ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

Drilling

Reaming

Burnishing

Threading

Criterion®

▶ *BORING*

Modular Boring Systems

Specials

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.

Aerospace | Agriculture | Automotive | Firearms | Renewable Energy

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.

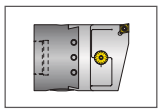
NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

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

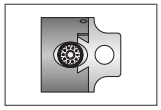
Visit www.alliedmachine.com for the most up-to-date information and procedures.

Criterion® Modular Boring Systems Contents

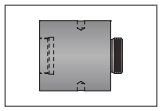
Reference Icons
The following icons will appear throughout the catalog to help you navigate between products.



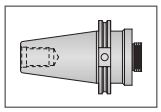
Boring Heads - Insert Holders
Microadjusting boring heads that use inserts for cutting



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

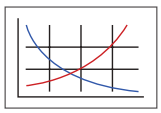


Head-to-Shank Adapters
Extensions and reducers that attach the boring head to the shank



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

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"	–

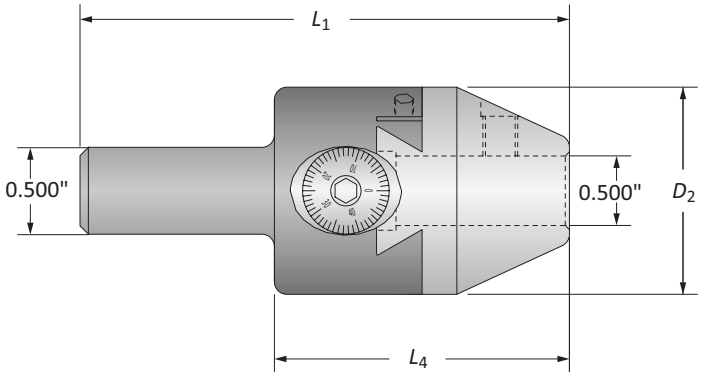
WE KNOW
SPEED MATTERS

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 L_1	Boring Head L_4	Boring Head D_2	Weight	Part No.
ⓘ	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.

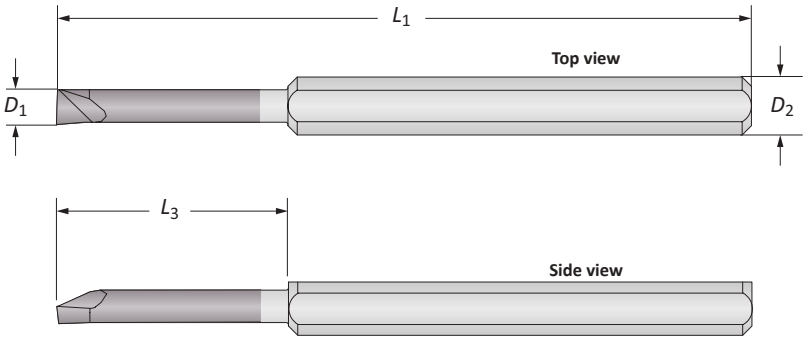
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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

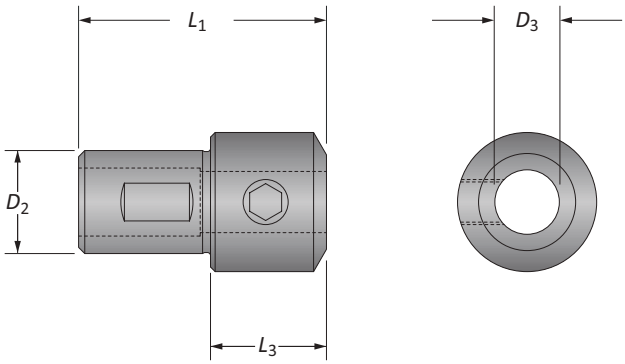
Bore Diameter Range: 0.050" - 0.275"



Mini Coated Boring Bars

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Part No.
	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

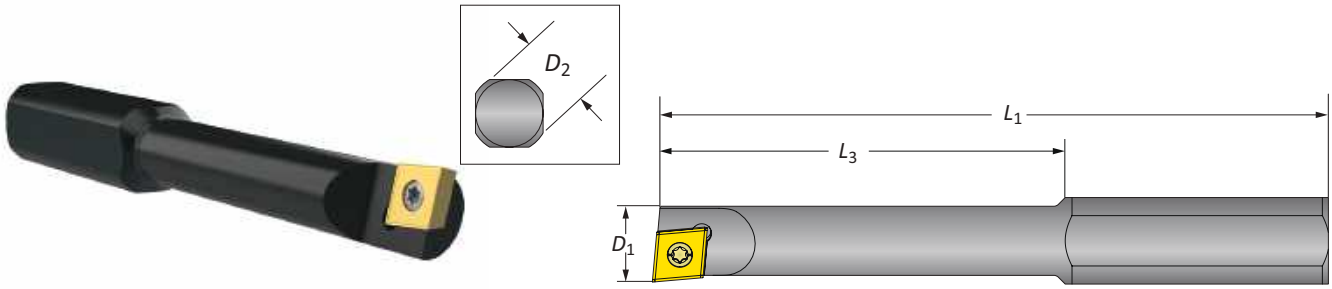
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.125	0.500	2.000	0.220	0.100 (lbs)	**BTH-01250500**
	0.250	0.500	1.312	–	0.050 (lbs)	**BTH-02500500**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = Metric (mm)

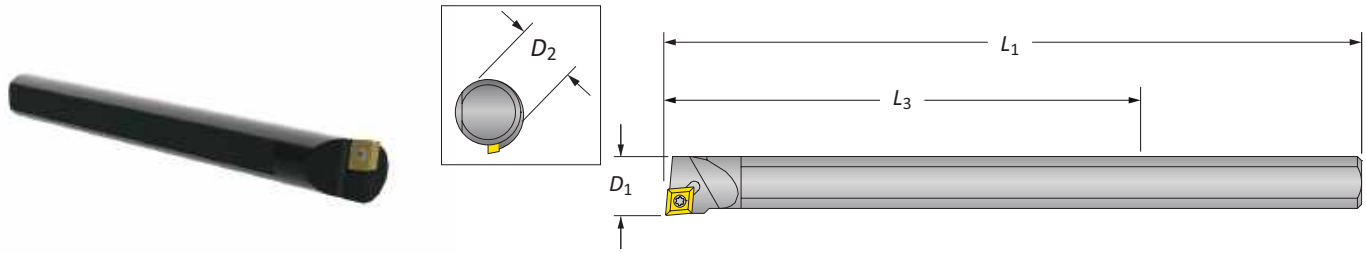
Boring Bars

Bore Diameter Range: 0.250" - 0.750"



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

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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**

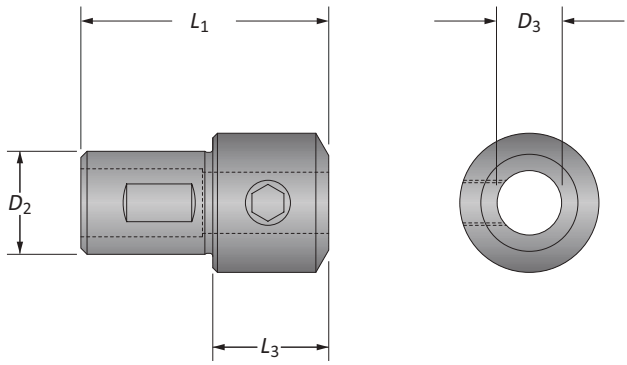
*Reducing sleeve required.

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

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

Reducing Sleeves

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

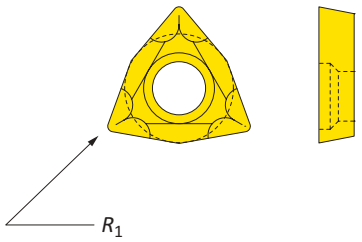


B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

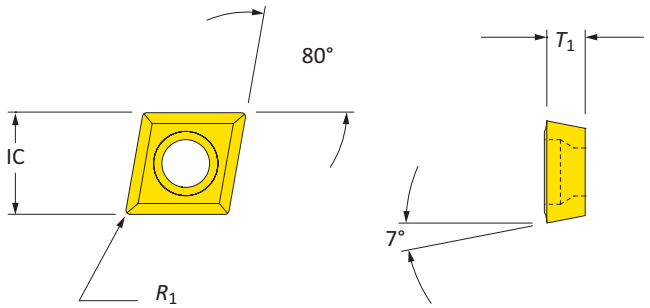
Boring Inserts

Trigon | 80° Diamond



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**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Notes

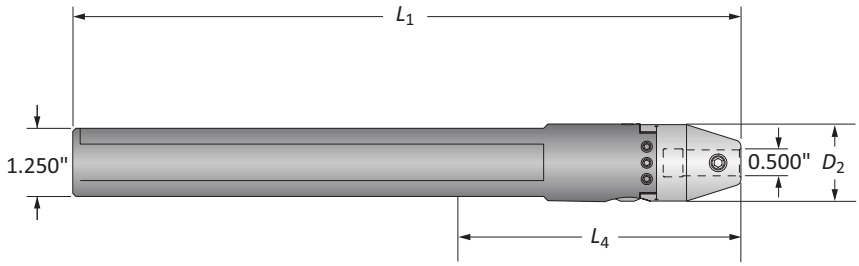
WE KNOW
REACH MATTERS

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 L_1	Boring Head L_4	Boring Head D_2	Weight	Part No.
ⓘ	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.

