



ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing



Drilling



Reaming



Burnishing



Threading



Specials



Criterion[®]

► *BORING*

Modular Boring Systems

CRITERION[®]

SECTION

B20

Criterion® Boring Systems

Criterion® Modular Boring Systems

MBS | CBS | MDS | Cri-Bore® | Large Cri-Bore® | CB Style



CRITERION®

Boring holes doesn't have to be boring.

Criterion modular boring systems bring speed, tolerance, toughness, and versatility to your boring applications.

The MBS finish boring tool is ideal for small diameter bores and high spindle speeds to bore quickly and efficiently.

The Cri-Bore boring system is designed for finish boring applications and can be used for extremely tight tolerances. When the tolerance is tight, the Cri-Bore can be adjusted in 0.00005" (fifty-millionths).

The versatile CB style boring heads are available in both microadjusting and standard. Made for maximum toughness, the CB style boring head can produce a wide range of diameters.

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



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

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

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

WARNING

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

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

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

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



Aerospace



Agriculture



Automotive



Firearms



Renewable
Energy

Criterion® Modular Boring Systems Contents

Reference Icons

The following icons will appear throughout the catalog to help you navigate between products.



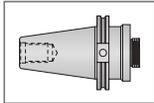
Boring Heads - Insert Holders
Microadjusting boring heads that use inserts for cutting



Boring Heads - Boring Bar Holders
Standard and microadjusting boring heads that use boring bars for cutting



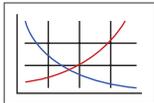
Head-to-Shank Adapters
Extensions and reducers that attach the boring head to the shank



Shanks
A variety of shanks for different machines



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



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

MBS Finish Boring Tools 2 - 6

CBS Finish Boring Tools 8 - 11

MDS Finish Boring Tools 12 - 13

Cri-Bore® Micro-adjusting Finish Boring Heads 14 - 16

Large Cri-Bore® Finish Boring / OD Turning System 18 - 23

CB Style Versatile Finish Boring Heads 24 - 43

Intermediate Modules 44 - 45

Master Shanks 46 - 50

Parts & Accessories 51 - 52

Technical Information 53 - 55

Guidelines / Troubleshooting

Guidelines to Not Exceed Recommended Length 56

Calculating Tool Assembly Weight 57

Recommended Cutting Data 58 - 59

Series	Bore Diameter Range	
	Imperial (inch)	Metric (mm)
MBS Finish Boring Tools	0.050" - 0.750"	–
CBS Finish Boring Tools	0.050" - 0.750"	–
MDS Finish Boring Tools	0.710" - 1.280"	18.00 mm - 33.00 mm
Cri-Bore® Micro-adjusting Finish Boring Heads	1.050" - 5.065"	27.00 mm - 128.00 mm
Large Cri-Bore® Finish Boring / OD Turning System	5.000" - 12.125"	127.00 mm - 308.00 mm
CB Style Versatile Finish Boring Heads	0.250" - 21.500"	–



WE KNOW

SPEED MATTERS

MBS Finish Boring Tool

Ideal for small diameter bores and high spindle speeds

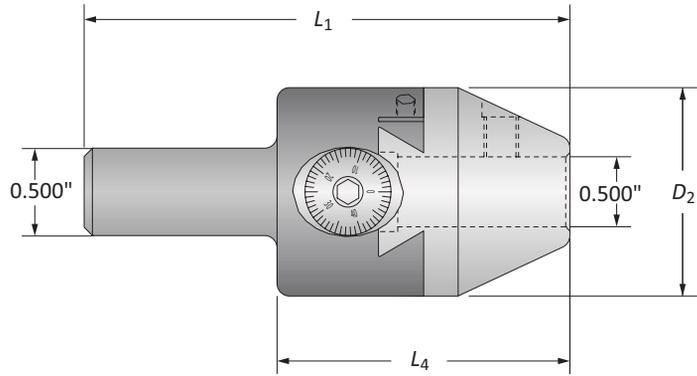
Compact design great for live tooling

Cylindrical shank can be dropped into existing tool holders



MBS Finish Boring Tool

Bore Diameter Range: 0.050" - 0.750"



Boring Range	Boring Head			Weight	Part No.
	L_1	L_4	D_2		
0.050 - 0.750	3.500	2.125	1.500	0.900 (lbs)	MBS0500B

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

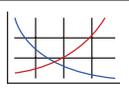
Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 7,000 RPM at 0 radial offset.

B20: 58 - 59

B20: 54 - 55

Key on B20: 1

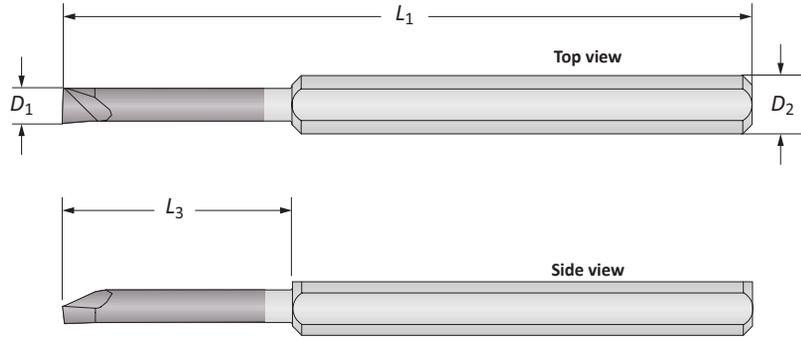


i = Imperial (in)
m = Metric (mm)

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.
ext: 7611 | email: appeng@alliedmachine.com

Mini Coated Boring Tools

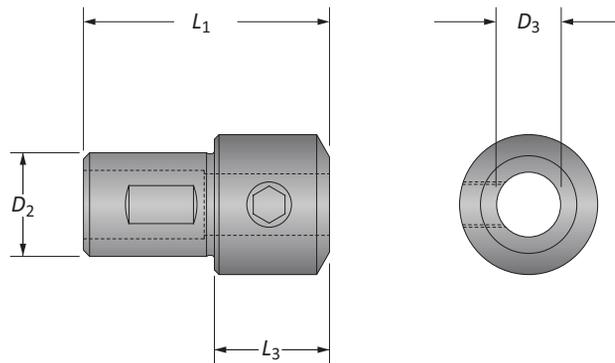
Bore Diameter Range: 0.050" - 0.275"



Mini Coated Boring Bars

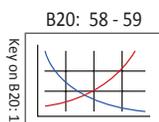
Min. Boring Diameter	Boring Bar				Weight	Part No.
D_1	L_3	L_1	D_2			
0.050	0.300	1.500	0.125*	0.010 (lbs)	0050GA	
0.060	0.300	1.500	0.125*	0.010 (lbs)	0060GA	
0.080	0.500	1.500	0.125*	0.010 (lbs)	0080GA	
0.100	0.600	1.500	0.125*	0.010 (lbs)	0100GA	
0.110	0.700	1.500	0.125*	0.010 (lbs)	0110GA	
0.120	0.750	2.500	0.250*	0.020 (lbs)	0120HA	
0.140	0.750	2.500	0.250*	0.020 (lbs)	0140HA	
0.160	0.875	2.500	0.250*	0.020 (lbs)	0160HA	
0.180	1.125	2.500	0.250*	0.020 (lbs)	0180HA	
0.200	1.250	2.500	0.250*	0.020 (lbs)	0200HA	

*Reducing sleeve required



Reducing Sleeves

Reducing Sleeve					
D_3	D_2	L_1	L_3	Weight	Part No.
0.125	0.500	2.000	0.220	0.100 (lbs)	BTH-01250500
0.250	0.500	1.312	-	0.050 (lbs)	BTH-02500500

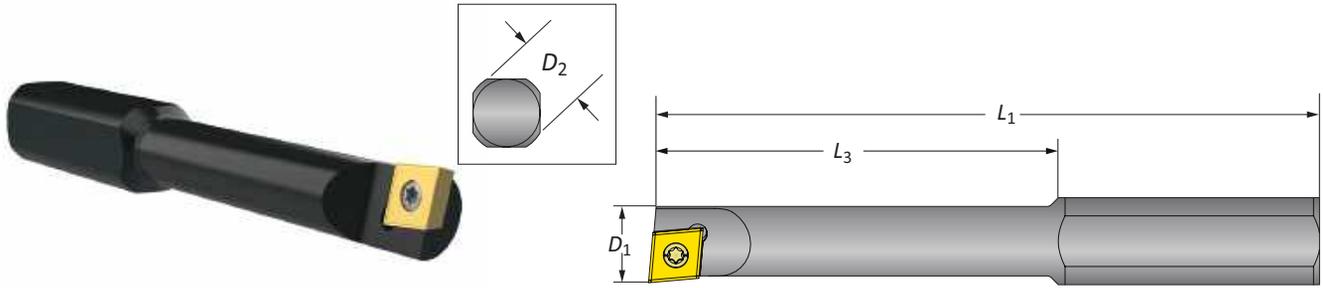


i = Imperial (in)
m = Metric (mm)



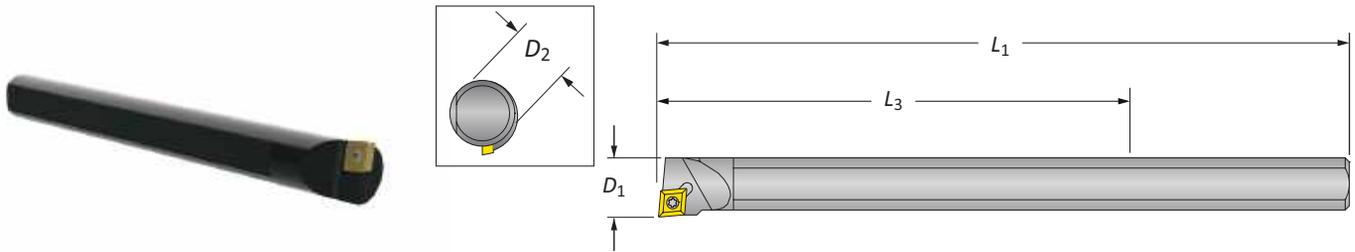
Boring Bars

Bore Diameter Range: 0.250" - 0.750"



Steel Boring Bars | Bore Diameter Range: 0.250" - 0.750"

Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1			
0.250	1.062	2.500	0.500	0.080 (lbs)	WBGX0301..	0250B
0.312	1.437	2.750	0.500	0.080 (lbs)	WBGX0301..	0312B
0.375	1.750	3.062	0.500	0.100 (lbs)	WBGX0301..	0375B
0.437	2.062	3.375	0.500	0.110 (lbs)	CC..215..	0437B
0.500	2.187	3.500	0.500	0.140 (lbs)	CC..215..	0500B



Heavy Metal Boring Bars | Bore Diameter Range: 0.365" - 0.750"

Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1			
0.365	2.250	4.000	0.312*	0.080 (lbs)	CC..215..	0365HM
0.550	3.250	6.000	0.500	0.300 (lbs)	CC..215..	0550BHM

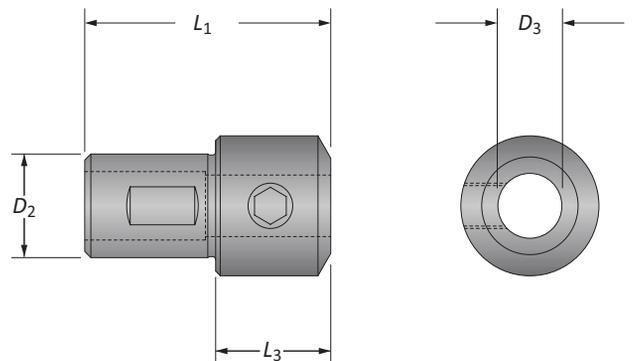
*Reducing sleeve required.

Carbide Boring Bars | Bore Diameter Range: 0.625" - 0.750"

Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1			
0.625	4.500	8.000	0.500	0.410 (lbs)	CC..215..	0625BCS

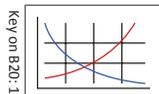
Reducing Sleeves

Reducing Sleeve					Weight	Part No.
	D_3	D_2	L_1	L_3		
0.312	0.500	1.312	-	0.040 (lbs)	BTH-03120500	
0.375	0.500	1.312	-	0.030 (lbs)	BTH-03750500	



B20: 58 - 59

B20: 54 - 55

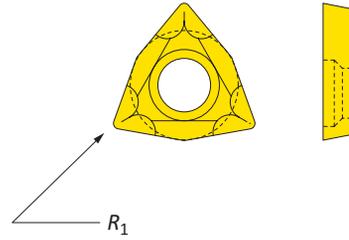


ⓘ = Imperial (in)
 ⓘ = Metric (mm)
 Inserts sold separately

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

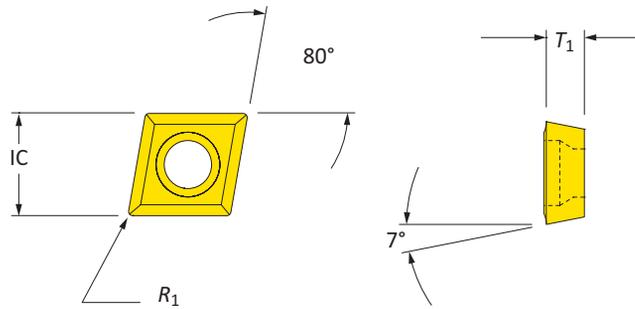
Boring Inserts

Trigon | 80° Diamond



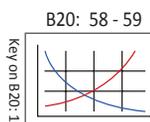
Coated Trigon Insert

		Insert		Part No.
Insert Form		R_1		
i	WBGX0301..	0.004	WBGX030101	



Coated 80° Diamond Insert

		Insert			Part No.
Insert Form		IC	T_1	R_1	
i	CC..215..	0.250	0.094	0.008	CCMT060202



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately



WE KNOW

REACH MATTERS

CBS Finish Boring Tool

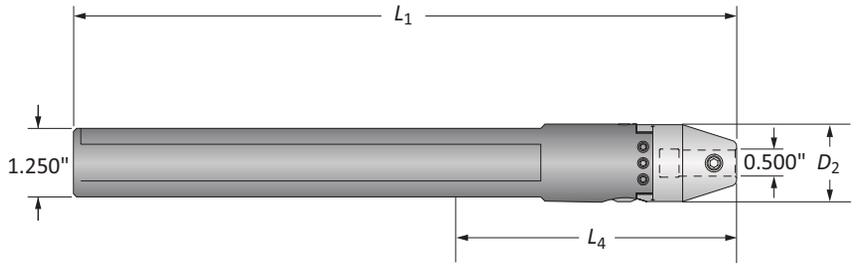
Ease the stress of reaching past fixturing

Ideal for small diameter bores with long overhangs

Cylindrical shank can be dropped into existing end mill (side-lock) holders

CBS Finish Boring Tool

Bore Diameter Range: 0.050" - 0.750"



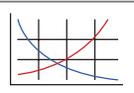
Boring Range	Boring Head			Weight	Part No.
	L_1	L_4	D_2		
i 0.050 - 0.750	10.600	8.320	1.250	3.100 (lbs)	CBS1250B

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 3,500 RPM at 0 radial offset.

B20: 58 - 59



B20: 54 - 55

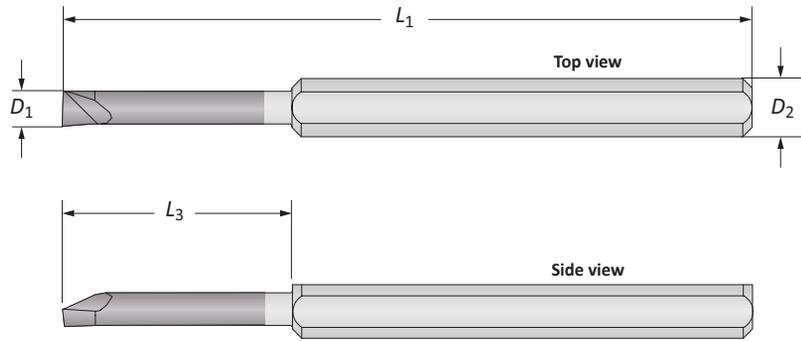


i = Imperial (in)
m = Metric (mm)

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.
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Mini Coated Boring Tools

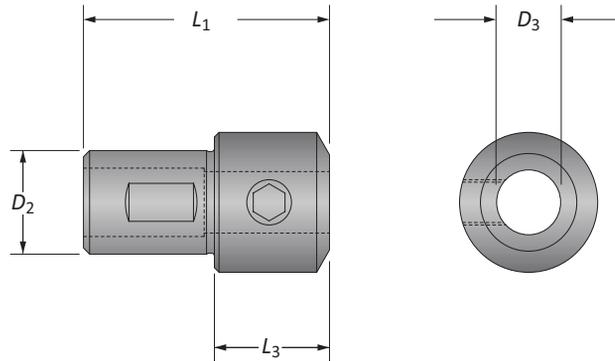
Bore Diameter Range: 0.050" - 0.275"



Mini Coated Boring Tools

Min. Boring Diameter	Boring Bar				Weight	Coated Part No.
	D_1	L_3	L_1	D_2		
0.050	0.300	1.500	0.125*	0.010 (lbs)	0050GA	
0.060	0.300	1.500	0.125*	0.010 (lbs)	0060GA	
0.080	0.500	1.500	0.125*	0.010 (lbs)	0080GA	
0.100	0.600	1.500	0.125*	0.010 (lbs)	0100GA	
0.110	0.700	1.500	0.125*	0.010 (lbs)	0110GA	
0.120	0.750	2.500	0.250*	0.020 (lbs)	0120HA	
0.140	0.750	2.500	0.250*	0.020 (lbs)	0140HA	
0.160	0.875	2.500	0.250*	0.020 (lbs)	0160HA	
0.180	1.125	2.500	0.250*	0.020 (lbs)	0180HA	
0.200	1.250	2.500	0.250*	0.020 (lbs)	0200HA	

*Reducing sleeve required.

