.500	-	BTH-05001000	BTH-05000750	-
0.625	BTH-06250750	-	BTH-06251000	-
0.750	-	-	BTH-07501000	-

For complete adapter details, see page B: 25.

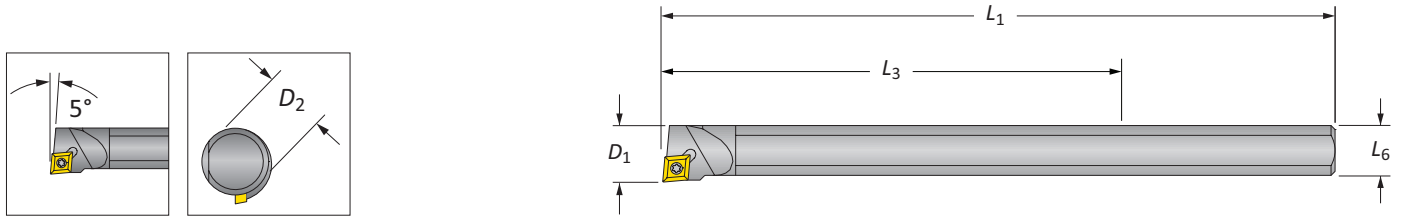


Icon reference key on B: 7

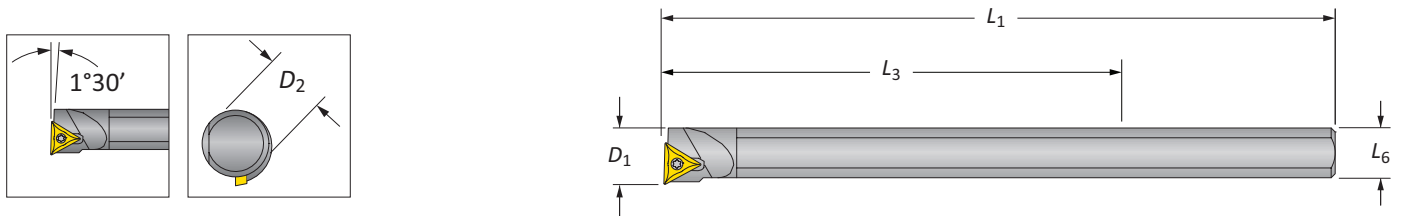
Inserts sold separately.

Criterion boring bars

Carbide shank CFX / TFX



D ₁		L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
CP Insert	CC Insert						I.C.	T ₁	Shape / Style
Imperial (inch) - CFX									
0.500 - 3.000	0.750	3.000	CFX-0375CS	6.00	0.34	0.375	0.250	0.094	🔹 CP or CC
0.625 - 4.500	0.750	4.500	CFX-0500CS	8.00	0.47	0.500	0.250	0.094	🔹 CP or CC
0.750 - 5.500	0.750	5.500	CFX-0625CS	10.00	0.59	0.625	0.250	0.094	🔹 CP or CC
0.875 - 6.000	1.230	6.000	CFX-0750CS	10.00	0.70	0.750	0.375	0.156	🔹 CP or CC

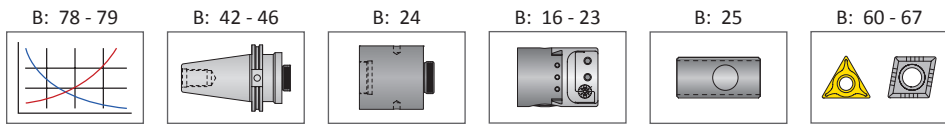


D ₁	L ₃	Part No.	L ₁	L ₆	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch) - TFX								
0.500 - 3.000	3.000	TFX-0375CS	6.00	0.34	0.375	0.250	0.094	▲ TP
0.625 - 4.500	4.500	TFX-0500CS	8.00	0.47	0.500	0.250	0.094	▲ TP
0.750 - 5.500	5.500	TFX-0625CS	10.00	0.59	0.625	0.375	0.125	▲ TP
0.875 - 6.000	6.000	TFX-0750CS	10.00	0.70	0.750	0.375	0.125	▲ TP

Adapters

D ₁	 Style 1	 Style 2	 Style 3	 Style 4
Imperial (inch)				
0.375	BTH-03750500	BTH-03750750	-	-
	-	BTH-03751000	-	-
0.500	-	BTH-05001000	BTH-05000750	-
0.625	BTH-06250750	-	BTH-06251000	-
0.750	-	-	BTH-07501000	-

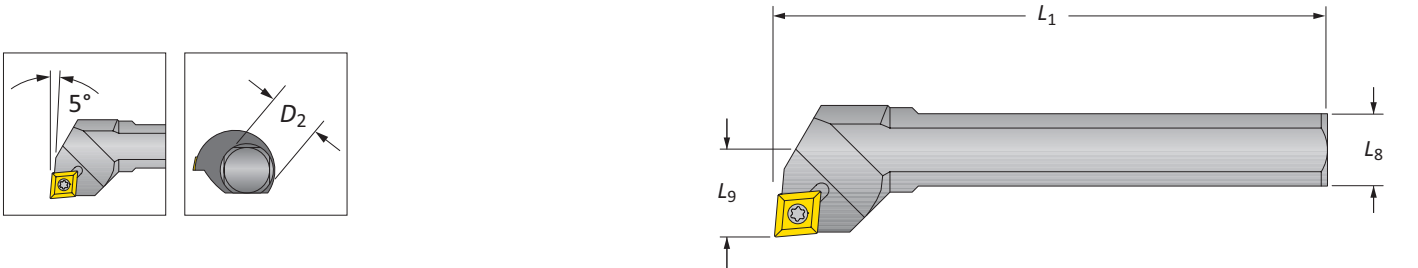
For complete adapter details, see page B: 25.



Icon reference key on B: 7 Inserts sold separately.

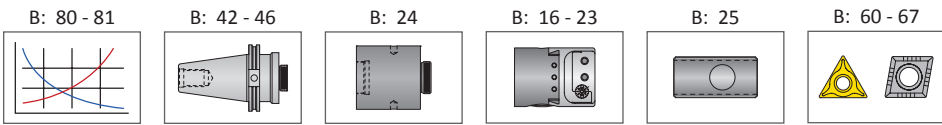
Criterion boring bars

Cross hole



D ₁	L ₉	Part No.	L ₁	L ₈	D ₂	Insert		
						I.C.	T ₁	Shape / Style
Imperial (inch)								
2.875 - 6.687*	0.53	CHB-0500	2.75	0.43	0.500	0.250	0.094	◇ CP or CC
4.937 - 11.000*	0.77	CHB-0750	4.75	0.64	0.750	0.375	0.156	◇ CP or CC
5.625 - 13.437*	0.87	CHB-1000	5.31	0.85	1.000	0.375	0.156	◇ CP or CC
9.093 - 21.500*	1.17	CHB-1500	9.00	1.31	1.500	0.500	0.188	◇ CC
Metric (mm)								
73.00 - 169.00*	13	CHB-012M	72	10	12	6.35	2.39	◇ CP or CC
126.00 - 279.00*	19	CHB-020M	123	18	20	9.53	3.97	◇ CP or CC
143.00 - 341.00*	22	CHB-025M	134	23	25	9.53	3.97	◇ CP or CC

*NOTICE: Cross hole bars should always be secured in the bar holder with at least two set screws.



Icon reference key on B: 7 Inserts sold separately.



Criterion boring inserts nomenclature

Criterion boring inserts

TCMT18150	T	MF	P02
1	2	3	4



80° rhombic



80° triangle



80° trigon

1. Standard ANSI / ISO Designation			2. Material		3. Chipbreaker		4. Coating
Rhombic	Triangle	Trigon	C = Carbide T = Cermet B = CBN		FA	MB	Blank = Uncoated T = TiN C01 = CVD C02 = CVD C03 = CVD C04 = CVD P01 = PVD P02 = PVD
CDCD	TCMT	WCMT			FB	MC	
CCET	TPGT				FC	MD	
CCGT	TPMT				FD	ME	
CCMT	TPGW				FE	MF	
CCGW					FG		
CCMW							
CPMT							

80° Rhombic

Insert Geometry	Designed for / Notes
FB	Finishing applications • Light to medium depths of cut • Low feed rates
FC	Chip control in finishing applications • Varied depths of cut • Low feed rates • Low cutting forces
FD	Finishing applications • Non-ferrous metals • Large rake angle provides smooth chip flow with less adhesion for a good surface finish
MB	Medium to finishing applications • Wide breaker dot and pocket
MD	Medium and finishing applications • Non-ferrous metals • Positive chip groove and polished surface reduces chip adhesion
ME	Medium and finishing applications • Stainless steel and heat-resistant alloys • Large rake angle and circular edge give good chip control

80° Triangle

Insert Geometry	Designed for / Notes
FA	Finishing applications • Light depths of cut • Low feed rates
FE	Finishing applications • Low carbon materials • Sticky materials
FG	Finishing applications • Ferrous materials with good chip control
MC	Medium and finishing applications • Cast iron
MF	Medium general purpose applications

ISO Application Areas

P	Steel	N	Non-ferrous
M	Stainless steel	S	Heat resistant
K	Cast iron	H	Hard materials

Recommendation Key

	Recommended
	Secondary

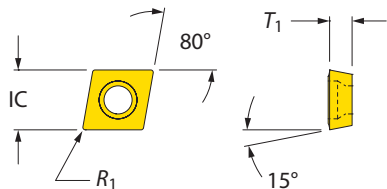


Criterion inserts

80° rhombic | CD•• | CP••

CD••

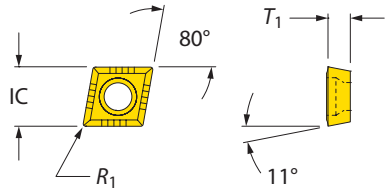
Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
CDCD513002...	0.156	0.040	0.002	3.97	1.02	0.05
CDCD513007...	0.156	0.040	0.007	3.97	1.02	0.18



	Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H		Torx Screw		Torx Wrench
			Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous				
CD••																	
CDCD513002C2			•						♦	♦	♦	♦					
CDCD513002C2T				•													
CDCD513002C6			•					♦	♦								
CDCD513007C2T				•						♦	♦	♦	♦				
CDCD513007C26T				•				♦	♦								
															TXS-001-1	8T-6	

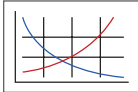
CP••

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
CP••2150...	0.250	0.094	0.008	6.35	2.38	0.20
CP••2151...	0.250	0.094	0.016	6.35	2.38	0.40
CP••3251...	0.375	0.156	0.016	9.53	3.97	0.40
CP••3252...	0.375	0.156	0.031	9.53	3.97	0.80



	Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H		Torx Screw		Torx Wrench	
			Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous					Heat resistant
CPMT••																		
CPMT2150C2T		060202		•							♦	♦					TXS-116-1	8T-7
CPMT2150C6T				•				♦	♦									
CPMT2151C2T		060204		•							♦	♦					TXS-009-1	8T-15
CPMT2151C6T				•				♦	♦									
CPMT3251C2T	09T304		•								♦	♦						
CPMT3251C6T			•				♦	♦										
CPMT3252C6T	09T308		•								♦	♦						

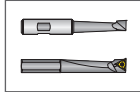
B: 78 - 81



B: 8 - 33



B: 47 - 59



Icon reference key on B: 7

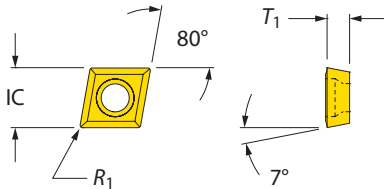
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

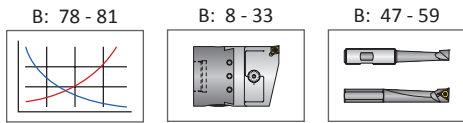
80° rhombic | CC••

CC••

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
CC••21502	0.250	0.094	0.004	6.35	2.38	0.10
CC••21505	0.250	0.094	0.008	6.35	2.38	0.20
CC••2151	0.250	0.094	0.016	6.35	2.38	0.40
CC••2152	0.250	0.094	0.031	6.35	2.38	0.80
CC••32505	0.375	0.156	0.008	9.53	3.97	0.20
CC••3251	0.375	0.156	0.016	9.53	3.97	0.40
CC••3252	0.375	0.156	0.031	9.53	3.97	0.80
CC••431	0.500	0.188	0.016	12.70	4.76	0.40
CC••432	0.500	0.188	0.031	12.70	4.76	0.80



 Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench			
		Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant	Titanium	Hard materials
CCET••																	
CCET21502CFBP01	060201		•				◆	◆	❖						TXS-116-1	8T-7	
CCET21505CFCP01	060202		•				◆	◆	❖								
CCET21505TMB					•			◆	◆								
CCET32505TFC	09T302			•			◆	◆							TXS-009-1	8T-15	
CCGT••																	
CCGT32505CFD	09T302	•							❖		◆		◆		TXS-009-1	8T-15	
CCGT3251CFD	09T304	•							❖		◆		◆				
CCGT3251CMD		•								❖		◆		◆			
CCGT3252CFD	09T308	•							❖		◆		◆				
CCGT3252CMD		•								❖		◆		◆			
CCGW••																	
CCGW21505CMC	060202	•							◆	◆	❖		❖		TXS-116-1	8T-7	
CCGW3251CMC	09T304	•							◆	◆	❖		❖		TXS-009-1	8T-15	
CCMW••																	
CCMW2151B1	060204					•			◆					◆	TXS-116-1	8T-7	
CCMW2151B2						•				◆	◆						
CCMW2152B1	060208					•			◆					◆			TXS-009-1
CCMW2152B2						•				◆	◆						
CCMW3251B1	09T304					•				◆				◆			
CCMW3251B2						•				◆	◆						
CCMW3252B1	09T308					•			◆					◆			
CCMW3252B2						•				◆	◆						



Icon reference key on B: 7

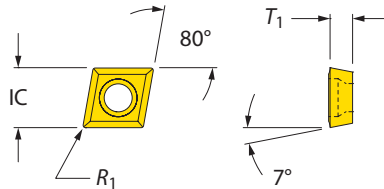
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

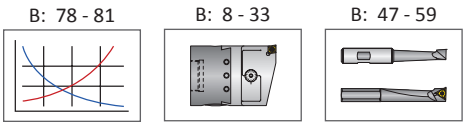
80° rhombic | CC••

CC••

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
CC••21502	0.250	0.094	0.004	6.35	2.38	0.10
CC••21505	0.250	0.094	0.008	6.35	2.38	0.20
CC••2151	0.250	0.094	0.016	6.35	2.38	0.40
CC••2152	0.250	0.094	0.031	6.35	2.38	0.80
CC••32505	0.375	0.156	0.008	9.53	3.97	0.20
CC••3251	0.375	0.156	0.016	9.53	3.97	0.40
CC••3252	0.375	0.156	0.031	9.53	3.97	0.80
CC••431	0.500	0.188	0.016	12.70	4.76	0.40
CC••432	0.500	0.188	0.031	12.70	4.76	0.80



 Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench	
		Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant
CCMT••															
CCMT21505CMBC01	060202		•				❖	❖		◆	◆				
CCMT21505CMBP01			•							◆	◆				
CCMT21505TMB				•			◆	◆							
CCMT2150C2		•								◆	◆	❖			
CCMT2150C2T			•							◆	◆	❖			
CCMT2150C6		•					◆	◆							
CCMT2150C6T			•			◆	◆								
CCMT2151C2	060204	•								◆	◆	❖			
CCMT2151C2T			•							◆	◆	❖			
CCMT2151C6		•					◆	◆							
CCMT2151C6T			•				◆	◆							
CCMT32505TMB	09T302			•		◆	◆								
CCMT3250C2		•								◆	◆	❖			
CCMT3250C2T			•							◆	◆	❖			
CCMT3250C6		•					◆	◆							
CCMT3250C6T			•			◆	◆								
CCMT3251TMB	09T304			•		◆	◆								
CCMT3251CMC02			•						◆				❖		
CCMT3251C2		•								◆	◆	❖			
CCMT3251C2T			•							◆	◆	❖			
CCMT3251C6	09T304	•				◆	◆								
CCMT3251C6T			•				◆	◆							
CCMT3251C6T			•				◆	◆							
CCMT3251C6T			•				◆	◆							
CCMT3252CMC02	09T308		•						◆				❖		
CCMT3252C2		•								◆	◆	❖			
CCMT3252C2T			•							◆	◆	❖			
CCMT3252C6		•					◆	◆							
CCMT3252C6T			•				◆	◆							
CCMT3252C6T			•				◆	◆							
CCMT431CMBC01	120404		•				❖	❖		◆	◆				
CCMT432C6T	120408		•				◆	◆							



Icon reference key on B: 7

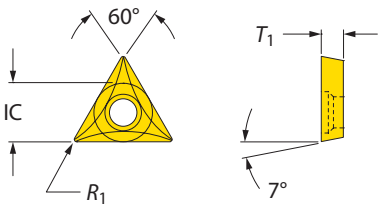
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

60° triangle | TC••

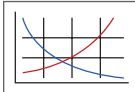
TC••

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
TC••12121...	0.156	0.078	0.016	3.97	1.98	0.40
TC••12122...	0.156	0.078	0.031	3.97	1.98	0.80
TC••18150...	0.219	0.094	0.008	5.56	2.38	0.20
TC••18151...	0.219	0.094	0.016	5.56	2.38	0.40
TC••2150...	0.250	0.094	0.008	6.35	2.38	0.20
TC••21505...	0.250	0.094	0.008	6.35	2.38	0.20
TC••2151...	0.250	0.094	0.016	6.35	2.38	0.40
TC••3251...	0.375	0.156	0.016	9.53	3.97	0.40

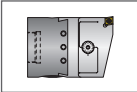


 Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench			
		Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant	Titanium	Hard materials
TCMT••																	
TCMT12121C2	06T104	•								♦	♦				TXS-028-1	8T-6	
TCMT12121C2T			•								♦	♦	❖				
TCMT12121C6T				•				♦	♦								
TCMT12121CFGC04				•				♦	♦								
TCMT12122C2	06T108	•								♦	♦	❖			TXS-116-1	8T-7	
TCMT12122C2T				•				♦	♦		♦	♦	❖				
TCMT12122C6T				•													
TCMT18150C2	090202	•								♦	♦	❖			TXS-116-1	8T-7	
TCMT18150C2T				•				♦	♦		♦	♦	❖				
TCMT18150C6				•				♦	♦								
TCMT18150C6T					•												
TCMT18150TMF						•		♦	♦								
TCMT18150TMFP02	090204						❖	❖		♦					TXS-116-1	8T-7	
TCMT18151TMF						•		♦	♦								
TCMT18151TMFP02							•	❖	❖		♦						
TCMT2150C2	110202	•								♦	♦	❖			TXS-116-1	8T-7	
TCMT2150C2T				•							♦	♦	❖				
TCMT2150C6				•				♦	♦								
TCMT2150C6T					•			♦	♦								
TCMT21505TMF						•		♦	♦								
TCMT21505TMFP02	110204						❖	❖		♦					TXS-116-1	8T-7	
TCMT2151TMF						•		♦	♦								
TCMT2151TMFP02							•	❖	❖		♦						
TCMT3251C6	16T304	•								♦					TXS-100-1	8T-20	
TCMT3251C6T				•				♦	♦								