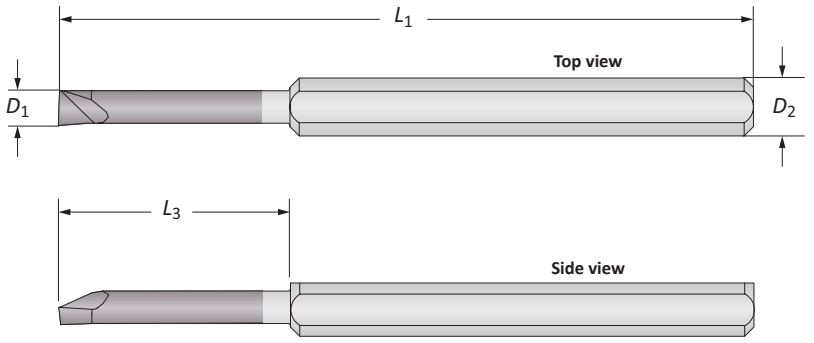
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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

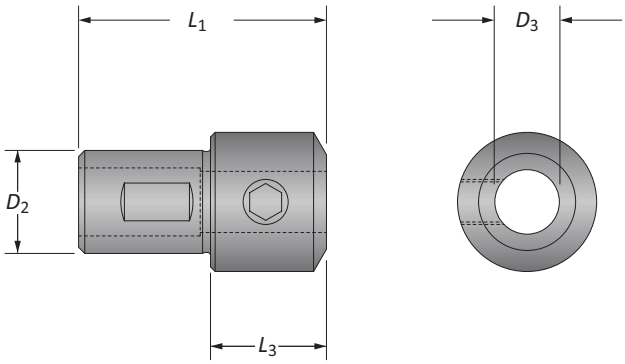
Bore Diameter Range: 0.050" - 0.275"



Mini Coated Boring Tools

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Coated Part No.
	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

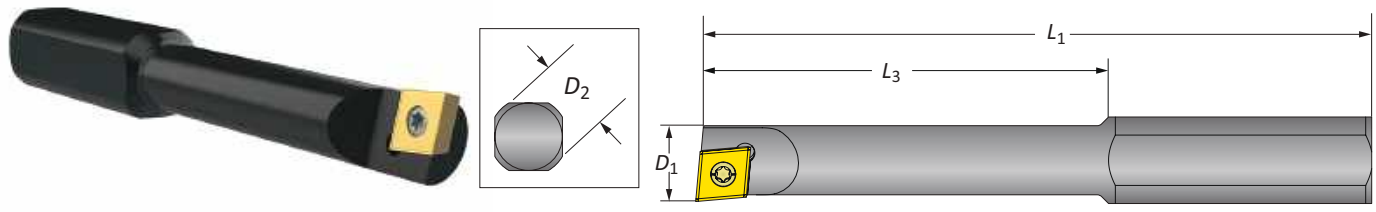
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.125	0.500	2.000	0.220	0.100 (lbs)	**BTH-01250500**
	0.250	0.500	1.312	–	0.050 (lbs)	**BTH-02500500**
	0.375	0.500	1.312	–	0.030 (lbs)	**BTH-03750500**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = Metric (mm)

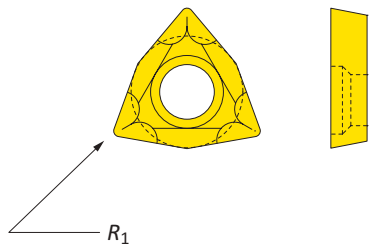
Steel Boring Bars | Boring Inserts

Bore Diameter Range: 0.250" - 0.750"



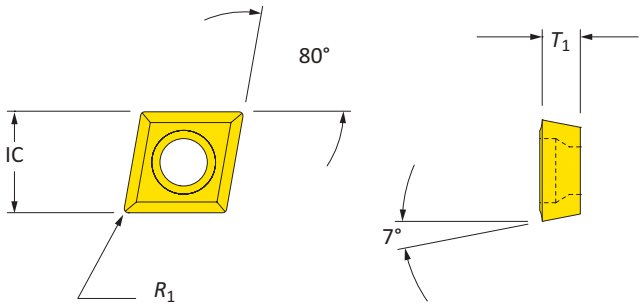
Steel Boring Bars

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

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

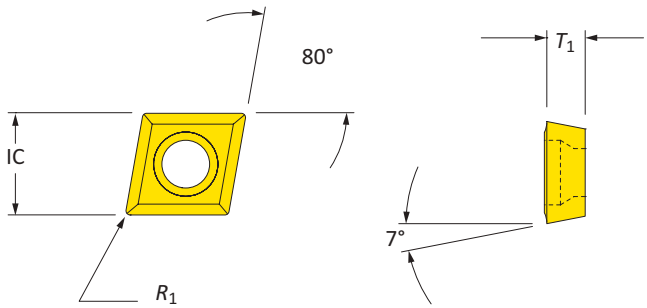
Available in both imperial (in) and metric (mm) versions

MDS Finish Boring Tools | Boring Inserts

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

	Boring Range D_1	Shank Diameter D_2	Boring Head L_1	Boring Head Max L_4	Weight	Insert Form	Part No.
i	0.710 - 0.960	0.625	5.250	3.386	0.400 (lbs)	CC..215..	**MDS0625**
i	0.890 - 1.280	0.750	6.310	4.435	0.700 (lbs)	CC..325..	**MDS0750**
m	18.00 - 24.25	16.00	133.00	85.37	0.18 (kg)	CC..0602..	**MDS16M**
m	22.00 - 33.00	20.00	160.00	112.37	0.32 (kg)	CC..09T3..	**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 IC	Insert T_1	Insert R_1	Part No.
i	CC..215..	0.250	0.094	0.008	**CCMT060202**
i	CC..325..	0.375	0.156	0.008	**CCMT09T302**
i	CC..325..	0.375	0.156	0.016	**CCMT09T304**
m	CC..0602..	6.35	2.38	0.20	**CCMT060202**
m	CC..09T3..	9.53	3.97	0.20	**CCMT09T302**
m	CC..09T3..	9.53	3.97	0.40	**CCMT09T304**

B20: 58 - 59
Key on B20: 1
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**

WE KNOW
TOLERANCE MATTERS

Cri-Bore® Micro-adjusting

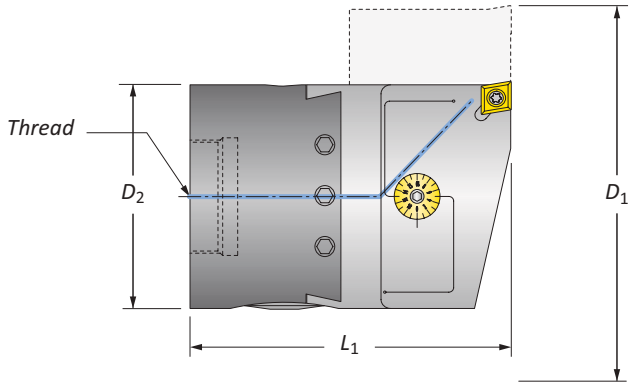
Allows for 0.00005" (0.001 mm) on diameter bore increments

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 D_1	Thread Connection	Boring Head L_1	Boring Head D_2	Weight	Insert Form	Part. No
	1.050 - 1.320	⅞ - 20	2.690	1.000	0.500 (lbs)	CC..215..	**CB1000CC**
	1.050 - 1.320	⅞ - 20	2.690	1.000	0.500 (lbs)	TC..215..	**CB1000TC**
	1.300 - 1.600	⅞ - 20	2.900	1.250	0.800 (lbs)	CC..215..	**CB1250CC**
	1.300 - 1.600	⅞ - 20	2.900	1.250	0.800 (lbs)	TC..215..	**CB1250TC**
ⓘ	1.585 - 2.700	⅞ - 20	3.200	1.500	1.300 (lbs)	CC..325..	**CB1500CC**
	1.585 - 2.700	⅞ - 20	3.200	1.500	1.300 (lbs)	TC..325..	**CB1500TC**
	2.060 - 3.320	⅞ - 20	3.590	2.000	2.400 (lbs)	CC..325..	**CB2000CC**
	2.060 - 3.320	⅞ - 20	3.590	2.000	2.400 (lbs)	TC..325..	**CB2000TC**
	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	⅞ - 20	68.35	25.00	0.23 (kg)	CC..0602..	**CB025MCC**
	27.00 - 33.00	⅞ - 20	68.35	25.00	0.23 (kg)	TC..1102..	**CB025MTC**
	33.00 - 41.00	⅞ - 20	73.65	32.00	0.36 (kg)	CC..0602..	**CB032MCC**
	33.00 - 41.00	⅞ - 20	73.65	32.00	0.36 (kg)	TC..1102..	**CB032MTC**
ⓜ	41.00 - 68.00	⅞ - 20	81.25	38.00	0.59 (kg)	CC..09T3..	**CB038MCC**
	41.00 - 68.00	⅞ - 20	81.25	38.00	0.59 (kg)	TC..16T3..	**CB038MTC**
	53.00 - 84.00	⅞ - 20	91.30	50.00	1.09 (kg)	CC..09T3..	**CB050MCC**
	53.00 - 84.00	⅞ - 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.