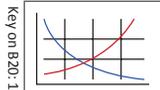


Reducing Sleeves

	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
①	0.125	0.500	2.000	0.220	0.100 (lbs)	BTH-01250500
	0.250	0.500	1.312	-	0.050 (lbs)	BTH-02500500
	0.375	0.500	1.312	-	0.030 (lbs)	BTH-03750500

B20: 58 - 59

B20: 54 - 55



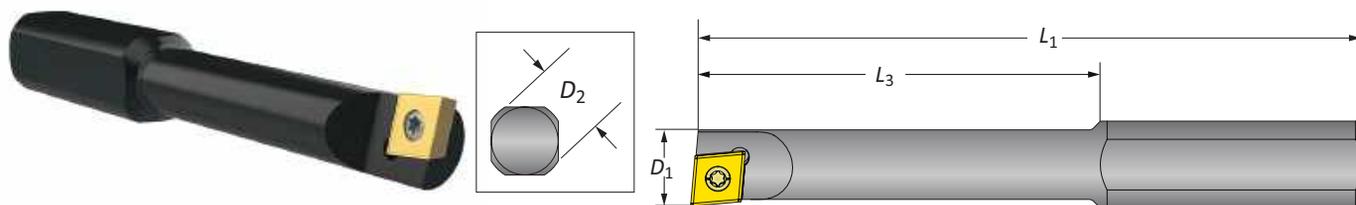
① = Imperial (in)
 Ⓜ = Metric (mm)

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



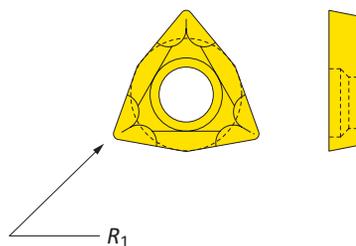
Steel Boring Bars | Boring Inserts

Bore Diameter Range: 0.250" - 0.750"



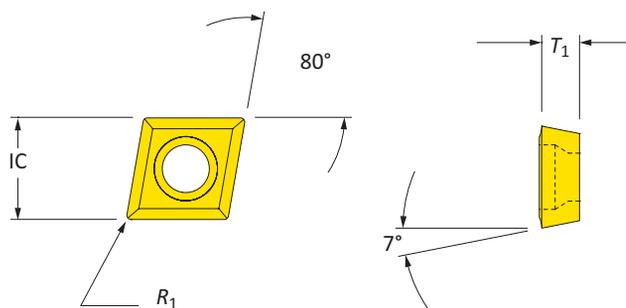
Steel Boring Bars

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
0.250	1.062	2.500	0.500	0.080 (lbs)	WBGX0301...	0250B	
0.312	1.437	2.750	0.500	0.080 (lbs)	WBGX0301...	0312B	
0.375	1.750	3.062	0.500	0.100 (lbs)	WBGX0301...	0375B	
0.437	2.062	3.375	0.500	0.110 (lbs)	CC..215..	0437B	
0.500	2.187	3.500	0.500	0.140 (lbs)	CC..215..	0500B	



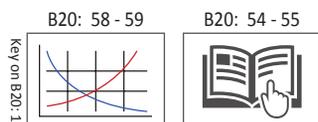
Coated Trigon Insert

Insert Form	Insert R_1	Part No.
WBGX0301...	0.004	WBGX030101



Coated 80° Diamond Insert

Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
CC..215..	0.250	0.094	0.008	CCMT060202



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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



WE KNOW CONVENIENCE MATTERS

MDS Finish Boring Tool

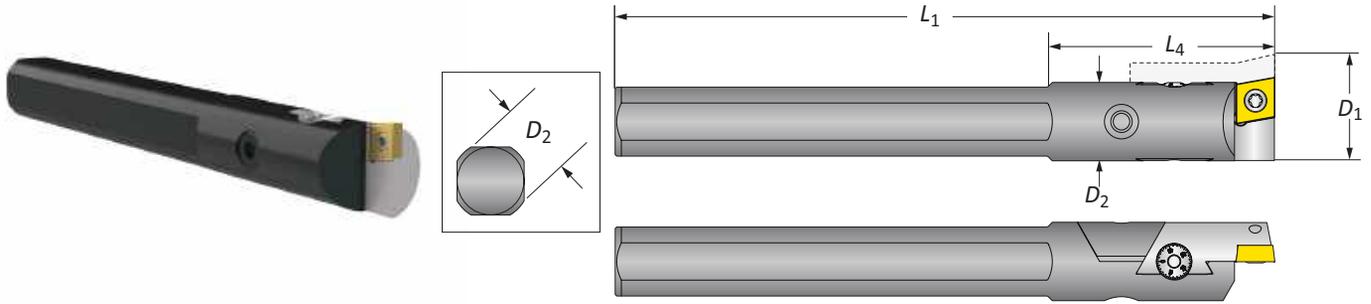
Compact design and rugged insert holder make it one of the toughest boring tools under 1.000" (25.4 mm) diameter

Cylindrical shank can be dropped into existing end mill (side-lock) holders

Available in both imperial (in) and metric (mm) versions

MDS Finish Boring Tools | Boring Inserts

Bore Diameter Range: 0.710" - 1.280" (18.00 mm - 33.00 mm)

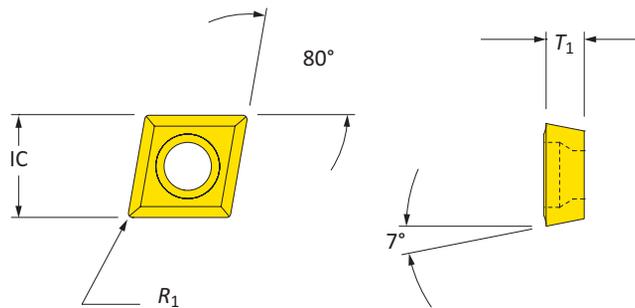


	Boring Range		Shank Diameter		Boring Head		Weight	Insert Form	Part No.
	D_1	D_2	L_1	Max L_4					
i	0.710 - 0.960	0.625	5.250	3.386	0.400 (lbs)	CC..215..	MDS0625		
	0.890 - 1.280	0.750	6.310	4.435	0.700 (lbs)	CC..215..	MDS0750		
m	18.00 - 24.25	16.00	133.00	85.37	0.18 (kg)	CC..0602..	MDS16M		
	22.00 - 33.00	20.00	160.00	112.37	0.32 (kg)	CC..0602..	MDS20M		

Imperial (in) = 0.001" adjustment on diameter.

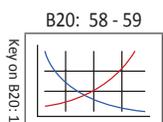
Metric (mm) = 0.020 mm adjustment on diameter.

NOTE: Max spindle speed: 1,000 SFM (305 M/Min) at 0 radial offset.



Coated 80° Diamond Inserts

	Insert Form	Insert			Part No.
		IC	T_1	R_1	
i	CC..215..	0.250	0.094	0.008	CCMT060202
m	CC..0602..	6.35	2.38	0.20	CCMT060202



i = Imperial (in)

m = Metric (mm)

Inserts sold separately

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.

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WE KNOW

TOLERANCE MATTERS

Cri-Bore[®] Micro-adjusting

Allows for 0.00005" (0.001 mm) on diameter bore increments

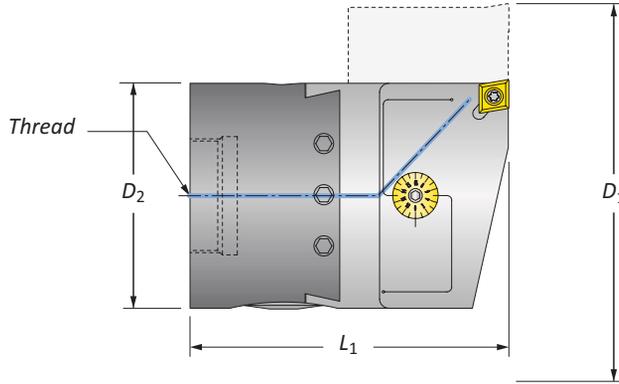
Modular system can be used on virtually any machine

Available in both imperial (in) and metric (mm) versions



Cri-Bore® Micro-adjusting Finish Boring Heads

Bore Diameter Range: 1.050" - 5.065" (27.00 mm - 128.00 mm)



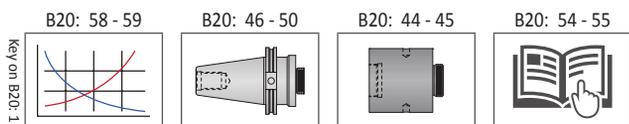
	Boring Range		Boring Head		Weight	Insert Form	Part. No
	D_1	Thread Connection	L_1	D_2			
i	1.050 - 1.320	¾ - 20	2.690	1.000	0.500 (lbs)	CC..215..	CB1000CC
	1.050 - 1.320	¾ - 20	2.690	1.000	0.500 (lbs)	TC..215..	CB1000TC
	1.300 - 1.600	¾ - 20	2.900	1.250	0.800 (lbs)	CC..215..	CB1250CC
	1.300 - 1.600	¾ - 20	2.900	1.250	0.800 (lbs)	TC..215..	CB1250TC
	1.585 - 2.700	¾ - 20	3.200	1.500	1.300 (lbs)	CC..325..	CB1500CC
	1.585 - 2.700	¾ - 20	3.200	1.500	1.300 (lbs)	TC..325..	CB1500TC
	2.060 - 3.320	¾ - 20	3.590	2.000	2.400 (lbs)	CC..325..	CB2000CC
	2.060 - 3.320	¾ - 20	3.590	2.000	2.400 (lbs)	TC..325..	CB2000TC
m	3.065 - 5.065	1½ - 18	4.100	3.000	5.800 (lbs)	CC..325..	CB3000CC
	3.065 - 5.065	1½ - 18	4.100	3.000	5.800 (lbs)	TC..325..	CB3000TC
	27.00 - 33.00	¾ - 20	68.35	25.00	0.23 (kg)	CC..0602..	CB025MCC
	27.00 - 33.00	¾ - 20	68.35	25.00	0.23 (kg)	TC..1102..	CB025MTC
	33.00 - 41.00	¾ - 20	73.65	32.00	0.36 (kg)	CC..0602..	CB032MCC
	33.00 - 41.00	¾ - 20	73.65	32.00	0.36 (kg)	TC..1102..	CB032MTC
	41.00 - 68.00	¾ - 20	81.25	38.00	0.59 (kg)	CC..09T3..	CB038MCC
	41.00 - 68.00	¾ - 20	81.25	38.00	0.59 (kg)	TC..16T3..	CB038MTC
	53.00 - 84.00	¾ - 20	91.30	50.00	1.09 (kg)	CC..09T3..	CB050MCC
	53.00 - 84.00	¾ - 20	91.30	50.00	1.09 (kg)	TC..16T3..	CB050MTC
78.00 - 128.00	1½ - 18	104.25	76.00	2.36 (kg)	CC..09T3..	CB076MCC	
78.00 - 128.00	1½ - 18	104.25	76.00	2.36 (kg)	TC..16T3..	CB076MTC	

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Imperial (in) = 0.00005" adjustment on diameter.

Metric (mm) = 0.001 mm adjustment on diameter.

NOTE: Max spindle speed: 1,000 SFM (305 M/Min) at 0 radial offset.



i = Imperial (in)
m = Metric (mm)

Inserts sold separately

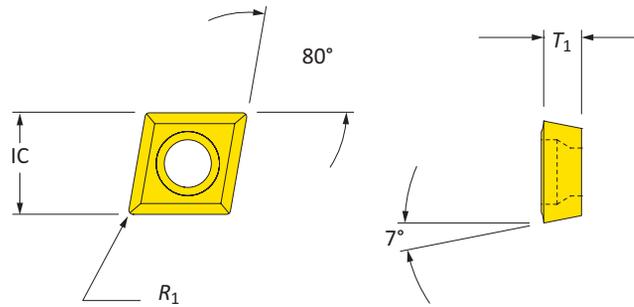
IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.

ext: 7611 | email: appeng@alliedmachine.com

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

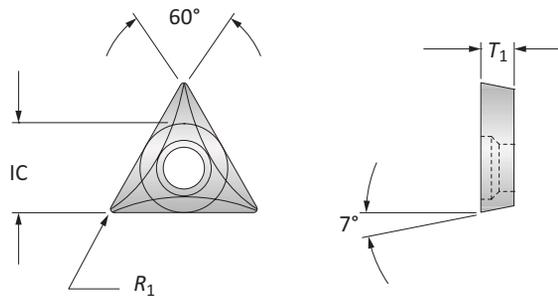
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



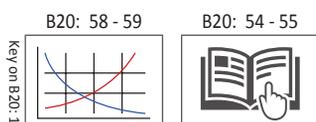
Coated 80° Diamond Inserts

	Insert Form	Insert			Part No.
		IC	T ₁	R ₁	
i	CC..215..	0.250	0.094	0.008	CCMT060202
	CC..215..	0.250	0.094	0.016	CCMT060204
	CC..325..	0.375	0.156	0.008	CCMT09T302
	CC..325..	0.375	0.156	0.016	CCMT09T304
m	CC..0602..	6.35	2.38	0.20	CCMT060202
	CC..0602..	6.35	2.38	0.40	CCMT060204
	CC..09T3..	9.53	3.97	0.20	CCMT09T302
	CC..09T3..	9.53	3.97	0.40	CCMT09T304



Coated 60° Triangle Inserts

	Insert Form	Insert			Part No.
		IC	T ₁	R ₁	
i	TC..215..	0.250	0.094	0.008	TCGT110202
	TC..215..	0.250	0.094	0.016	TCGT110204
	TC..325..	0.375	0.156	0.016	TCGT16T304
m	TC..1102..	6.35	2.38	0.20	TCGT110202
	TC..1102..	6.35	2.38	0.40	TCGT110204
	TC..16T3..	9.53	3.97	0.40	TCGT16T304



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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



EXTEND YOUR BORING RANGE

Large Cri-Bore[®] Finish Boring / OD Turning System

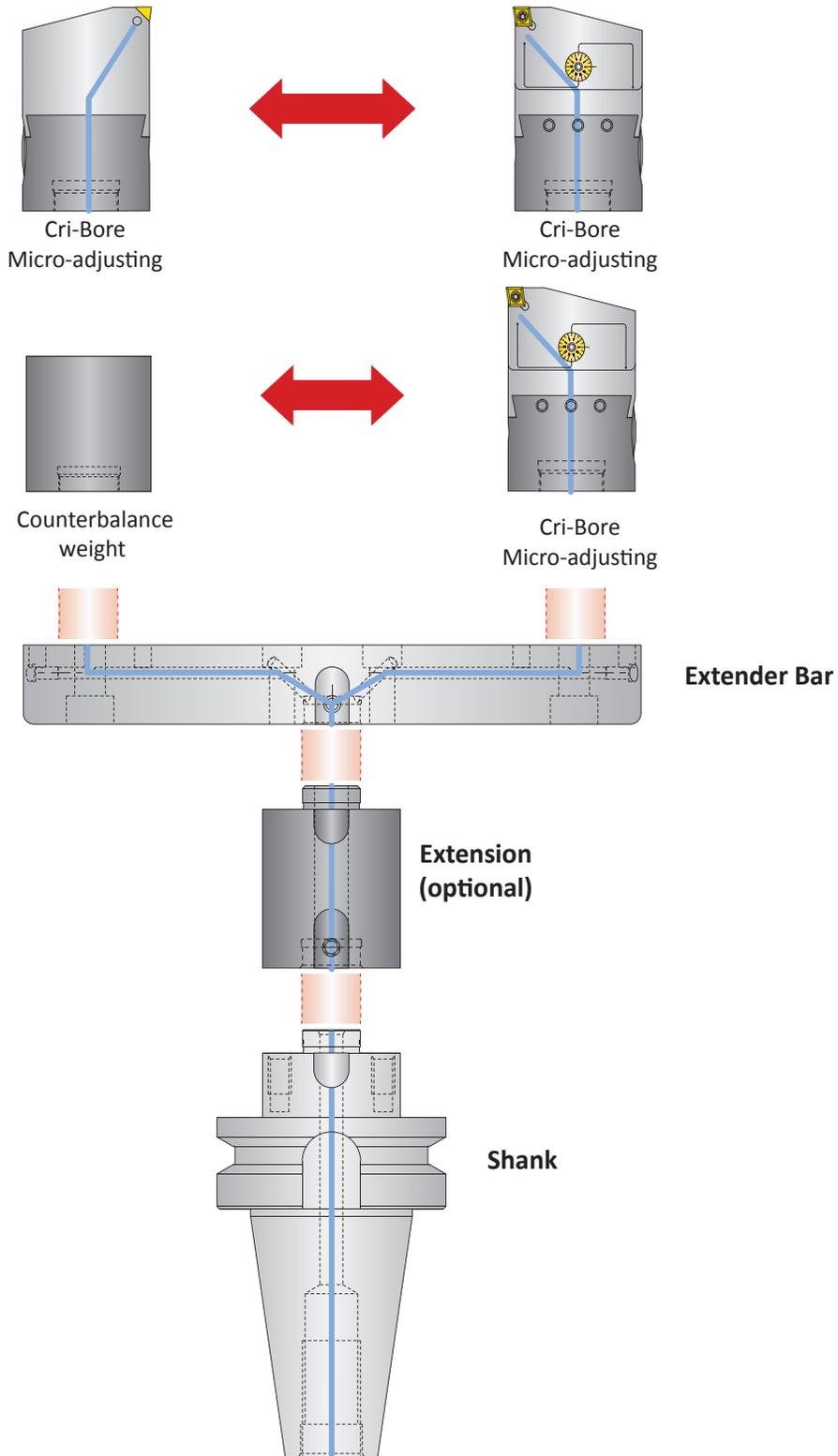
Extend the diameter range for internal and external boring

Modular tooling system allows for CAT, BT, or HSK shanks

Allows for 0.00005" (0.001 mm) on diameter bore increments

Large Cri-Bore Finish Boring / OD Turning System

Cri-Bore Boring Head / Optional Component Combinations



⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

⚠ WARNING Tool failure can cause serious injury. To prevent:

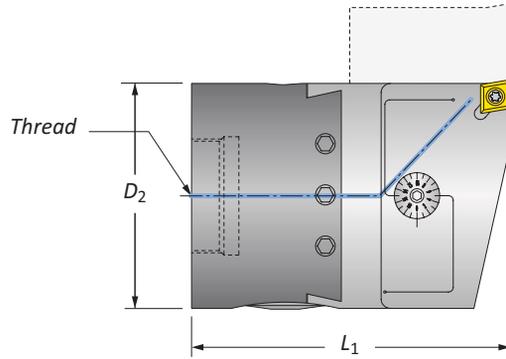
- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

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

Cri-Bore Micro-adjusting Finish Boring Heads | Counter Weights

Bore ID Range: 5.000" - 12.125" (127.00 mm - 307.90 mm) | Bore OD Range: 0.710" - 7.830" (18.10 mm - 198.80 mm)



Cri-Bore Micro-adjusting Boring Heads

	Connection Thread	Boring Head		Weight	Insert Form	Part No.
		L_1	D_2			
i	7/8 - 20	3.200	1.500	1.300 (lbs)	CC..325..	CB1500CC
	7/8 - 20	3.200	1.500	1.300 (lbs)	TC..325..	CB1500TC
m	7/8 - 20	81.25	38.00	0.59 (kg)	CC..09T3..	CB038MCC
	7/8 - 20	81.25	38.00	0.59 (kg)	TC..16T3..	CB038MTC

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Imperial (in) = 0.00005" adjustment on diameter.

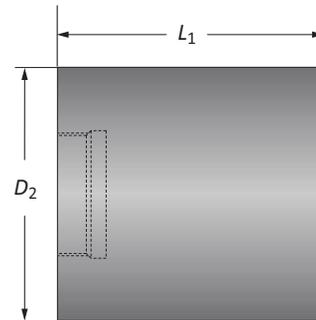
Metric (mm) = 0.001 mm adjustment on diameter.

NOTE: Max spindle speed ID boring: 1,000 SFM (305 M/Min) at 0 radial offset and used with counter weight or additional boring head.

NOTE: Max spindle speed OD boring: Contact our Application Engineering department.

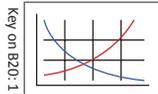
Large Cri-Bore Counter Weights

	Counter Weight		Weight	Part No.
	D_2	L_1		
i	1.500	2.580	1.250 (lbs)	LCB1500-CBWT A
m	38.10	65.53	0.57 (kg)	LCB1500-CBWT A



B20: 58 - 59

B20: 54 - 55



i = Imperial (in)

m = Metric (mm)

Inserts sold separately

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.

- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

1. WARNING Tool failure can cause serious injury. To prevent:

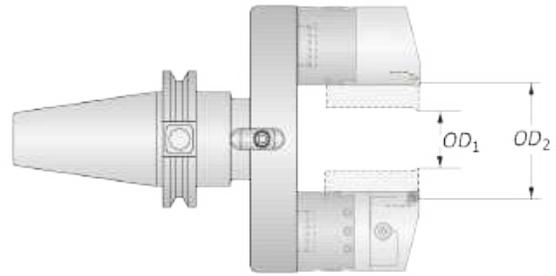
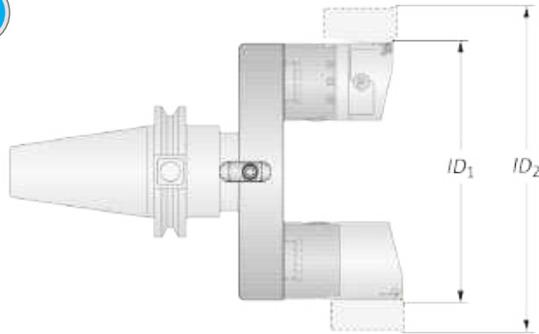
- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)

- Refer to example on page B20: 56 for calculating length to diameter ratio

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

Large Cri-Bore Finish Boring / OD Turning System Extender Bars | Extensions

Bore ID Range: 5.000" - 12.125" (127.00 mm - 307.90 mm) | Bore OD Range: 0.710" - 7.830" (18.10 mm - 198.80 mm)



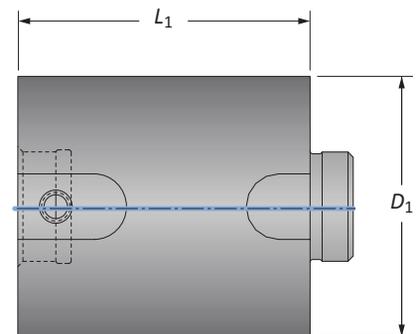
Large Cri-Bore Extender Bars

Extender Bar						
	ID_1	ID_2	OD_1	OD_2	Weight	Part No.
i	5.000	6.125	0.710	1.830	1.560 (lbs)	LCB1500-56EBK
	6.000	7.125	1.710	2.830	1.920 (lbs)	LCB1500-67EBK
	7.000	8.125	2.710	3.830	2.290 (lbs)	LCB1500-78EBK
	8.000	9.125	3.710	4.830	2.650 (lbs)	LCB1500-89EBK
	9.000	10.125	4.710	5.830	3.010 (lbs)	LCB1500-910EBK
	10.000	11.125	5.710	6.830	3.370 (lbs)	LCB1500-1011EBK
	11.000	12.125	6.710	7.830	3.730 (lbs)	LCB1500-1112EBK
m	127.00	155.50	18.10	46.40	0.71 (kg)	LCB1500-56EBK
	152.40	180.90	43.50	71.80	0.87 (kg)	LCB1500-67EBK
	177.80	206.30	68.90	97.20	1.04 (kg)	LCB1500-78EBK
	203.20	231.70	94.30	122.60	1.20 (kg)	LCB1500-89EBK
	228.60	257.10	119.70	148.00	1.37 (kg)	LCB1500-910EBK
	254.00	282.50	145.10	173.40	1.53 (kg)	LCB1500-1011EBK
	279.40	307.90	170.50	198.80	1.69 (kg)	LCB1500-1112EBK



Large Cri-Bore Extensions

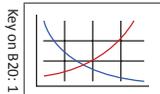
Extension				
	D_1	L_1	Weight	Part No.
i	1.500	1.500	0.660 (lbs)	LCB1500-IA1500
	1.500	3.000	1.330 (lbs)	LCB1500-IA3000
	1.500	4.500	1.980 (lbs)	LCB1500-IA4500
m	38.10	38.10	0.30 (kg)	LCB1500-IA1500
	38.10	76.20	0.60 (kg)	LCB1500-IA3000
	38.10	114.30	0.90 (kg)	LCB1500-IA4500



NOTE: Only one extension can be used per boring assembly. Extensions cannot be combined.

B20: 58 - 59

B20: 54 - 55



i = Imperial (in)
m = Metric (mm)

Inserts sold separately

WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

WARNING Tool failure can cause serious injury. To prevent:

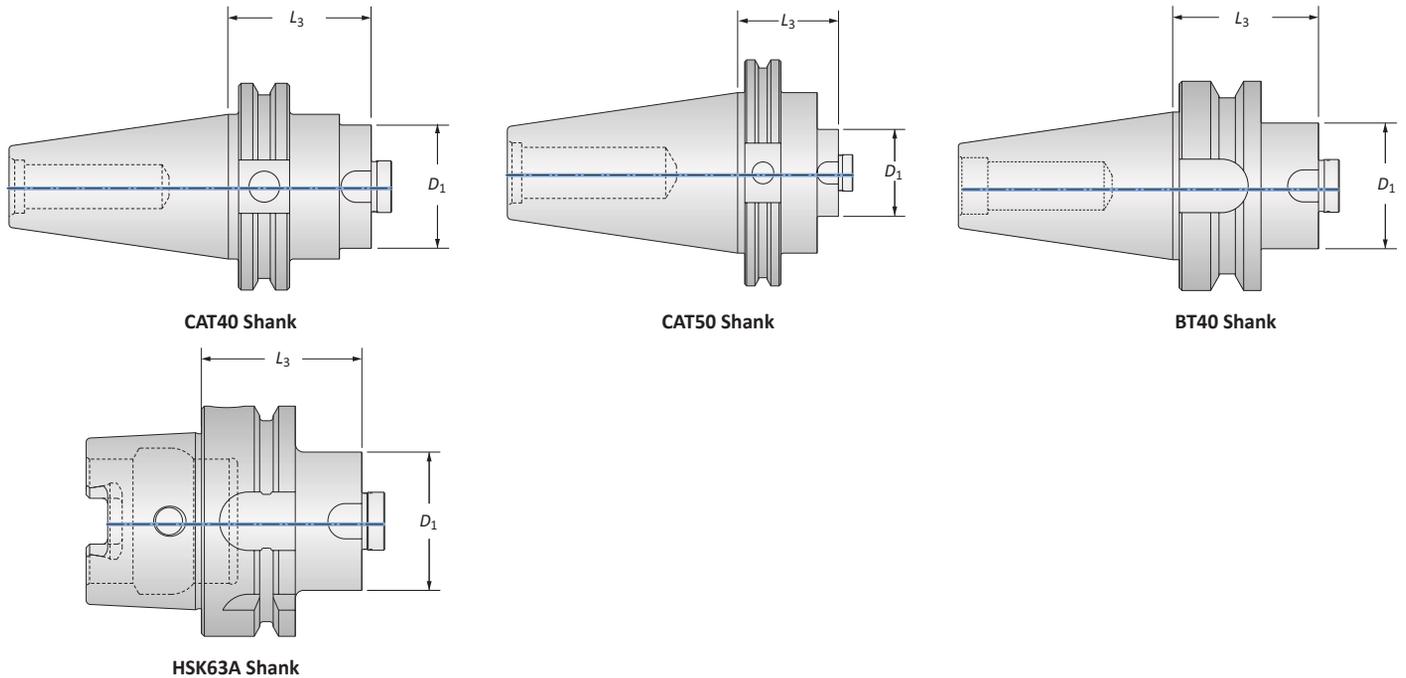
- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

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

Large Cri-Bore Finish Boring / OD Turning System Shanks

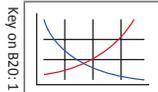
Bore ID Range: 5.000" - 12.125" (127.00 mm - 307.90 mm) | Bore OD Range: 0.710" - 7.830" (18.10 mm - 198.80 mm)



		Shank				
		L_3	D_1	Taper	Weight	Part No.
i		1.750	1.500	CAT40	2.410 (lbs)	LCB1500-CV40
		1.750	1.500	CAT50	6.960 (lbs)	LCB1500-CV50
		1.750	1.500	BT40	2.460 (lbs)	LCB1500-BT40
		1.750	1.500	HSK63A	1.750 (lbs)	LCB1500-HSK63A
m		44.45	38.10	CAT40	1.09 (kg)	LCB1500-CV40
		44.45	38.10	CAT50	3.16 (kg)	LCB1500-CV50
		44.45	38.10	BT40	1.12 (kg)	LCB1500-BT40
		44.45	38.10	HSK63A	0.79 (kg)	LCB1500-HSK63A

B20: 58 - 59

B20: 54 - 55



i = Imperial (in)
m = Metric (mm)

Inserts sold separately

1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

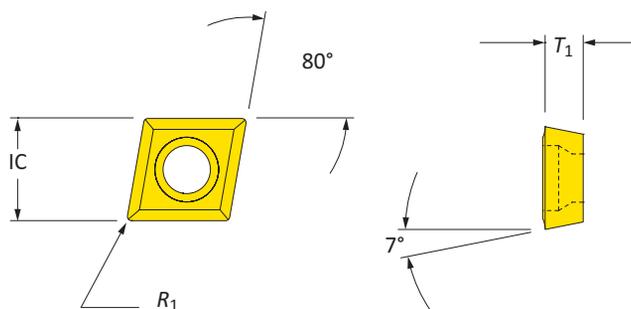
1. WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

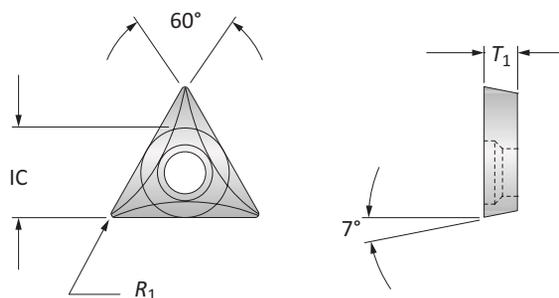
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



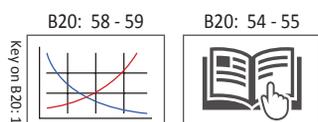
Coated 80° Diamond Inserts

	Insert Form	Insert			Part No.
		IC	T ₁	R ₁	
i	CC..325..	0.375	0.156	0.008	CCMT09T302
	CC..325..	0.375	0.156	0.016	CCMT09T304
	CC..325..	0.375	0.156	0.031	CCMT09T308
m	CC..09T3..	9.53	3.97	0.20	CCMT09T302
	CC..09T3..	9.53	3.97	0.40	CCMT09T304
	CC..09T3..	9.53	3.97	0.80	CCMT09T308



Coated 60° Triangle Inserts

	Insert Form	Insert			Part No.
		IC	T ₁	R ₁	
i	TC..325..	0.375	0.156	0.016	TCGT16T304
m	TC..16T3..	9.53	3.97	0.40	TCGT16T304



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately



NEED VERSATILITY? NO PROBLEM.

CB Style Versatile Boring

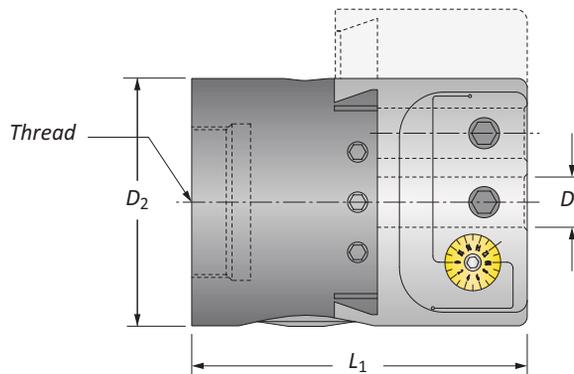
Wide range of diameters produced with
a single boring head

Allows for 0.001" adjustment on bore diameter and
0.000050" with CB2500BMA

Maximum toughness and maximum versatility

CB2500BMA Micro-adjusting Versatile Boring Head

Bore Diameter Range: 0.250" - 3.125"



	Boring Range	Thread Connection	Boring Head			Weight	Part No.
			L_1	D_2	D_3		
i	0.250 - 3.125	1½ - 18	3.375	2.500	0.500	3.400 (lbs)	CB2500BMA

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Imperial (in) = 0.00005" adjustment on diameter.

NOTE: Max spindle speed: 2,000 RPM at 0 radial offset.

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

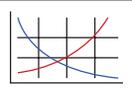
E

THREADING

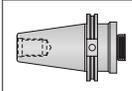
X

SPECIALS

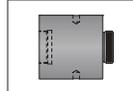
B20: 58 - 59



B20: 46 - 50



B20: 44 - 45



B20: 54 - 55



i = Imperial (in)

m = Metric (mm)

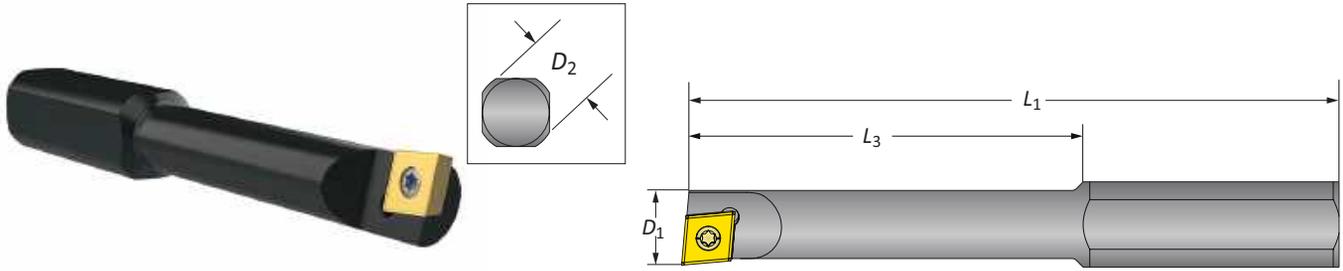
Inserts sold separately

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.

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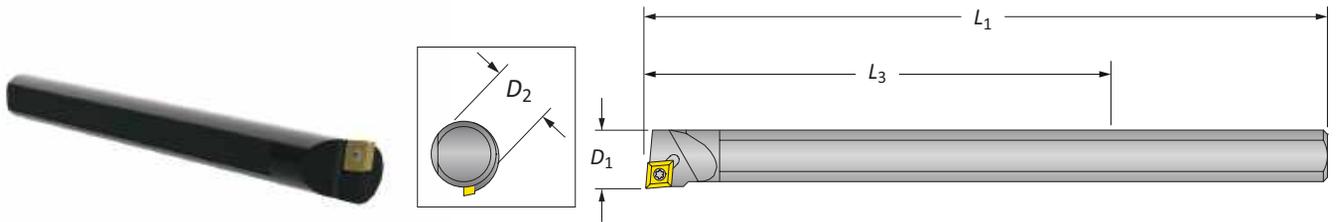
Boring Bars

Bore Diameter Range: 0.250" - 3.125"



Steel Boring Bars | Bore Diameter Range: 0.250" - 3.125"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
0.250	1.062	2.500	0.500	0.080 (lbs)	WBGX0301..	0250B	
0.312	1.437	2.750	0.500	0.080 (lbs)	WBGX0301..	0312B	
i 0.375	1.750	3.062	0.500	0.100 (lbs)	WBGX0301..	0375B	
0.437	2.062	3.375	0.500	0.110 (lbs)	CC..215..	0437B	
0.500	2.187	3.500	0.500	0.140 (lbs)	CC..215..	0500B	



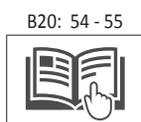
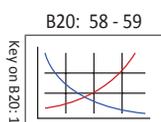
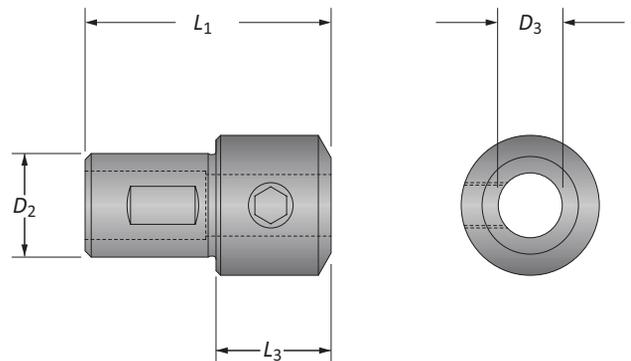
Heavy Metal Boring Bars | Bore Diameter Range: 0.365" - 3.125"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.365	2.250	4.000	0.312*	0.080 (lbs)	CC..215..	0365HM	
0.550	3.250	6.000	0.500	0.300 (lbs)	CC..215..	0550BHM	

*Reducing sleeve required.

Reducing Sleeves

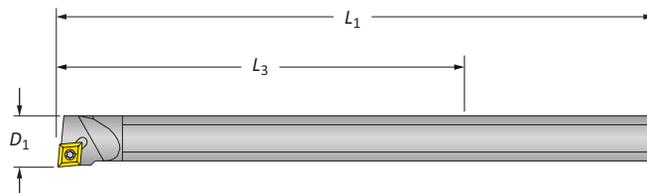
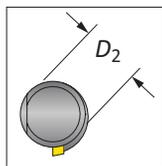
Reducing Sleeve					Weight	Part No.
	D_3	D_2	L_1	L_3		
i 0.312	0.500	1.312	-	0.040 (lbs)	BTH-03120500	
0.375	0.500	1.312	-	0.030 (lbs)	BTH-03750500	



i = Imperial (in)
m = Metric (mm)

Boring Bar | Boring Inserts

Bore Diameter Range: 0.625" - 3.125"

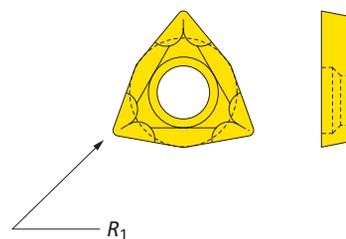


Carbide Boring Bar

	Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.625	4.500	8.000	0.500	0.410 (lbs)	CC..215..	0625BCS

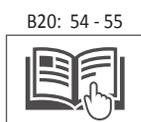
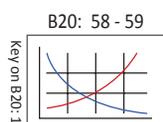
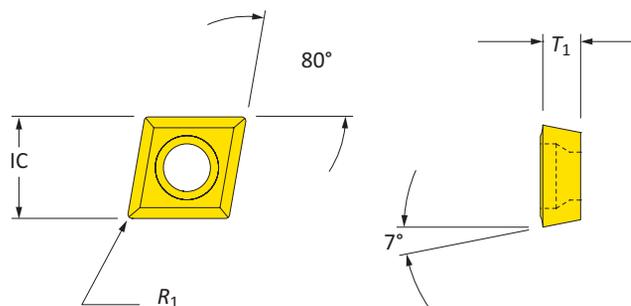
Coated Trigon Insert

	Insert Form	Insert	Part No.
		R_1	
i	WBGX0301..	0.004	WBGX030101



Coated 80° Diamond Inserts

	Insert Form	Insert			Part No.
		IC	T_1	R_1	
i	CC..215..	0.250	0.094	0.008	CCMT060202
	CC..215..	0.250	0.094	0.016	CCMT060204
	CC..215..	0.250	0.094	0.031	CCMT060208



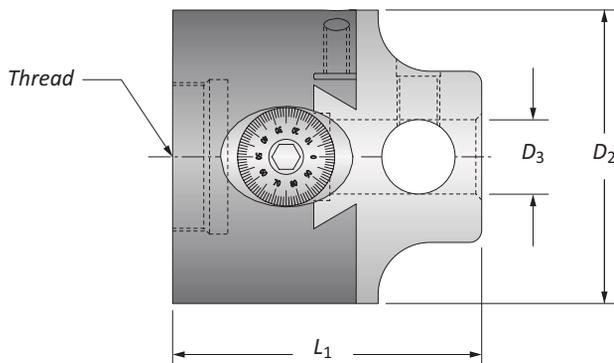
Key on B20-1

i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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

**CB202B Versatile Boring Head**

Bore Diameter Range: 0.250" - 6.687"



	Boring Range	Thread Connection	Boring Head			Weight	Part No.
			L_1	D_2	D_3		
i	0.250 - 6.687	$\frac{7}{8}$ - 20	2.435	2.000	0.500	1.600 (lbs)	CB202B

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.**NOTICE:** Cross hole bars should always be secured in the bar holder with at least two set screws.

Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 2,500 RPM at 0 radial offset.

A

DRILLING

B

BORING

C

REAMING

D

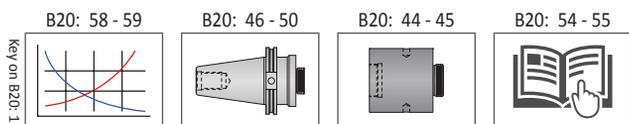
BURNISHING

E

THREADING

X

SPECIALS



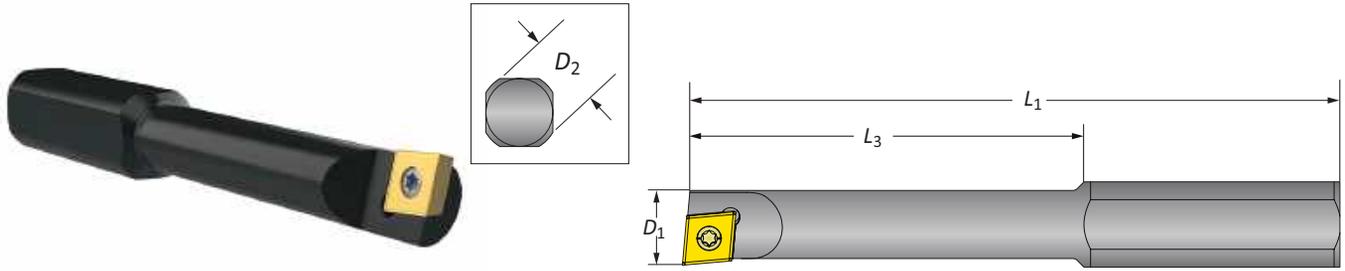
i = Imperial (in)
m = Metric (mm)

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.

ext: 7611 | email: appeng@alliedmachine.com

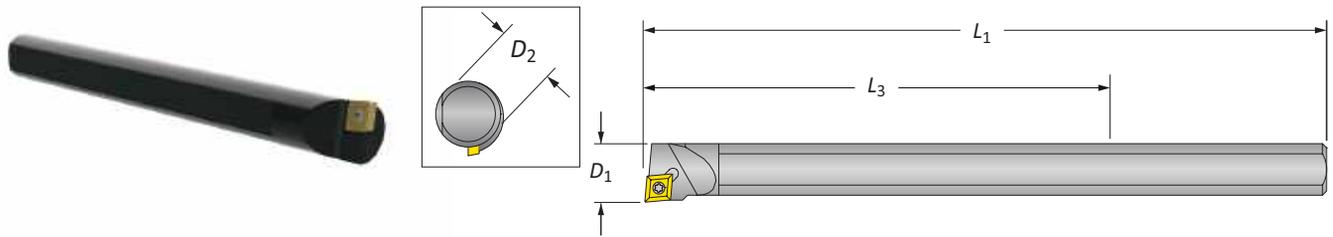
Boring Bars

Bore Diameter Range: 0.250" - 3.000"



Steel Boring Bars | Bore Diameter Range: 0.250" - 3.000"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.250	1.062	2.500	0.500	0.080 (lbs)	WBGX0301..	0250B	
0.312	1.437	2.750	0.500	0.080 (lbs)	WBGX0301..	0312B	
0.375	1.750	3.062	0.500	0.100 (lbs)	WBGX0301..	0375B	
0.437	2.062	3.375	0.500	0.110 (lbs)	CC..215..	0437B	
0.500	2.187	3.500	0.500	0.140 (lbs)	CC..215..	0500B	



Heavy Metal Boring Bars | Bore Diameter Range: 0.365" - 3.000"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.365	2.250	4.000	0.312*	0.080 (lbs)	CC..215..	0365HM	
0.550	3.250	6.000	0.500	0.300 (lbs)	CC..215..	0550BHM	

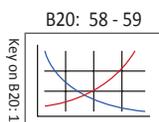
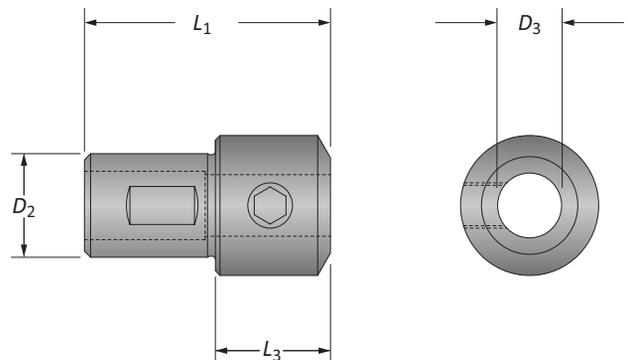
*Reducing sleeve required.

Carbide Boring Bar | Bore Diameter Range: 0.625" - 3.000"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.625	4.500	8.000	0.500	0.410 (lbs)	CC..215..	0625BCS	

Reducing Sleeves

Min. Boring Diameter	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i 0.312	0.500	1.312	-	0.040 (lbs)	BTH-03120500	
0.375	0.500	1.312	-	0.030 (lbs)	BTH-03750500	



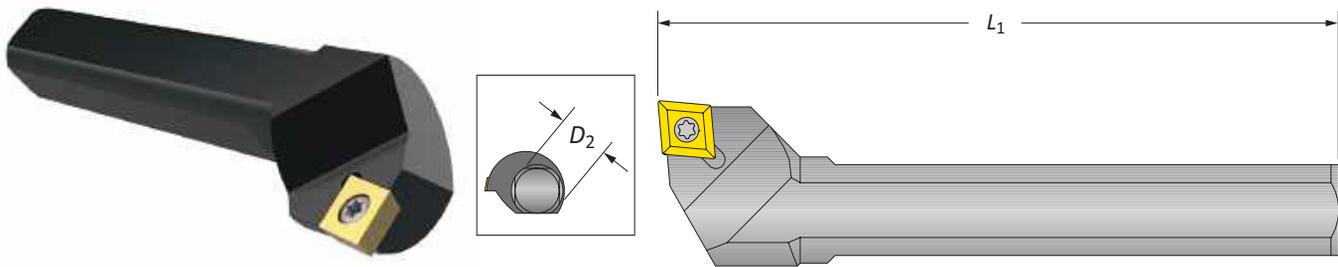
i = Imperial (in)
m = Metric (mm)

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



Boring Bar

Bore Diameter Range: 2.875" - 6.687"



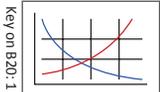
Min. Boring Diameter	Boring Bar*		Weight	Insert Form	Part No.
	L_1	D_2			
i 2.875	2.750	0.500	0.140 (lbs)	CC..215..	0500BCH

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

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

B20: 58 - 59

B20: 54 - 55

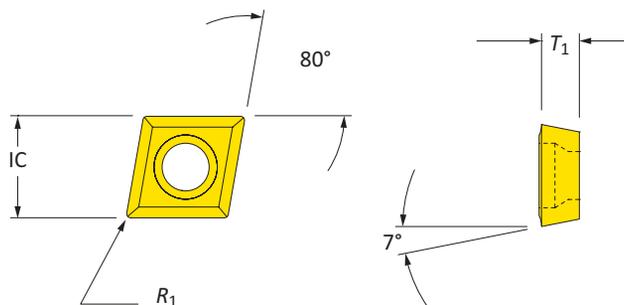


i = Imperial (in)
m = Metric (mm)

Inserts sold separately

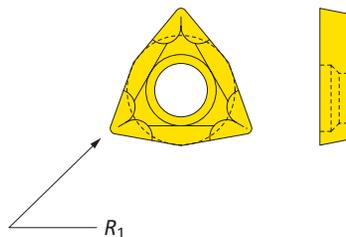
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



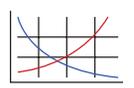
Coated 80° Diamond Inserts

	Insert Form	Insert			Part No.
		IC	T ₁	R ₁	
i	CC..215..	0.250	0.094	0.008	CCMT060202
	CC..215..	0.250	0.094	0.016	CCMT060204
	CC..215..	0.250	0.094	0.031	CCMT060208



Coated Trigon Insert

	Insert Form	Insert		Part No.
		R ₁		
i	WBGX0301..	0.004		WBGX030101

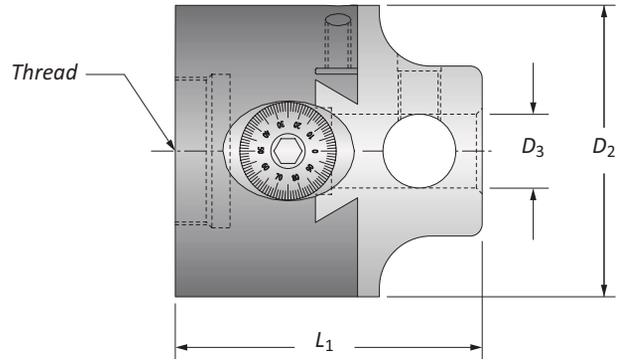
B20: 58 - 59  Key on B20-1

B20: 54 - 55 

i = Imperial (in)
m = Metric (mm)
Inserts sold separately

CB203D Versatile Boring Head

Bore Diameter Range: 0.250" - 11.000"



	Boring Range	Thread Connection	Boring Head			Weight	Part No.
			L_1	D_2	D_3		
i	0.250 - 11.000	1½ - 18	3.166	3.000	0.750	4.700 (lbs)	CB203D

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

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

Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 1,750 RPM at 0 radial offset.

Key on B20: 1

B20: 58 - 59

B20: 46 - 50

B20: 44 - 45

B20: 54 - 55

i = Imperial (in)
m = Metric (mm)

Inserts sold separately

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.
 ext: 7611 | email: appeng@alliedmachine.com

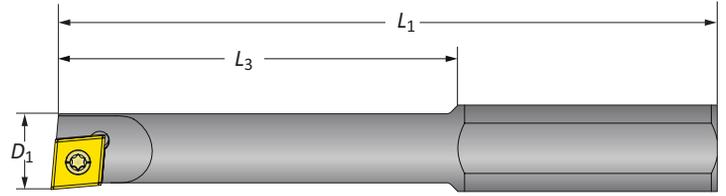
WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

Boring Bars

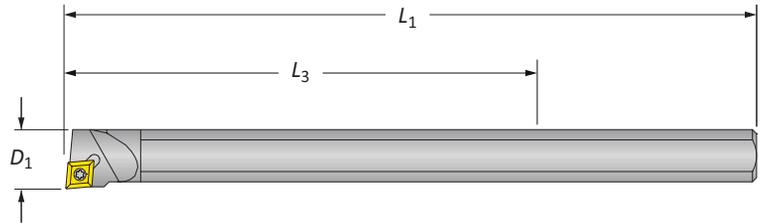
Bore Diameter Range: 0.250" - 5.125"



Steel Boring Bars | Bore Diameter Range: 0.250" - 5.125"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.250	1.062	2.500	0.500*	0.080 (lbs)	WBGX0301..	0250B
	0.312	1.437	2.570	0.500*	0.080 (lbs)	WBGX0301..	0312B
	0.375	1.750	3.062	0.500*	0.100 (lbs)	WBGX0301..	0375B
	0.437	2.062	3.375	0.500*	0.110 (lbs)	CC..215..	0437B
	0.500	2.500	4.250	0.750	0.280 (lbs)	CC..215..	0500D
	0.750	3.000	4.687	0.750	0.430 (lbs)	CC..325..	0750D
	1.000	3.500	5.125	0.750	0.570 (lbs)	CC..325..	1000D
	1.250	4.000	5.562	0.750	0.570 (lbs)	CC..325..	1250D

*Reducing sleeve required.



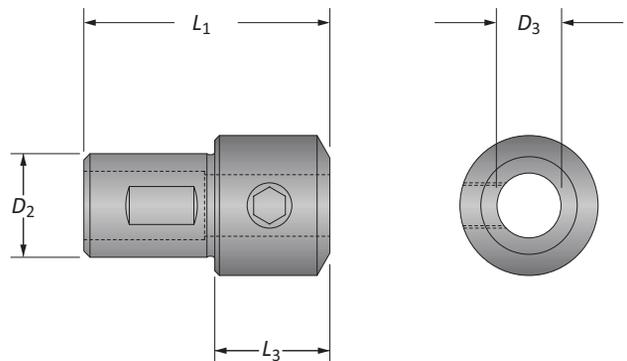
Heavy Metal Boring Bars | Bore Diameter Range: 0.425" - 4.250"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.425	2.250	4.000	0.375*	0.110 (lbs)	CC..215..	0425BHM
	0.550	3.250	6.000	0.500*	0.300 (lbs)	CC..215..	0550BHM
	0.688	4.250	8.000	0.625*	0.630 (lbs)	CC..325..	0688CHM
	0.832	4.750	10.000	0.750	1.150 (lbs)	CC..325..	0832DHM

*Reducing sleeve required.

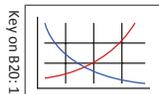
Reducing Sleeves

Reducing Sleeve	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i	0.375	0.750	2.406	-	0.190 (lbs)	BTH-03750750
	0.500	0.750	2.406	0.910	0.040 (lbs)	BTH-05000750
	0.625	0.750	1.500	-	0.060 (lbs)	BTH-06250750



B20: 58 - 59

B20: 54 - 55

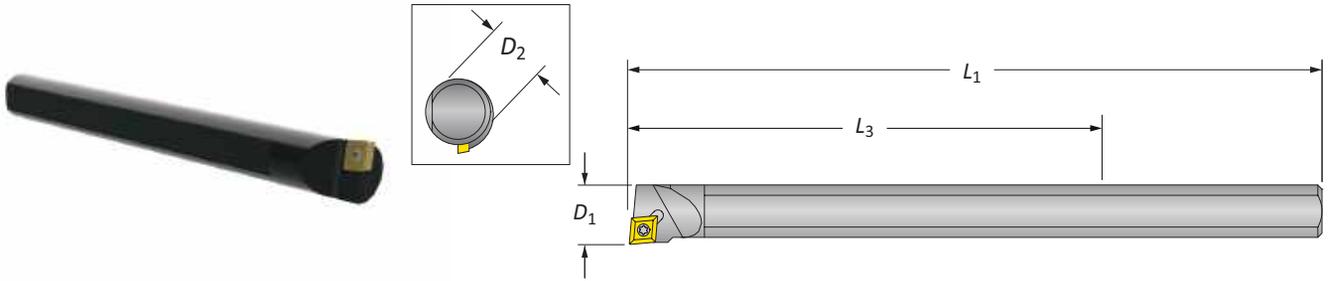


i = Imperial (in)
m = Metric (mm)
Inserts sold separately

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

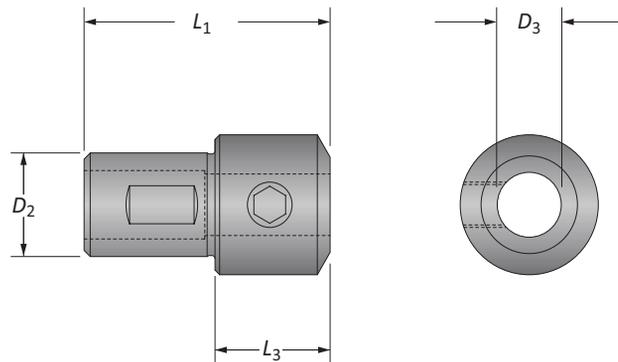
**Carbide Boring Bars**

Bore Diameter Range: 0.625" - 4.250"

**Carbide Boring Bars**

	Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.625	4.500	8.000	0.500*	0.410 (lbs)	CC..215..	0625BCS
	0.875	6.000	10.000	0.750	1.130 (lbs)	CC..325..	0875DCS

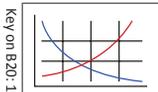
*Reducing sleeve required.

**Reducing Sleeve**

	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i	0.500	0.750	2.406	0.910	0.040 (lbs)	BTH-05000750

B20: 58 - 59

B20: 54 - 55

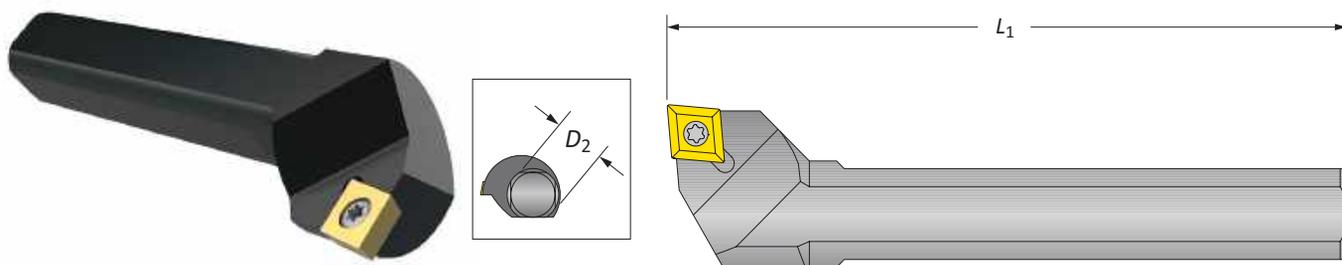


i = Imperial (in)
m = Metric (mm)

Inserts sold separately

Cross Hole Boring Bar | Boring Inserts

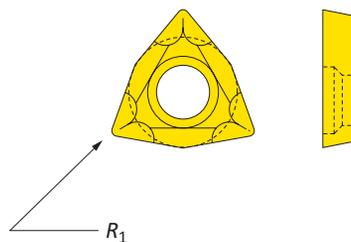
Bore Diameter Range: 4.937" - 11.000"



Cross Hole Boring Bar

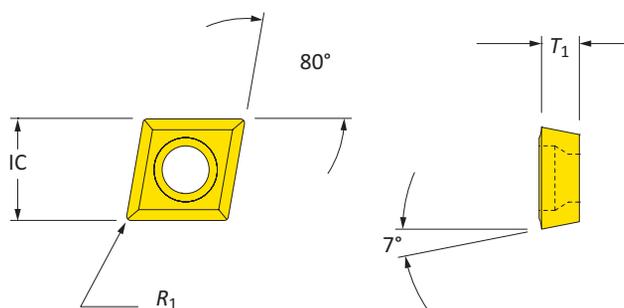
Min. Bore Diameter	Boring Bar*		Weight	Insert Form	Part No.
	L_1	D_2			
i 4.937	4.750	0.750	0.550 (lbs)	CC..325..	0750DCH

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



Coated Trigon Insert

Insert Form	Insert R_1	Part No.
i WBGX0301...	0.004	WBGX030101

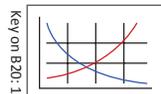


Coated 80° Diamond Inserts

Insert Form	Insert			Part No.
	IC	T_1	R_1	
i CC..215..	0.250	0.094	0.008	CCMT060202
CC..215..	0.250	0.094	0.016	CCMT060204
CC..215.	0.250	0.094	0.031	CCMT060208
CC..325...	0.375	0.156	0.008	CCMT09T302
CC..325..	0.375	0.156	0.016	CCMT09T304
CC..325..	0.375	0.156	0.031	CCMT09T308

B20: 58 - 59

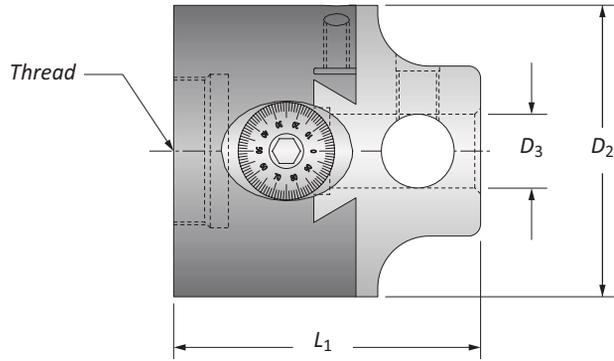
B20: 54 - 55



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

CB204E Versatile Boring Head

Bore Diameter Range: 0.500" - 13.437"



	Boring Range	Thread Connection	Boring Head			Weight	Part No.
			L_1	D_2	D_3		
i	0.500 - 13.437	1½ - 18	3.715	4.000	1.000	9,300 (lbs)	CB204E

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

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

Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 800 RPM at 0 radial offset.