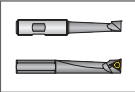
B: 78 - 81



B: 8 - 33



B: 47 - 59



Icon reference key on B: 7

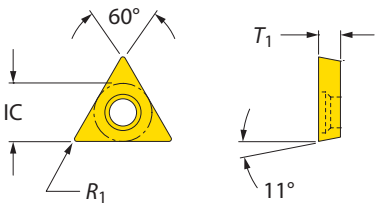
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

60° triangle | TP••

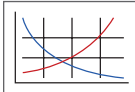
TP••

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
TP••2150...	0.250	0.094	0.002	6.35	2.38	0.05
TP••2151...	0.250	0.094	0.016	6.35	2.38	0.40
TP••2152...	0.250	0.094	0.031	6.35	2.38	0.80
TP••3205	0.375	0.125	0.008	9.53	3.18	0.40
TP••321...	0.375	0.125	0.016	9.53	3.18	0.40
TP••322...	0.375	0.125	0.031	9.53	3.18	0.80
TP••3251...	0.375	0.156	0.016	9.53	3.97	0.40
TP••3252...	0.375	0.156	0.031	9.53	3.97	0.80



	Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench		
			Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant	Titanium
TPGT••																	
TPGT2151C2	110204	110204	•							♦	♦	❖			TXS-116-1	8T-7	
TPGT2151C2T				•							♦	♦	❖				
TPGT2151C6				•					♦	♦							
TPGT2151C6T				•					♦	♦							
TPGT2152C2	110208	110208	•							♦	♦	❖			TXS-116-1	8T-7	
TPGT2152C2T				•							♦	♦	❖				
TPGT2152C6				•					♦	♦							
TPGT2152C6T				•					♦	♦							
TPGT321C2	160304	160304	•							♦	♦	❖			TXS-100-1	8T-20	
TPGT321C2T				•							♦	♦	❖				
TPGT321C6				•					♦	♦							
TPGT321C6T				•					♦	♦							
TPGT322C2	160308	160308	•							♦	♦	❖			TXS-100-1	8T-20	
TPGT322C2T				•							♦	♦	❖				
TPGT322C6				•					♦	♦							
TPGT322C6T				•					♦	♦							
TPGT3251C2	16T304	16T304	•							♦	♦	❖			TXS-100-1	8T-20	
TPGT3251C2T				•							♦	♦	❖				
TPGT3251C6				•					♦	♦							
TPGT3251C6T				•					♦	♦							
TPGT3252C2	16T308	16T308	•							♦	♦	❖			TXS-100-1	8T-20	
TPGT3252C2T				•							♦	♦	❖				
TPGT3252C6				•					♦	♦							
TPGT3252C6T				•					♦	♦							
TPMT••																	
TPMT3205CMFC03	160302	160302		•						♦			❖	❖	TXS-100-1	8T-20	
TPMT321CMFC03	160304	160304		•						♦			❖	❖			
TPMT321CFEC03				•					❖	❖				❖			❖
TPMT321CFEP01	160308	160308		•						♦			❖	❖			
TPMT322CFEC03				•					❖	❖	♦						
TPMT322CFEP01				•					♦	♦	❖						

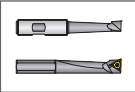
B: 78 - 81



B: 8 - 33



B: 47 - 59



Icon reference key on B: 7

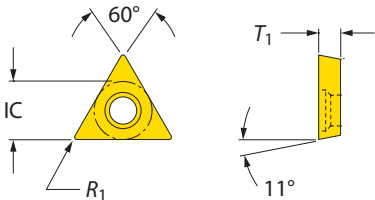
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

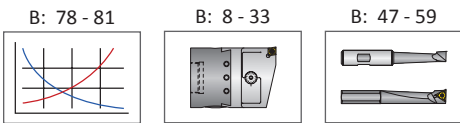
60° triangle | TP●●

TP●●

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
TP●●2150...	0.250	0.094	0.002	6.35	2.38	0.05
TP●●2151...	0.250	0.094	0.016	6.35	2.38	0.40
TP●●2152...	0.250	0.094	0.031	6.35	2.38	0.80
TP●●321...	0.375	0.125	0.016	9.53	3.18	0.40
TP●●322...	0.375	0.125	0.031	9.53	3.18	0.80
TP●●3251...	0.375	0.156	0.016	9.53	3.97	0.40
TP●●3252...	0.375	0.156	0.031	9.53	3.97	0.80



 Part No.	ISO Description	Carbide		Cermet		CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench		
		Uncoated	Coated	Uncoated	Coated		Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant	Titanium
TPGW●●																
TPGW2150C2	1102V5	•								•	•	•				
TPGW2150C2T			•								•	•	•			
TPGW2150C6			•					•	•							
TPGW2150C6T				•				•	•							
TPGW2151C2	110204	•								•	•	•				
TPGW2151C2T			•								•	•	•			
TPGW2151C6			•					•	•							
TPGW2151C6T				•				•	•							
TPGW2152C2	110208	•								•	•	•				
TPGW2152C2T			•								•	•	•			
TPGW2152C6			•					•	•							
TPGW2152C6T				•				•	•							
TPGW320C2	1603V5	•								•	•	•				
TPGW320C2T			•								•	•	•			
TPGW320C6			•					•	•							
TPGW320C6T				•				•	•							
TPGW321C2	160304	•								•	•	•				
TPGW321C2T			•								•	•	•			
TPGW321C6			•					•	•							
TPGW321C6T				•				•	•							
TPGW322C2	160308	•								•	•	•				
TPGW322C2T			•								•	•	•			
TPGW322C6			•					•	•							
TPGW322C6T				•				•	•							
TPGW3250C2	16T3V5	•								•	•	•				
TPGW3250C2T			•								•	•	•			
TPGW3250C6			•					•	•							
TPGW3250C6T				•				•	•							
TPGW3251C2	16T304	•								•	•	•				
TPGW3251C2T			•								•	•	•			
TPGW3251C6			•					•	•							
TPGW3251C6T				•				•	•							
TPGW3252C2	16T308	•								•	•	•				
TPGW3252C2T			•								•	•	•			
TPGW3252C6			•					•	•							
TPGW3252C6T				•				•	•							



Icon reference key on B: 7

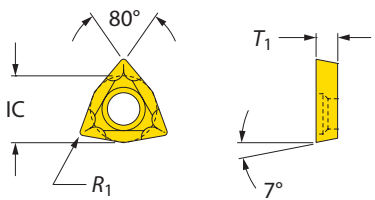
Inserts supplied in packs of 10.
Screws sold in multiples of 10.

Criterion inserts

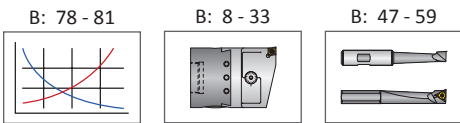
80° trigon | WC●●

WC●●

Part No.	Imperial (inch)			Metric (mm)		
	IC	T ₁	R ₁	IC	T ₁	R ₁
WC●●020102...	0.156	0.063	0.008	3.97	1.60	0.20
WC●●020104...	0.156	0.063	0.016	3.97	1.60	0.40



 Part No.	ISO Description	Carbide		Cermet	CBN	P	M	K	N	S	H	 Torx Screw	 Torx Wrench			
		Uncoated	Coated	Uncoated	Coated	Free cutting	Carbon / Alloy	Stainless	Grey cast iron	Nodular cast iron	Non-ferrous			Heat resistant	Titanium	Hard materials
WCMT●●																
WCMT020102C2	020102	●						❖	❖	❖	◆			TXS-028-1	8T-6	
WCMT020102C2T			●						◆	◆	◆	❖				
WCMT020102C6		●					❖	❖								
WCMT020102C6T		●				◆	◆									
WCMT020104C2	020104	●						❖	❖	❖	◆					
WCMT020104C2T			●						◆	◆	◆	❖				
WCMT020104C6		●					❖	❖								
WCMT020104C6T			●				◆	◆								



Icon reference key on B: 7

Inserts supplied in packs of 10.
Screws sold in multiples of 10.



Criterion boring kits

Micro adjusting

|

CNC kits

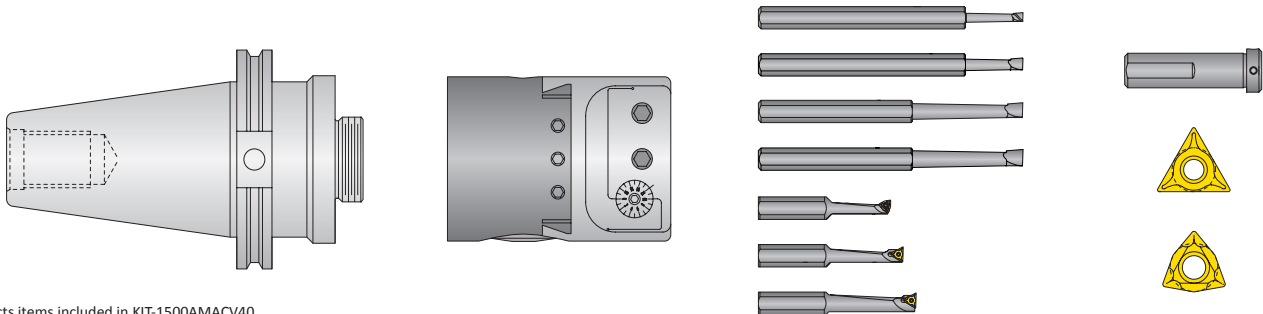


Image depicts items included in [KIT-1500AMACV40](#).