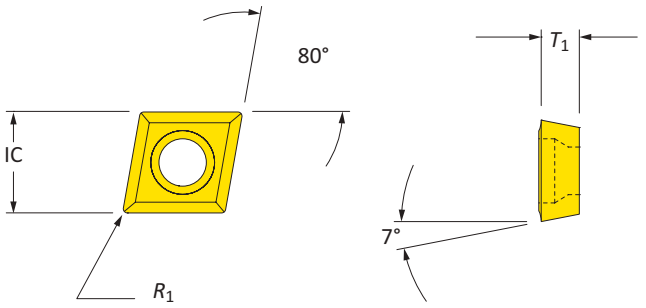
B20: 58 - 59
Key on B20: 1
B20: 46 - 50
B20: 44 - 45
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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**

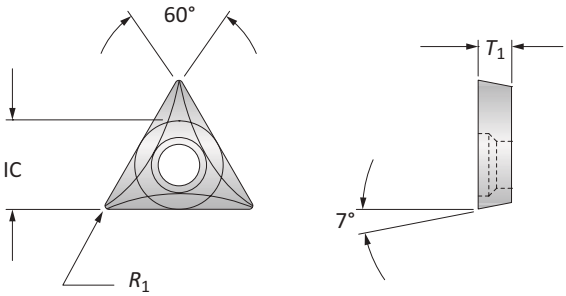
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



Coated 80° Diamond Inserts

	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
i	CC..215..	0.250	0.094	0.008	**CCMT060202**
i	CC..215..	0.250	0.094	0.016	**CCMT060204**
i	CC..325..	0.375	0.156	0.008	**CCMT09T302**
i	CC..325..	0.375	0.156	0.016	**CCMT09T304**
m	CC..0602..	6.35	2.38	0.20	**CCMT060202**
m	CC..0602..	6.35	2.38	0.40	**CCMT060204**
m	CC..09T3..	9.53	3.97	0.20	**CCMT09T302**
m	CC..09T3..	9.53	3.97	0.40	**CCMT09T304**



Coated 60° Triangle Inserts

	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
i	TC..215..	0.250	0.094	0.008	**TCGT110202**
i	TC..215..	0.250	0.094	0.016	**TCGT110204**
i	TC..325..	0.375	0.156	0.016	**TCGT16T304**
m	TC..1102..	6.35	2.38	0.20	**TCGT110202**
m	TC..1102..	6.35	2.38	0.40	**TCGT110204**
m	TC..16T3..	9.53	3.97	0.40	**TCGT16T304**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Notes

EXTEND YOUR BORING RANGE

Large Cri-Bore® Finish Boring / OD Turning System

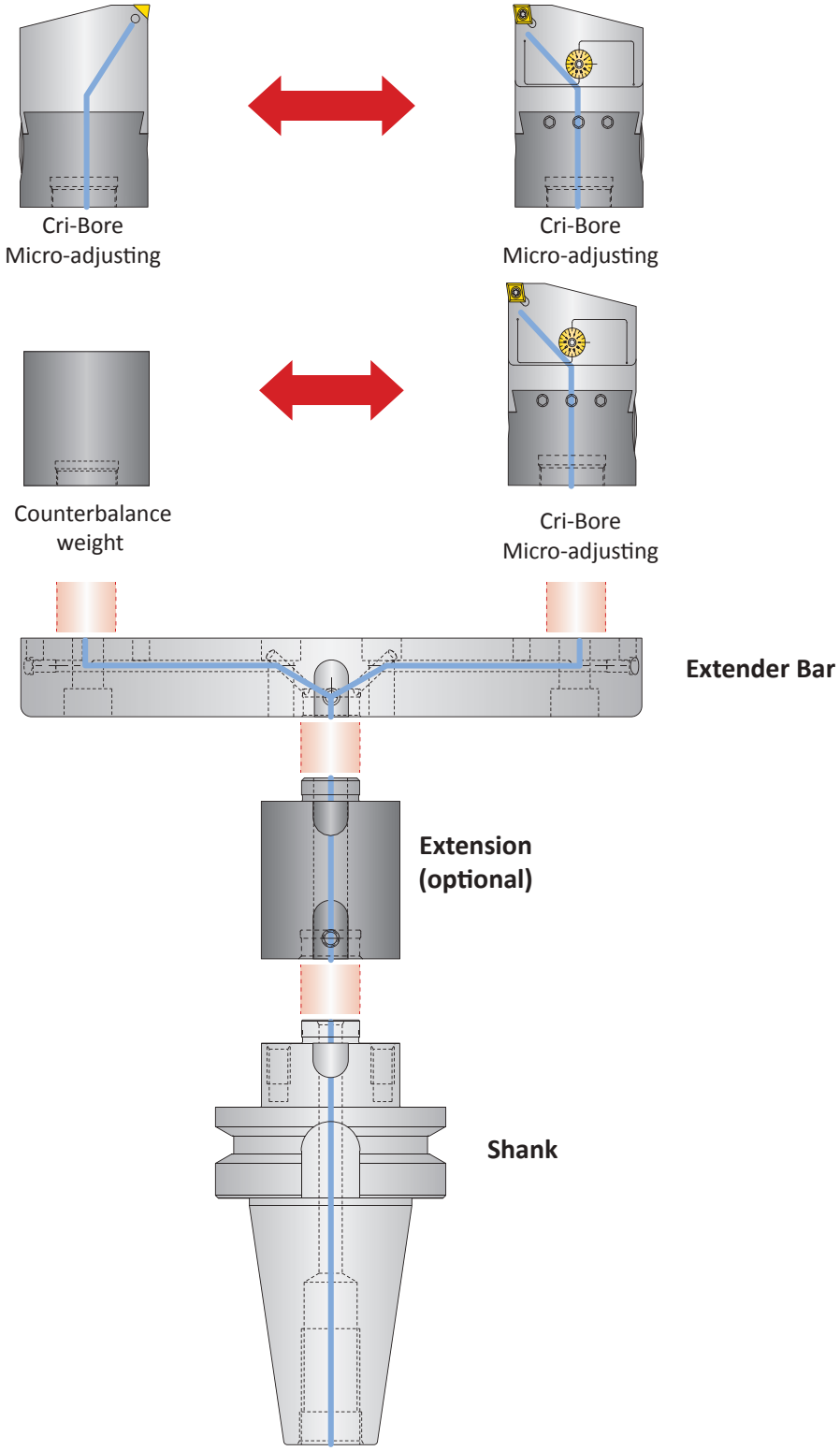
Extend the diameter range for internal and external boring

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.

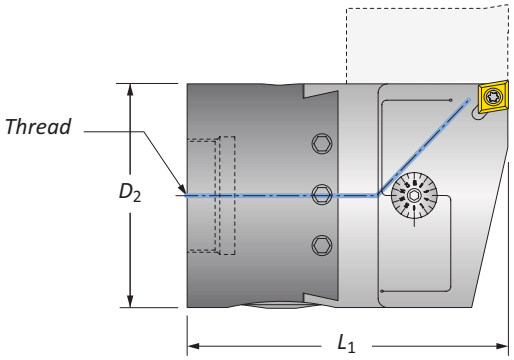
Factory technical assistance is also available for specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

⚠ 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**

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)



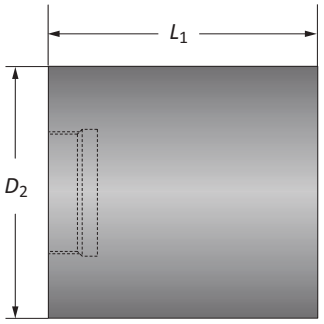
Cri-Bore Micro-adjusting Boring Heads

	Connection Thread	Boring Head L_1	Boring Head D_2	Weight	Insert Form	Part No.
ⓘ	⅞ - 20	3.200	1.500	1.300 (lbs)	CC..325..	**CB1500CC**
ⓘ	⅞ - 20	3.200	1.500	1.300 (lbs)	TC..325..	**CB1500TC**
ⓜ	⅞ - 20	81.25	38.00	0.59 (kg)	CC..09T3..	**CB038MCC**
ⓜ	⅞ - 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 D_2	Counter Weight L_1	Weight	Part No.
ⓘ	1.500	2.580	1.250 (lbs)	**LCB1500-CBWTA**
ⓜ	38.10	65.53	0.57 (kg)	**LCB1500-CBWTA**



B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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.