Key on B20: 1

B20: 58 - 59

B20: 46 - 50

B20: 44 - 45

B20: 54 - 55

i = Imperial (in)
m = Metric (mm)

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.
ext: 7611 | email: appeng@alliedmachine.com

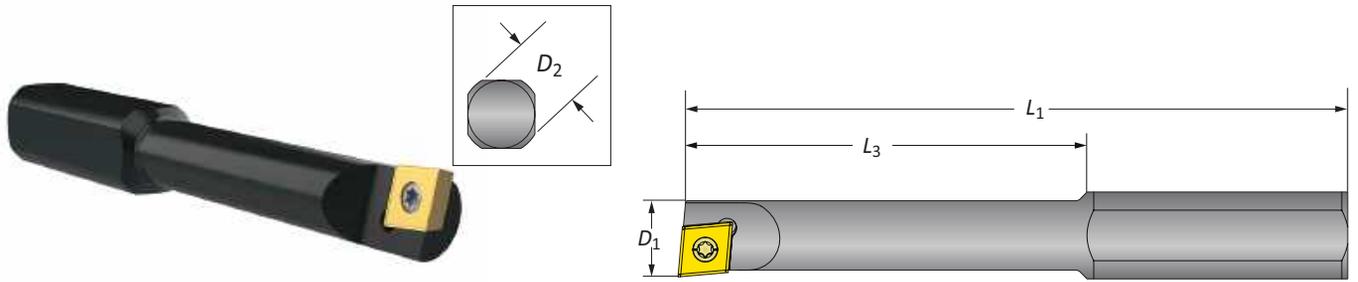
WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

Boring Bars

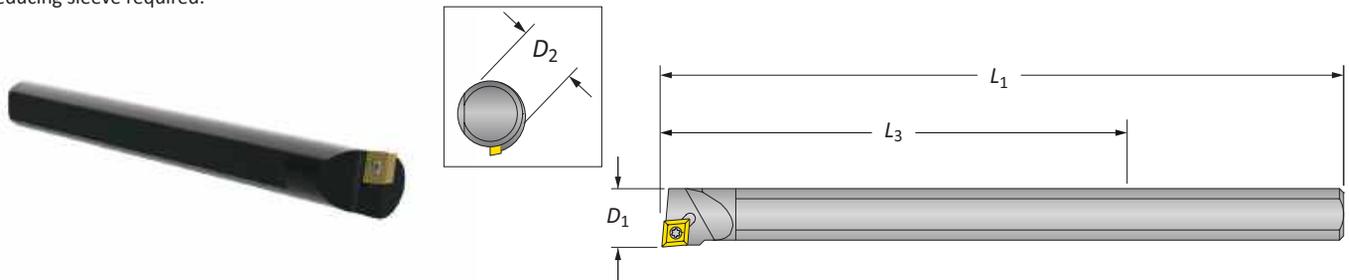
Bore Diameter Range: 0.500" - 5.750"



Steel Boring Bars | Bore Diameter Range: 0.500" - 5.750"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.500	2.500	4.250	0.750*	0.280 (lbs)	CC..215..	0500D	
0.750	3.000	4.687	0.750*	0.430 (lbs)	CC..325..	0750D	
1.000	3.500	5.125	0.750*	0.510 (lbs)	CC..325..	1000D	
1.250	4.000	5.562	0.750*	0.570 (lbs)	CC..325..	1250D	

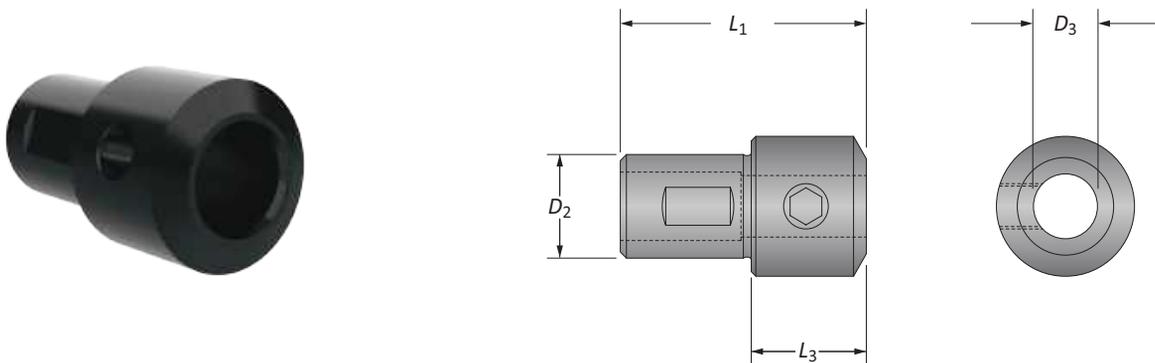
*Reducing sleeve required.



Heavy Metal Boring Bar | Bore Diameter Range: 0.832" - 5.125"

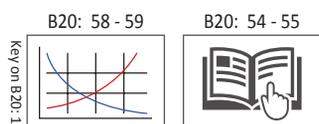
Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.832	4.750	10.000	0.750*	1.150 (lbs)	CC..325..	0832DHM	

*Reducing sleeve required.



Reducing Sleeve

Min. Boring Diameter	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i 0.750	1.000	2.405	1.125	0.400 (lbs)	BTH-07501000	

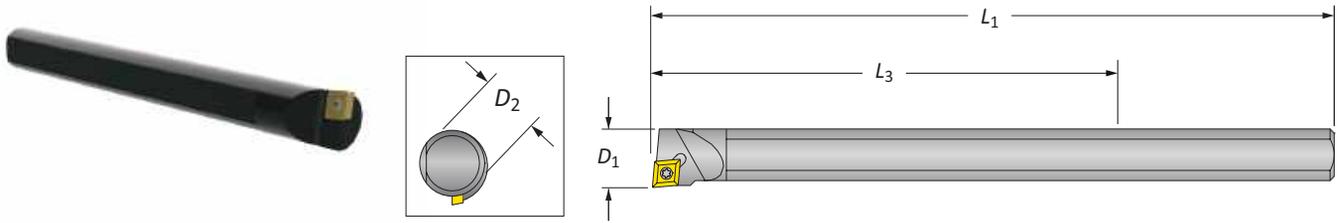


i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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

Boring Bars

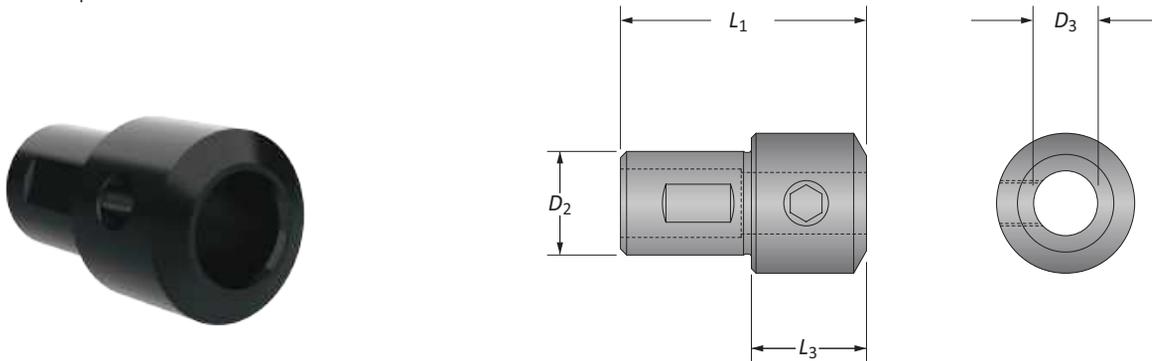
Bore Diameter Range: 0.875" - 5.125"



Carbide Boring Bar

	Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.875	6.000	10.000	0.750*	1.130 (lbs)	CC..325..	0875DCS

*Reducing sleeve required.

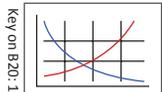


Reducing Sleeve

	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i	0.750	1.000	2.405	1.125	0.400 (lbs)	BTH-07501000

B20: 58 - 59

B20: 54 - 55

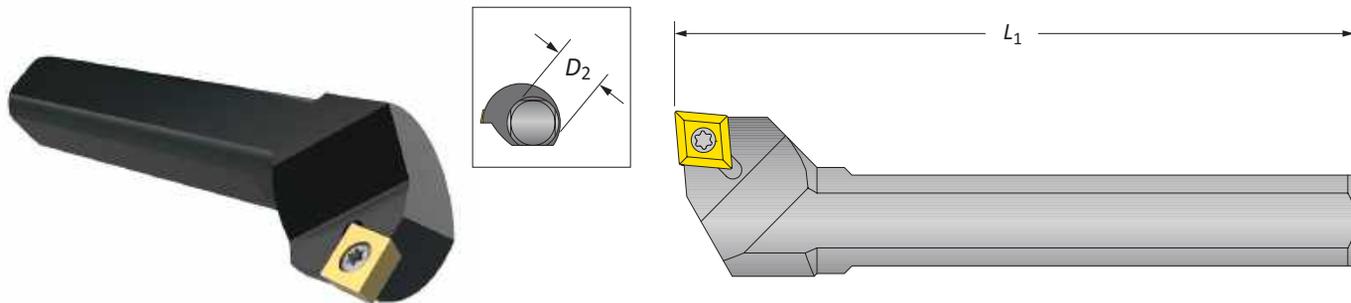


i = Imperial (in)
m = Metric (mm)

Inserts sold separately

Cross Hole Boring Bar | Boring Inserts

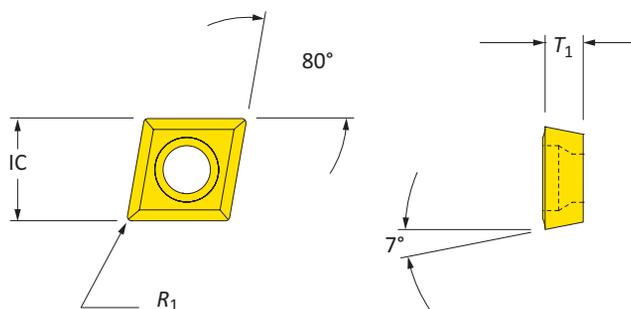
Bore Diameter Range: 5.625" - 13.437"



Cross Hole Boring Bar

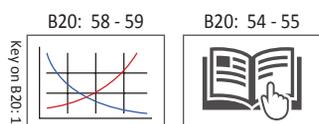
Min Boring Diameter	Boring Bar*		Weight	Insert Form	Part No.
	L_1	D_2			
i 5.625	5.310	1.000	1.020 (lbs)	CC..325..	1000ECH

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



Coated 80° Diamond Inserts

Insert Form	Insert			Part No.
	IC	T_1	R_1	
i CC..215..	0.250	0.094	0.008	CCMT060202
CC..215..	0.250	0.094	0.016	CCMT060204
CC..215..	0.250	0.094	0.031	CCMT060208
CC..325..	0.375	0.156	0.008	CCMT09T302
CC..325..	0.375	0.156	0.016	CCMT09T304
CC..325..	0.375	0.156	0.031	CCMT09T308

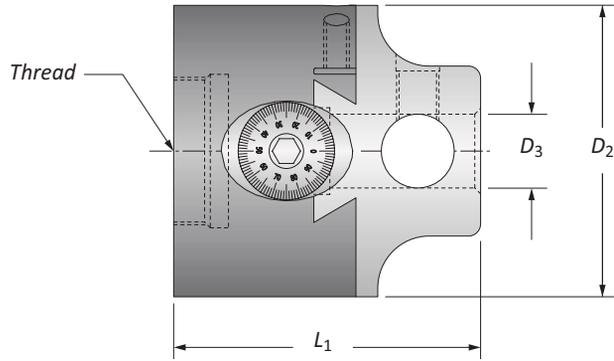


i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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

CB206F Versatile Boring Head

Bore Diameter Range: 0.500" - 21.500"



	Boring Range	Thread Connection	Boring Head			Weight	Part No.
			L_1	D_2	D_3		
i	0.500 - 21.500	2 ¼ - 10	5.475	6.000	1.500	26.400 (lbs)	CB206F

IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

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

Imperial (in) = 0.001" adjustment on diameter.

NOTE: Max spindle speed: 500 RPM at 0 radial offset.

Key on B20: 1

B20: 58 - 59

B20: 46 - 50

B20: 44 - 45

B20: 54 - 55

i = Imperial (in)
m = Metric (mm)

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.
ext: 7611 | email: appeng@alliedmachine.com

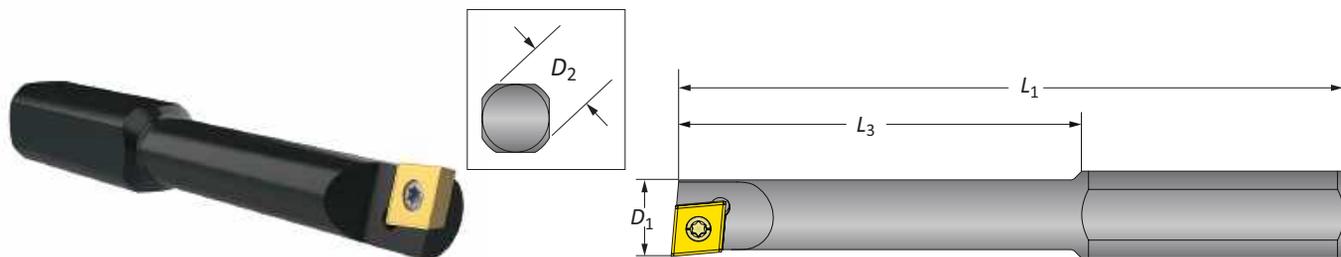
1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

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Boring Bars

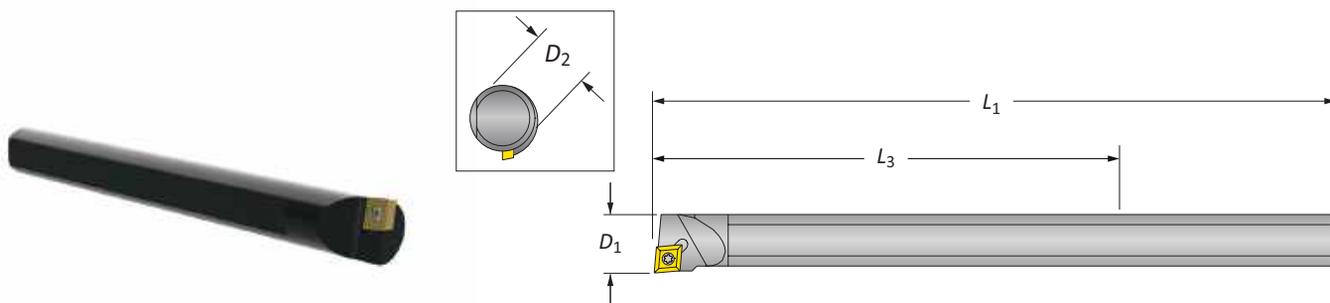
Bore Diameter Range: 0.500" - 9.125"



Steel Boring Bars | Bore Diameter Range: 0.500" - 9.125"

Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.500	2.500	4.250	0.750*	0.280 (lbs)	CC..215..	0500D	
0.750	3.000	4.687	0.750*	0.430 (lbs)	CC..325..	0750D	
1.000	3.500	5.125	0.750*	0.510 (lbs)	CC..325..	1000D	
1.250	4.000	5.562	0.750*	0.570 (lbs)	CC..325..	1250D	

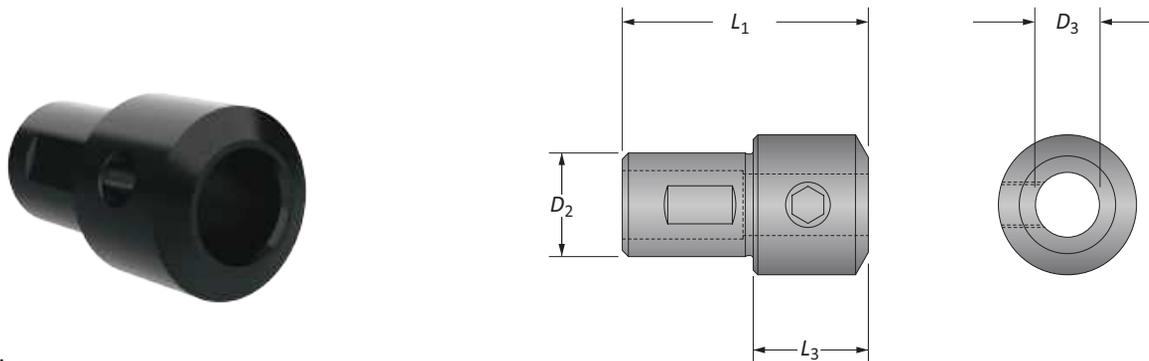
*Reducing sleeve required.



Heavy Metal Boring Bar | Bore Diameter Range: 0.832" - 7.125"

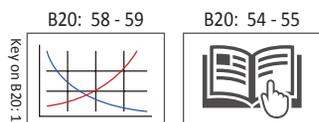
Min. Boring Diameter	Boring Bar				Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i 0.832	4.750	10.000	0.750*	1.150 (lbs)	CC..325..	0832DHM	

*Reducing sleeve required.



