

CRITERION[®] BORING PRODUCT CATALOG



**ALLIED MACHINE
& ENGINEERING**

www.alliedmachine.com

It's so much easier when you make **BETTER CHIPS**

Allied Machine specializes in developing innovative solutions designed to **pulverize** material. Our tools achieve the chip formation and chip evacuation you need to increase your production.



Allied Machine &
Engineering is registered
to ISO 9001:2015 by DQS



Wohlhaupter GmbH is
registered to ISO
9001:2015 by QUACERT



Allied Machine &
Engineering Co. Europe
Ltd. is registered to
ISO 9001:2015 by bsi.



Our Commitment to **YOU**



Manufacturing is the DNA of success everywhere in the world. When you're manufacturing, you're building, creating, and developing something that physically didn't exist before.

At Allied Machine, our core purpose is to provide practical and dependable solutions to improve your manufacturing processes. We know you face challenges and difficulties every day, so we're here to simplify your holmaking processes and improve your production.

However, many factors must be incorporated to truly improve production.

Some of those factors include increasing penetration rates while also improving chip formation and evacuation, reducing scrap rates by producing better parts, reducing setup times, and increasing tool life to get the most from your investment.

Not only does our tooling achieve these results, but our customer service is also an extension of our tooling advantages. Our Application Engineers and Field Sales Engineers are available to assist with any problems you encounter. Don't hesitate to put their skills and knowledge to the test. They won't disappoint.

This is our commitment to manufacturing, and it's our promise to you.



ALLIED MACHINE
& ENGINEERING

SECTION

B20-CRT

Criterion® Boring Systems

Criterion® Modular Boring Systems



Boring holes doesn't have to be boring

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

- ▶ MBS Finish Boring Tools
 - ▶ 0.050" - 0.750"
- ▶ CBS Finish Boring Tools
 - ▶ 0.050" - 0.750"
- ▶ MDS Finish Boring Tools
 - ▶ 18.00 mm - 33.00 mm (0.710" - 1.280")
- ▶ Cri-Bore® Microadjusting Finish Boring Heads
 - ▶ 27.00 mm - 128.00 mm (1.050" - 5.065")
- ▶ Large Cri-Bore® Finish Boring / OD Turning System
 - ▶ 127.00 mm - 308.00 mm (5.000" - 12.125")
- ▶ CB Style Versatile Finish Boring Heads
 - ▶ 0.250" - 21.500"

Applicable Industries

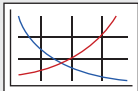
-  Aerospace
-  Agriculture
-  Automotive
-  Defense
-  General Production
-  Heavy Equipment
-  Hydraulics
-  Marine
-  Medical
-  Oil and Gas
-  Renewable Energy/ Energy
-  Tool, Mold, and Die

Reference Icons

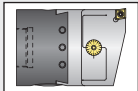
The following icons will appear throughout the catalog to help you navigate between products.



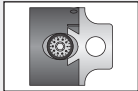
Setup / Assembly Information
Detailed instructions and information regarding the corresponding part(s).



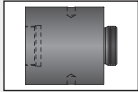
Recommended Cutting Data
Speed and feed recommendations for optimum and safe drilling.



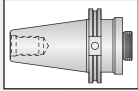
Boring Heads - Insert Holders
Microadjusting boring heads that use inserts for cutting.



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.



Coolant-Through Option
Indicates that the product is coolant through.

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 means that failure to follow the precautions in this message could result in tool failure and serious injury.

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

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

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

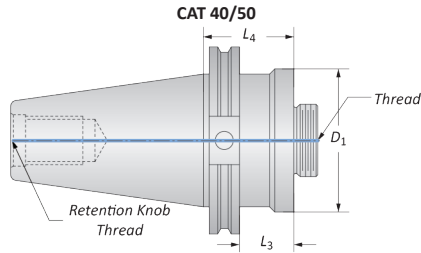
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Master Shanks

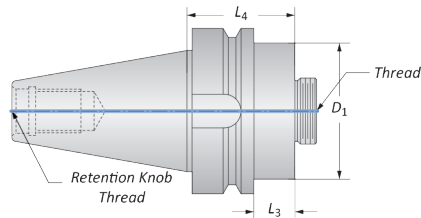
CAT 40/50 and BT Flange Shanks



Imperial (in)

Style	D_1	L_3	L_4	Shank			Part No.
				Weight (lbs)	Thread	Retention Knob Thread	
CAT40	1.500	0.370	1.770	2.490	7/8 - 20	5/8 - 11	CB1500-CV40
	2.000	1.130	1.880	2.700	7/8 - 20	5/8 - 11	CB2000-CV40
	2.500	1.130	1.880	3.120	1-1/2 - 18	5/8 - 11	CB2500-CV40
	3.000	1.180	1.880	3.410	1-1/2 - 18	5/8 - 11	CB3000-CV40
CAT50	1.500	0.370	1.770	7.120	7/8 - 20	1 - 8	CB1500-CV50
	2.000	1.130	1.880	7.330	7/8 - 20	1 - 8	CB2000-CV50
	2.500	1.130	1.880	7.740	1-1/2 - 18	1 - 8	CB2500-CV50
	3.000	1.130	1.880	8.030	1-1/2 - 18	1 - 8	CB3000-CV50
	3.380	1.380	2.130	9.440	2-1/4 - 10	1 - 8	CB6000-CV50

BT Flange Shanks



Imperial (in)

Style	D_1	L_3	L_4	Shank			Part No.
				Weight (lbs)	Thread	Retention Knob Thread	
BT30	1.500	0.900	1.770	1.360	7/8 - 20	M12 x 1.75	CB1500-BT30
BT40	1.500	0.710	1.770	2.540	7/8 - 20	M16 x 2	CB1500-BT40
	2.000	0.500	1.560	2.620	7/8 - 20	M16 x 2	CB2000-BT40
	2.500	0.870	2.060	3.690	1-1/2 - 18	M16 x 2	CB2500-BT40
	3.000	1.000	2.060	3.980	1-1/2 - 18	M16 x 2	CB3000-BT40
BT50	1.500	0.270	1.770	8.220	7/8 - 20	M24 x 3	CB1500-BT50
	2.000	0.060	1.560	8.250	7/8 - 20	M24 x 3	CB2000-BT50
	3.000	0.500	2.060	9.410	1-1/2 - 18	M24 x 3	CB3000-BT50
	3.380	0.630	2.130	10.500	2-1/4 - 10	M24 x 3	CB6000-BT50

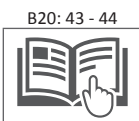
NOTE: Taper ground to AT3 tolerance.**WARNING**

Assembly of modular components may cause machine damage and/or serious injury. To prevent:

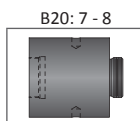
- Do not exceed the **allowable weight** for your machine tool.
- Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.

For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46 or visit****www.alliedmachine.com/CriterionBoringGuidelines.**

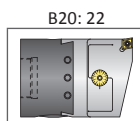
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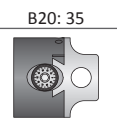
B20: 43 - 44



B20: 7 - 8



B20: 22



B20: 35

M = Metric (mm)

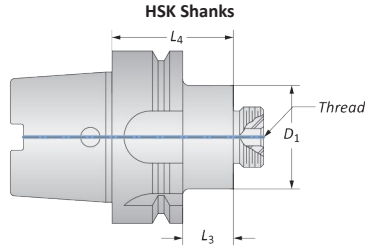
I = Imperial (in)



Master Shanks

HSK and Straight Shanks

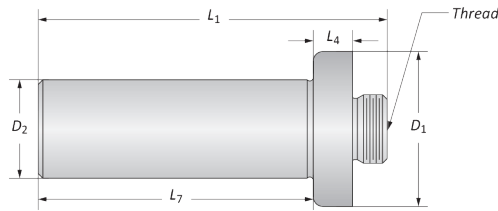
B20



Imperial (in)

		Shank					
Style		D_1	L_3	L_4	Weight (lbs)	Thread	Part No.
i	HSK63	1.500	0.730	1.750	1.820	7/8 - 20	CB1500-HSK63A
		2.000	0.730	1.750	2.090	7/8 - 20	CB2000-HSK63A
		3.000	0.500	2.150	3.200	1-1/2 - 18	CB3000-HSK63A
	HSK100	1.500	0.500	2.270	6.300	7/8 - 20	CB1500-HSK100A
		2.000	0.500	2.270	6.470	7/8 - 20	CB2000-HSK100A
		3.000	0.500	2.270	7.180	1-1/2 - 18	CB3000-HSK100A

Straight Shanks



Imperial (in)

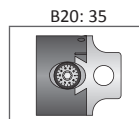
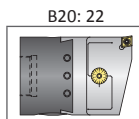
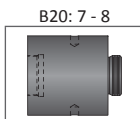
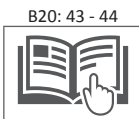
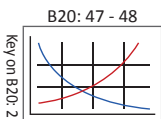
		Shank				Thread	Part No.
D_1	D_1	L_4	L_7	L_1	Weight (lbs)		
i 1.110	0.500	0.250	2.000	2.690	0.240	7/8 - 20	SS0500-087520
	0.625	0.250	2.370	3.060	0.340	7/8 - 20	SS0625-087520
	0.750	0.250	2.750	3.440	0.480	7/8 - 20	SS0750-087520
	1.000	0.250	3.120	3.810	0.820	7/8 - 20	SS1000-087520
i 1.860	0.750	0.250	3.120	3.870	0.810	1-1/2 - 18	SS0750-150018
	1.000	0.250	3.120	3.870	1.110	1-1/2 - 18	SS1000-150018
	1.250	0.250	3.880	4.630	1.760	1-1/2 - 18	SS1250-150018
	1.500	0.250	4.630	5.380	2.720	1-1/2 - 18	SS1500-150018
2.000	2.000	—	6.380	6.880	5.850	1-1/2 - 18	SS2000-150018

WARNING

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For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit www.alliedmachine.com/CriterionBoringGuidelines.