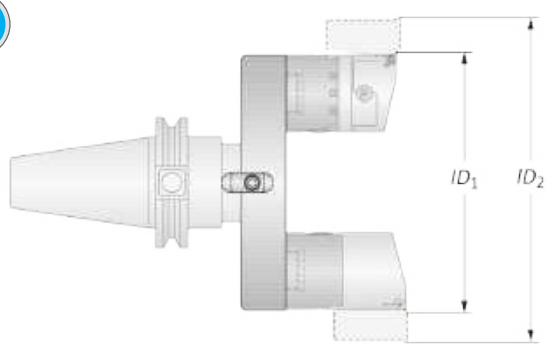
Factory technical assistance is also available for specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

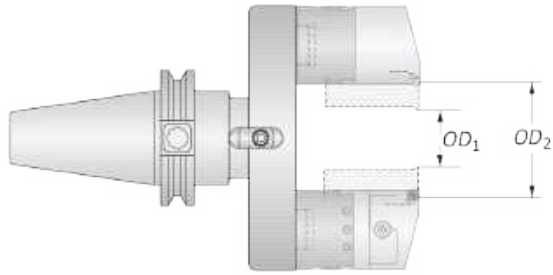
⚠ WARNING **Tool failure can cause serious injury. To prevent:**
- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

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)



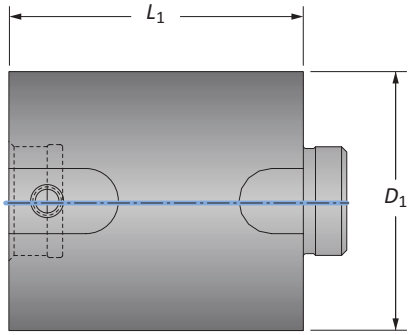


Large Cri-Bore Extender Bars

	Extender Bar					
	ID_1	ID_2	OD_1	OD_2	Weight	Part No.
ⓘ	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**
ⓜ	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

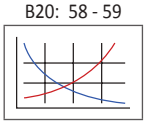
	Extension			
	D_1	L_1	Weight	Part No.
ⓘ	1.500	1.500	0.660 (lbs)	**LCB1500-IA1500**
	1.500	3.000	1.330 (lbs)	**LCB1500-IA3000**
	1.500	4.500	1.980 (lbs)	**LCB1500-IA4500**
ⓜ	38.10	38.10	0.30 (kg)	**LCB1500-IA1500**
	38.10	76.20	0.60 (kg)	**LCB1500-IA3000**
	38.10	114.30	0.90 (kg)	**LCB1500-IA4500**



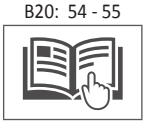
NOTE: Only one extension can be used per boring assembly. Extensions cannot be combined.

B20: 58 - 59

Key on B20: 1



B20: 54 - 55



ⓘ = Imperial (in)
ⓜ = 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.

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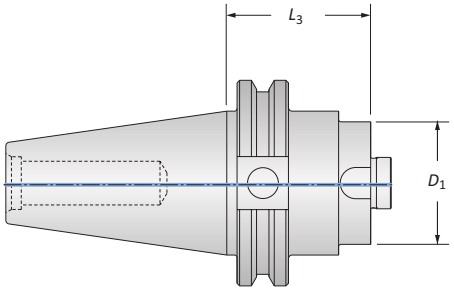
⚠ WARNING **Tool failure can cause serious injury. To prevent:**
- Do not exceed recommended 9xD length-to-diameter ratio or exceed 4 total components (including shank)
- Refer to example on page B20: 56 for calculating length to diameter ratio

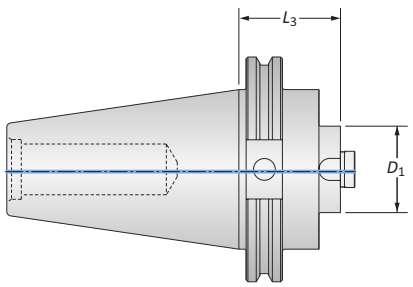
Factory technical assistance is available for your specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

Large Cri-Bore Finish Boring / OD Turning System Shanks

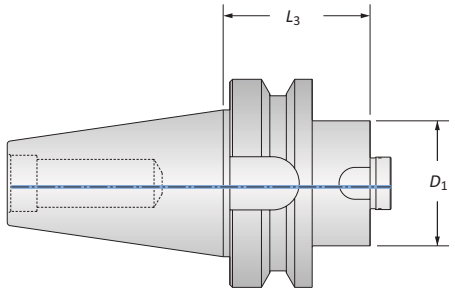
Bore ID Range: 5.000" - 12.125" (127.00 mm - 307.90 mm) | Bore OD Range: 0.710" - 7.830" (18.10 mm - 198.80 mm)



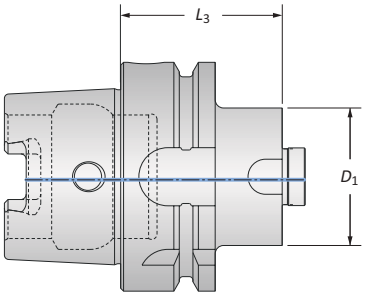
CAT40 Shank



CAT50 Shank



BT40 Shank



HSK63A Shank

	Shank L_3	Shank D_1	Taper	Weight	Part No.
ⓘ	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**
ⓜ	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
Key on B20: 1

B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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.

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⚠ 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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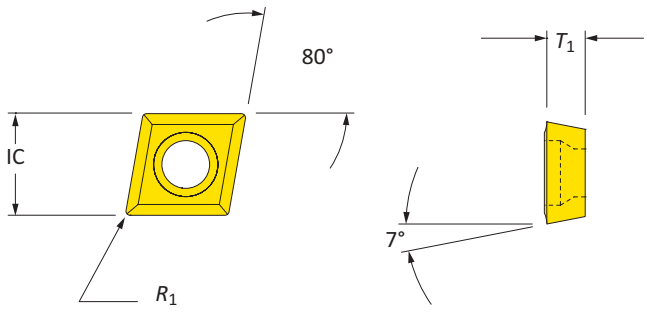
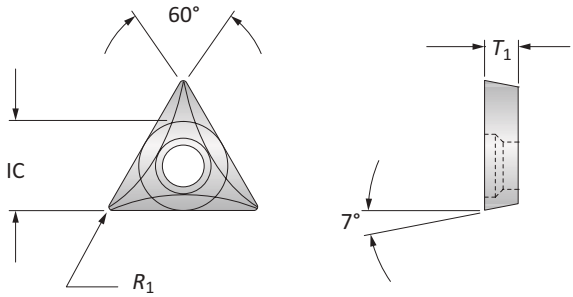
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



Coated 80° Diamond Inserts

	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
ⓘ	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..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 IC	Insert T_1	Insert R_1	Part No.
ⓘ	TC..325..	0.375	0.156	0.016	**TCGT16T304**
ⓜ	TC..16T3..	9.53	3.97	0.40	**TCGT16T304**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

NEED VERSATILITY?
NO PROBLEM.

CB Style
Versatile Boring

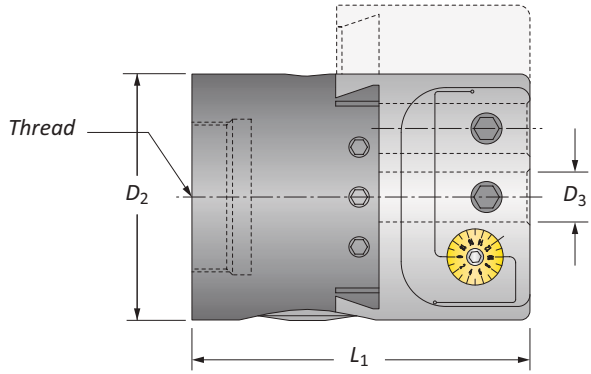
Wide range of diameters produced with a single boring head

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 L_1	Boring Head D_2	Boring Head D_3	Weight	Part No.
ⓘ	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.