Reducing Sleeve

Reducing Sleeve						
D_3	D_2	L_1	L_3	Weight	Part No.	
i 0.750	1.500	3.000	1.000	1.400 (lbs)	BTH-07501500	

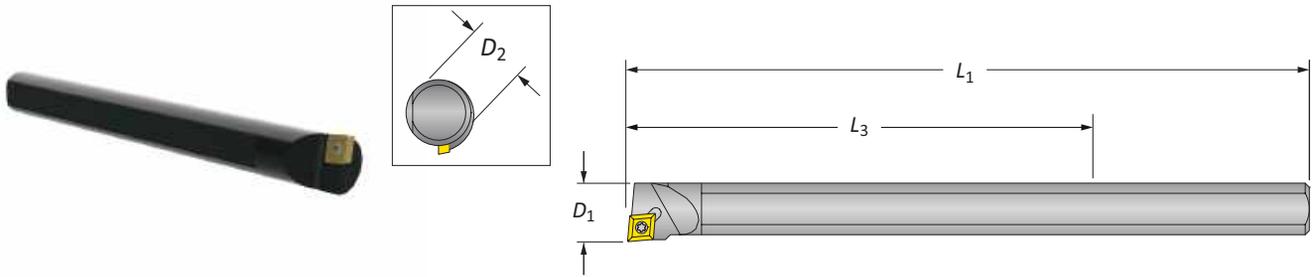


i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

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

Carbide Boring Bar

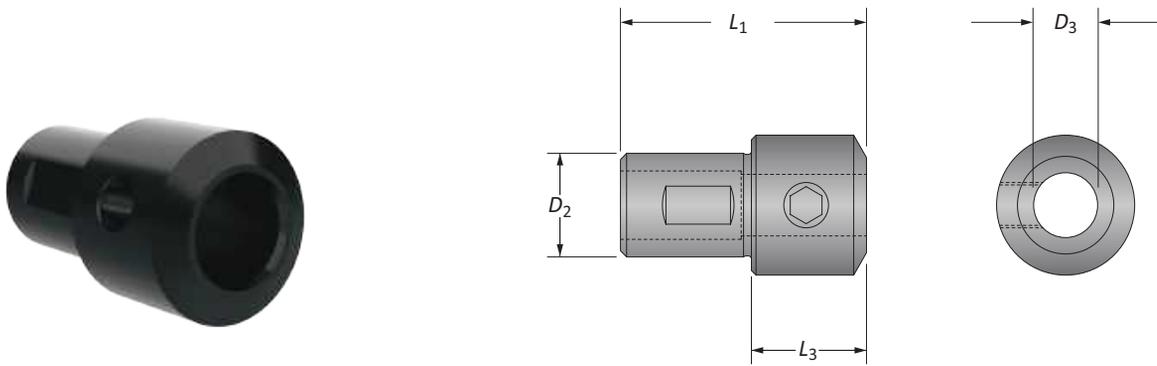
Bore Diameter Range: 0.875" - 7.125"



Carbide Boring Bar

	Min. Boring Diameter	Boring Bar			Weight	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
i	0.875	6.000	10.000	0.750*	1.130 (lbs)	CC..325..	0875DCS

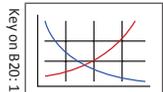
*Reducing sleeve required.



Reducing Sleeve

	Reducing Sleeve				Weight	Part No.
	D_3	D_2	L_1	L_3		
i	0.750	1.500	3.000	1.000	1.400 (lbs)	BTH-07501500

B20: 58 - 59



B20: 54 - 55

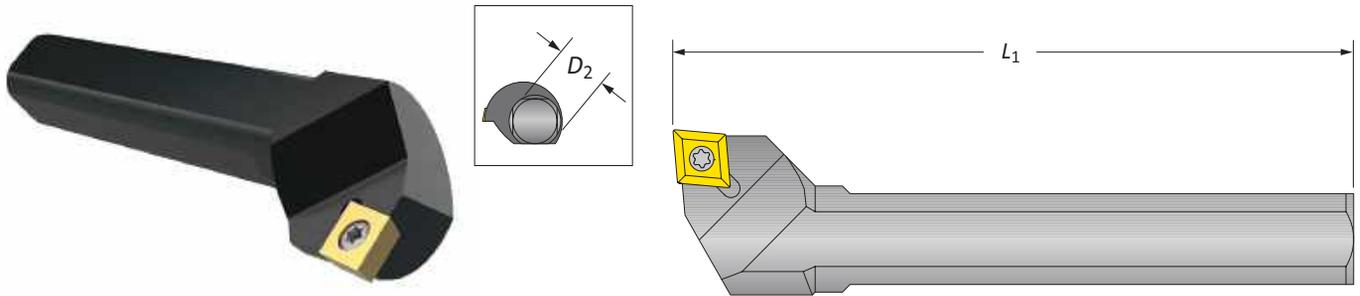


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m = Metric (mm)
 Inserts sold separately

A DRILLING
 B BORING
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 D BURNISHING
 E THREADING
 X SPECIALS

Cross Hole Boring Bar | Boring Inserts

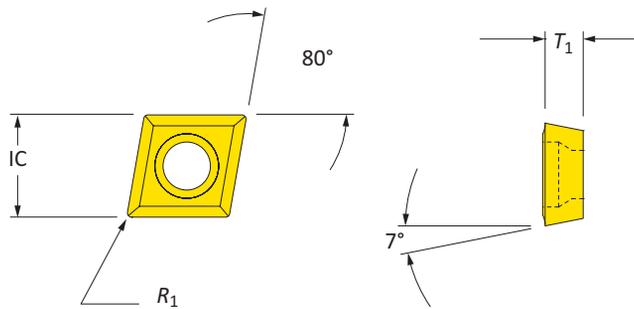
Bore Diameter Range: 9.093" - 21.500"



Cross Hole Boring Bar

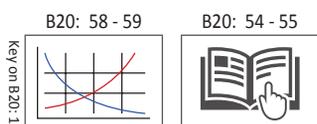
Min. Boring Diameter	Boring Bar*		Weight	Insert Form	Part No.
	L_1	D_2			
i 9.093	9.125	1.500	4.130 (lbs)	CC..43..	1500FCH

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



Coated 80° Diamond Inserts

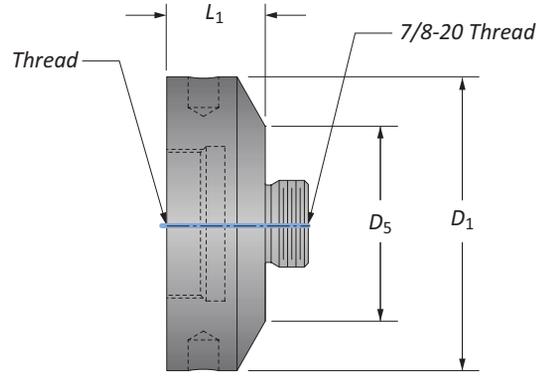
Insert Form	Insert			Part No.
	IC	T_1	R_1	
i CC..215..	0.250	0.094	0.008	CCMT060202
CC..215..	0.250	0.091	0.016	CCMT060204
CC..215..	0.250	0.094	0.031	CCMT060208
CC..325..	0.375	0.156	0.008	CCMT09T302
CC..325..	0.375	0.156	0.016	CCMT09T304
CC..325..	0.375	0.156	0.031	CCMT09T308
CC..43..	0.500	0.188	0.031	CCMT120408



i = Imperial (in)
m = Metric (mm)
 Inserts sold separately

Intermediate Modules

Reducers



Reducer					
D_1	D_5	L_1	Weight	Thread	Part No.
1.500	1.000	1.000	0.440 (lbs)	$\frac{7}{8}$ - 20	CB1500-IRCB1000
1.500	1.250	1.000	0.450 (lbs)	$\frac{7}{8}$ - 20	CB1500-IRCB1250
2.000	1.000	1.000	0.720 (lbs)	$\frac{7}{8}$ - 20	CB2000-IRCB1000
2.000	1.250	1.000	0.760 (lbs)	$\frac{7}{8}$ - 20	CB2000-IRCB1250
i 2.000	1.500	1.000	0.800 (lbs)	$\frac{7}{8}$ - 20	CB2000-IRCB1500
3.000	1.000	1.250	1.610 (lbs)	$1\frac{1}{2}$ - 18	CB3000-IRCB1000
3.000	1.250	1.250	1.750 (lbs)	$1\frac{1}{2}$ - 18	CB3000-IRCB1250
3.000	1.500	1.250	1.840 (lbs)	$1\frac{1}{2}$ - 18	CB3000-IRCB1500
3.000	2.000	1.250	2.020 (lbs)	$1\frac{1}{2}$ - 18	CB3000-IRCB2000

A DRILLING

B BORING

C REAMING

D BURNISHING

F THREADING

X SPECIALS

Key on B20: 1

B20: 58 - 59

B20: 54 - 55

B20: 46 - 50

B20: 14

B20: 24 - 43

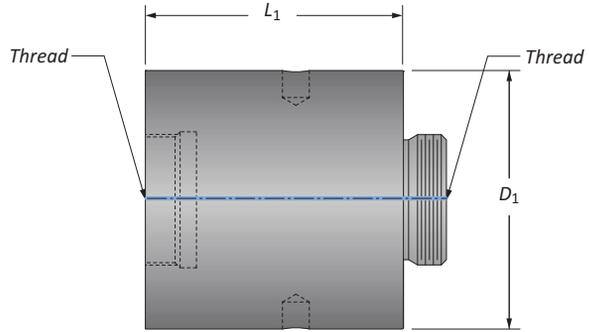
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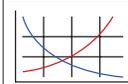
Intermediate Modules

Extensions

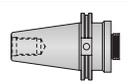


Extension				
D_1	L_1	Weight	Thread	Part No.
1.000	1.000	0.190 (lbs)	$\frac{7}{8}$ - 20	CB1000-IA1000
1.000	2.000	0.390 (lbs)	$\frac{7}{8}$ - 20	CB1000-IA2000
1.250	1.250	0.390 (lbs)	$\frac{7}{8}$ - 20	CB1250-IA1250
1.250	2.500	0.800 (lbs)	$\frac{7}{8}$ - 20	CB1250-IA2500
1.500	1.500	0.700 (lbs)	$\frac{7}{8}$ - 20	CB1500-IA1500
1.500	3.000	1.410 (lbs)	$\frac{7}{8}$ - 20	CB1500-IA3000
2.000	2.000	1.660 (lbs)	$\frac{7}{8}$ - 20	CB2000-IA2000
2.000	4.000	3.350 (lbs)	$\frac{7}{8}$ - 20	CB2000-IA4000
3.000	3.000	5.730 (lbs)	1½ - 18	CB3000-IA3000
3.000	6.000	11.500 (lbs)	1½ - 18	CB3000-IA6000

i

B20: 58 - 59

 Key on B20: 1

B20: 54 - 55


B20: 46 - 50


B20: 14


B20: 24 - 43


i = Imperial (in)
 m = Metric (mm)

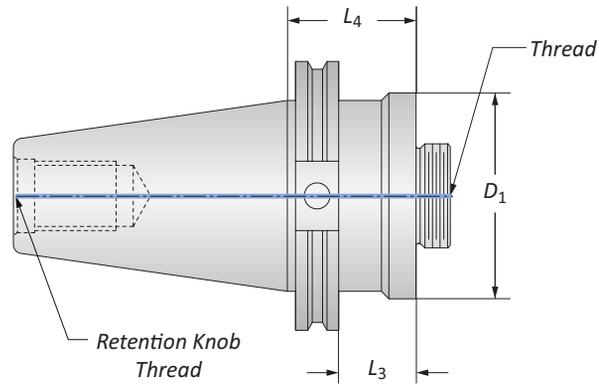
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A
 DRILLING
 B
 BORING
 C
 REAMING
 D
 BURNISHING
 E
 THREADING
 X
 SPECIALS

Criterion Master Shanks

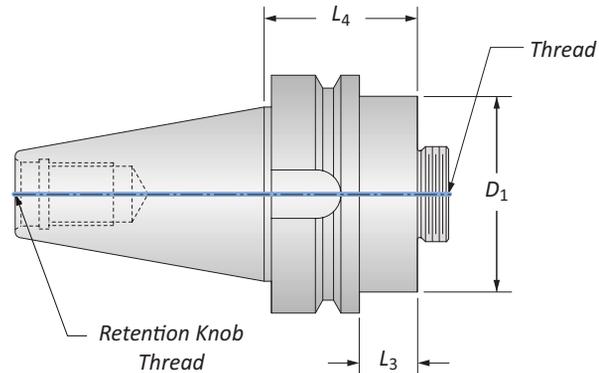
CAT 40/50 | BT Flange



CAT 40/50 Shanks

Style	D ₁	L ₃	L ₄	Shank			Retention Knob Thread	Part No.
				Weight	Thread	Retention Knob Thread		
CAT40	1.500	0.370	1.770	2.490 (lbs)	3/8 - 20	3/8 - 11	CB1500-CV40	
CAT40	2.000	1.130	1.880	2.700 (lbs)	3/8 - 20	3/8 - 11	CB2000-CV40	
CAT40	2.500	1.130	1.880	3.120 (lbs)	1 1/2 - 18	3/8 - 11	CB2500-CV40	
CAT40	3.000	1.180	1.880	3.410 (lbs)	1 1/2 - 18	3/8 - 11	CB3000-CV40	
CAT50	1.500	0.370	1.770	7.120 (lbs)	3/8 - 20	1 - 8	CB1500-CV50	
CAT50	2.000	1.130	1.880	7.330 (lbs)	3/8 - 20	1 - 8	CB2000-CV50	
CAT50	2.500	1.130	1.880	7.740 (lbs)	1 1/2 - 18	1 - 8	CB2500-CV50	
CAT50	3.000	1.130	1.880	8.030 (lbs)	1 1/2 - 18	1 - 8	CB3000-CV50	
CAT50	3.380	1.380	2.130	9.440 (lbs)	2 1/4 - 10	1 - 8	CB6000-CV50	

NOTE: Taper ground to AT3 tolerance.



BT Flange Shanks

Style	D ₁	L ₃	L ₄	Shank			Retention Knob Thread	Part No.
				Weight	Thread	Retention Knob Thread		
BT30	1.500	0.900	1.770	1.360 (lbs)	3/8 - 20	M12 x 1.75	CB1500-BT30	
BT40	1.500	0.710	1.770	2.540 (lbs)	3/8 - 20	M16 x 2	CB1500-BT40	
BT40	2.000	0.500	1.560	2.620 (lbs)	3/8 - 20	M16 x 2	CB2000-BT40	
BT40	2.500	0.870	2.060	3.690 (lbs)	1 1/2 - 18	M16 x 2	CB2500-BT40	
BT40	3.000	1.000	2.060	3.980 (lbs)	1 1/2 - 18	M16 x 2	CB3000-BT40	
BT50	1.500	0.270	1.770	8.220 (lbs)	3/8 - 20	M24 x 3	CB1500-BT50	
BT50	2.000	0.060	1.560	8.250 (lbs)	3/8 - 20	M24 x 3	CB2000-BT50	
BT50	3.000	0.500	2.060	9.410 (lbs)	1 1/2 - 18	M24 x 3	CB3000-BT50	
BT50	3.380	0.630	2.130	10.500 (lbs)	2 1/4 - 10	M24 x 3	CB6000-BT50	

NOTE: Taper ground to AT3 tolerance.

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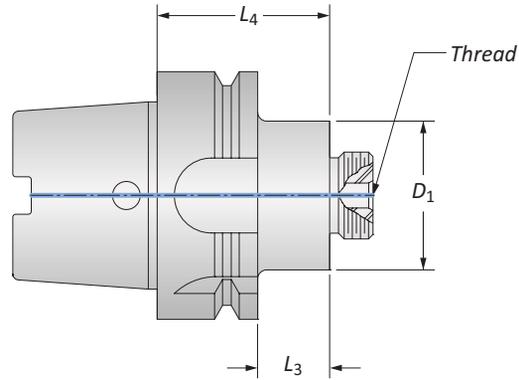
WARNING Tool failure can cause serious injury. To prevent:

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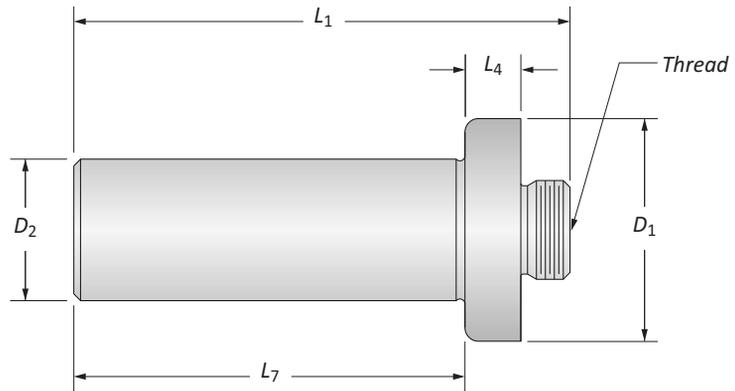
Criterion Master Shanks

HSK | Straight Shank



HSK Shanks

Style	D_1	Shank			Weight	Thread	Part No.
		L_3	L_4				
HSK63	1.500	0.730	1.750	1.820 (lbs)	$\frac{7}{8}$ - 20	CB1500-HSK63A	
HSK63	2.000	0.730	1.750	2.090 (lbs)	$\frac{7}{8}$ - 20	CB2000-HSK63A	
HSK63	3.000	0.500	2.150	3.200 (lbs)	1½ - 18	CB3000-HSK63A	
HSK100	1.500	0.500	2.270	6.300 (lbs)	$\frac{7}{8}$ - 20	CB1500-HSK100A	
HSK100	2.000	0.500	2.270	6.470 (lbs)	$\frac{7}{8}$ - 20	CB2000-HSK100A	
HSK100	3.000	0.500	2.270	7.180 (lbs)	1½ - 18	CB3000-HSK100A	



Straight Shanks

D_1	D_2	Shank			Weight	Thread	Part No.
		L_4	L_7	L_1			
1.110	0.500	0.250	2.000	2.690	0.240 (lbs)	$\frac{7}{8}$ - 20	SS0500-087520
1.110	0.625	0.250	2.370	3.060	0.340 (lbs)	$\frac{7}{8}$ - 20	SS0625-087520
1.110	0.750	0.250	2.750	3.440	0.480 (lbs)	$\frac{7}{8}$ - 20	SS0750-087520
1.110	1.000	0.250	3.120	3.810	0.820 (lbs)	$\frac{7}{8}$ - 20	SS1000-087520
1.860	0.750	0.250	3.120	3.870	0.810 (lbs)	1½ - 18	SS0750-150018
1.860	1.000	0.250	3.120	3.870	1.110 (lbs)	1½ - 18	SS1000-150018
1.860	1.250	0.250	3.880	4.630	1.760 (lbs)	1½ - 18	SS1250-150018
1.860	1.500	0.250	4.630	5.380	2.720 (lbs)	1½ - 18	SS1500-150018
2.000	2.000	-	6.380	6.880	5.850 (lbs)	1½ - 18	SS2000-150018

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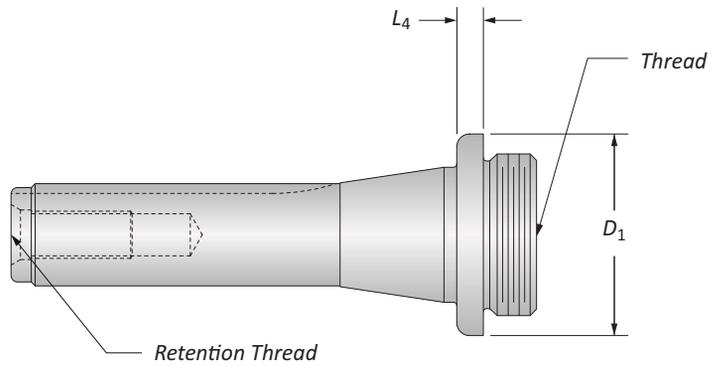
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A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

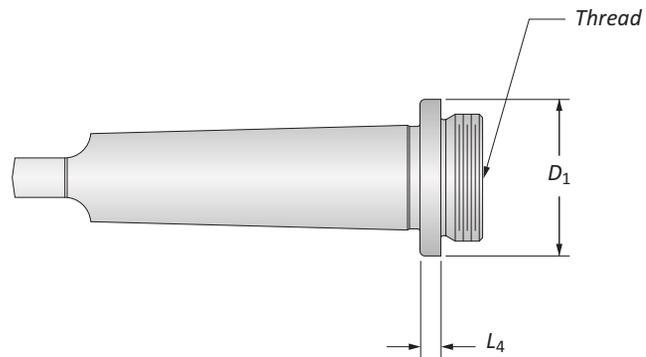
Criterion Shanks

R-8 | Morse Taper



R-8 Shanks

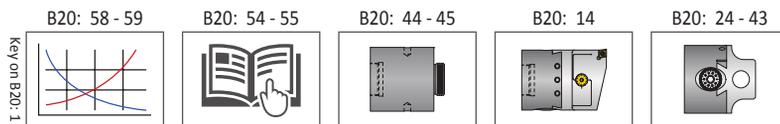
	Shank					Part No.
	D_1	L_4	Weight	Thread	Retention Thread	
i	1.110	0.470	0.990 (lbs)	$\frac{7}{8}$ - 20	$\frac{7}{16}$ - 20	R8-087520
	1.860	0.370	1.270 (lbs)	1- $\frac{1}{2}$ - 18	$\frac{7}{16}$ - 20	R8-150018



Morse Taper Shanks

	Style	Shank				Part No.
		D_1	L_4	Weight	Thread	
	2 Taper	1.110	0.250	0.380 (lbs)	$\frac{7}{8}$ - 20	MT2-375THD87520*
	2 Taper	1.110	0.250	0.390 (lbs)	$\frac{7}{8}$ - 20	MT2-087520
	3 Taper	1.110	0.250	0.710 (lbs)	$\frac{7}{8}$ - 20	MT3-087520
i	3 Taper	1.860	0.250	1.000 (lbs)	1- $\frac{1}{2}$ - 18	MT3-150018
	4 Taper	1.230	0.250	1.350 (lbs)	$\frac{7}{8}$ - 20	MT4-087520
	4 Taper	1.860	0.250	1.700 (lbs)	1- $\frac{1}{2}$ - 18	MT4-150018
	5 Taper	1.860	0.250	3.770 (lbs)	1- $\frac{1}{2}$ - 18	MT5-150018

*Item features a $\frac{3}{8}$ - 16 thread instead of tang.