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

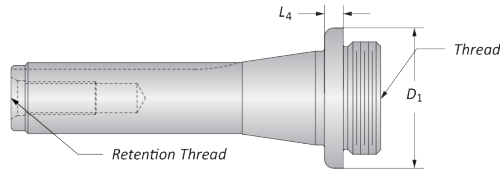


Master Shanks

R-8 and Morse Taper Shanks

B20

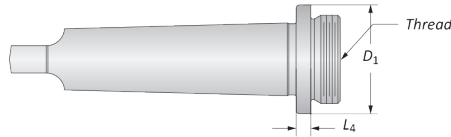
R-8 Shanks



Imperial (in)

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

Morse Taper Shanks



Imperial (in)

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

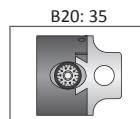
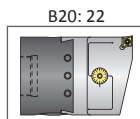
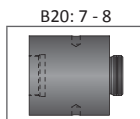
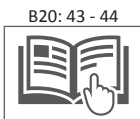
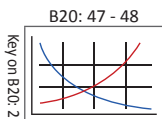
*Item features a 3/8 - 16 thread instead of tang.

WARNING

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M = Metric (mm)
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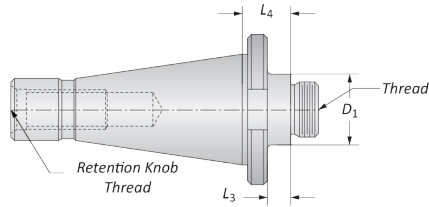


Master Shanks

NMTB and DIN 2080 Shanks

B20

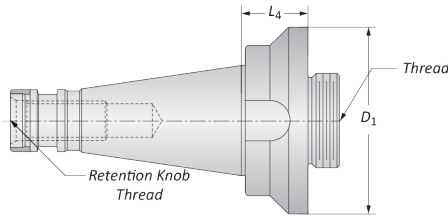
NMTB Taper Shanks



Imperial (in)

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

DIN 2080



Metric (mm)

D_1	L_3	L_4	Shank			Part No.
			Weight (kg)	Thread	Retention Knob Thread	
50.00	17.00	25.70	0.45 (kg)	7/8 - 20	M12	CB050M-ISO30
	11.00	27.70	0.91 (kg)	7/8 - 20	M16	CB050M-ISO40
	11.00	39.40	2.88 (kg)	7/8 - 20	M24	CB038M-ISO50
76.00	22.00	27.70	1.32 (kg)	11/2 - 18	M16	CB076M-ISO40
	36.00	39.40	3.36 (kg)	11/2 - 18	M24	CB076M-ISO50

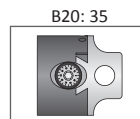
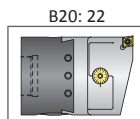
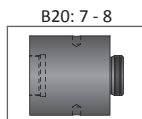
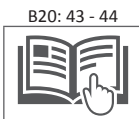
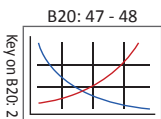
⚠ WARNING

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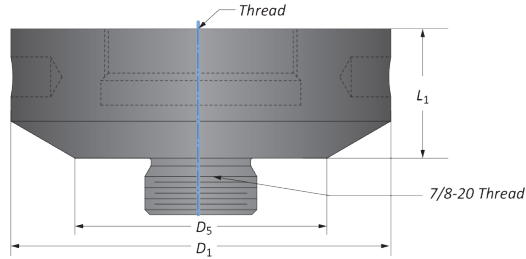
i = Imperial (in)



Intermediate Modules

Reducers

B20



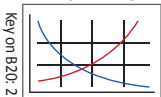
Imperial (in)

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

WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

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- For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46 or visit**
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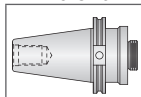
B20: 47 - 48



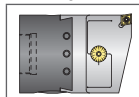
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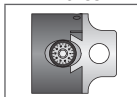
B20: 3 - 6



B20: 22



B20: 35

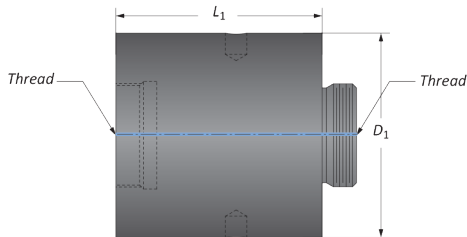


M = Metric (mm)
I = Imperial (in)



Intermediate Modules

Extensions



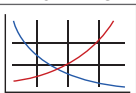
B20

Imperial (in)

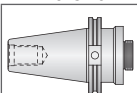
Reducer				
D ₁	L ₁	Weight (lbs)	Thread	Part No.
1.000	1.000	0.190	7/8 - 20	CB1000-IA1000
	2.000	0.390	7/8 - 20	CB1000-IA2000
1.250	1.250	0.390	7/8 - 20	CB1250-IA1250
	2.500	0.800	7/8 - 20	CB1250-IA2500
1.500	1.500	0.700	7/8 - 20	CB1500-IA1500
	3.000	1.410	7/8 - 20	CB1500-IA3000
2.000	2.000	1.660	7/8 - 20	CB2000-IA2000
	4.000	3.350	7/8 - 20	CB2000-IA4000
3.000	3.000	5.730	1-1/2 - 18	CB3000-IA3000
	6.000	11.500	1-1/2 - 18	CB3000-IA6000

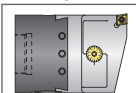
 **WARNING**

Assembly of modular components may cause machine damage and/or serious injury. To prevent:
-Do not exceed the **allowable weight** for your machine tool.
-Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.
For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit www.alliedmachine.com/CriterionBoringGuidelines.

B20: 47 - 48


B20: 43 - 44


B20: 3 - 6


B20: 22


B20: 35


 = Metric (mm)
 = Imperial (in)

WE KNOW

SPEED MATTERS.

MBS Finish Boring Tool

Ideal for small diameter bores and high spindle speeds.

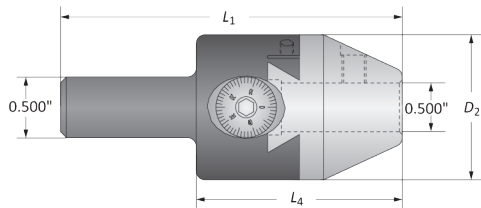
Compact design great for live tooling.

Cylindrical shank can be dropped into existing tool holders.



MBS Finish Boring Tool

Diameter Range: 0.050" - 0.750"



B20

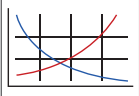
Imperial (in)

Boring Range		Boring Head			Weight (lbs)	Part No.
		L ₁	L ₄	D ₂		
	0.050 - 0.750	3.500	2.125	1.500	0.900	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.

IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages B20: 47 - 48 for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

B20: 47 - 48



B20: 43 - 44



 = Metric (mm)
 = Imperial (in)

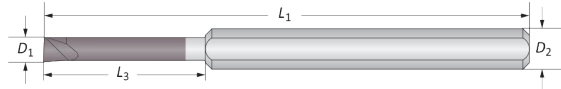
B20: 10



Mini Coated Boring Bars

Diameter Range: 0.050" - 0.275"

B20

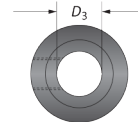
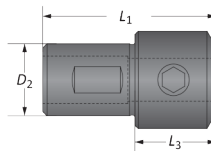


Imperial (in)

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

NOTE: Reducing sleeve required.

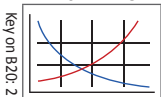
Reducing Sleeves



Imperial (in)

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

B20: 47 - 48



B20: 43 - 44

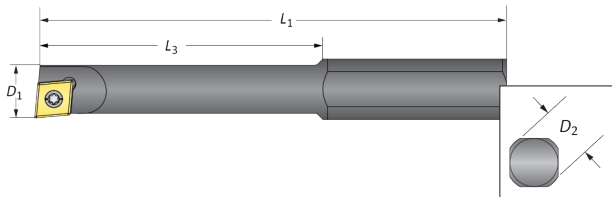


M = Metric (mm)

I = Imperial (in)

Boring Bars

Diameter Range: 0.050" - 0.750"



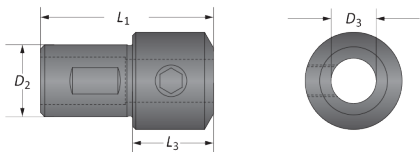
B20

Imperial (in)

	Style	Min. Boring Diameter	Boring Bar			Weight (lbs)	Insert Form	Part No.
		D_1	L_3	L_1	D_2			
	Steel	0.250	1.062	2.500	0.500	0.080	WBGX0301..	0250B
		0.312	1.437	2.750	0.500	0.080	WBGX0301..	0312B
		0.375	1.750	3.062	0.500	0.100	WBGX0301..	0375B
		0.437	2.062	3.375	0.500	0.110	CC..215..	0437B
	Heavy Metal	0.500	2.187	3.500	0.500	0.140	CC..215..	0500B
		0.365	2.250	4.000	0.312	0.080	CC..215..	0365HM*
	Carbide	0.550	3.250	6.000	0.500	0.300	CC..215..	0550BHM
		0.625	4.500	8.000	0.500	0.410	CC..215..	0625BCS

*Reducing sleeve required.

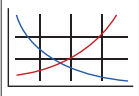
Reducing Sleeves



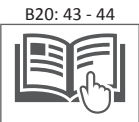
Imperial (in)

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

B20: 47 - 48



Key on B20: 2



Inserts sold separately.