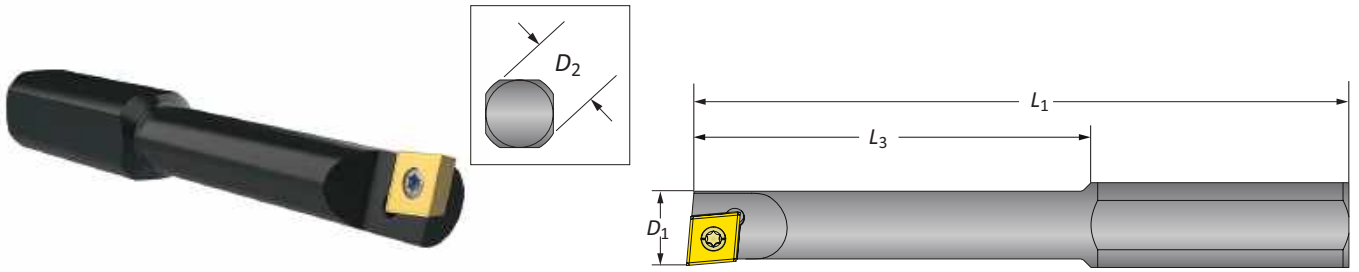
B20: 58 - 59
B20: 46 - 50
B20: 44 - 45
B20: 54 - 55
Key on B20: 1

ⓘ = Imperial (in)
ⓜ = 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**

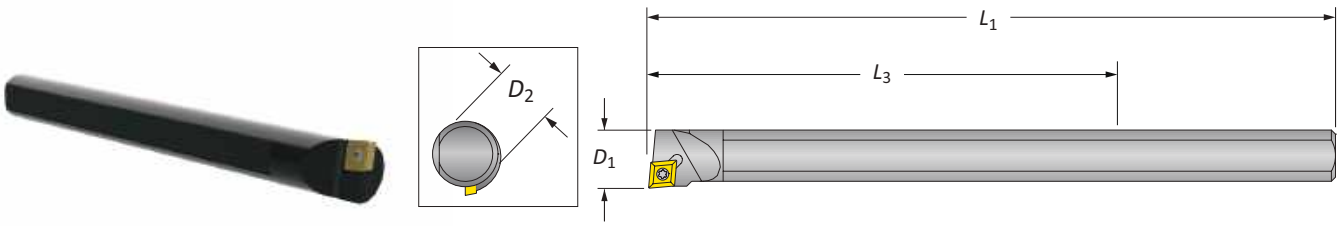
Boring Bars

Bore Diameter Range: 0.250" - 3.125"



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

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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**



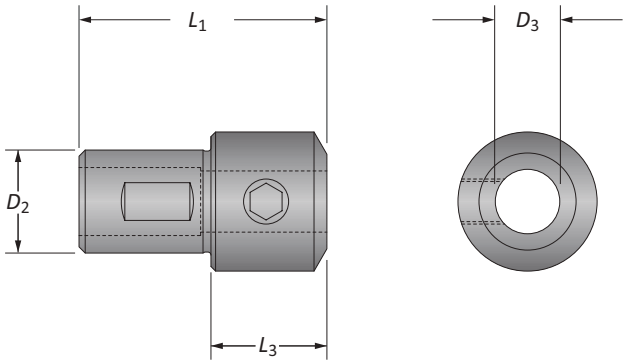
Heavy Metal Boring Bars | Bore Diameter Range: 0.365" - 3.125"

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.312	0.500	1.312	–	0.040 (lbs)	**BTH-03120500**
	0.375	0.500	1.312	–	0.030 (lbs)	**BTH-03750500**

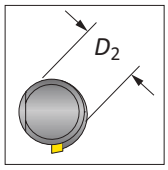


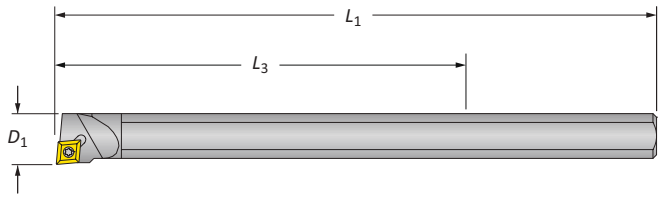
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = Metric (mm)

Boring Bar | Boring Inserts

Bore Diameter Range: 0.625" - 3.125"



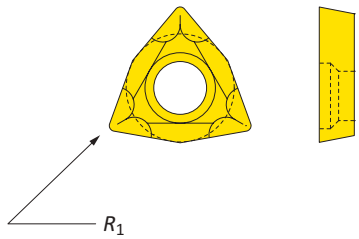


Carbide Boring Bar

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

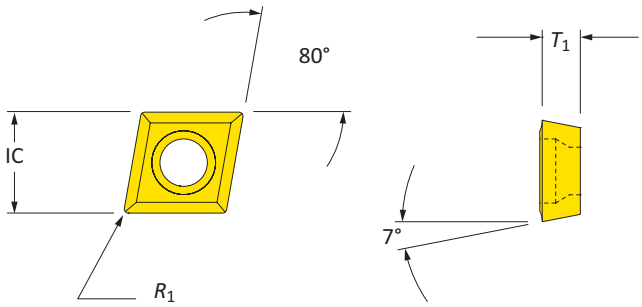
Coated Trigon Insert

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



Coated 80° Diamond Inserts

	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
	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**

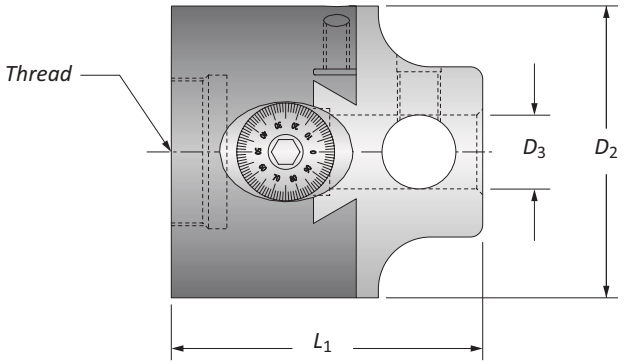


B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

CB202B Versatile Boring Head

Bore Diameter Range: 0.250" - 6.687"



	Boring Range	Thread Connection	Boring Head L_1	Boring Head D_2	Boring Head D_3	Weight	Part No.
ⓘ	0.250 - 6.687	⅞ - 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.

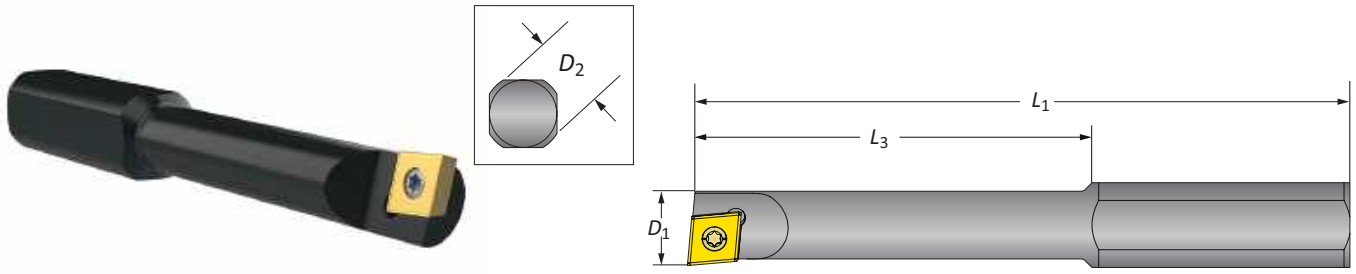
B20: 58 - 59
Key on B20: 1
B20: 46 - 50
B20: 44 - 45
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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**

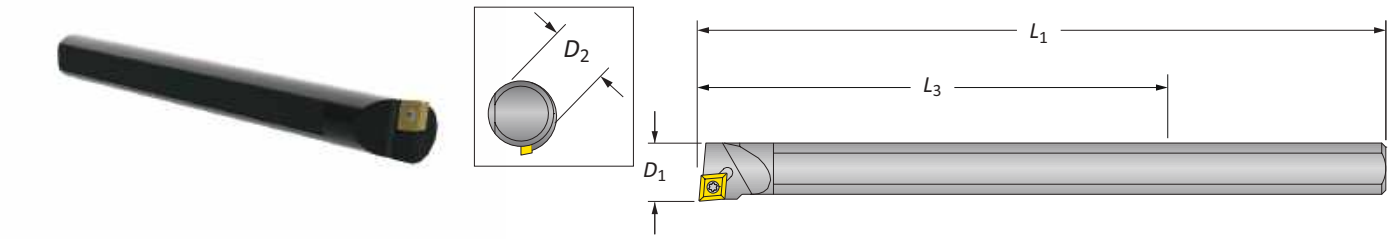
Boring Bars

Bore Diameter Range: 0.250" - 3.000"



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

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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**

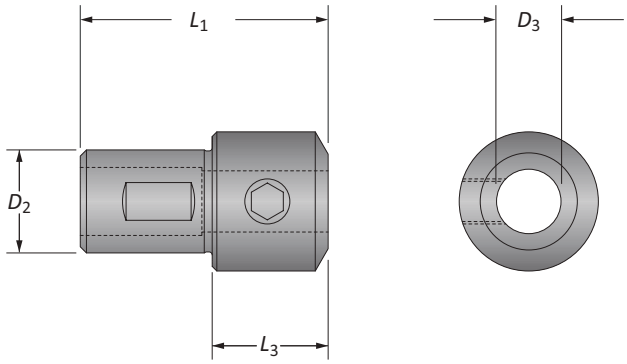
*Reducing sleeve required.

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

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

Reducing Sleeves

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

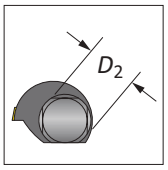


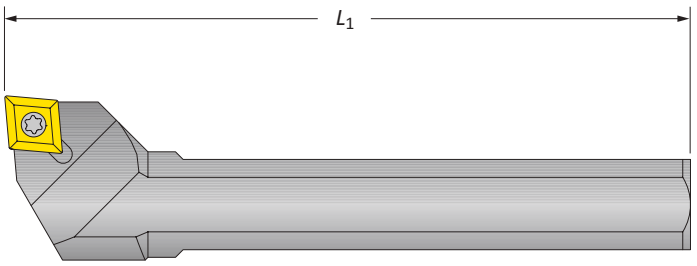
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = Metric (mm)

Boring Bar

Bore Diameter Range: 2.875" - 6.687"





	Min. Boring Diameter	Boring Bar* L_1	Boring Bar* D_2	Weight	Insert Form	Part No.
ⓘ	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.