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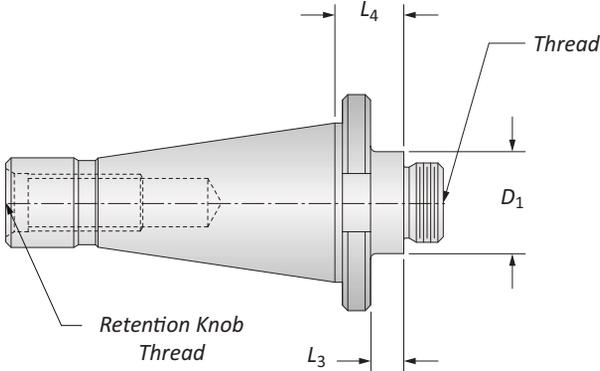
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Criterion Master Shanks

NMTB Taper



NMTB Taper Shanks

Style	D_1	L_3	L_4	Shank			Part No.
				Weight	Thread	Retention Thread	
NMTB 30	1.120	0.370	0.790	0.810 (lbs)	$\frac{7}{8}$ - 20	$\frac{1}{2}$ - 13	NMTB30-087520
NMTB 30	1.850	0.630	1.050	1.190 (lbs)	1 $\frac{1}{2}$ - 18	$\frac{1}{2}$ - 13	NMTB30-150018
NMTB 40	1.120	0.370	0.770	1.780 (lbs)	$\frac{7}{8}$ - 20	$\frac{5}{8}$ - 11	NMTB40-087520
NMTB 40	1.850	0.630	1.020	2.310 (lbs)	1 $\frac{1}{2}$ - 18	$\frac{5}{8}$ - 11	NMTB40-150018
NMTB 50	1.970	0.510	1.250	6.750 (lbs)	$\frac{7}{8}$ - 20	1 - 8	NMTB50-087520
NMTB 50	1.870	0.400	1.210	6.870 (lbs)	1 $\frac{1}{2}$ - 18	1 - 8	NMTB50-150018
NMTB 50	3.380	0.500	1.250	8.320 (lbs)	2 $\frac{1}{4}$ - 10	1 - 8	NMTB50-225010

i

Key on B20: 1

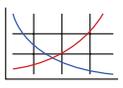
B20: 58 - 59

B20: 54 - 55

B20: 44 - 45

B20: 14

B20: 24 - 43



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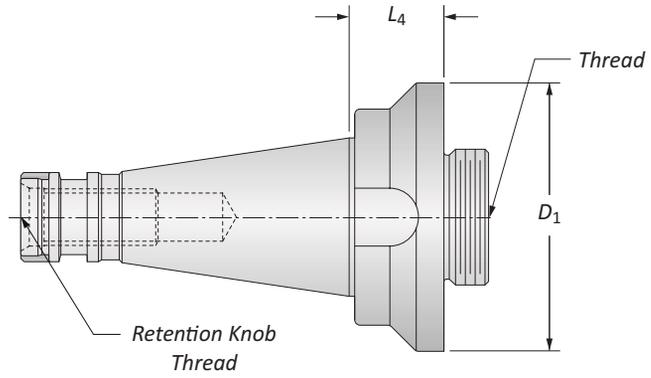
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Criterion Shanks

DIN 2080



DIN 2080

		Shank					Part No.	
		D_1	L_3	L_4	Weight	Thread	Retention Thread	
m		50.00	17.00	25.70	0.45 (kg)	$\frac{7}{8}$ - 20	M12	CB050M-ISO30
		50.00	11.00	27.70	0.91 (kg)	$\frac{7}{8}$ - 20	M16	CB050M-ISO40
		76.00	22.00	27.70	1.32 (kg)	1½ - 18	M16	CB076M-ISO40
		50.00	11.00	39.40	2.88 (kg)	$\frac{7}{8}$ - 20	M24	CB038M-ISO50
		76.00	36.00	39.40	3.36 (kg)	1½ - 18	M24	CB076M-ISO50

A DRILLING

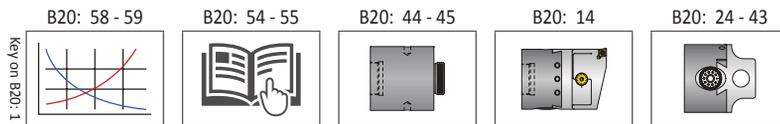
B BORING

C REAMING

D BURNISHING

E THREADING

X SPECIALS



i = Imperial (in)
m = Metric (mm)

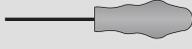
WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:
 - Refer to page B20: 57 to see formula for calculating weight of tool assembly.
 - Consult machine tool builder for machine's weight limitations.
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

WARNING Tool failure can cause serious injury. To prevent:
 - Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
 - Refer to example on page B20: 56 for calculating length to diameter ratio
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

Criterion Accessories

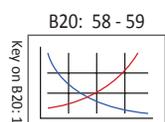
Insert Screws | Drivers | Pin Spanner Wrenches

Insert Screws & Drivers

 Insert Form	 Part No.	 Thread	 Part No.	Technical Information	
				Torque Specs	Key Size
WBGX0301..	215377	M2x4	115537	0.6 (Nm)	T6
CC..215.. CC..0602..	115676	M2.5x5	115590	1.2 (Nm)	T8
CC..32500 CC..09T3 (ϕ37mm)	115672	M3.5x7.5	115664	3.0 (Nm)	T15
CC..32500 CC..09T3 (ϕ36mm)	115673	M3.5x9	115664	3.0 (Nm)	T15
CC..43.. CC..1204..	215149	M4.5x11.5	215150	5.0 (Nm)	T20
TC..215.. TC..1102..	115676	M2.5x5	115590	1.2 (Nm)	T8
TC..325.. TC..16T3	115673	M3.5x9	115664	3.0 (Nm)	T15

Pin Spanner Wrenches

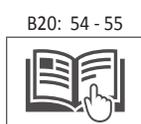
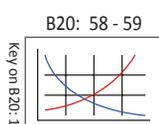
 Body Diameter	 Part No.
1.000" (25.00mm)	CB1000-PSW
1.250" (32.00mm)	CB1250-PSW
1.500" (38.00mm)	CB1500-PSW
2.000" (38.00mm)	CB2000-PSW
2.500" (63.50mm)	CB2500-PSW
3.000" (76.00mm)	CB3000-PSW
4.000" (101.00mm)	CB4000-PSW





Criterion Hardware Kits

	Corresponding Boring Head Item Number	Hardware Kit Part No.
A DRILLING	CBR-0625CP, CBR-0628TP, CBR-0625SG, CBS-0625CP, CBS-0625TP, CBS-0625SG, CBER16S-SG, CBER16-SG, CBER20S-SG, CBER20-SG, CBER16MS-CP, CBER16M-CP, CBER16MS-TP, CBER16M-TP, CBER20MS-CP, CBER20M-CP, CBER20MS-TP, CBER20M-TP, CBER16S-CP, CBER16-CP, CBER16S-TP, CBER16-TP, CBER20S-CP, CBER20-CP, CBER20S-TP, CBER20-TP	CB0625-HDW
	CBS-0750CP, CBS-0750TP, CBS-0750SH, CBR-0750CP, CBR-0750TP, CBR-0750SH, CBER25S-SH, CBER25-SH, CBER25S-CP, CBER25-CP, CBER25S-TP, CBER25-TP, CBER25-TP, CBER25MS-CP, CBER25M-CP, CBER25MS-TP TMT-0750H, TMT-1000H	CB0750-HDW TMT0750-HDW
B BORING	CB1000CC, CB1000TC CBS-1000CP, CBS-1000TP, CBS-1000CPMA, CBS-1000TPMA, CBS-1000SA, CBR-1000CP, CBR-1000TP, CBR-1000CPMA, CBR-1000TPMA, CBR-1000SA, CBER32S-CPMA, CBER32-CPMA, CBER32S-TPMA, CBER32-TPMA, CBER32MS-CPMA, CBER32M-CPMA, CBER32MS-TPMA, CBER32M-TPMA, CBER32S-SA, CBER32-SA, CBER32S-CP, CBER32-CP, CBER32S-TP, CBER32-TP, CBER32MS-CP, CBER32M-CP, CBER32MS-TP, CBER32M-TP, CB1000-TPMA, CB1000-CPMA, CB1000-TP, CB1000-CP CT1000-0, CT1000-1, CT1000-2	CB1000-HDW CT1000-HDW
	CB025MCC, CB025MTC, CB025M-TPMA, CB025M-CPMA, CB025M-TP, CB025M-CP CT025M-0, CT025M-1, CT025M-2	CB025M-HDW CT025M-HDW
	CBS1250B, CB1250CC, CB1250TC, CBS-1250CP, CBS-1250TP, CBS-1250CPMA, CBS-1250TPMA, CBS-1250SB, CBR-1250CP, CBR-1250TP, CBR-1250CPMA, CBR-1250TPMA, CBR-1250SB, CBER40S-CPMA, CBER40-CPMA, CBER40S-TPMA, CBER40-TPMA, CBER40S-CPMA, CBER40M-CPMA, CBER40MS-TPMA, CBER40M-TPMA, CBER40S-SB, CBER40-SB, CBER40S-CP, CBER40-CP, CBER40S-TP, CBER40-TP, CBER40MS-CP, CBER40M-CP, CBER40MS-TP, CBER40M-TP, CB1250-TPMA, CB1250-CPMA, CB1250-TP, CB1250-CP CT1250-0, CT1250-1, CT1250-2	CB1250-HDW CT1250-HDW
	CB032MCC, CB032MTC, CB032M-TPMA, CB032M-CPMA, CB032M-TP, CBO32M-CP CT032M-0, CT032M-1, CT032M-2	CB032M-HDW CT032M-HDW
C REAMING	MBS0500B, CB1500CC, CB1500TC, MB002-500, MB002-625, MB002-750, MB152-500, MB152-625, MB152-750, CB-2375A, CB-1500B, CB-1500AMA, CB1500-TPMA, CB1500-CPMA, CB1500-TP, CB1500-CP CT1500-0, CT1500-1, CT1500-2 SQ-1500B	CB1500-HDW CT1500-HDW S1500-HDW
	CB038MCC, CB038MTC, CB-038MA, CB-038MB, CB038M-TPMA, CB038M-CPMA, CB038M-TP, CB038M-CP CT038M-0, CT038M-1, CT038-2 SQ-2000B	CB038-HDW CT038M-HDW S2000-HDW
	CB2000CC, CB2000TC, CB202B, CB2500BMA CSL-202, CB-202A, CB-202B, CB-2500BMA, CB2000-TPMA, CB2000-CPMA, CB050M-TP, CB050M-CP CT2000-0, CT2000-1, CT2000-2	CB2000-HDW CT2000-HDW
	CB050MCC, CB050MTC, CB-050MA, CB-050MB, CB-064MBMA, CB050M-TPMA, CB050M-TPMA, CB050M-TPMA, CB050M-CPMA, CB050M-TP, CP050M-CP CT050M-0, CT050M-1, CT050M-2 SQ-3000D, SQ-3000E	CB050M-HDW CT050M-HDW S3000-HDW
D URNISHING	CB3000CC, CB3000TC, CB203D, CSL-203, CB-203D, CB-3000DMA, CB3000-TPMA, CB3000-CPMA, CB3000-TP, CB3000-CP CT3000-0, CT3000-1, CT3000-2	CB3000-HDW CT3000-HDW
	CB076MCC, CB076MTC, CB-076MD, CB-076MDMA, CB076M-TPMA, CB076M-CPMA, CBO76M-TP, CB076M-CP CT076M-0, CT076M-1, CT076M-2	CB076M-HDW CT076M-HDW
	CB204E, CSL-204, CB-204E, CB4000-TP, CB4000-TP, CB4000-TP, CB4000-CP	CB4000-HDW
	CB-101ME, CB101M-TP, CB101-CP CB206F, CB-206F	CB101M-HDW CB6000-HDW



A

DRILLING

B

BORING

C

REAMING

D

URNISHING

E

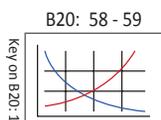
THREADING

X

SPECIALS

Technical Information

Assembly Item Number	Lock Screw	Torque Specs				
		Locking Screw Allen Key Size	Dial Adjust Allen Key Size	Micro-adjusting Dial Allen Key Size	Clamping Screw Allen Key Size	Insert Torx® Screw Driver Size
MBS0500B	1.4 (Nm)	5/64	5/32	-	1/8	-
CBS1250B	0.7 (Nm)	1/16	5/32	-	1/8	-
MDS0625	1.4 (Nm)	9/64	7/64	-	-	T8
MDS0750	1.5 (Nm)	5/32	7/64	-	-	T15
MDS16M	1.4 (Nm)	2.5 mm	2.5 mm	-	-	T8
MDS20M	1.5 (Nm)	3.0 mm	2.5 mm	-	-	T15
CB1000CC	0.6 (Nm)	0.050	5/32	3/32	-	T8
CB1000TC	0.6 (Nm)	0.050	5/32	3/32	-	T8
CB1250CC	0.7 (Nm)	1/16	5/32	3/32	-	T8
CB1250TC	0.7 (Nm)	1/16	5/32	3/32	-	T8
CB1500CC	1.4 (Nm)	5/64	5/32	7/64	-	T15
CB1500TC	1.4 (Nm)	5/64	5/32	7/64	-	T15
CB2000CC	2.3 (Nm)	3/32	5/32	7/64	-	T15
CB2000TC	2.3 (Nm)	3/32	5/32	7/64	-	T15
CB3000CC	5.3 (Nm)	1/8	1/4	7/64	-	T15
CB3000TC	5.3 (Nm)	1/8	1/4	7/64	-	T15
CB025MCC	0.6 (Nm)	1.5 mm	4.0 mm	2.5 mm	-	T8
CB025MTC	0.6 (Nm)	1.5 mm	4.0 mm	2.5 mm	-	T8
CB032MCC	0.7 (Nm)	2.0 mm	4.0 mm	2.5 mm	-	T8
CB032MTC	0.7 (Nm)	2.0 mm	4.0 mm	2.5 mm	-	T8
CB038MCC	1.4 (Nm)	2.0 mm	4.0 mm	3.0 mm	-	T15
CB038MTC	1.4 (Nm)	2.0 mm	4.0 mm	3.0 mm	-	T15
CB050MCC	2.3 (Nm)	2.5 mm	4.0 mm	3.0 mm	-	T15
CB050MTC	2.3 (Nm)	2.5 mm	4.0 mm	3.0 mm	-	T15
CB076MCC	5.3 (Nm)	3.0 mm	6.0 mm	3.0 mm	-	T15
CB076MTC	5.3 (Nm)	3.0 mm	6.0 mm	3.0 mm	-	T15
CB2500BMA	2.3 (Nm)	3/32	1/4	7/64	7/32	-
CB202B	2.3 (Nm)	3/32	5/32	-	5/32	-
CB203D	5.3 (Nm)	1/8	1/4	-	7/32	-
CB204E	12.4 (Nm)	5/32	1/4	-	7/32	-
CB206F	12.4 (Nm)	5/32	5/16	-	1/4	-



Setup Instructions | Standard Adjusting Boring Heads

Adjusting Standard Adjusting Boring Heads (see figure B1)

1. Loosen locking screw (6).
2. Turn dial screw (3) to desired graduation.
3. Tighten locking screw (6) to proper torque spec (laser marked on tool).

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

NOTE: To machine smaller bore diameters, turn dial screw (3) counterclockwise one full rotation to remove any backlash. Once backlash is mitigated, turn dial screw (3) clockwise to desired graduation.

No.	Part
1	Bar holder
2	Boring head body
3	Dial screw
4	Bar holder set screws
5	Gib screws (DO NOT ADJUST)
6	Locking screw

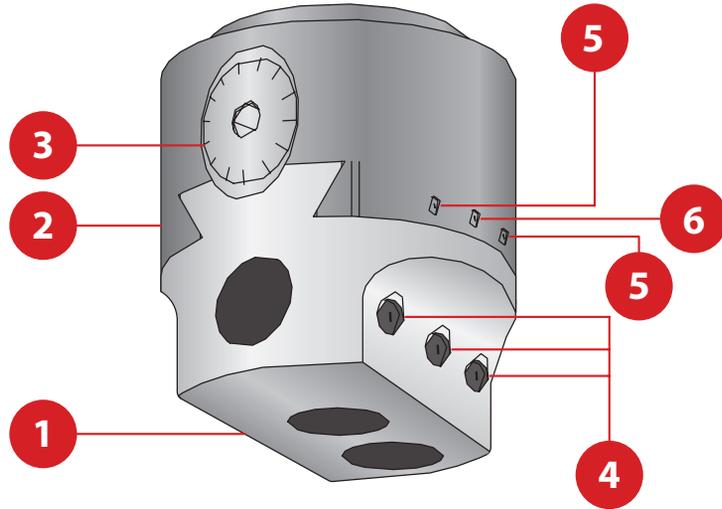
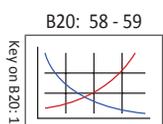


Figure B1



Setup Instructions | Micro-adjusting Boring Heads

Setting Up Micro-adjusting Boring Heads (see figure B2)

Set the microadjusting dial screw range

1. The microadjusting dial screws (4) only have a total range of 0.006" (0.152 mm) on diameter. To zero, turn dial (4) clockwise until dial screw bottoms out. Turn the dial (4) two complete turns counterclockwise. Turn dial (4) one half turn clockwise. Dial is now centered for 0.003" (0.076 mm) positive or negative travel.