 = Metric (mm)
 = Imperial (in)

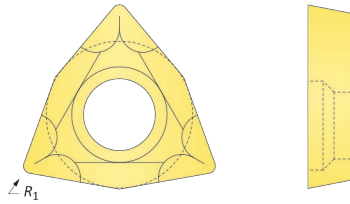


Boring Inserts

Trigon | 80° Diamond

B20

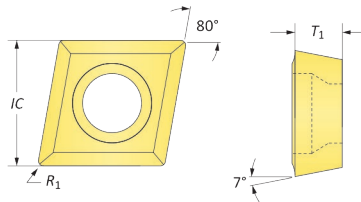
Coated Trigon Insert



Imperial (in)

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

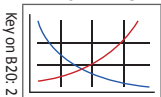
Coated 80° Diamond Insert



Imperial (in)

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

B20: 47 - 48



B20: 43 - 44



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

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, dark gray lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The background is white, and the grid covers the entire area of the page without any margins or additional markings.

B20

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

Diameter Range: 0.050" - 0.750"



B20

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

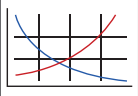
IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Imperial (in) = 0.001" adjustment on diameter.

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

IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

B20: 47 - 48



B20: 43 - 44



m = Metric (mm)

i = Imperial (in)

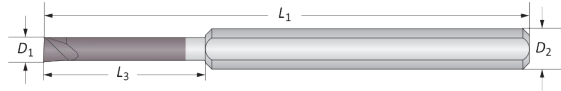
B20: 16



Mini Coated Boring Bars

Diameter Range: 0.050" - 0.275"

B20

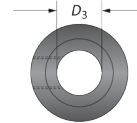
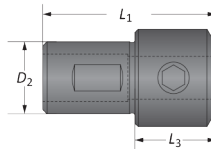


Imperial (in)

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

NOTE: Reducing sleeve required.

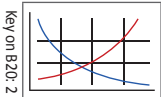
Reducing Sleeves



Imperial (in)

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

B20: 47 - 48



B20: 43 - 44

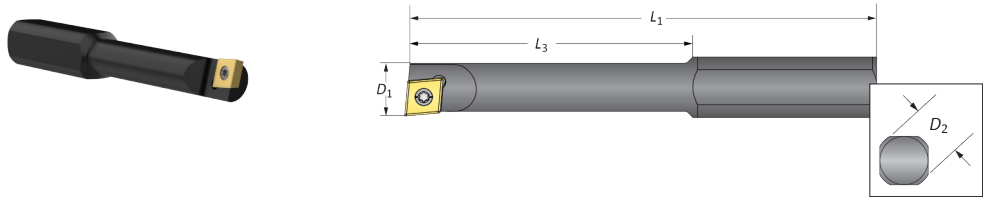


M = Metric (mm)

I = Imperial (in)

Boring Bars and Inserts

Diameter Range: 0.050" - 0.750"

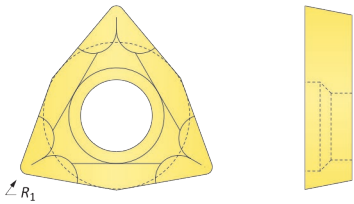


B20

Imperial (in)

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

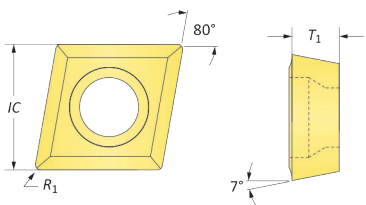
Coated Trigon Insert



Imperial (in)

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

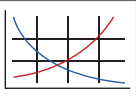
Coated 80° Diamond Insert



Imperial (in)

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

B20: 47 - 48



Key on B20: 2

B20: 43 - 44



Inserts sold separately.
 = Metric (mm)
 = Imperial (in)
B20: 18

WE KNOW

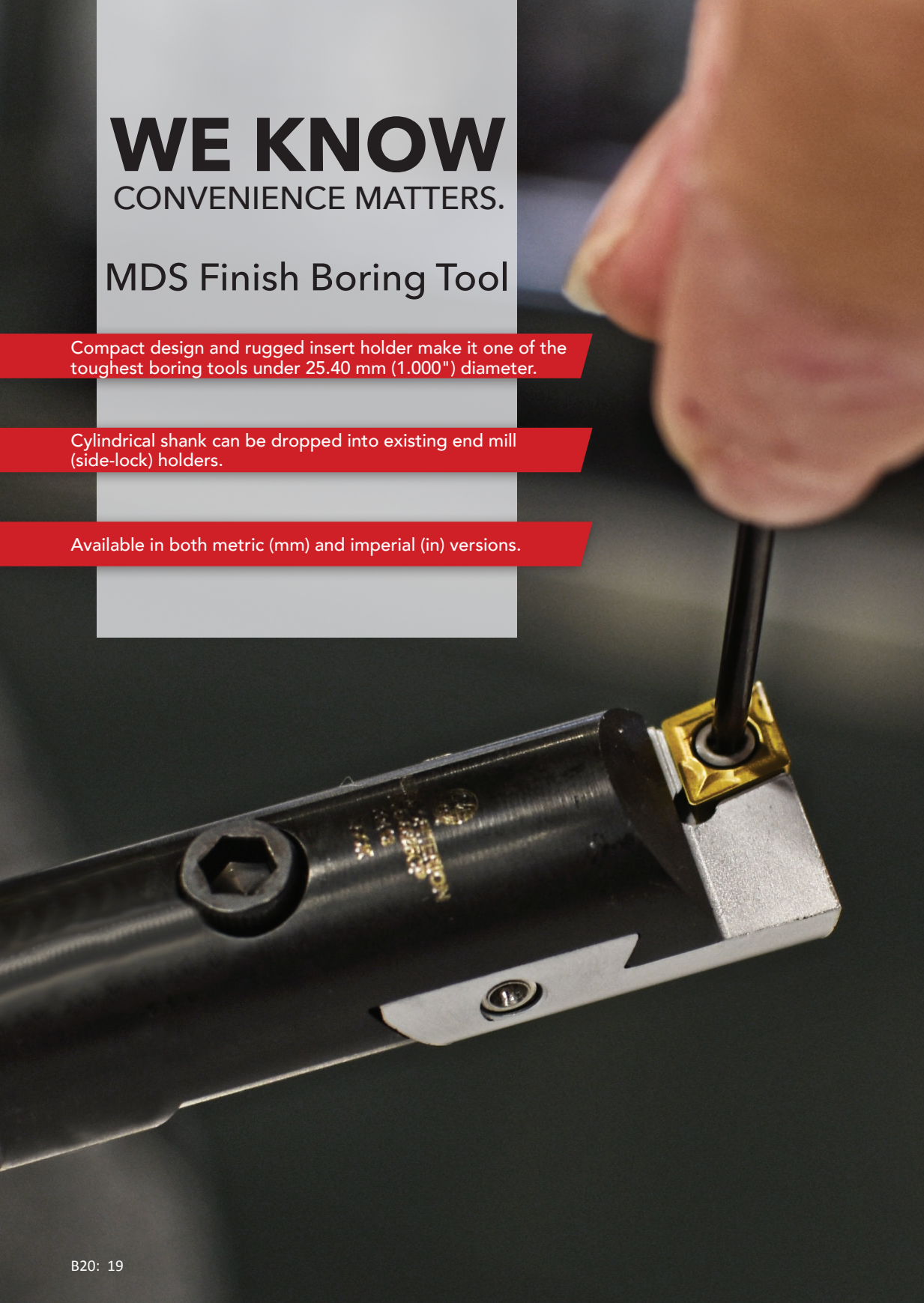
CONVENIENCE MATTERS.

MDS Finish Boring Tool

Compact design and rugged insert holder make it one of the toughest boring tools under 25.40 mm (1.000") diameter.

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

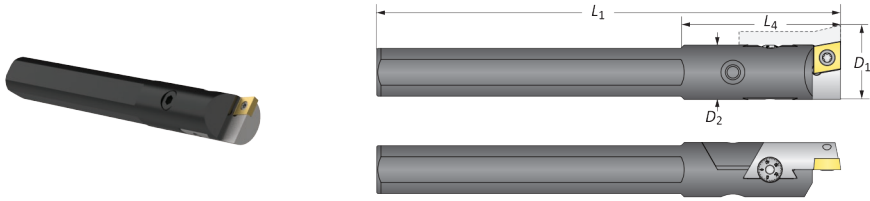
Available in both metric (mm) and imperial (in) versions.





MDS Finish Boring Tools and Inserts

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



B20

Metric (mm)

	Boring Head			Weight (kg)	Insert Form	Part No.
	Boring Range	L_1	Max L_4			
	18.00 - 24.25	133.00	85.37	0.18	CC..0602..	MDS16M
	22.00 - 33.00	160.00	112.37	0.32	CC..0602..	MDS20M

Imperial (in)

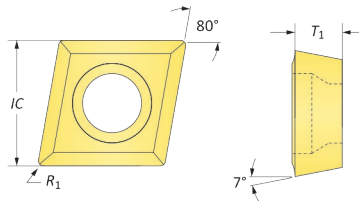
	Boring Head			Weight (lbs)	Insert Form	Part No.
	Boring Range	L_1	Max L_4			
	0.710 - 0.960	5.250	3.386	0.400 (lbs)	CC..215..	MDS0625
	0.890 - 1.280	6.310	4.435	0.700 (lbs)	CC..215..	MDS0750

Metric (mm) = 0.020 mm adjustment on diameter.

Imperial (in) = 0.001" adjustment on diameter.