D ₁ Range	Part No.	Components Included in Kit				
		Boring Head	Shank	Boring Bars	Adapters	Inserts
Imperial (inch)						
0.060 - 2.500	KIT-1500AMACV40	CB-1500AMA	CB1500-CV40	CBT-00600300G CBT-00800300G CBT-01000600G CBT-01100600G TA-02501062A TA-03121437A TA-03751750A	BTH-01250375	WCMT020102C6T TCMT12121CFGC04
	KIT-1500AMACV50	CB-1500AMA	CB1500-CV50	CBT-00600300G CBT-00800300G CBT-01000600G CBT-01100600G TA-02501062A TA-03121437A TA-03751750A	BTH-01250375	WCMT020102C6T TCMT12121CFGC04
0.060 - 3.250	KIT-2500BMACV40	CB-2500BMA	CB2500-CV40	CBT-00600300G CBT-00800300G CBT-01000600G CBT-0110600G TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002187B	BTH-01250500	WCMT020102C6T TCMT12121CFGC04 TPGT2151C6T
	KIT-2500BMACV50	CB-2500BMA	CB2500-CV50	CBT-00600300G CBT-00800300G CBT-01000600G CBT-0110600G TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002187B	BTH-01250500	WCMT020102C6T TCMT12121CFGC04 TPGT2151C6T

Criterion boring kits

Micro adjusting

|

CNC kits

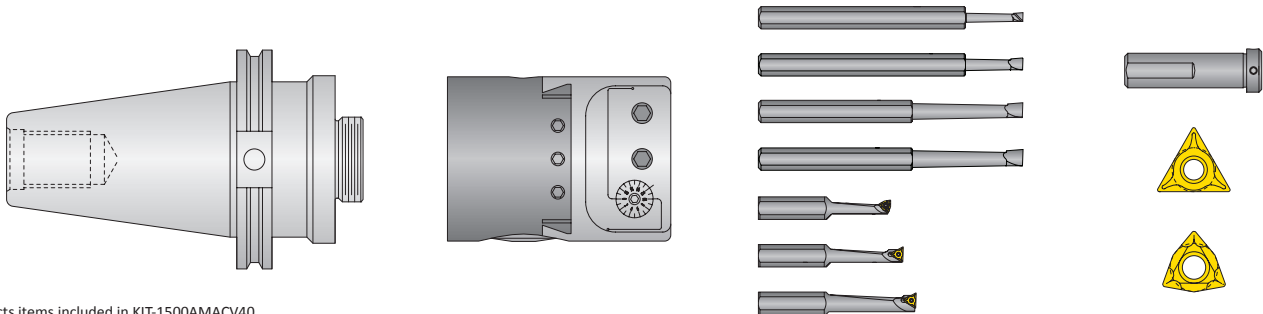


Image depicts items included in [KIT-3000DMACV40](#).

D ₁ Range	Part No.	Components Included in Kit				
		Boring Head	Shank	Boring Bars	Adapters	Inserts
Imperial (inch)						
0.120 - 50.125	KIT-3000DMACV40	CB-3000DMA	CB3000-CV40	CBT-01200500H CBT-01400625H CBT-01600750H CBT-01800875H TA-02501062B TA-031211437B TA-03751750B TA-04372062B TA-05002500D TA-07503000D TA-10003500D TA-12504000D	BTH-02500750 BTH-05000750	WCMT020102C6T TCMT12121CFGC04 TPGT2151C6T TPGT321C6T
	KIT-3000DMACV40	CB-3000DMA	CB3000-CV40	CBT-01200500H CBT-01400625H CBT-01600750H CBT-01800875H TA-02501062B TA-031211437B TA-03751750B TA-04372062B TA-05002500D TA-07503000D TA-10003500D TA-12504000D	BTH-02500750 BTH-05000750	WCMT020102C6T TCMT12121CFGC04 TPGT2151C6T TPGT321C6T

Criterion boring kits

CB Style | Balance kits

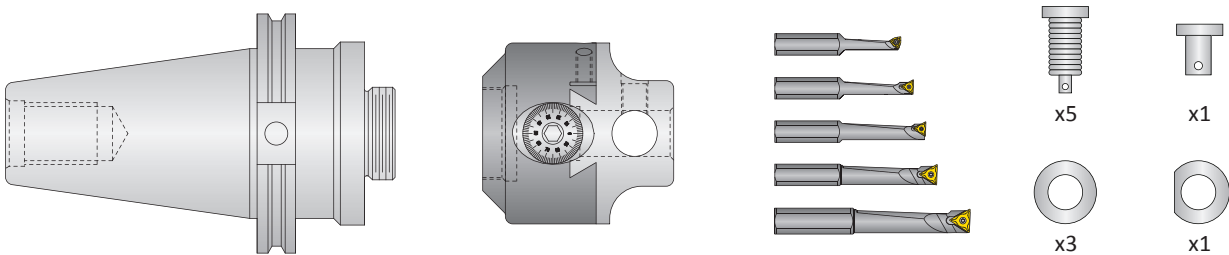
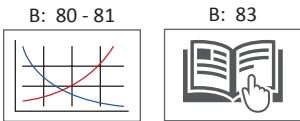


Image depicts items included in KIT-202BCV40BAL. Inserts sold separately.

D ₁ Range	Part No.	Components Included in Kit			
		Boring Head	Shank	Boring Bars	Shafts / Weights
Imperial (inch)					
0.250 - 2.500	KIT-202BBAL	-	-	-	To obtain balance, all kits include: • 6 shafts • 4 weights
	KIT-202BTABAL	Kits include: • CB-202B	-	Kits include: • TA-02501062B • TA-03121437B • TA-03751750B • TA-04372062B • TA-05002187B	
	KIT-202BR8BAL		R8-087520		
	KIT-202BNT40BAL		NMTB40-087520		
	KIT-202BCV40BAL		CB2000-CV40		
	KIT-202BBT40BAL		CB2000-BT40		
KIT-202BHS63BAL	CB2000-HSK63A				
Metric (mm)					
6 - 76	KIT-050MBBAL	-	-	-	To obtain balance, all kits include: • 6 shafts • 4 weights
	KIT-050MBTABAL	Kits include: • CB-050MB	-	Kits include: • TA-06M027B • TA-08M036B • TA-10M045B • TA-12M054B	
	KIT-050MBD40BAL		CB050M-DIN40		
	KIT-050MBI40BAL		CB050M-ISO40		

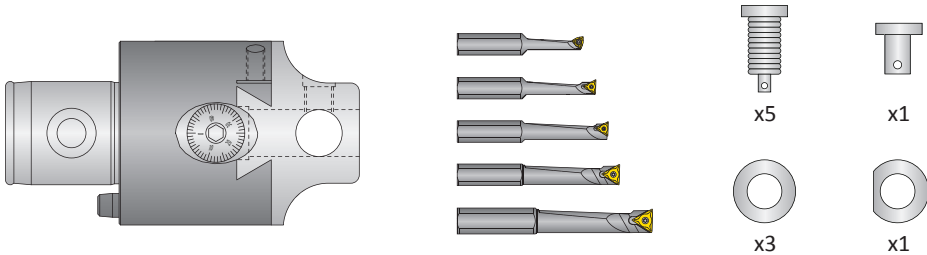
- Notes:**
- Bores up to 8x faster
 - Fits all 202B style boring heads
 - Improves bore finish, concentricity, and productivity
 - Simple and easy to use
 - U.S. Patent No.: 7,309,194



Icon reference key on B: 7

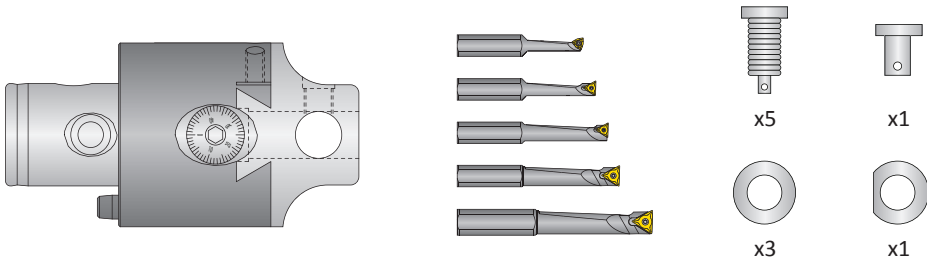
Cri-Tip® boring heads - competitor connection kits

CB Style | Balance kits



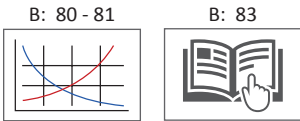
Komet® ABS®

D ₁ Range	Part No.	Components Included in Kit		
		Boring Head	Boring Bars	Shafts / Weights
Imperial (inch)				
0.250 - 2.500	KIT-CTP202K5BAL	CTP2000-K5202B	TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002187B	To obtain balance, the kit includes: • 6 shafts • 4 weights



Komet® ABS®

D ₁ Range	Part No.	Components Included in Kit		
		Boring Head	Boring Bars	Shafts / Weights
Imperial (inch)				
0.250 - 2.500	<u>KIT-CTP202A5BAL</u>	<u>CTP2000-A50202B</u>	<u>TA-02501062B</u> <u>TA-03121437B</u> <u>TA-03751750B</u> <u>TA-04372062B</u> <u>TA-05002187B</u>	To obtain balance, the kit includes: • 6 shafts • 4 weights



Icon reference key on B: 7

A

DRILLING

Criterion boring kits

CB Style | Carbide boring bars

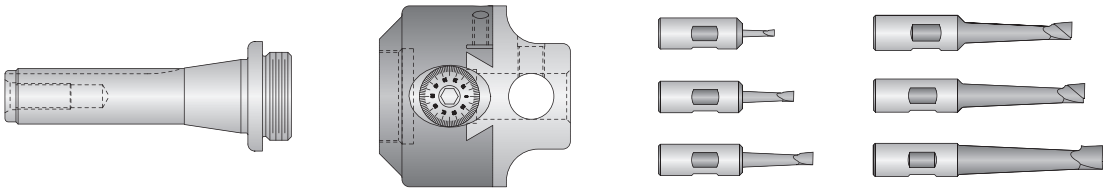
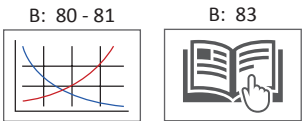


Image depicts items included in KIT-202BR8SBT.