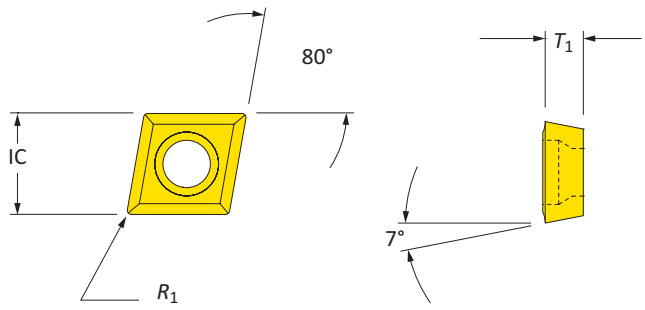
B20: 58 - 59
Key on B20: 1

B20: 54 - 55

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

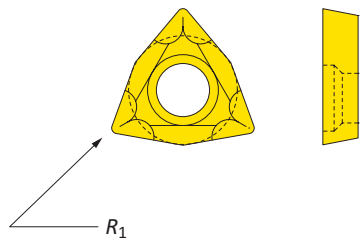
Boring Inserts

80° Diamond Insert | 60° Triangle Insert



Coated 80° Diamond Inserts

	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
	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

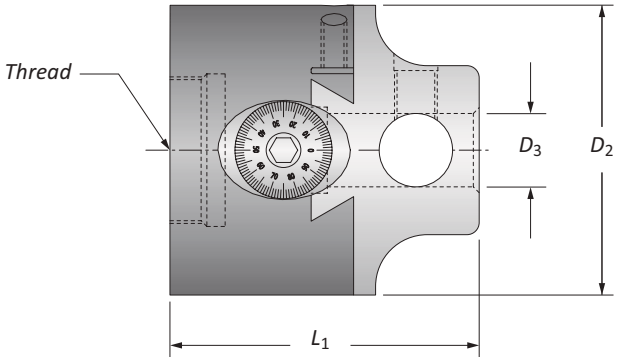
	Insert Form	Insert R_1	Part No.
ⓘ	WBGX0301..	0.004	**WBGX030101**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

CB203D Versatile Boring Head

Bore Diameter Range: 0.250" - 11.000"



	Boring Range	Thread Connection	Boring Head L_1	Boring Head D_2	Boring Head D_3	Weight	Part No.
ⓘ	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.

B20: 58 - 59
Key on B20: 1
B20: 46 - 50
B20: 44 - 45
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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.

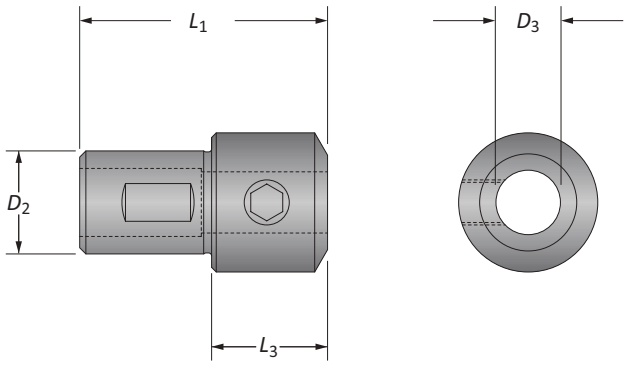
Heavy Metal Boring Bars | Bore Diameter Range: 0.425" - 4.250"

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
	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					
	D_3	D_2	L_1	L_3	Weight	Part No.
	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**

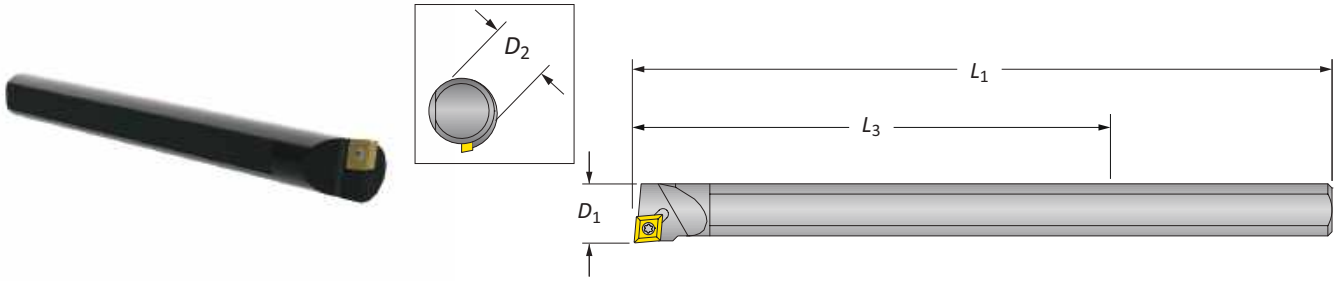


B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Carbide Boring Bars

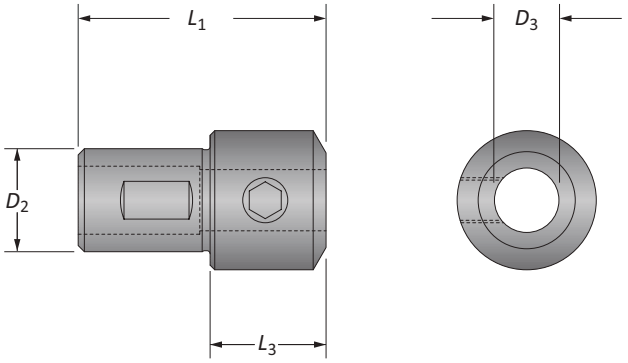
Bore Diameter Range: 0.625" - 4.250"



Carbide Boring Bars

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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

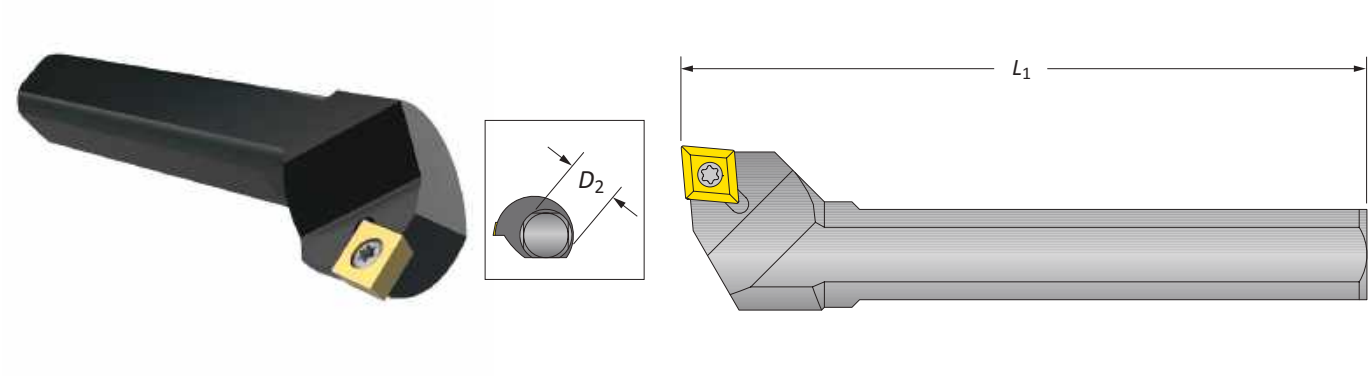
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.500	0.750	2.406	0.910	0.040 (lbs)	**BTH-05000750**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Cross Hole Boring Bar | Boring Inserts

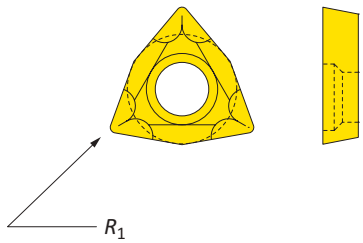
Bore Diameter Range: 4.937" - 11.000"



Cross Hole Boring Bar

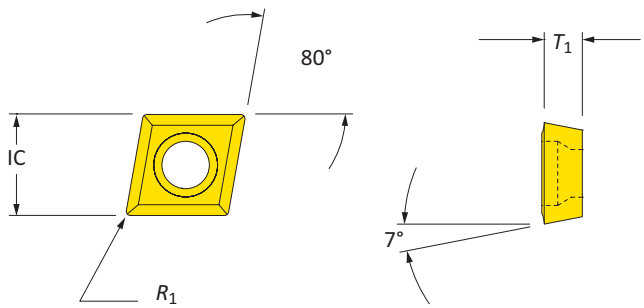
	Min. Bore Diameter	Boring Bar* L_1	Boring Bar* D_2	Weight	Insert Form	Part No.
ⓘ	4.937	4.750	0.750	0.550 (lbs)	CC..325..	**0750DCH**