Setting the diameter of the boring head

2. Loosen locking screw (6).
3. Turn dial screw (3) to adjust to the desired diameter using a presetter or plunge indicator or the dial screw (3).
4. Tighten the locking screw (6) to the proper torque spec (laser marked on the tool).
 - Microadjustments will be made at the machine.
5. Make a shallow test cut (roughly 0.250" deep) to determine the actual diameter.
6. Use the microadjusting dial (4) to adjust to the finish diameter. Do not release the locking screw (6) for microadjustments.
 - If the hole diameter is more than 0.002" from the target hole size return to step two.

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

NOTE: Backlash occurs when the diameter of the boring head needs to be decreased. To remove backlash, turn the dial (3) counterclockwise at least one half of a full rotation past the desired adjustment. Once backlash is mitigated, turn dial screw (3) clockwise to the desired adjustment.

No.	Part
1	Insert holder
2	Boring head body
3	Dial screw
4	Microadjusting dial screw
5	Gib screws (DO NOT ADJUST)
6	Locking screw

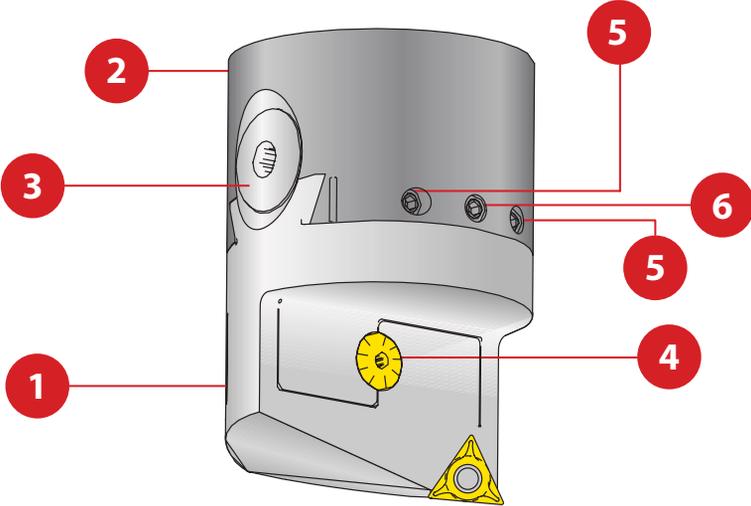
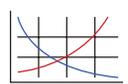


Figure B2

B20: 58 - 59

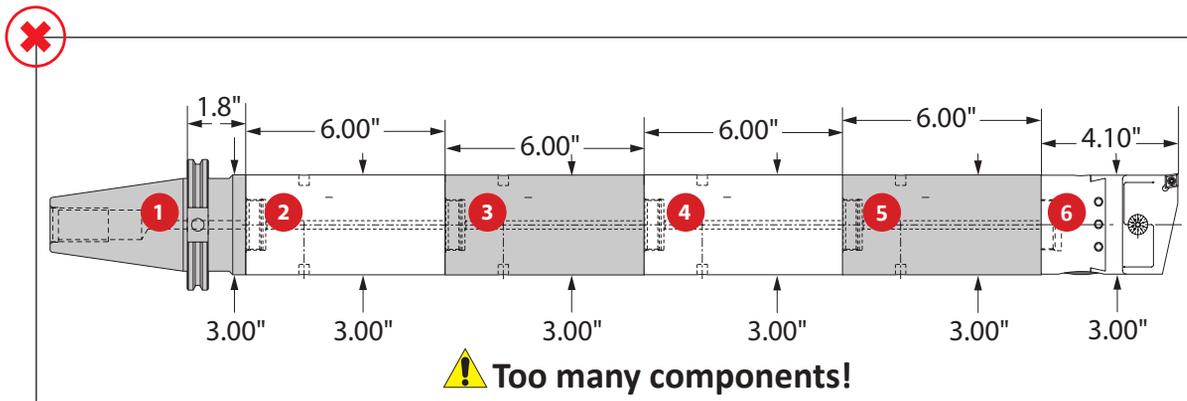


B20: 54 - 55



Guidelines for Not Exceeding Recommended Length-to-Diameter Ratio

To calculate, see graphics below:



*Length-to-diameter ratio is calculated using body diameters, not cutting diameter.

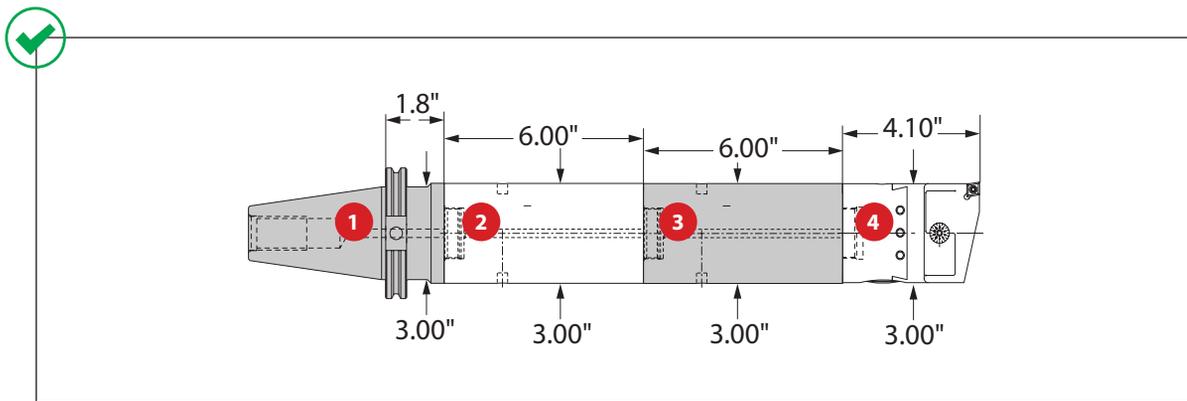
Step 1: Find L : D by component

- ① $0.6 = 1.88/3.00$
- ② $2.0 = 6.00/3.00$
- ③ $2.0 = 6.00/3.00$
- ④ $2.0 = 6.00/3.00$
- ⑤ $2.0 = 6.00/3.00$
- ⑥ $1.4 = 4.10/3.00$

Step 2: Add each L : D Average

0.6	→	0.6
2.0	→	2.0
2.0	→	2.0
2.0	→	2.0
2.0	→	2.0
1.4	→	2.0
+ 1.4	→	10.0 = L : D ratio

⚠ Too Long!



*Length-to-diameter ratio is calculated using body diameters, not cutting diameter.

Step 1: Find L : D by component

- ① $0.6 = 1.88/3.00$
- ② $2.0 = 6.00/3.00$
- ③ $2.0 = 6.00/3.00$
- ④ $1.4 = 4.10/3.00$

Step 2: Add each L : D Average

0.6	→	0.6
2.0	→	2.0
2.0	→	2.0
1.4	→	2.0
+ 1.4	→	6.0 = L : D ratio

✓

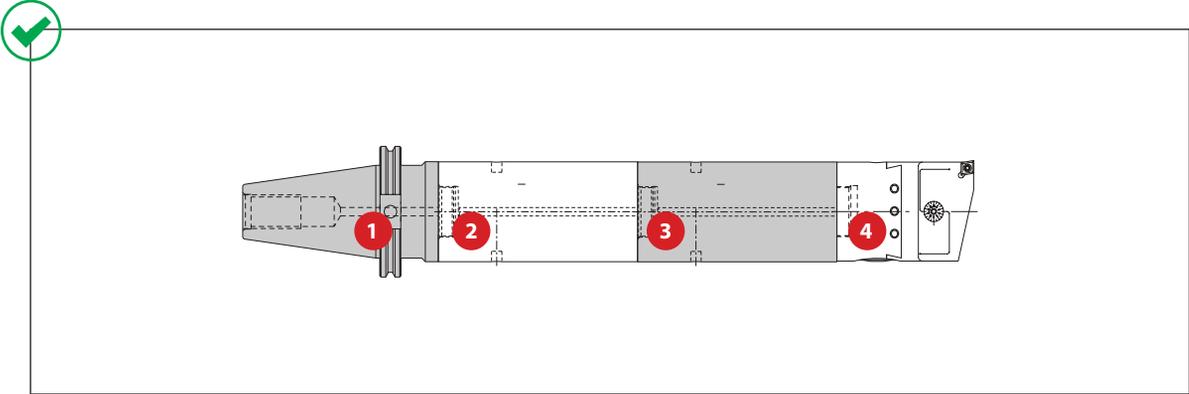
⚠ WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank).

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

Calculating Tool Assembly Weight

To calculate, see graphics below:



Step 1: Find weight for each component

Example:

Boring Range	D_1	Thread Connection	4 Boring Head		Weight	Insert Form	Order Number
			L_1	D_2			
i	1.050 - 1.320	¾ - 20	2.690	1.000	0.50 (lbs)	CC..215...	CB1000CC
	1.050 - 1.320	¾ - 20	2.690	1.000	0.50 (lbs)	TC..215...	CB1000TC
	1.300 - 1.600	¾ - 20	2.900	1.250	0.80 (lbs)	CC..215...	CB1250CC
	1.300 - 1.600	¾ - 20	2.900	1.250	0.80 (lbs)	TC..215...	CB1250TC
	1.585 - 2.700	¾ - 20	3.200	1.500	1.30 (lbs)	CC..325...	CB1500CC
	1.585 - 2.700	¾ - 20	3.200	1.500	1.30 (lbs)	TC..325...	CB1500TC
	2.060 - 3.320	¾ - 20	3.590	2.000	2.40 (lbs)	CC..325...	CB2000CC
	2.060 - 3.320	¾ - 20	3.590	2.000	2.40 (lbs)	TC..325...	CB2000TC
	3.065 - 5.065	1½ - 18	4.100	3.000	5.80 (lbs)	CC..325...	CB3000CC
	3.065 - 5.065	1½ - 18	4.100	3.000	5.80 (lbs)	TC..325...	CB3000TC
m	27.00 - 33.00	¾ - 20	68.35	25	0.23 (kg)	CC..0602...	CB025MCC
	27.00 - 33.00	¾ - 20	68.35	25	0.23 (kg)	TC..1102...	CB025MTC
	33.00 - 41.00	¾ - 20	73.65	32	0.36 (kg)	CC..0602...	CB032MCC
	33.00 - 41.00	¾ - 20	73.65	32	0.36 (kg)	TC..1102...	CB032MTC
	41.00 - 68.00	¾ - 20	81.25	38	0.59 (kg)	CC..09T3...	CB038MCC
	41.00 - 68.00	¾ - 20	81.25	38	0.59 (kg)	TC..16T3...	CB038MTC
	53.00 - 84.00	¾ - 20	91.30	50	1.09 (kg)	CC..09T3...	CB050MCC
	53.00 - 84.00	¾ - 20	91.30	50	1.09 (kg)	TC..16T3...	CB050MTC
	78.00 - 128.00	1½ - 18	104.25	76	2.36 (kg)	CC..09T3...	CB076MCC
	78.00 - 128.00	1½ - 18	104.25	76	2.36 (kg)	TC..16T3...	CB076MTC

Imperial (in) = 0.00005" adjustment on diameter.
 Metric (mm) = 0.001 mm adjustment on diameter.

Step 2: Calculate total assembly weight

$$\begin{array}{r}
 \textcircled{1} \ 8.03 \text{ lbs} \\
 \textcircled{2} \ 11.50 \text{ lbs} \\
 \textcircled{3} \ 11.50 \text{ lbs} \\
 + \textcircled{4} \ 5.80 \text{ lbs} \\
 \hline
 36.83 \text{ lbs}
 \end{array}$$

Step 3: Consult machine tool builder to ensure tool assembly weight does not exceed machine capabilities.

⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:
 - Consult machine tool builder for machine's weight limitations.
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com



Recommended Cutting Data | Imperial (inch)

ISO	Material	(BHN) Hardness	Grade	*Speed SFM	Recommended Feed (inch / tooth)			
					Nose Radius			
					0.004"	0.008"	0.016"	0.031"
P	Free-Machining Steel 1118, 1215, 12L14, etc.	100 - 250	Carbide	525 - 975	0.001 - 0.003	0.002 - 0.005	0.004 - 0.006	0.006 - 0.009
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 275	Carbide	475 - 925	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	Carbide	475 - 825	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	Carbide	400 - 700	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	Carbide	325 - 600	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Structural Steel A36, A285, A516, etc.	100 - 350	Carbide	475 - 925	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 250	Carbide	325 - 600	0.001 - 0.002	0.002 - 0.003	0.003 - 0.004	0.004 - 0.006
S	High-Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	Carbide	100 - 225	0.001 - 0.002	0.002 - 0.003	0.003 - 0.005	0.004 - 0.006
	Titanium Alloy	140 - 310	Carbide	125 - 300	0.001 - 0.002	0.002 - 0.003	0.003 - 0.005	0.004 - 0.006
	Aerospace Alloy S82	185 - 350	Carbide	125 - 300	0.001 - 0.002	0.002 - 0.003	0.003 - 0.005	0.004 - 0.006
M	Stainless Steel 400 Series 416, 420, etc.	185 - 350	Carbide	300 - 525	0.001 - 0.002	0.002 - 0.004	0.003 - 0.004	0.004 - 0.006
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 275	Carbide	300 - 525	0.001 - 0.002	0.002 - 0.004	0.003 - 0.004	0.004 - 0.006
	Super Duplex Stainless Steel	135 - 275	Carbide	300 - 525	0.001 - 0.002	0.002 - 0.004	0.003 - 0.004	0.004 - 0.006
H	Wear Plate	400 - 600	Carbide	100 - 200	0.001 - 0.002	0.002 - 0.003	0.003 - 0.004	0.004 - 0.006
	Hardened Steel	300 - 500	Carbide	125 - 275	0.001 - 0.002	0.002 - 0.003	0.003 - 0.004	0.004 - 0.006
K	SG / Nodular Cast Iron	120 - 320	Carbide	475 - 850	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Grey / White Iron	180 - 320	Carbide	600 - 1000	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
N	Cast Aluminum	30 - 180	Carbide	850 - 1000	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Wrought Aluminum	30 - 180	Carbide	675 - 1000	0.001 - 0.003	0.002 - 0.005	0.004 - 0.006	0.006 - 0.009
	Aluminum Bronze	100 - 250	Carbide	475 - 925	0.001 - 0.002	0.002 - 0.004	0.004 - 0.005	0.005 - 0.008
	Brass	100	Carbide	675 - 1000	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
	Copper	60	Carbide	325 - 600	0.001 - 0.002	0.002 - 0.003	0.003 - 0.004	0.004 - 0.005

*Not to exceed max recommended RPM for boring head.

Deep Hole Boring Speed Adjustment

⚠ For Dynamic Boring Tool Length			
Boring Type	7xD	8xD	9xD
Finishing	0.70	0.50	0.30

Recommended Speed Example

If the recommended speed for a finish boring assembly under 5xD is 400 SFM, then the speed for an 8xD finish boring assembly in the same application would be 200 SFM. (400 SFM x 0.50 = 200 SFM)	
5xD = 400 SFM	8xD = 200 SFM

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department.

ext: 7611 | email: appeng@alliedmachine.com

⚠ WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

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Recommended Cutting Data | Metric (mm)

ISO	Material	(BHN) Hardness	Grade	*Speed m/min	Recommended Feed (mm / tooth)			
					Nose Radius			
					0.1 mm	0.2 mm	0.4 mm	0.8 mm
P	Free-Machining Steel 1118, 1215, 12L14, etc.	100 - 250	Carbide	160 - 300	0.02 - 0.07	0.05 - 0.13	0.10 - 0.15	0.15 - 0.23
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 275	Carbide	145 - 280	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	Carbide	145 - 250	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	Carbide	120 - 210	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 400	Carbide	100 - 180	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Structural Steel A36, A285, A516, etc.	100 - 350	Carbide	145 - 280	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 250	Carbide	100 - 180	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	0.10 - 0.15
S	High-Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	Carbide	30 - 70	0.02 - 0.05	0.05 - 0.07	0.07 - 0.13	0.10 - 0.15
	Titanium Alloy	140 - 310	Carbide	40 - 90	0.02 - 0.05	0.05 - 0.07	0.07 - 0.13	0.10 - 0.15
	Aerospace Alloy S82	185 - 350	Carbide	40 - 90	0.02 - 0.05	0.05 - 0.07	0.07 - 0.13	0.10 - 0.15
M	Stainless Steel 400 Series 416, 420, etc.	185 - 350	Carbide	90 - 160	0.02 - 0.05	0.05 - 0.10	0.07 - 0.10	0.10 - 0.15
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 275	Carbide	90 - 160	0.02 - 0.05	0.05 - 0.10	0.07 - 0.10	0.10 - 0.15
	Super Duplex Stainless Steel	135 - 275	Carbide	90 - 160	0.02 - 0.05	0.05 - 0.10	0.07 - 0.10	0.10 - 0.15
H	Wear Plate	400 - 600	Carbide	30 - 60	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	0.10 - 0.15
	Hardened Steel	300 - 500	Carbide	40 - 80	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	0.10 - 0.15
K	SG / Nodular Cast Iron	120 - 320	Carbide	145 - 260	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Grey / White Iron	180 - 320	Carbide	180 - 306	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
N	Cast Aluminum	30 - 180	Carbide	260 - 306	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Wrought Aluminum	30 - 180	Carbide	205 - 305	0.02 - 0.07	0.05 - 0.13	0.10 - 0.15	0.15 - 0.23
	Aluminum Bronze	100 - 250	Carbide	145 - 280	0.02 - 0.05	0.05 - 0.10	0.10 - 0.13	0.13 - 0.20
	Brass	100	Carbide	205 - 305	0.02 - 0.05	0.05 - 0.10	0.07 - 0.13	0.13 - 0.20
	Copper	60	Carbide	100 - 180	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	0.10 - 0.13

*Not to exceed max recommended RPM for boring head.

Deep Hole Boring Speed Adjustment

▲ For Dynamic Boring Tool Length			
Boring Type	7xD	8xD	9xD
Finishing	0.70	0.50	0.30

Recommended Speed Example

If the recommended speed for a finish boring assembly under 5xD is 260 m/min, then the speed for an 8xD finish boring assembly in the same application would be 260 m/min. (260 m/min x 0.50 = 130 m/min)

5xD = 260 m/min	8xD = 130 m/min
-----------------	-----------------

IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

⚠ WARNING Tool failure can cause serious injury. To prevent:
 - Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
 - Refer to example on page B20: 56 for calculating length to diameter ratio
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

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



S.C.A.M.I.®

ROLLER BURNISHING

When your mirror finish still isn't shiny enough, follow your Criterion® boring tool with a S.C.A.M.I. roller burnisher. Contact your local Allied Machine & Engineering representative for more details.

S.C.A.M.I.®

**ALLIED MACHINE
& ENGINEERING**

Guaranteed Test / Demo Application Form

Distributor PO #

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

IMPORTANT: For processing, send purchase order to your Allied Field Sales Engineer (FSE). Please clearly mark the paperwork as "Test Order."

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

Hole Diameter: _____ in/mm Tolerance: _____ Material: _____
(4150, A36, cast iron, etc.)
Preexisting Diameter: _____ in/mm Depth of Cut: _____ in/mm Hardness: _____
(BHN, Rc)
Required Finish: _____ RMS 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: Thrust: _____ lbs/N
 Excellent Vertical Yes
 Good Horizontal 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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Complete information as to operating conditions, machine, setup, and the application of cutting fluid should accompany any product returned for inspection. This warranty shall not apply to any Allied Machine products which have been subjected to misuse, abuse, improper operating conditions, improper machine setup or improper application of cutting fluid or which have been repaired or altered if such repair or alteration, in the judgement of Allied Machine, would adversely affect the performance of the product.

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