D ₁ Range	Part No.	Components Included in Kit			
		Boring Head	Shank	Boring Bars	Adapters
Imperial (inch)					
0.125 - 2.500	KIT-202BR8SBT	CB-202B	R8-087520	SBT-01250500B SBT-01870812B SBT-02501125B SBT-03121500B SBT-03751750B SBT-05002187B	None
0.500 - 50.125	KIT-203DR8SBT	CB-203D	R8-150018	SBT-05002187D SBT-06252750D SBT-07503000D SBT-10003500D SBT-12504000D	None
0.125 - 50.125	KIT-203DR8SBTBD	CB-203D	R8-150018	SBT-01250500B SBT-01870812B SBT-02501125B SBT-03121500B SBT-03751750B SBT-05002187B SBT-06252750D SBT-07503000D SBT-10003500D SBT-12504000D	BTH-05000750
Metric (mm)					
3 - 62	KIT-CB038MASBT	CB-038MA	None	SBT-03012MA SBT-04020MA SBT-06028MA SBT-08037MA SBT-10048MA SBT-12055MA	None
0.05 - 76	KIT-CB050MBSBT	CB-050MB	None	SBT-03012MB SBT-04020MB SBT-06028MB SBT-08037MB SBT-10048MB SBT-12055MB	CHB-012M
12 - 130	KIT-CB076MDSBT	CB-076MD	None	SBT-12063MD SBT-16071MD SBT-19078MD SBT-25090MD SBT-32100MD	CHB-020M



Icon reference key on B: 7

B

DRILLING

Criterion boring kits

CB Style | TA insert boring bars

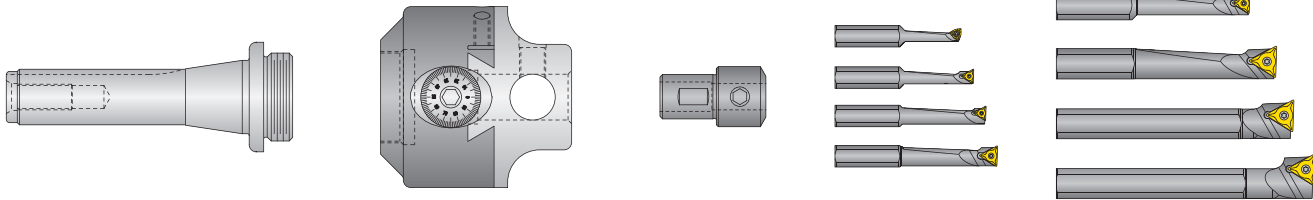
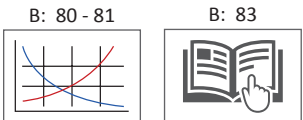


Image depicts items included in KIT-203DR8TABD. Inserts sold separately.

D ₁ Range	Part No.	Components Included in Kit			
		Boring Head	Shank	Boring Bars	Adapters
Imperial (inch)					
0.250 - 2.500	KIT-202BR8TA	CB-202B	R8-087520	TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002187B	None
0.500 - 50.125	KIT-203DR8TA	CB-203D	R8-150018	TA-05002500D TA-07503000D TA-10003500D TA-12504000D	None
0.250 - 50.125	KIT-203DR8TABD	CB-203D	R8-150018	TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002500D TA-07503000D TA-10003500D TA-12504000D	BTH-05000750
0.250 - 50.125	KIT-203DC40TABD	CB-203D	CB3000-CV40	TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002500D TA-07503000D TA-10003500D TA-12504000D	BTH-05000750
Metric (mm)					
6 - 62	KIT-CB038MATA	CB-038MA	None	TA-06M027A TA-08M036A TA-10M045A	None
6 - 76	KIT-CB050MBTA	CB-050MB	None	TA-06M027B TA-08M036B TA-10M045B TA-12M054B	CHB-012M
10 - 130	KIT-CB076MDTA	CB-076MD	None	TA-10M045D TA-12M054D TA-16M072D TA-20M090D	CHB-020M
6 - 62	KIT-CB038MATAS	CB-038MA	None	TAS-06M012A TAS-08M016A TAS-10M020A	
6 - 76	KIT-CB050MBTAS	CB-050MB	None	TAS-06M012B TAS-08M016B TAS-10M020B TAS-12M024B	CHB-012M
10 - 130	KIT-CB076MDTAS	CB-076MD	None	TAS-10M020D TAS-12M024D TAS-16M032D TAS-20M040D	CHB-020M



Icon reference key on B: 7



Criterion boring bar sets

Carbide

|

Round shank

|

Imperial

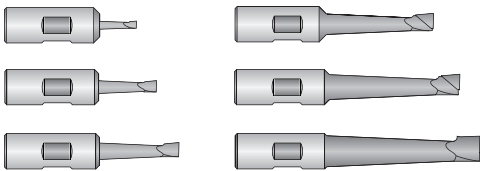
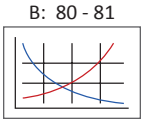


Image depicts items included in SET-SBTB.

D_2	Part No.	Boring Bars Included in Set
<i>Imperial (inch)</i>		
0.375	SET-SBTA	SBT-01250500A SBT-01870812A SBT-02501125A SBT-03121500A SBT-03751875A SBT-05002312A
0.500	SET-SBTB	SBT-01250500B SBT-01870812B SBT-02501125B SBT-03121500B SBT-03751750B SBT-05002187B
0.750	SET-SBTD	SBT-05002187D SBT-06252750D SBT-07503000D SBT-10003500D SBT-12504000D
1.000	SET-SBTE	SBT-05002375E SBT-06252625E SBT-07502875E SBT-10003500E SBT-12503875E



Icon reference key on B: 7



Criterion boring bar sets

Carbide

|

Round shank

|

Stubby

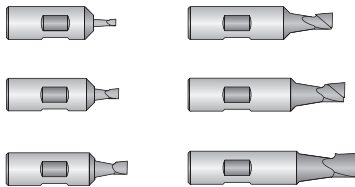
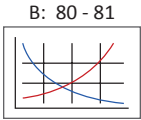


Image depicts items included in SET-SBTBSHT.

D_2	Part No.	Boring Bars Included in Set
<i>Imperial (inch)</i>		
0.500	SET-SBTBSHT	SBT-01250250B SBT-01870312B SBT-02500437B SBT-03120562B SBT-03750687B SBT-05000812B
0.750	SET-SBTDSHT	SBT-05001312D SBT-07501531D SBT-10001750D



Icon reference key on B: 7

A

CRITERION BORING BAR SETS

DRILLING

Carbide | Square shank

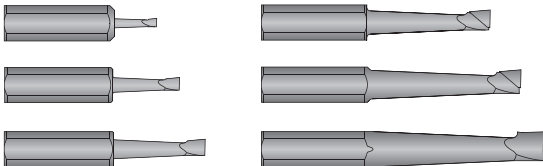
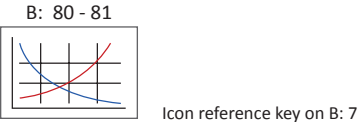


Image depicts items included in SET-SBTBS.

D_2	Part No.	Boring Bars Included in Set
Imperial (inch)		
0.500	SET-SBTBS	SBT-01250500BS SBT-01870812BS SBT-02501125BS SBT-03121500BS SBT-03751750BS SBT-05002187BS
Metric (mm)		
10	SET-SBTMA	SBT-03012MA SBT-04020MA SBT-06028MA SBT-08037MA SBT-10048MA SBT-12055MA
12	SET-SBTMB	SBT-03012MB SBT-04020MB SBT-06028MB SBT-08037MB SBT-10048MB SBT-12055MB
20	SET-SBTMD	SBT-12063MD SBT-16071MD SBT-19078MD SBT-25090MD SBT-32100MD
25	SET-SBTME	SBT-12060ME SBT-16067ME SBT-19074ME SBT-25089ME SBT-32100ME



CRITERION BORING BAR SETS

TA insert

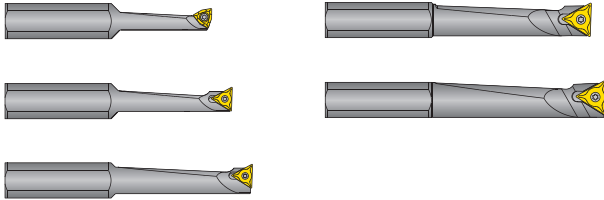
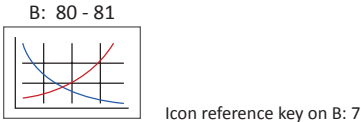


Image depicts items included in SET-TAB. Inserts sold separately.