***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.
ⓘ	WBGX0301...	0.004	**WBGX030101**



Coated 80° Diamond Inserts

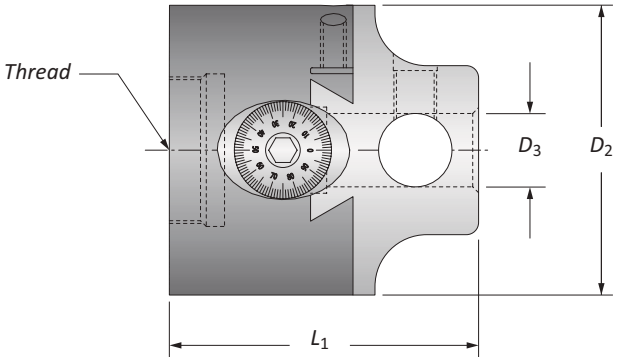
	Insert Form	Insert *IC*	Insert T_1	Insert R_1	Part No.
	CC..215..	0.250	0.094	0.008	**CCMT060202**
	CC..215..	0.250	0.094	0.016	**CCMT060204**
ⓘ	CC..215.	0.250	0.094	0.031	**CCMT060208**
	CC..325...	0.375	0.156	0.008	**CCMT09T302**
	CC..325..	0.375	0.156	0.016	**CCMT09T304**
	CC..325..	0.375	0.156	0.031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

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

CB204E Versatile Boring Head

Bore Diameter Range: 0.500" - 13.437"



	Boring Range	Thread Connection	Boring Head L_1	Boring Head D_2	Boring Head D_3	Weight	Part No.
ⓘ	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.

B20: 58 - 59 | B20: 46 - 50 | B20: 44 - 45 | B20: 54 - 55

Key on B20: 1

ⓘ = Imperial (in)
ⓜ = Metric (mm)

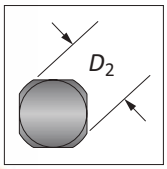
IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering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

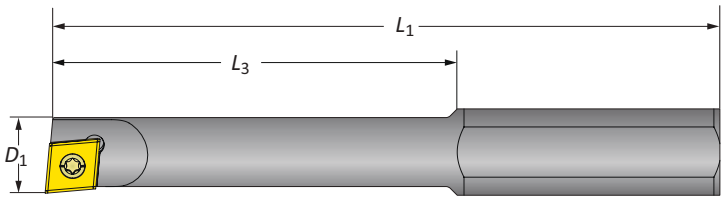
⚠ WARNING **Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**
- Refer to page B20: 57 to see formula for calculating weight of tool assembly.
- Consult machine tool builder for machine's weight limitations.

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"

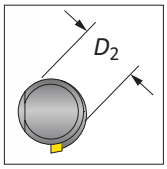


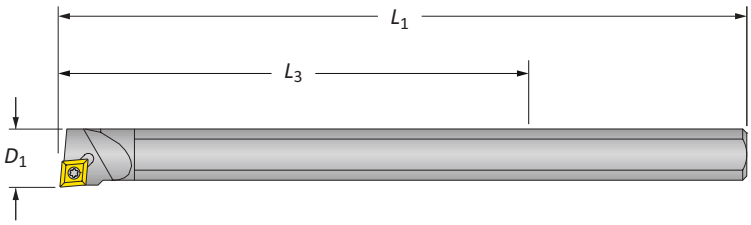


Steel Boring Bars | Bore Diameter Range: 0.500" - 5.750"

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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.

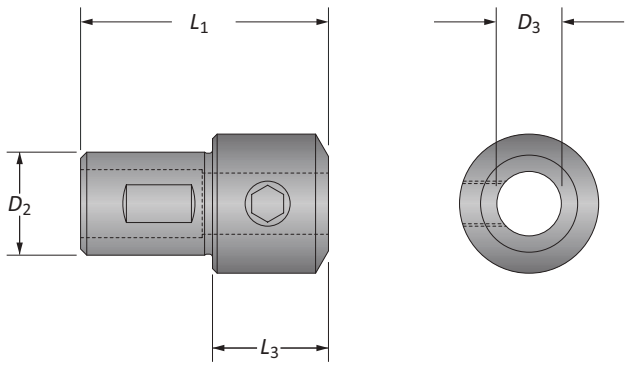




Heavy Metal Boring Bar | Bore Diameter Range: 0.832" - 5.125"

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

*Reducing sleeve required.



Reducing Sleeve

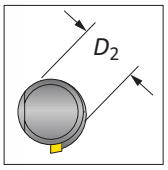
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.750	1.000	2.405	1.125	0.400 (lbs)	**BTH-07501000**

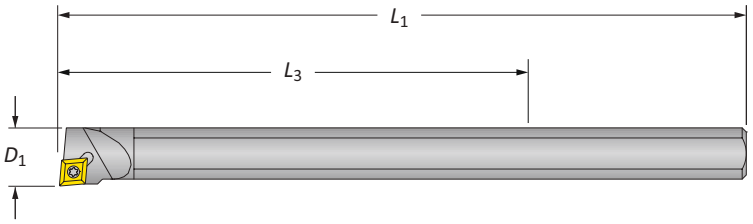
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Boring Bars

Bore Diameter Range: 0.875" - 5.125"

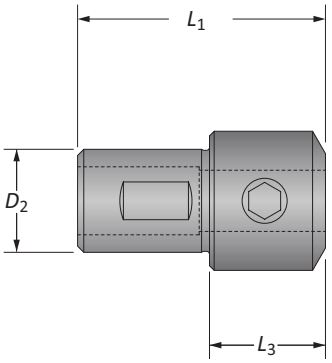


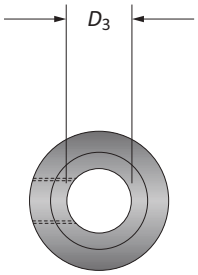


Carbide Boring Bar

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

*Reducing sleeve required.





Reducing Sleeve

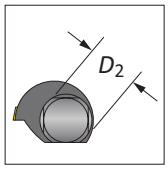
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.750	1.000	2.405	1.125	0.400 (lbs)	**BTH-07501000**

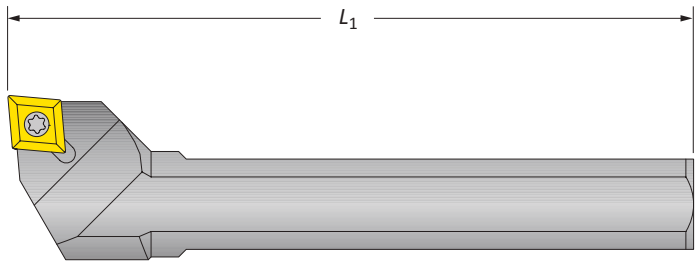
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Cross Hole Boring Bar | Boring Inserts

Bore Diameter Range: 5.625" - 13.437"

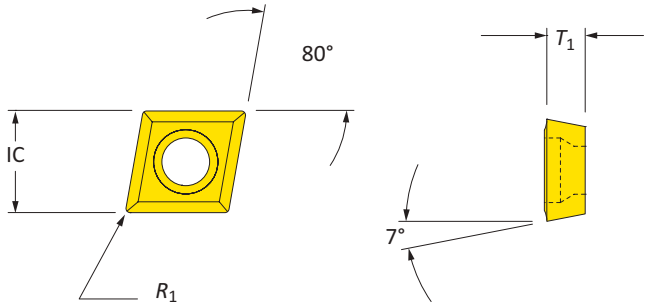




Cross Hole Boring Bar

	Min Boring Diameter	Boring Bar* L_1	Boring Bar* D_2	Weight	Insert Form	Part No.
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

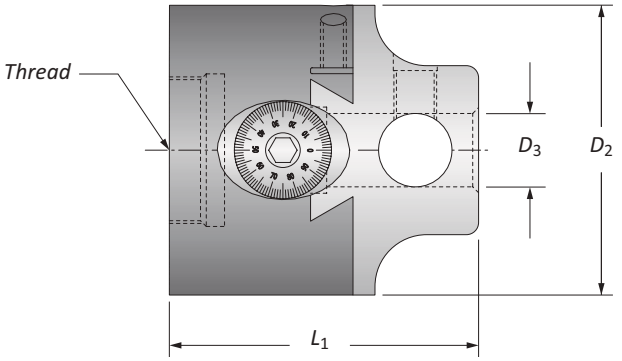
	Insert Form	Insert IC	Insert T_1	Insert R_1	Part No.
	CC..215..	0.250	0.094	0.008	**CCMT060202**
	CC..215..	0.250	0.094	0.016	**CCMT060204**
i	CC..215..	0.250	0.094	0.031	**CCMT060208**
	CC..325..	0.375	0.156	0.008	**CCMT09T302**
	CC..325..	0.375	0.156	0.016	**CCMT09T304**
	CC..325..	0.375	0.156	0.031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

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

CB206F Versatile Boring Head

Bore Diameter Range: 0.500" - 21.500"



	Boring Range	Thread Connection	Boring Head L_1	Boring Head D_2	Boring Head D_3	Weight	Part No.
ⓘ	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.