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

Coated 80° Diamond Insert



Metric (mm)

	Insert Form	IC	Insert		Part No.
			T_1	R_1	
	CC..0602..	6.35	2.38	0.20	CCMT060202

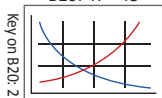
Imperial (in)

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

IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

B20: 47 - 48

B20: 43 - 44



Inserts sold separately.

= Metric (mm)

= Imperial (in)

WE KNOW TOLERANCE MATTERS.

Cri-Bore® Microadjusting

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

Modular system can be used on virtually any machine.

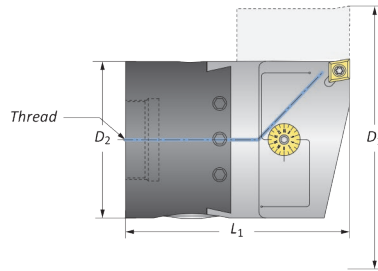
Available in both metric (mm) and imperial (in) versions.





Cri-Bore® Microadjusting Finish Boring Heads

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



B20

Metric (mm)

Boring Range D_1	Thread Connection	Boring Head		Weight (kg)	Insert Form	Part No.
		L_1	D_2			
27.00 - 33.00	7/8 - 20	68.35	25.00	0.23	CC..0602..	CB025MCC
					TC..1102..	CB025MTC
33.00 - 41.00	7/8 - 20	73.65	32.00	0.36	CC..0602..	CB032MCC
					TC..1102..	CB032MTC
41.00 - 68.00	7/8 - 20	81.25	38.00	0.59	CC..09T3..	CB038MCC
					TC..16T3..	CB038MTC
53.00 - 84.00	7/8 - 20	91.30	50.00	1.09	CC..09T3..	CB050MCC
					TC..16T3..	CB050MTC
78.00 - 128.00	1-1/2 - 18	104.25	76.00	2.36	CC..09T3..	CB076MCC
					TC..16T3..	CB076MTC

Imperial (in)

Boring Range D_1	Thread Connection	Boring Head		Weight (lbs)	Insert Form	Part No.
		L_1	D_2			
1.050 - 1.320	7/8 - 20	2.690	1.000	0.500	CC..215..	CB1000CC
					TC..215..	CB1000TC
1.300 - 1.600	7/8 - 20	2.900	1.250	0.800	CC..215..	CB1250CC
					TC..215..	CB1250TC
1.585 - 2.700	7/8 - 20	3.200	1.500	1.300	CC..325..	CB1500CC
					TC..325..	CB1500TC
2.060 - 3.320	7/8 - 20	3.590	2.000	2.400	CC..325..	CB2000CC
					TC..325..	CB2000TC
3.065 - 5.065	1-1/2 - 18	4.100	3.000	5.800	CC..325..	CB3000CC
					TC..325..	CB3000TC

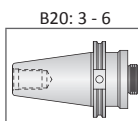
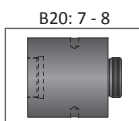
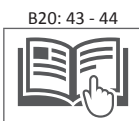
IMPORTANT: Wax covered gib screws are factory set and should not be removed. Adjustment of these screws will cause performance issues.

Metric (mm) = 0.001 mm adjustment on diameter.

Imperial (in) = 0.00005" adjustment on diameter.

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

IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages B20: 47 - 48 for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.



Inserts sold separately.

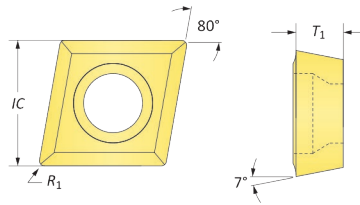
m = Metric (mm)

i = Imperial (in)

**Boring Inserts**

80° Diamond Insert | 60° Triangle Insert

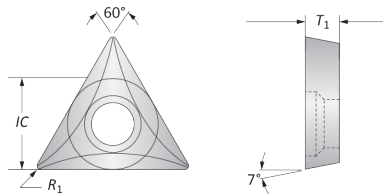
B20

Coated 80° Diamond Inserts**Metric (mm)**

	Insert Form	IC	Insert		Part No.
			T_1	R_1	
m	CC..0602..	6.35	2.38	0.20	CCMT060202
				0.40	CCMT060204
	CC..09T3..	9.53	3.97	0.20	CCMT09T302
				0.40	CCMT09T304

Imperial (in)

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

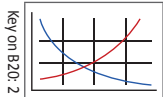
Coated 60° Triangle Inserts**Metric (mm)**

	Insert Form	IC	Insert		Part No.
			T_1	R_1	
m	TC..1102..	6.35	2.38	0.20	TCGT110202
	TC..16T3..	9.53	3.97	0.40	TCGT110204
				0.40	TCGT16T304

Imperial (in)

	Insert Form	IC	Insert		Part No.
			T_1	R_1	
i	TC..215..	0.250	0.094	0.008	TCGT110202
	TC..325..	0.375	0.156	0.016	TCGT110204
				0.016	TCGT16T304

B20: 47 - 48



B20: 43 - 44

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

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The paper is otherwise completely blank, with no margins, text, or other markings.

B20

EXTEND YOUR BORING RANGE.

Large Cri-Bore® Finish Boring / OD Turning System

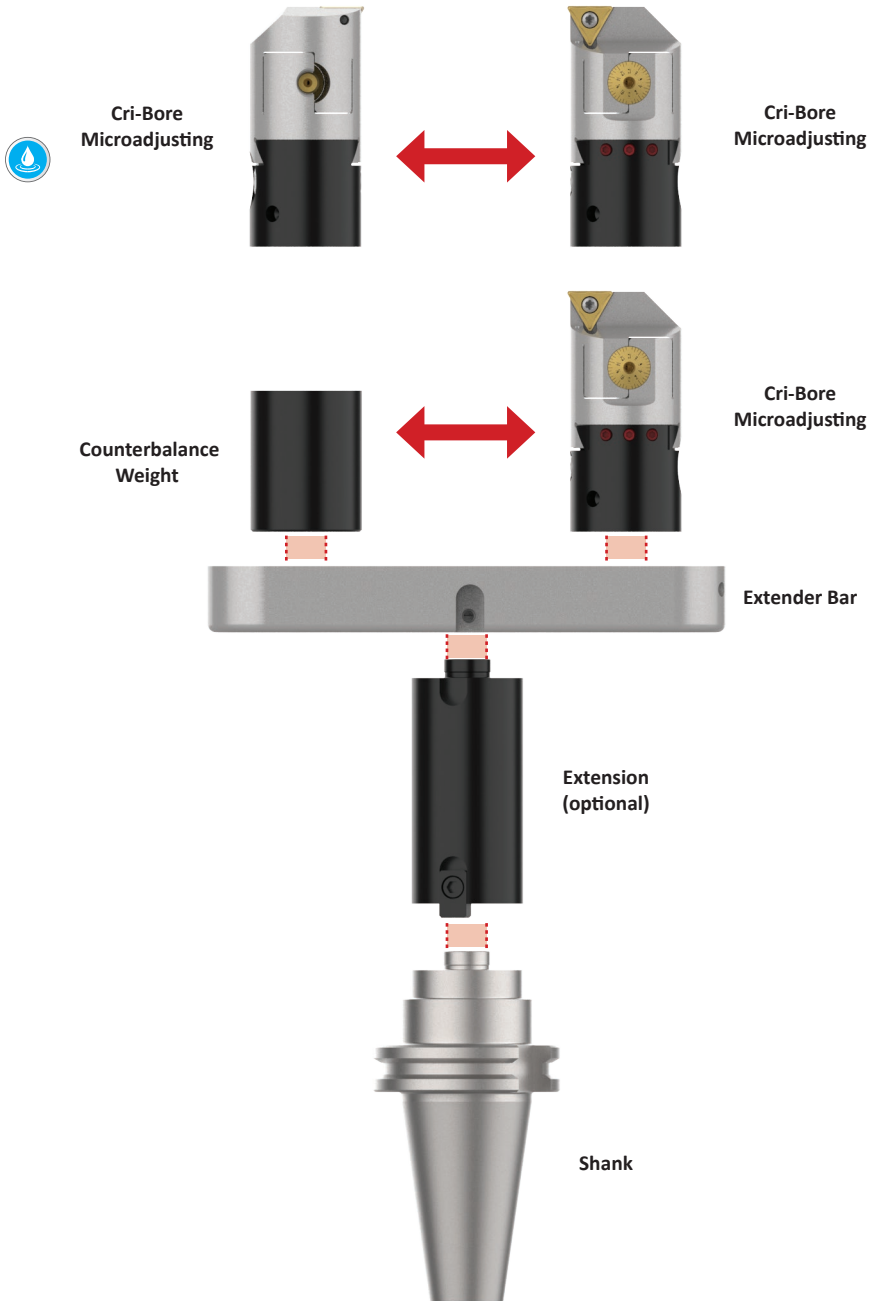
Extend the diameter range for internal and external boring.

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

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

Large Cri-Bore System

Overview



B20

⚠ WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

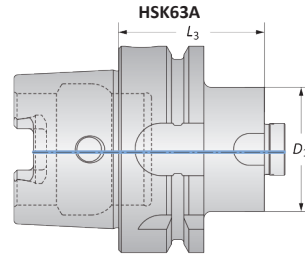
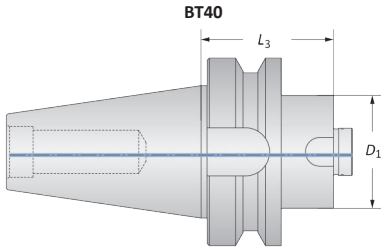
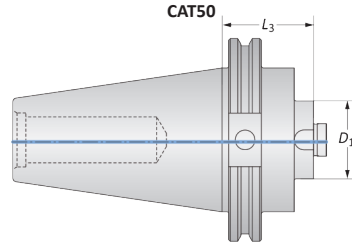
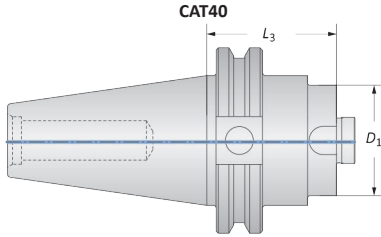
- Do not exceed the **allowable weight** for your machine tool.
 - Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.
- For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit www.alliedmachine.com/CriterionBoringGuidelines.