D_2	Part No.	Boring Bars Included in Set
Imperial (inch)		
0.500	SET-TAB	TA-02501062B TA-03121437B TA-03751750B TA-04372062B TA-05002187B
0.750	SET-TAD	TA-05002500D TA-07503000D TA-10003500D TA-12504000D
1.000	SET-TAE	TA-05002375E TA-07502875E TA-10003500E TA-12503875E
Metric (mm)		
10	SET-TAMA	TA-06M027A TA-08M036A TA-10M045A
10	SET-TASMA	TAS-06M012A TAS-08M016A TAS-10M020A
12	SET-TAMB	TA-06M027B TA-08M036B TA-10M045B TA-12M054B
12	SET-TASMB	TAS-06M012B TAS-08M016B TAS-10M020B TAS-12M024B
20	SET-TAMD	TA-10M045D TA-12M054D TA-16M072D TA-20M090D
20	SET-TASMD	TAS-10M020D TAS-12M024D TAS-16M032D TAS-20M040D
25	SET-TAME	TA-10M045E TA-12M054E TA-16M072E TA-20M090E TA-25M113E
25	SET-TASME	TAS-10M020E TAS-12M024E TAS-16M032E TAS-20M040E TAS-25M050E





Criterion recommended rough boring data - imperial (inch)

ISO	Material	Hardness (BHN)	Cri-Twin®		
			SFM (Uncoated inserts)	SFM (Coated inserts)	Feed (IPR)
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	450 - 800	450 - 1000	0.006 - 0.016
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 -275	450 - 800	450 - 1000	0.006 - 0.016
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	450 - 800	450 - 1000	0.006 - 0.016
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	450 - 800	450 - 1000	0.006 - 0.016
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	400 - 700	450 - 800	0.006 - 0.016
	Tool Steel H-13, H-21, A-4, O-2, 5-3, etc.	150 - 250	400 - 700	400 - 700	0.006 - 0.010
M	Stainless Steel 400 Series 1010, 1020, 1025, 1522, 1144, etc.	185 - 350	400 - 600	400 - 700	0.006 - 0.012
	Stainless Steel 300 Series 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	400 - 600	400 - 700	0.006 - 0.012
	Super Duplex Stainless Steel 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	400 - 600	400 - 700	0.006 - 0.012
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	100 - 250	150 - 300	0.006 - 0.010
K	Nodular, Grey, Ductile Cast Iron	120 - 320	400 - 600	500 - 700	0.006 - 0.012
N	Cast Aluminum	30 - 180	750 - 1000	800 - 1100	0.006 - 0.016
	Wrought Aluminum	30 - 180	750 - 1000	750 - 1000	0.006 - 0.016
	Brass	100	700 - 950	750 - 1000	0.006 - 0.016

See page B: 82 for instructions on applying the Cri-Twin® boring head in different applications.

NOTICE:

The modular boring system’s configuration, including the length of boring bar, boring head off set, and amount of extensions and/or reducers, may all affect performance of boring systems. All of these factors may increase imbalance of the modular boring system. Imbalance at excessive RPM will cause vibration in the machine tool, which can cause damage to the machine tool; in particular the spindle. This vibration may occur at spindle speeds above 1000 RPM. If vibration is present, reduce spindle speed.

Criterion recommended rough boring data - metric (mm)

ISO	Material	Hardness (BHN)	Cri-Twin®		
			SFM (Uncoated inserts)	SFM (Coated inserts)	Feed (IPR)
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	137 - 244	137 - 305	0.15 - 0.41
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 -275	137 - 244	137 - 305	0.15 - 0.41
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	137 - 244	137 - 305	0.15 - 0.41
	Alloy Steel 4140, 5140, 8640, etc.	125 - 325	137 - 244	137 - 305	0.15 - 0.41
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	122 - 213	137 - 244	0.15 - 0.41
	Tool Steel H-13, H-21, A-4, O-2, 5-3, etc.	150 - 250	122 - 213	122 - 213	0.15 - 0.25
M	Stainless Steel 400 Series 1010, 1020, 1025, 1522, 1144, etc.	185 - 350	122 - 182	122 - 213	0.15 - 0.31
	Stainless Steel 300 Series 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	122 - 182	122 - 213	0.15 - 0.31
	Super Duplex Stainless Steel 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	122 - 182	122 - 213	0.15 - 0.31
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	30 - 76	46 - 91	0.15 - 0.25
K	Nodular, Grey, Ductile Cast Iron	120 - 320	122 - 182	152 - 213	0.15 - 0.31
N	Cast Aluminum	30 - 180	220 - 305	244 - 335	0.15 - 0.41
	Wrought Aluminum	30 - 180	220 - 305	229 - 305	0.15 - 0.41
	Brass	100	213 - 290	229 - 305	0.15 - 0.41

See page B: 82 for instructions on applying the Cri-Twin® boring head in different applications.

NOTICE:

The modular boring system’s configuration, including the length of boring bar, boring head off set, and amount of extensions and/or reducers, may all affect performance of boring systems. All of these factors may increase imbalance of the modular boring system. Imbalance at excessive RPM will cause vibration in the machine tool, which can cause damage to the machine tool; in particular the spindle. This vibration may occur at spindle speeds above 1000 RPM. If vibration is present, reduce spindle speed.





Criterion recommended finish boring data - imperial (inch)

ISO	Material	Hardness (BHN)	Cri-Bore® CBER® CB Style		
			SFM (Uncoated inserts)	SFM (Coated inserts)	Feed (IPR)
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	350 - 700	450 - 800	0.003 - 0.005
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 -275	350 - 700	450 - 800	0.002 - 0.004
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	400 - 700	500 - 800	0.002 - 0.004
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	300 - 600	400 - 700	0.002 - 0.004
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	300 - 600	350 - 650	0.002 - 0.004
	Tool Steel H-13, H-21, A-4, O-2, 5-3, etc.	150 - 250	300 - 600	300 - 700	0.002 - 0.004
M	Stainless Steel 400 Series 1010, 1020, 1025, 1522, 1144, etc.	185 - 350	350 - 600	400 - 650	0.002 - 0.004
	Stainless Steel 300 Series 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	350 - 600	400 - 650	0.002 - 0.004
	Super Duplex Stainless Steel 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	350 - 600	400 - 650	0.002 - 0.004
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	100 - 250	150 - 300	0.002 - 0.004
K	Nodular, Grey, Ductile Cast Iron	120 - 320	400 - 600	500 - 700	0.002 - 0.004
N	Cast Aluminum	30 - 180	750 - 1000	800 - 1100	0.002 - 0.004
	Wrought Aluminum	30 - 180	750 - 1000	750 - 1000	0.002 - 0.004
	Brass	100	700 - 950	750 - 1000	0.002 - 0.004

NOTICE:

The modular boring system’s configuration, including the length of boring bar, boring head off set, and amount of extensions and/or reducers, may all affect performance of boring systems. All of these factors may increase imbalance of the modular boring system. Imbalance at excessive RPM will cause vibration in the machine tool, which can cause damage to the machine tool; in particular the spindle. This vibration may occur at spindle speeds above 1000 RPM. If vibration is present, reduce spindle speed.

Criterion recommended finish boring data - metric (mm)

ISO	Material	Hardness (BHN)	Cri-Bore® CBER® CB Style		
			SFM (Uncoated inserts)	SFM (Coated inserts)	Feed (IPR)
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	107 - 213	137 - 244	0.08 - 0.13
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 -275	107 - 213	137 - 244	0.05 - 0.10
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	122 - 213	152 - 244	0.05 - 0.10
	Alloy Steel 4140, 5140, 8640, etc.	125 - 325	91 - 182	122 - 213	0.05 - 0.10
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	91 - 182	107 - 198	0.05 - 0.10
	Tool Steel H-13, H-21, A-4, O-2, 5-3, etc.	150 - 250	91 - 182	107 - 213	0.05 - 0.10
M	Stainless Steel 400 Series 1010, 1020, 1025, 1522, 1144, etc.	185 - 350	107 - 182	122 - 198	0.05 - 0.10
	Stainless Steel 300 Series 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	107 - 182	122 - 198	0.05 - 0.10
	Super Duplex Stainless Steel 1010, 1020, 1025, 1522, 1144, etc.	135 - 275	107 - 182	122 - 198	0.05 - 0.10
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	30 - 76	46 - 91	0.05 - 0.10
K	Nodular, Grey, Ductile Cast Iron	120 - 320	122 - 182	152 - 213	0.05 - 0.10
N	Cast Aluminum	30 - 180	229 - 305	244 - 335	0.05 - 0.10
	Wrought Aluminum	30 - 180	229 - 305	229 - 305	0.05 - 0.10
	Brass	100	213 - 290	229 - 305	0.05 - 0.10

NOTICE:

The modular boring system’s configuration, including the length of boring bar, boring head off set, and amount of extensions and/or reducers, may all affect performance of boring systems. All of these factors may increase imbalance of the modular boring system. Imbalance at excessive RPM will cause vibration in the machine tool, which can cause damage to the machine tool; in particular the spindle. This vibration may occur at spindle speeds above 1000 RPM. If vibration is present, reduce spindle speed.



Set-up instructions - Cri-Twin® modular boring heads

Adjusting Cri-Twin® modular boring heads (see figure B3)

- Loosen the insert holder locking screw (4) on the insert holder (1) to be adjusted. Re-slug lightly using light finger pressure only. Only one insert holder should be adjusted at a time. The other insert holder should remain locked.
- Loosen and re-slug the body clamp bolt (5) so a small amount of tension is felt when adjusting the dial screw.
- Turn the dial screw (3) clockwise to increase the diameter and counterclockwise to decrease the diameter.
- Tighten the insert holder locking screw (#4).
- Rotate the boring head 180°.
- Repeat steps 1, 3, and 4.
- Tighten the body clamp bolt (#5).