Shanks

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

B20



Metric (mm)

m	L_3	Insert D_1	Taper	Weight (kg)	Part No.
			CAT40	1.09	LCB1500-CV40
			CAT50	3.16	LCB1500-CV50
			BT40	1.12	LCB1500-BT40
			HSK63A	0.79	LCB1500-HSK63A

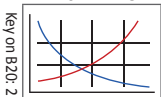
Imperial (in)

i	L_3	Insert D_1	Taper	Weight (lbs)	Part No.
			CAT40	2.410	LCB1500-CV40
			CAT50	6.960	LCB1500-CV50
			BT40	2.460	LCB1500-BT40
			HSK63A	1.750	LCB1500-HSK63A

WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

- Do not exceed the **allowable weight** for your machine tool.
 - Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.
- For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46 or visit**
www.alliedmachine.com/CriterionBoringGuidelines.

B20: 47 - 48



B20: 43 - 44



Inserts sold separately.

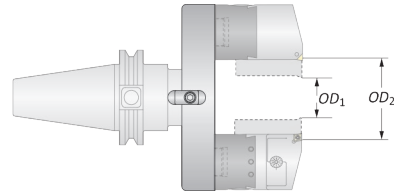
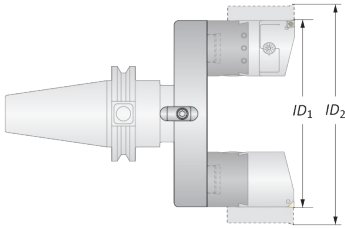
m = Metric (mm)

i = Imperial (in)



Extender Bars and Extensions

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



B20

Metric (mm)

Extender Bar				Weight (kg)	Part No.
ID_1	ID_2	OD_1	OD_2		
127.00	155.50	18.10	46.40	0.71	LCB1500-56EBK
152.40	180.90	43.50	71.80	0.87	LCB1500-67EBK
177.80	206.30	68.90	97.20	1.04	LCB1500-78EBK
203.20	231.70	94.30	122.60	1.20	LCB1500-89EBK
228.60	257.10	119.70	148.00	1.37	LCB1500-910EBK
254.00	282.50	145.10	173.40	1.53	LCB1500-1011EBK
279.40	307.90	170.50	198.80	1.69	LCB1500-1112EBK

Imperial (in)

Extender Bar				Weight (lbs)	Part No.
ID_1	ID_2	OD_1	OD_2		
5.000	6.125	0.710	1.830	1.560	LCB1500-56EBK
6.000	7.125	1.710	2.830	1.920	LCB1500-67EBK
7.000	8.125	2.710	3.830	2.290	LCB1500-78EBK
8.000	9.125	3.710	4.830	2.650	LCB1500-89EBK
9.000	10.125	4.710	5.830	3.010	LCB1500-910EBK
10.000	11.125	5.710	6.830	3.370	LCB1500-1011EBK
11.000	12.125	6.710	7.830	3.730	LCB1500-1112EBK

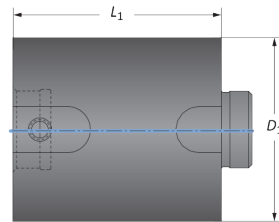
Large Cri-Bore Extensions

Metric (mm)

Counterweight		Weight (kg)	Part No.
D_1	L_1		
38.10	38.10	0.30	LCB1500-IA1500
38.10	76.20	0.60	LCB1500-IA3000
38.10	114.30	0.90	LCB1500-IA4500

Imperial (in)

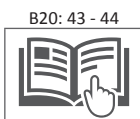
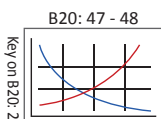
Counterweight		Weight (lbs)	Part No.
D_1	L_1		
1.500	1.500	0.660	LCB1500-IA1500
1.500	3.000	1.330	LCB1500-IA3000
1.500	4.500	1.980	LCB1500-IA4500



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

WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

- Do not exceed the **allowable weight** for your machine tool.
 - Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.
- For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit www.alliedmachine.com/CriterionBoringGuidelines.



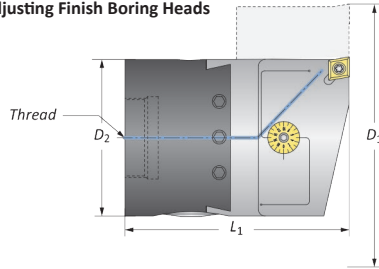
Inserts sold separately.

m = Metric (mm)

i = Imperial (in)

**Boring Heads and Counterweights**

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

Cri-Bore® Microadjusting Finish Boring Heads**B20****Metric (mm)**

	Thread Connection	Boring Head		Weight (kg)	Insert Form	Part No.
		L_1	D_2			
	7/8 - 20	81.25	38.00	0.59	CC..09T3..	CB038MCC
					TC..16T3..	CB038MTC

Imperial (in)

	Thread Connection	Boring Head		Weight (lbs)	Insert Form	Part No.
		L_1	D_2			
	7/8 - 20	3.200	1.500	1.300	CC..325..	CB1500CC
					TC..325..	CB1500TC

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

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

NOTE: Max spindle speed ID boring: 305 m/min (1,000 SFM) at 0 radial offset and used with counterweight or additional boring head.

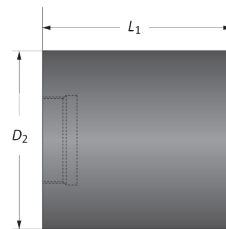
NOTE: Max spindle speed OD boring: Contact our Application Engineering department.

Large Cri-Bore Counterweights**Metric (mm)**

	Counterweight		Weight (kg)	Part No.
	D_2	L_1		
	38.10	65.53	0.57	LCB1500-CBWT A

Imperial (in)

	Counterweight		Weight (lbs)	Part No.
	D_2	L_1		
	1.500	2.580	1.250	LCB1500-CBWT A



IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

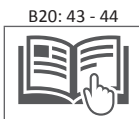
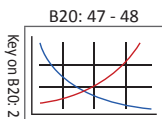
WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

-Do not exceed the **allowable weight** for your machine tool.

-Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.

For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit

www.alliedmachine.com/CriterionBoringGuidelines.



Inserts sold separately.

= Metric (mm)

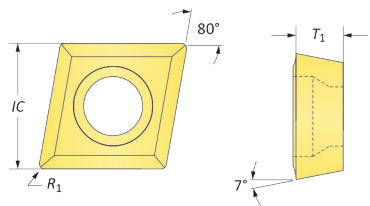
= Imperial (in)



Boring Inserts

80° Diamond Insert | 60° Triangle Insert

Coated 80° Diamond Inserts



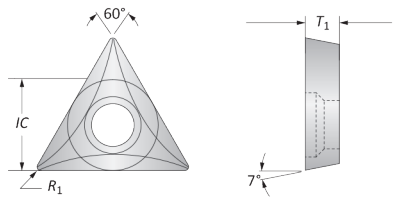
Metric (mm)

m	Insert Form	IC	Insert		Part No.
			T ₁	R ₁	
				0.20	
				0.40	
	CC..09T3..	9.53	3.97	0.80	CCMT09T308

Imperial (in)

i	Insert Form	IC	Insert		Part No.
			T ₁	R ₁	
				0.008	
				0.016	
	CC..325..	0.375	0.156	0.031	CCMT09T308

Coated 60° Triangle Inserts

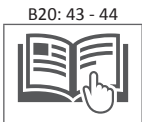
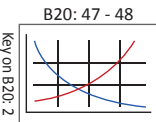


Metric (mm)

m	Insert Form	IC	Insert		Part No.
			T ₁	R ₁	
				0.40	
	TC..16T3..	9.53	3.97		TCGT16T304

Imperial (in)

i	Insert Form	IC	Insert		Part No.
			T ₁	R ₁	
				0.016	
	TC..325..	0.375	0.156		TCGT16T304



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



**NEED VERSATILITY?
NO PROBLEM.**

CB Style Versatile Boring

Wide range of diameters produced with a single boring head.

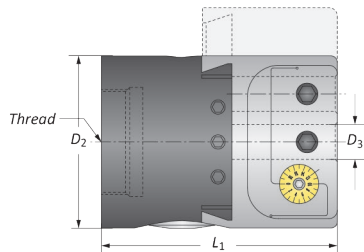
Allows for 0.001" adjustment on bore diameter and 0.000050" with CB2500BMA.

Maximum toughness and maximum versatility.



CB Microadjusting Versatile Boring Head

Diameter Range: 0.250" - 3.125"



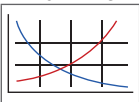
B20

Imperial (in)						
Boring Range	Thread	Boring Head			Weight (lbs)	Part No.
D ₁	Connection	L ₁	D ₂	D ₃		
 0.250 - 3.125	1-1/2 - 18	3.375	2.500	0.500	3.400	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.

IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

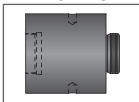
B20: 47 - 48



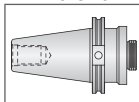
B20: 43 - 44



B20: 7 - 8



B20: 3 - 6



 = Metric (mm)
 = Imperial (in)

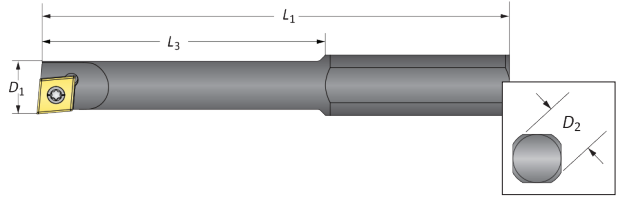
B20: 32



Boring Bars

Diameter Range: 0.050" - 0.750"

B20

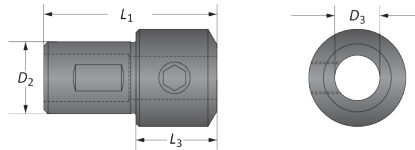


Imperial (in)

Style	Min. Boring Diameter	Boring Bar			Weight (lbs)	Insert Form	Part No.
	D_1	L_3	L_1	D_2			
 Steel	0.250	1.062	2.500	0.500	0.080	WBGX0301..	0250B
	0.312	1.437	2.750	0.500	0.080	WBGX0301..	0312B
	0.375	1.750	3.062	0.500	0.100	WBGX0301..	0375B
	0.437	2.062	3.375	0.500	0.110	CC..215..	0437B
	0.500	2.187	3.500	0.500	0.140	CC..215..	0500B
Heavy Metal	0.365	2.250	4.000	0.312	0.080	CC..215..	0365HM*
	0.550	3.250	6.000	0.500	0.300	CC..215..	0550BHM
Carbide	0.625	4.500	8.000	0.500	0.410	CC..215..	0625BCS

*Reducing sleeve required.

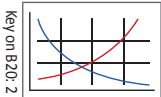
Reducing Sleeves



Imperial (in)

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

B20: 47 - 48



B20: 43 - 44



Inserts sold separately.

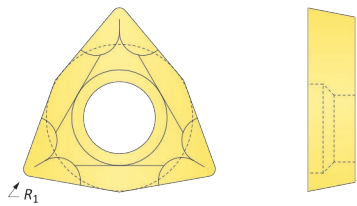
 = Metric (mm) = Imperial (in)



Boring Inserts

Trigon | 80° Diamond

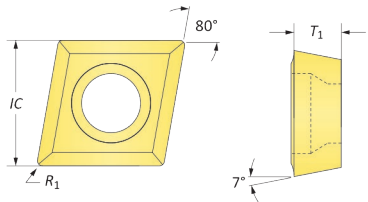
Coated Trigon Insert



Imperial (in)

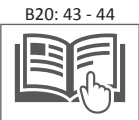
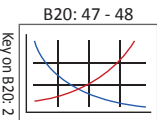
Insert Form		Insert R_1	Part No.
i	WBGX0301..	0.004	WBGX030101

Coated 80° Diamond Insert



Imperial (in)

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

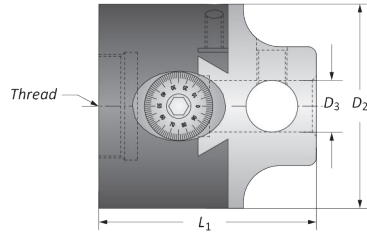




CB Versatile Boring Head

Diameter Range: 0.250" - 21.500"

B20



Imperial (in)

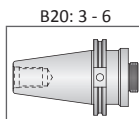
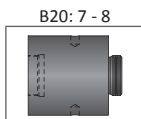
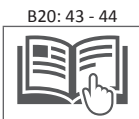
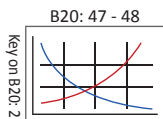
	Boring Range	Thread Connection	Boring Head			Weight (lbs)	Max Spindle Speed (RPM)	Part No.
	D_1		L_1	D_2	D_3			
i	0.250 - 6.687	7/8 - 20	2.435	2.000	0.500	1.600	2500	CB202B
	0.250 - 11.000	1-1/2 - 18	3.166	3.000	0.750	4.700	1750	CB203D
	0.500 - 13.437	1-1/2 - 18	3.715	4.000	1.000	9.300	800	CB204E
	0.500 - 21.500	2-1/4 - 10	5.475	6.000	1.500	26.400	500	CB206F

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: RPM (in table) at 0 radial offset.

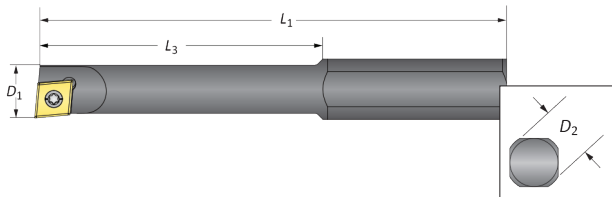
IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.



= Metric (mm)
 = Imperial (in)

Boring Bars

Diameter Range: 0.050" - 0.750"

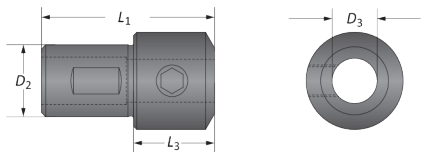


B20

Imperial (in)

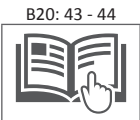
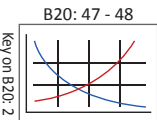
Style	Min. Boring Diameter	Boring Bar			Weight (lbs)	Insert Form	Part No.
	D_1	D_2	L_3	L_1			
i Steel	0.250	0.500	1.062	2.500	0.080	WBGX0301..	0250B
	0.312	0.500	1.437	2.750	0.080	WBGX0301..	0312B
	0.375	0.500	1.750	3.062	0.100	WBGX0301..	0375B
	0.437	0.500	2.062	3.375	0.110	CC..215..	0437B
	0.500	0.500	2.187	3.500	0.140	CC..215..	0500B
	0.500	0.750	2.500	4.250	0.280	CC..215..	0500D
	0.750	0.750	3.000	4.687	0.430	CC..325..	0750D
	1.000	0.750	3.500	5.125	0.570	CC..325..	1000D
Heavy Metal	1.250	0.750	4.000	5.562	0.570	CC..325..	1250D
	0.365	0.312	2.250	4.000	0.080	CC..215..	0365HM
	0.425	0.375	2.250	4.000	0.110	CC..215..	0425BHM
	0.550	0.500	3.250	6.000	0.300	CC..215..	0550BHM
	0.688	0.625	4.250	8.000	0.630	CC..325..	0688CHM
Carbide	0.832	0.750	4.750	10.000	1.150	CC..325..	0832DHM
	0.625	0.500	4.500	8.000	0.410	CC..215..	0625BCS
	0.875	0.750	6.000	10.000	1.130	CC..325..	0875DCS

Reducing Sleeves



Imperial (in)

Reducing Sleeve					Weight (lbs)	Part No.
D_3	D_2	L_1	L_3			
0.312	0.500	1.312	—		0.040	BTH-03120500
0.375	0.500	1.312	—		0.030	BTH-03750500
0.375	0.750	2.406	—		0.190	BTH-03750750
0.500	0.750	2.406	0.910		0.040	BTH-05000750
0.625	0.750	1.500	—		0.060	BTH-06250750
0.750	1.000	2.405	1.125		0.400	BTH-07501000
0.750	1.500	3.000	1.000		1.400	BTH-07501500



Inserts sold separately.

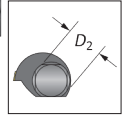
 = Metric (mm)
 = Imperial (in)



Cross Hole Boring Bars

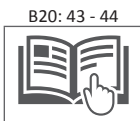
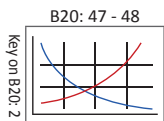
Diameter Range: 2.875" - 21.500"

B20



Imperial (in)

	Min. Boring Diameter	Boring Bar		Weight (lbs)	Insert Form	Part No.
		D_2	L_1			
i	2.875	0.500	2.750	0.140	CC..215..	0500BCH
	4.937	0.750	4.750	0.550	CC..325..	0750DCH
	5.625	1.000	5.310	1.020	CC..325..	1000ECH
	9.093	1.500	9.125	4.130	CC..43..	1500FCH

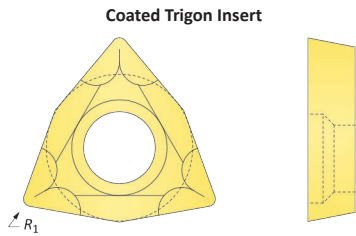


Inserts sold separately.