NOTE: To machine a smaller bore diameter, turn the dial screw (3) counterclockwise one full turn minimum to remove any backlash, and then adjust to small size.

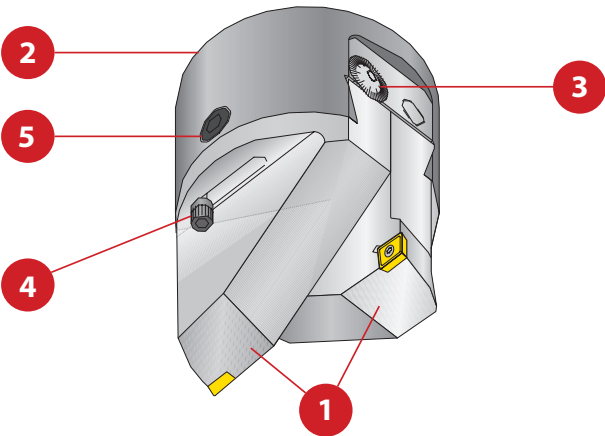


Figure B3

No.	Part
1	Insert holders
2	Boring head body
3	Dial screw
4	Insert holder locking screw
5	Body clamp bolt

Cri-Twin® modular boring heads

The Cri-Twin® Modular Boring System is one of the most versatile boring systems available today. With a combination of insert holders, you can perform different types of boring operations. The Cri-Twin® system can double your feed rate, double the material removed, or rough and finish in the same operation.

1. Double Feed Rate Operations:

This requires using two "standard length" or two "zero lead" insert holders and setting the cutting tips of both insert holders to bore the same diameter. The inserts will make equal cuts in the bore so you can double your feed rate and reduce the cycle time to bore your hole. Utilizing the Cri-Twin® system in this manner may leave tool retraction marks in the finish bore. For best results, you should bore into and out of the hole.

NOTICE: Use rough boring feed recommendations from charts on pages B: 78 - 79.

2. Double Material Removed:

This requires using a standard and a short length insert holder. The standard length insert holder enters the cut first so it needs to be set to remove one-half of the material to be bored from the hole. The short insert holder is then set to the finish bore diameter. Remember, when doubling the material removed, each cutting edge is working separately, and you should not double your feed rate.

NOTICE: Use finish boring feed recommendations from charts on pages B: 80 - 81.

3. Roughing and Finishing:

This requires using a standard and a short length insert holder. The standard length insert holder will be set to the rough bore diameter and then the short length insert holder will be set to the finish bore diameter. Utilizing the Cri-Twin® system in this manner may leave tool retraction marks in the finish bore. For best results, you should bore into and out of the hole.

NOTICE: Use finish boring feed recommendations from charts on pages B: 80 - 81.

Set-up instructions - Standard and micro adjusting boring heads

Adjusting standard adjusting boring heads (see figure B1)

- Loosen the locking screw (6).
- Turn the dial screw (3) clockwise to increase the diameter, and turn it counterclockwise to decrease the diameter.
- Tighten the locking screw (6).

IMPORTANT: Do not loosen the gib screws (5). It can cause poor performance when making diameter adjustments.

NOTE: To machine a smaller bore diameter, turn the dial screw (3) counterclockwise one full turn minimum to remove any backlash, and then adjust to small size.

No.	Part
1	Bar holder
2	Boring head body
3	Dial screw
4	Bar holder set screws
5	Gib screws
6	Locking screw

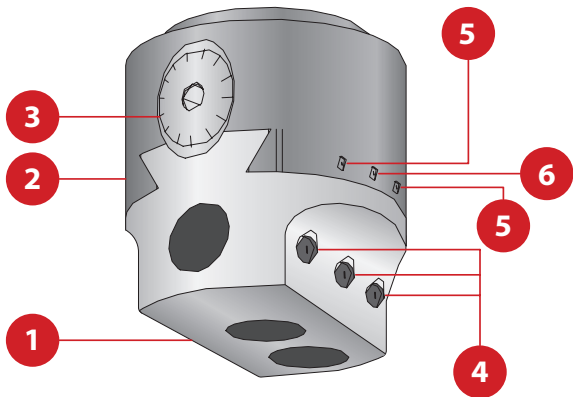


Figure B1

Adjusting micro adjusting setting boring heads (see figure B2)

Before setting the micro adjusting boring head to the bore diameter, you need to set the micro adjusting dial (7) to the minimum bore diameter.

- Turn the micro adjusting dial (7) clockwise until the dial screw bottoms out on the bottom of the dial screw bore.
- Note the graduation line on the dial face closest to the reference line, then turn the micro adjusting dial (7) counterclockwise 3-1/4 turns.
- Reverse direction and line the graduation line noted in Step 2 with the reference line.
- The micro adjusting dial is now set so you have 0.006" on diameter of adjustment.

Adjusting micro adjusting setting boring heads is just as easy as adjusting standard boring heads. First, you adjust the boring head using the 0.001" adjustment (3), and then you make your final adjustment with the 0.00005" adjustment (7).

- Loosen the locking screw (6).
- Turn the dial screw (3) clockwise to increase the diameter and counterclockwise to decrease the diameter.
- Tighten the locking screw (6).
- Turn the 0.00005" dial screw (7) clockwise to increase the diameter and counterclockwise to decrease the diameter. Locking of the 0.00005" dial screw (7) is **not** required.

NOTE: The micro adjusting dial screws only have a total range of 0.006" (0.15mm) on diameter.

No.	Part
1	Insert holder
2	Boring head body
3	Dial screw
4	Gib screws
5	Locking screw
6	Micro adjusting dial screw

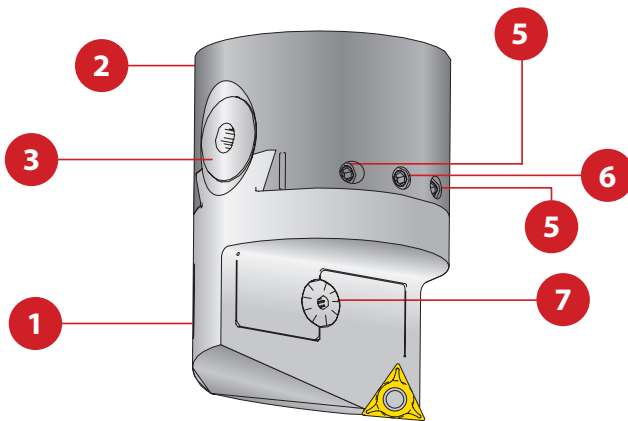


Figure B2

Set-up instructions - Manual Boring and Facing heads

For general boring

When no lateral movement is required, the Manual Boring and Facing head can be used for standard boring operations. Adjustments are made by placing a hex wrench in the end of the dial screw (6) and dialing off the required amount. Each graduation on the dial represents 0.001" on the bore diameter.

1. Loosen the locking screw (10).
2. Turn the dial screw (6) clockwise to increase the diameter and counterclockwise to decrease the diameter.
3. Tighten the locking screw (10).
4. To readjust for the next cut, repeat steps 1, 2, and 3.

NOTE: To machine a smaller bore diameter, turn dial screw (6) counterclockwise one full turn minimum to remove any backlash and then adjust to smaller size.

For facing in the reverse direction

The Manual Boring & Facing Head is capable of reverse feed by running the spindle in reverse. To set the head for feeding in clockwise and counterclockwise direction, screw the head on the desired shank.

1. Align the "Rev. Lock" mark on the facing ring (7) with the "Rev. Lock" mark on the body (5) (see Figure B4).
2. Insert a 3/32" hex wrench through the hole in the facing ring (7) and tighten the reversing lock screw (15) (see Figure B4) in the top cap (14). This prevents the head from unscrewing during reverse (counterclockwise) operation.

NOTICE: To run the spindle in reverse, the head must be locked onto the shank. Please follow the directions above carefully.

For facing, grooving, and undercutting

Set-up instructions:

1. Make sure the dial screw lock (12) is loose.
2. Insert a hex wrench in the dial screw (6) and position the tool at the start of the cut. To simplify a return to this position, set left* dog stop (2) against the stop pin (3).
3. Determine the length of cut required and with the aid of a gauge block, set the right* dog stop (4) against the stop pin (3).
4. Remove gauge block and lower the spindle to the proper depth.
5. Tighten the locking screw (12).
6. As the spindle turns, hold on to the facing ring (7). The tool will feed out at the rate of 0.003 per revolution (fine feed, 0.0015) until the right* dog stop (4) strikes the stop pin. At this point, the clutch will disengage. Although the facing ring (7) will continue to revolve, the tool will not advance.
7. For fine adjustments: after setting for facing mode with gauge block, the fine adjusting screws (13) may be utilized to aid in the adjustment of the dog stops (2) and (4).
8. To return the tool to the starting position, place a hex wrench in the dial screw (6) and turn counterclockwise until left* dog stop (2) contacts the stop pin (3) or (see note below) while holding onto the facing ring (7), reverse the spindle and the tool will go back to the starting position.

NOTICE: While machining either right or left hand, the bar holder (1) should never extend past the body (5) on the dial screw face side. This would result in tool damage due to the boring head rubbing inside of the bored hole.

* Instructions are based on right hand cutting. If the application requires left hand cutting, reverse the dog stop instructions listed above.