= Metric (mm)
 = Imperial (in)

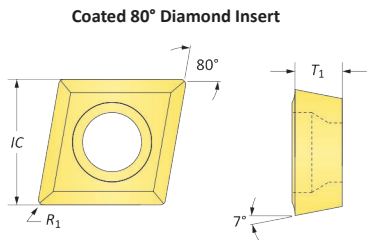
Boring Inserts

Trigon | 80° Diamond



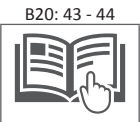
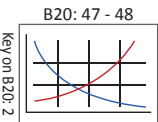
Imperial (in)

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



Imperial (in)

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



 = Metric (mm)
 = Imperial (in)



Accessories

Screws, Driver, and Wrenches

Insert Screws and Drivers

Insert Form	Insert Part No.	Thread	Insert Driver Part No.	Technical Information	
				Torque Specs	Key Size
WBGX0301..	215377	M2x4	115537	0.6 (N·m)	T6
CC..215.. CC..0602..	115676	M2.5x5	115590	1.2 (N·m)	T8
CC..32500 CC..09T3 (<Ø37mm)	115672	M3.5x7.5	115664	3.0 (N·m)	T15
CC..32500 CC..09T3 (>Ø36mm)	115673	M3.5x9	115664	3.0 (N·m)	T15
CC..43.. CC..1204..	215149	M4.5x11.5	215150	5.0 (N·m)	T20
TC..215.. TC..1102..	115676	M2.5x5	115590	1.2 (N·m)	T8
TC..325.. TC..16T3	115673	M3.5x9	115664	3.0 (N·m)	T15

Pin Spanner Wrenches

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

Hardware Kits

Boring Head Part No.	Hardware Kit Part No.	Boring Head Part No.	Hardware Kit Part No.	Boring Head Part No.	Hardware Kit Part No.
CB-038MA	CB038-HDW	CB032MTC	CB032M-HDW	CB101M-TP	CB101M-HDW
CB-038MB	CB038-HDW	CB038M-CP	CB038-HDW	CB1250-CP	CB1250-HDW
CB-050MA	CB050M-HDW	CB038M-CPMA	CB038-HDW	CB1250-CPMA	CB1250-HDW
CB-050MB	CB050M-HDW	CB038M-TP	CB038-HDW	CB1250-TP	CB1250-HDW
CB-064MBMA	CB050M-HDW	CB038M-TPMA	CB038-HDW	CB1250-TPMA	CB1250-HDW
CB-076MD	CB076M-HDW	CB038MCC	CB038-HDW	CB1250CC	CB1250-HDW
CB-076MDMA	CB076M-HDW	CB038MTC	CB038-HDW	CB1250TC	CB1250-HDW
CB-101ME	CB101M-HDW	CB050M-CP	CB2000-HDW	CB1500-CP	CB1500-HDW
CB-1500AMA	CB1500-HDW	CB050M-CPMA	CB050M-HDW	CB1500-CPMA	CB1500-HDW
CB-1500B	CB1500-HDW	CB050M-TP	CB2000-HDW	CB1500-TP	CB1500-HDW
CB-202A	CB2000-HDW	CB050M-TP	CB050M-HDW	CB1500-TPMA	CB1500-HDW
CB-202B	CB2000-HDW	CB050M-TPMA	CB050M-HDW	CB1500CC	CB1500-HDW
CB-203D	CB3000-HDW	CB050M-TPMA	CB050M-HDW	CB1500TC	CB1500-HDW
CB-204E	CB4000-HDW	CB050M-TPMA	CB050M-HDW	CB2000-CPMA	CB2000-HDW
CB-206F	CB6000-HDW	CB050MCC	CB050M-HDW	CB2000-TPMA	CB2000-HDW
CB-2375A	CB1500-HDW	CB050MTC	CB050M-HDW	CB2000CC	CB2000-HDW
CB-2500BMA	CB2000-HDW	CB076M-CP	CB076M-HDW	CB2000TC	CB2000-HDW
CB-3000DMA	CB3000-HDW	CB076M-CPMA	CB076M-HDW	CB202B	CB2000-HDW
CB025M-CP	CB025M-HDW	CB076M-TPMA	CB076M-HDW	CB203D	CB3000-HDW
CB025M-CPMA	CB025M-HDW	CB076MCC	CB076M-HDW	CB204E	CB4000-HDW
CB025M-TP	CB025M-HDW	CB076MTC	CB076M-HDW	CB206F	CB6000-HDW
CB025M-TPMA	CB025M-HDW	CB1000-CP	CB1000-HDW	CB2500BMA	CB2000-HDW
CB025MCC	CB025M-HDW	CB1000-CPMA	CB1000-HDW	CB3000-CP	CB3000-HDW
CB025MTC	CB025M-HDW	CB1000-TP	CB1000-HDW	CB3000-CPMA	CB3000-HDW
CB032M-CPMA	CB032M-HDW	CB1000-TPMA	CB1000-HDW	CB3000-TP	CB3000-HDW
CB032M-TP	CB032M-HDW	CB1000CC	CB1000-HDW	CB3000-TPMA	CB3000-HDW
CB032M-TPMA	CB032M-HDW	CB1000TC	CB1000-HDW	CB3000CC	CB3000-HDW
CB032MCC	CB032M-HDW	CB101-CP	CB101M-HDW	CB3000TC	CB3000-HDW

Hardware Kits

Boring Head Part No.	Hardware Kit Part No.	Boring Head Part No.	Hardware Kit Part No.	Boring Head Part No.	Hardware Kit Part No.
CB4000-CP	CB4000-HDW	CBER40S-CP	CB1250-HDW	CT1250-1	CT1250-HDW
CB4000-TP	CB4000-HDW	CBER40S-CPMA	CB1250-HDW	CT1250-2	CT1250-HDW
CB4000-TP	CB4000-HDW	CBER40S-CPMA	CB1250-HDW	CT1500-0	CT1500-HDW
CB4000-TP	CB4000-HDW	CBER40S-SB	CB1250-HDW	CT1500-1	CT1500-HDW
CBER16-CP	CB0625-HDW	CBER40S-TP	CB1250-HDW	CT1500-2	CT1500-HDW
CBER16-SG	CB0625-HDW	CBER40S-TPMA	CB1250-HDW	CT2000-0	CT2000-HDW
CBER16-TP	CB0625-HDW	CBO32M-CP	CB032M-HDW	CT2000-1	CT2000-HDW
CBER16M-CP	CB0625-HDW	CBO76M-TP	CB076M-HDW	CT2000-2	CT2000-HDW
CBER16M-TP	CB0625-HDW	CBR-0625CP	CB0625-HDW	CT3000-0	CT3000-HDW
CBER16MS-CP	CB0625-HDW	CBR-0625SG	CB0625-HDW	CT3000-1	CT3000-HDW
CBER16MS-TP	CB0625-HDW	CBR-0628TP	CB0625-HDW	CT3000-2	CT3000-HDW
CBER16S-CP	CB0625-HDW	CBR-0750CP	CB0750-HDW	MB002-500	CB1500-HDW
CBER16S-SG	CB0625-HDW	CBR-0750SH	CB0750-HDW	MB002-625	CB1500-HDW
CBER16S-TP	CB0625-HDW	CBR-0750TP	CB0750-HDW	MB002-750	CB1500-HDW
CBER20-CP	CB0625-HDW	CBR-1000CP	CB1000-HDW	MB152-500	CB1500-HDW
CBER20-SG	CB0625-HDW	CBR-1000CPMA	CB1000-HDW	MB152-625	CB1500-HDW
CBER20-TP	CB0625-HDW	CBR-1000SA	CB1000-HDW	MB152-750	CB1500-HDW
CBER20M-CP	CB0625-HDW	CBR-1000TP	CB1000-HDW	MBS0500B	CB1500-HDW
CBER20M-TP	CB0625-HDW	CBR-1000TPMA	CB1000-HDW	SQ-1500B	S1500-HDW
CBER20MS-CP	CB0625-HDW	CBR-1250CP	CB1250-HDW	SQ-2000B	S2000-HDW
CBER20MS-TP	CB0625-HDW	CBR-1250CPMA	CB1250-HDW	SQ-3000D	S3000-HDW
CBER20S-CP	CB0625-HDW	CBR-1250SB	CB1250-HDW	SQ-3000E	S3000-HDW
CBER20S-SG	CB0625-HDW	CBR-1250TP	CB1250-HDW	TMT-0750H	TMT0750-HDW
CBER20S-TP	CB0625-HDW	CBR-1250TPMA	CB1250-HDW	TMT-1000H	TMT0750-HDW
CBER25-CP	CB0750-HDW	CBS-0625CP	CB0625-HDW		
CBER25-SH	CB0750-HDW	CBS-0625SG	CB0625-HDW		
CBER25-TP	CB0750-HDW	CBS-0625TP	CB0625-HDW		
CBER25-TP	CB0750-HDW	CBS-0750CP	CB0750-HDW		
CBER25M-CP	CB0750-HDW	CBS-0750SH	CB0750-HDW		
CBER25MS-CP	CB0750-HDW	CBS-0750TP	CB0750-HDW		
CBER25MS-TP	CB0750-HDW	CBS-1000CP	CB1000-HDW		
CBER25S-CP	CB0750-HDW	CBS-1000CPMA	CB1000-HDW		
CBER25S-SH	CB0750-HDW	CBS-1000SA	CB1000-HDW		
CBER25S-TP	CB0750-HDW	CBS-1000TP	CB1000-HDW		
CBER32-CP	CB1000-HDW	CBS-1000TPMA	CB1000-HDW		
CBER32-CPMA	CB1000-HDW	CBS-1250CP	CB1250-HDW		
CBER32-SA	CB1000-HDW	CBS-1250CPMA	CB1250-HDW		
CBER32-TP	CB1000-HDW	CBS-1250SB	CB1250-HDW		
CBER32-TPMA	CB1000-HDW	CBS-1250TP	CB1250-HDW		
CBER32M-CP	CB1000-HDW	CBS-1250TPMA	CB1250-HDW		
CBER32M-CPMA	CB1000-HDW	CBS1250B	CB1250-HDW		
CBER32M-TP	CB1000-HDW	CP050M-CP	CB050M-HDW		
CBER32M-TPMA	CB1000-HDW	CSL-202	CB2000-HDW		
CBER32MS-CP	CB1000-HDW	CSL-203	CB3000-HDW		
CBER32MS-CPMA	CB1000-HDW	CSL-204	CB4000-HDW		
CBER32MS-TP	CB1000-HDW	CT025M-0	CT025M-HDW		
CBER32MS-TPMA	CB1000-HDW	CT025M-1	CT025M-HDW		
CBER32S-CP	CB1000-HDW	CT025M-2	CT025M-HDW		
CBER32S-CPMA	CB1000-HDW	CT032M-0	CT032M-HDW		
CBER32S-SA	CB1000-HDW	CT032M-1	CT032M-HDW		
CBER32S-TP	CB1000-HDW	CT032M-2	CT032M-HDW		
CBER32S-TPMA	CB1000-HDW	CT038-2	CT038M-HDW		
CBER40-CP	CB1250-HDW	CT038M-0	CT038M-HDW		
CBER40-CPMA	CB1250-HDW	CT038M-1	CT038M-HDW		
CBER40-SB	CB1250-HDW	CT050M-0	CT050M-HDW		
CBER40-TP	CB1250-HDW	CT050M-1	CT050M-HDW		
CBER40-TPMA	CB1250-HDW	CT050M-2	CT050M-HDW		
CBER40M-CP	CB1250-HDW	CT076M-0	CT076M-HDW		
CBER40M-CPMA	CB1250-HDW	CT076M-1	CT076M-HDW		
CBER40M-TP	CB1250-HDW	CT076M-2	CT076M-HDW		
CBER40M-TPMA	CB1250-HDW	CT1000-0	CT1000-HDW		
CBER40MS-CP	CB1250-HDW	CT1000-1	CT1000-HDW		
CBER40MS-TP	CB1250-HDW	CT1000-2	CT1000-HDW		
CBER40MS-TPMA	CB1250-HDW	CT1250-0	CT1250-HDW		

B20

**Technical Information**

Torque Specs

B20

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

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin gray lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The background is white, and the grid lines are light gray.

B20



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.

B20

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

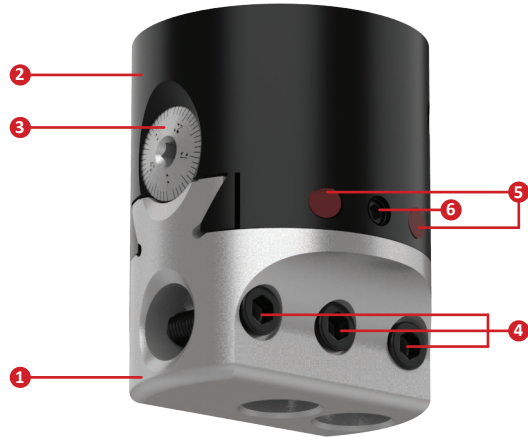


Figure B1



Setup Instructions

Microadjusting Boring Heads

Setting Up Microadjusting Boring Heads (see Figure B2)

Set the microadjusting dial screw range

1. The microadjusting dial screws (4) only have a total range of 0.152 mm (0.006") 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 0.076 mm (0.003") 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 6.35 mm (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 0.05 mm (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	Bar holder
2	Boring head body
3	Dial screw
4	Microadjusting dial screw
5	Gib screws (DO NOT ADJUST)
6	Locking screw

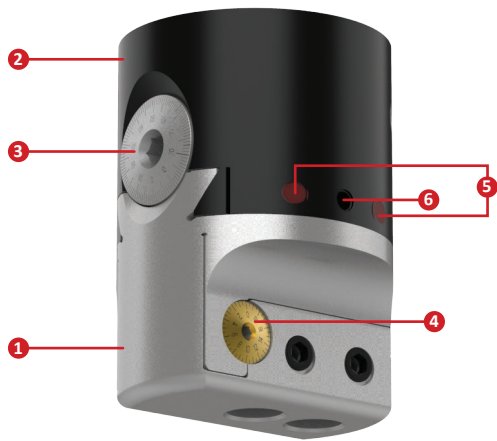


Figure B2

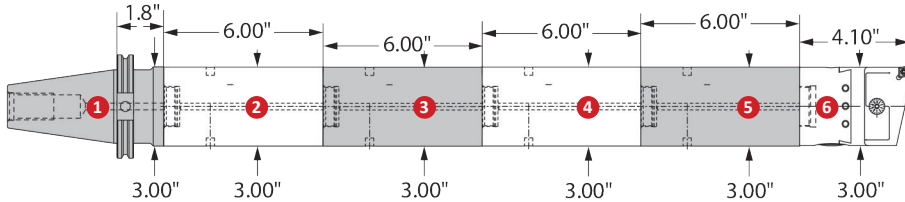
B20



Guidelines for Not Exceeding Recommended Length-to-Diameter Ratio

To calculate, see graphics below:

B20



Too many components!

NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.

Step 1: Find L : D by component.

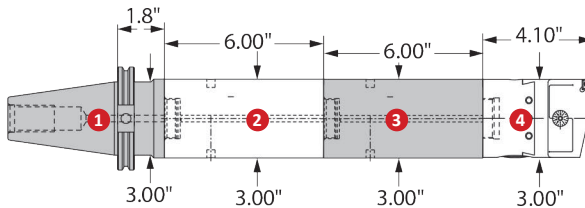
①	$0.6 = 1.88/3.00$	→	0.6
②	$2.0 = 6.00/3.00$	→	2.0
③	$2.0 = 6.00/3.00$	→	2.0
④	$2.0 = 6.00/3.00$	→	2.0
⑤	$2.0 = 6.00/3.00$	→	2.0
⑥	$1.4 = 4.10/3.00$	→	+1.4



10.0 = L : D ratio



Too long with too many components!



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.

Step 1: Find L : D by component.

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



6.0 = L : D ratio



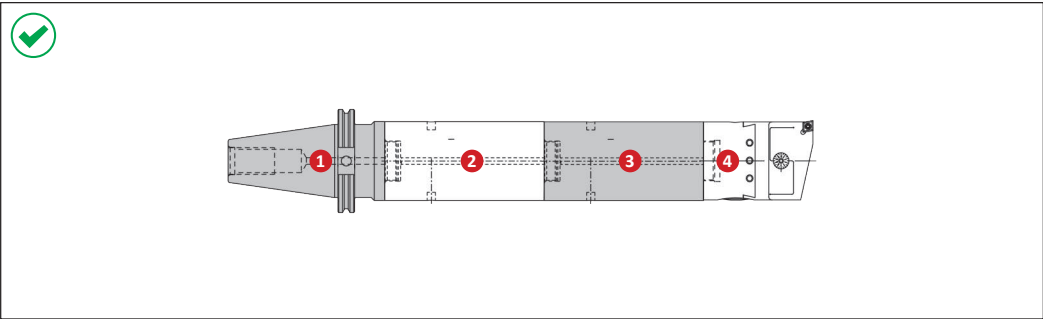
WARNING Tool failure can cause serious injury. To prevent:

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

Factory technical assistance is available for you through our Application Engineering department: appeng@alliedmachine.com.

Calculating Tool Assembly Weight

To calculate, see graphics below:



B20

Step 1: Find weight for each component circled in the example table below.

Example:

Imperial (in)

Boring Range D_1	Thread Connection	Boring Head		Weight (lbs)	Insert Form	Part No.
		L_1	D_2			
1.050 - 1.320	7/8 - 20	2.690	1.000	0.500	CC..215..	CB1000CC
					TC..215..	CB1000TC
1.300 - 1.600	7/8 - 20	2.900	1.250	0.800	CC..215..	CB1250CC
					TC..215..	CB1250TC
1.585 - 2.700	7/8 - 20	3.200	1.500	1.300	CC..325..	CB1500CC
					TC..325..	CB1500TC
2.060 - 3.320	7/8 - 20	3.590	2.000	2.400	CC..325..	CB2000CC
					TC..325..	CB2000TC
3.065 - 5.065	1-1/2 - 18	4.100	3.000	5.800	CC..325..	CB3000CC
					TC..325..	CB3000TC

Step 2: Calculate total assembly weight.

- 1

8.03 lbs
- 2

11.50 lbs
- 3

11.50 lbs
- 4

+ 5.80 lbs
- 36.83 lbs

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 available for you through our Application Engineering department: appeng@alliedmachine.com.

**Recommended Drilling Data | Metric (mm)****CRITERION®****B20**

ISO	Material	Hardness (BHN)	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, 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, 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, S-3, etc.	150 - 250	Carbide	100 - 180	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	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
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
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
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

NOTE: Speed 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 an individual boring head and is not a recommended parameter. Refer to pages **B20: 47 - 48** for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

⚠ WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

-Do not exceed the **allowable weight** for your machine tool.

-Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.

For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit

www.alliedmachine.com/CriterionBoringGuidelines.



Recommended Drilling Data | Imperial (in)

CRITERION®								
ISO	Material	Hardness (BHN)	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, 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, 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, S-3, etc.	150 - 250	Carbide	325 - 600	0.001 - 0.002	0.002 - 0.003	0.003 - 0.004	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
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
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
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

NOTE: Speed 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
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IMPORTANT: Max spindle speed refers to maximum possible speed for an individual boring head and is not a recommended parameter. Refer to pages B20: 47 - 48 for recommended application specific parameters or factory technical assistance is available through our Application Engineering department: appeng@alliedmachine.com.

⚠ WARNING Assembly of modular components may cause machine damage and/or serious injury. To prevent:

- Do not exceed the **allowable weight** for your machine tool.
- Do not exceed the recommended **length-to-diameter** ratio, which can impact tool stability and performance.

For detailed guidelines on safe configurations, **please refer to pages B20: 45 - 46** or visit www.alliedmachine.com/CriterionBoringGuidelines.

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

Coolant Information

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

Requested Tooling

QTY	Item Number

QTY	Item Number



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ALLIED MACHINE & ENGINEERING

Warranty Information



Allied Machine & Engineering ("Allied Machine") warrants to original equipment manufacturers, distributors, industrial and commercial users of its products for one year from the original date of sale that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's sole and exclusive obligation under this warranty is limited to, at its option, without additional charge, replacing or repairing this product or issuing a credit. For this warranty to be applied, the product must be returned freight prepaid to the plant designated by an Allied Machine representative and which, upon inspection, is determined by Allied Machine to be defective in material and workmanship.

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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B20-CRT | Publish Date: Sep. 01, 2026



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