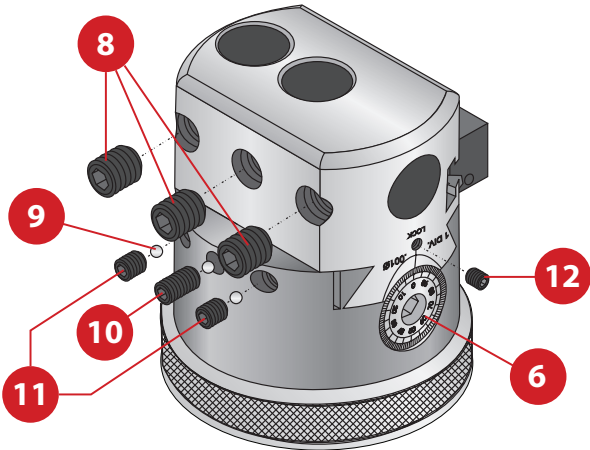


Figure B4

No.	Part	No.	Part
1	Bar holder	9	Steel balls
2	Left dog stop	10	Locking screw
3	Stop pin	11	Gib screws
4	Right dog stop	12	Dial screw lock
5	Body	13	Fine adjusting screws
6	Dial screw	14	Top cap
7	Facing ring	15	Reversing lock screw
8	Bar holder set screws		

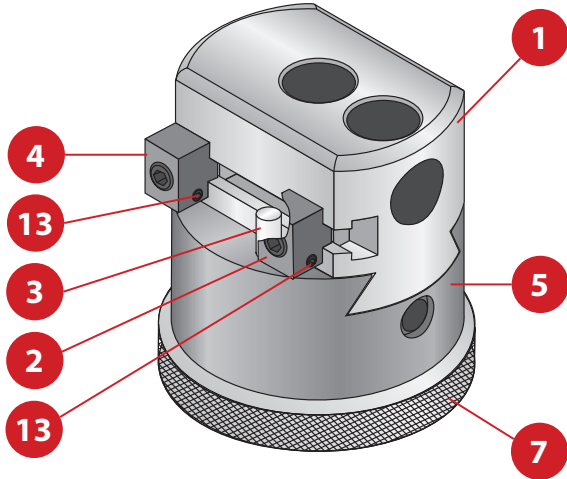


Figure B5

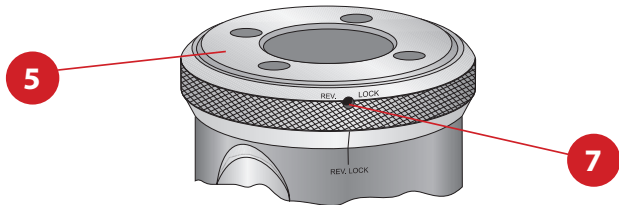


Figure B6



Set-up instructions - CNC Boring and Facing heads

For CNC operations - horizontal or vertical

To set the head for CNC tool change operations, first refer to the "For Facing, Grooving, and Undercutting" and "For Facing in the Reverse Direction" instructions on page B: 68 and set the gib, stop dogs, and thread lock as described.

1. Install the head in the machine spindle and ensure the spindle is in its “home” or “tool change” position. Take note of the position of the anti-rotation device on your machine in relation to the key slot in the taper shank. Then remove the head from the machine.
2. Using the two #10-32 cap screws supplied, attach the plunger housing (16) to the facing ring (7). Note that the lock ring (18) should be loose and turn freely.
3. Align the 1/8" dowel pin in the plunger (17) with the slot in the lock ring (18).
4. Attach the stop arm (19) to the plunger (17) using the #10-32 button head screw provided. At this time, the facing ring (7) should turn with slight resistance.
5. Rotate the facing ring (7) so that the stop arm (19) is in the approximate position relative to the key slot in the taper shank.
6. Install the head in the spindle, taking care to set the stop arm (19) in its proper position relative to the anti-rotation device on the machine.
7. With the head in the machine’s spindle at its "home" or "tool change" position, clamp the lock ring (20) in position using the two #4-40 set screws on the periphery of the lock ring (18). The head is now ready for use.

IMPORTANT: Stop arm is required.

Calculating dwell time: $T = (D / 0.0015) / (RPM / 60)$

Where:

RPM = spindle speed
60 = seconds
D = distance from the dog stop to the stop pin
0.0015 = radial feed per revolution (inches)
T = dwell time (seconds)

Example:

The cut is .500" change in diameter. The radial distance (the distance the dog stop is away from the stop pin) is .250". This is your D. The spindle speed is determined to be 500 RPM. Therefore, the formula is now:

$T = (0.250 / 0.0015) / (500 / 60)$
T = 20 seconds

NOTICE: Damage to the Boring & Facing head’s clutch and gear mechanism may result if operated above 700 RPM. Because the head is not connected to, or controlled by, the machine’s CNC control, allowances must be made in the machine’s program to allow the head enough time to make its cut (and return). To accomplish this, a dwell must be inserted in the program. To calculate the dwell time, use the following formula.

As a matter of practice, the dwell time will almost always be a few seconds longer than "T" to allow the head to come firmly against the stop and force the clutch to slip. This will allow the tool to come to a constant size (spring cut). This may take some test cuts to determine the necessary additional time.

Use the information above to face a bottom bore and cut an internal relief groove. Call up the head in the CNC program. DO NOT START THE SPINDLE. Center the head over the bore to enter. Enter the holder in Z axis so that the groove tool is properly placed to begin cutting. In the program, set the RPM to be 500 as calculated from example. NOW START THE SPINDLE and set a dwell time of, say, 22 seconds. At the end of this dwell, stop the spindle and set another dwell time of 22 seconds. At the end of this dwell, stop the spindle and retract the head. You now have a faced surface with an undercut.

If the tool is free of cutting on the return stroke, the head may be increased to the maximum of 700 RPM to speed the return as long as the dwell time is reduced accordingly so as not to slip the clutch unnecessarily. Excessive dwell time has the effect of "impact hammering" the feed mechanism against the dog stop and should be avoided.

No.	Part
7	Facing ring
16	Plunger housing
17	Plunger
18	Lock ring
19	Stop arm
20	Lock ring clamps

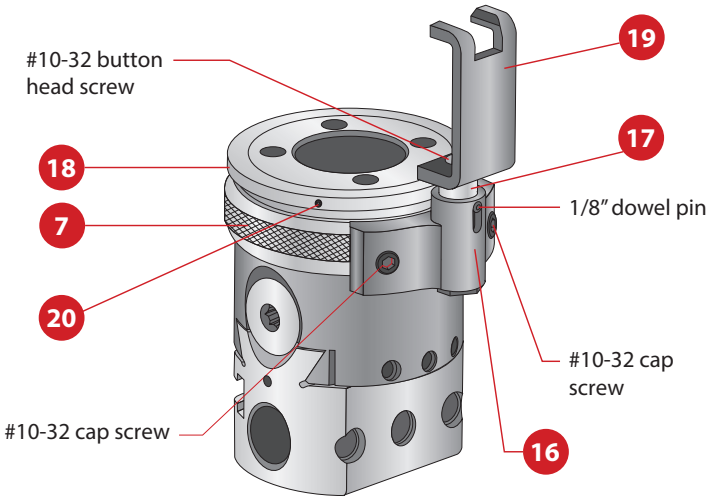


Figure B6

Guaranteed Test / Demo Application Form

Distributor PO #

The following must be filled out completely before your test will be considered

Distributor Information

Company Name: _____
Contact: _____
Account Number: _____
Phone: _____
Email: _____

End User Information

Company Name: _____
Contact: _____
Industry: _____
Phone: _____
Email: _____

Current Process List all tooling, coatings, substrates, speeds and feeds, tool life, and any problems you are experiencing

Test Objective List what would make this a successful test (i.e. penetration rate, finish, tool life, hole size, etc.)

Application Information

Finish Bore Diameter: _____ in/mm Tolerance: _____ Material: _____
(4150 / A36 / Cast Iron / etc.)
Pre-existing Diameter: _____ in/mm Depth of Bore: _____ in/mm Hardness: _____
(BHN / Rc)
State: _____
(Casting / Hot rolled / Forging)

Machine Information

Machine Type: _____ Builder: _____ Model #: _____
(Lathe / Screw machine / Machine center / etc.) (Haas, Mori Seiki, etc.)
Shank Required: _____ Power: _____ HP/KW
(CAT50 / Morse taper, etc.)
Rigidity: Orientation: Tool Rotating: Using Canned Boring Cycle Thrust: _____ lbs/N
☐ Excellent ☐ Vertical ☐ Yes ☐ Yes
☐ Good ☐ Horizontal ☐ No ☐ No
☐ Poor

Coolant Information

Coolant Delivery: _____ Coolant Pressure: _____ PSI / bar
(Through tool / Flood)
Coolant Type: _____ Coolant Volume: _____ GPM / LPM
(Air mist, oil, synthetic, water soluble, etc.)

Requested Tooling

QTY	Item Number	QTY	Item Number



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Warranty Information

Allied Machine & Engineering warrants to original equipment manufacturers, distributors, industrial and commercial users of its products that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's obligation under this warranty is limited to furnishing without additional charge a replacement or, at its option repairing or issuing credit for any product which shall within one year from the date of sale be returned freight prepaid to the plant designated by an Allied Machine representative and which upon inspection is determined by Allied Machine to be defective in materials or workmanship.

Complete information as to operating conditions, machine, set-up, and application of cutting fluid should accompany any product returned for inspection. The provisions of this warranty shall not apply to any Allied Machine products which have been subjected to misuse, improper operating conditions, machine set-up or application of cutting fluid or which have been repaired or altered if such repair or alteration in the judgment of Allied Machine would adversely affect performance of the product.

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Literature Order Number: AMPC-B
Print Date: August 2016