B20: 58 - 59 | B20: 46 - 50 | B20: 44 - 45 | B20: 54 - 55

Key on B20: 1

ⓘ = Imperial (in)
ⓜ = Metric (mm)

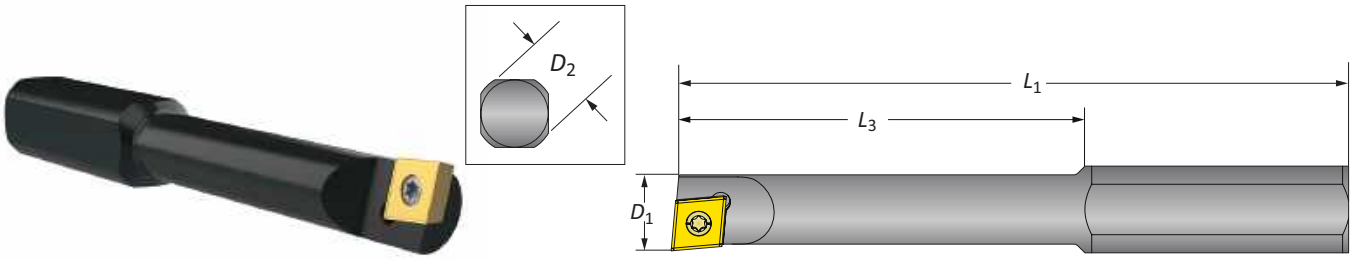
IMPORTANT: Max spindle speed refers to maximum possible speed for individual boring head and is not a recommended parameter. Refer to page B20: 58 for recommended application specific parameters. Factory technical assistance is available for your specific applications through our Application Engineering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

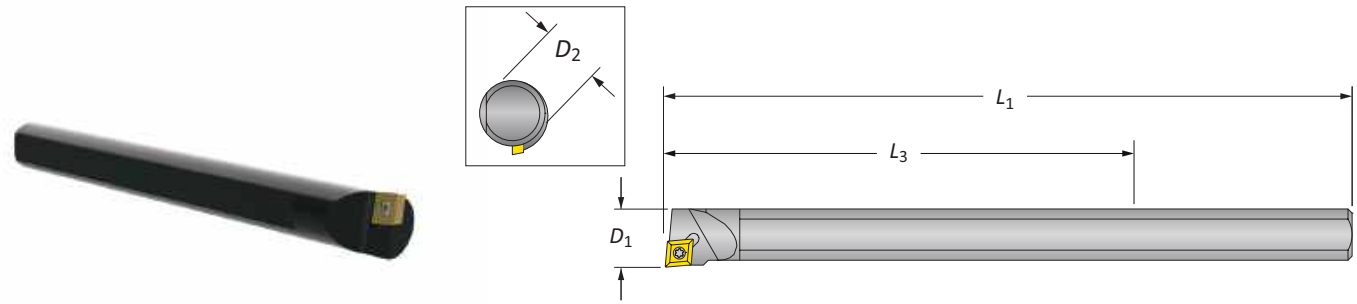
Bore Diameter Range: 0.500" - 9.125"



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

	Min. Boring Diameter	Boring Bar					
	D_1	L_3	L_1	D_2	Weight	Insert Form	Part No.
ⓘ	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**

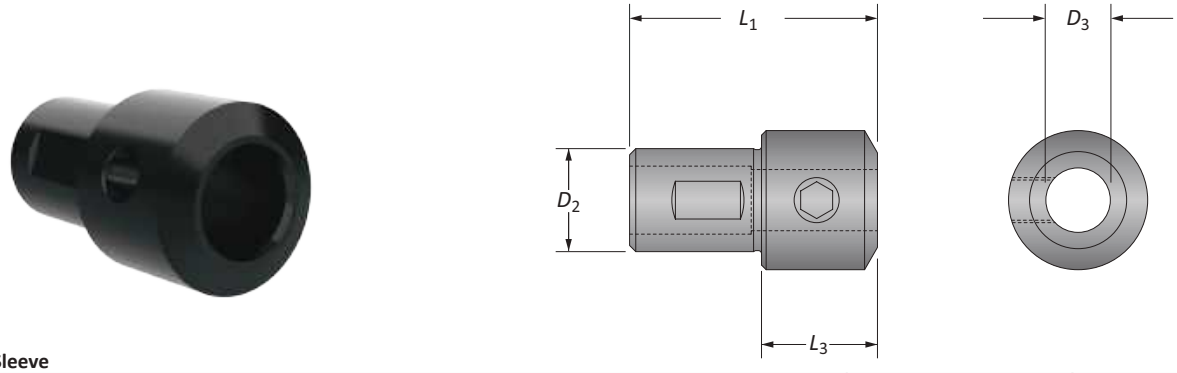
*Reducing sleeve required.



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

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

*Reducing sleeve required.



Reducing Sleeve

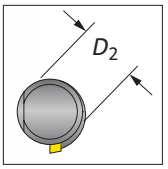
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
ⓘ	0.750	1.500	3.000	1.000	1.400 (lbs)	**BTH-07501500**

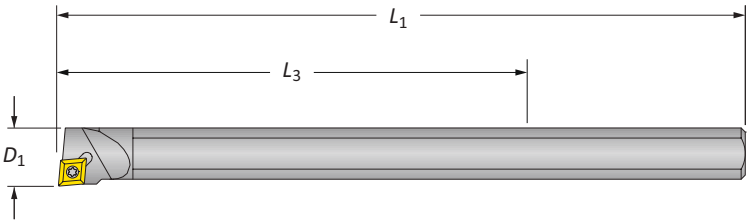
B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Carbide Boring Bar

Bore Diameter Range: 0.875" - 7.125"

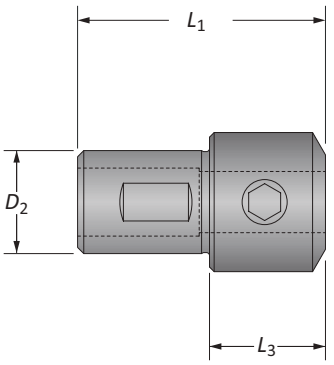


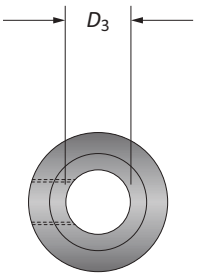


Carbide Boring Bar

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

*Reducing sleeve required.





Reducing Sleeve

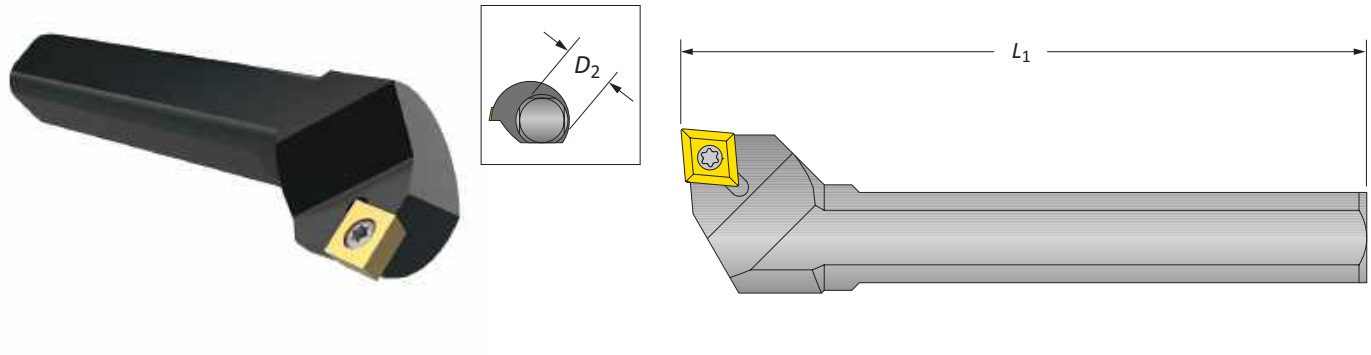
	Reducing Sleeve					
	D_3	D_2	L_1	L_3	Weight	Part No.
i	0.750	1.500	3.000	1.000	1.400 (lbs)	**BTH-07501500**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

Cross Hole Boring Bar | Boring Inserts

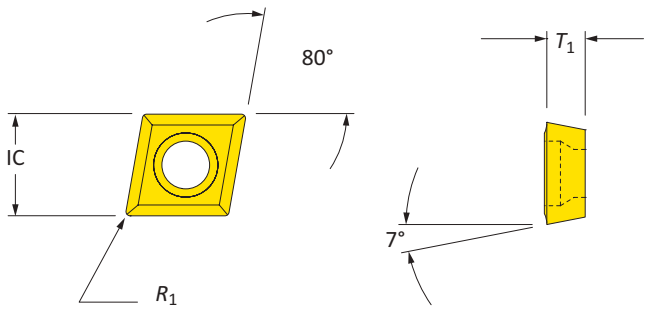
Bore Diameter Range: 9.093" - 21.500"



Cross Hole Boring Bar

	Min. Boring Diameter	Boring Bar* L_1	Boring Bar* D_2	Weight	Insert Form	Part No.
ⓘ	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

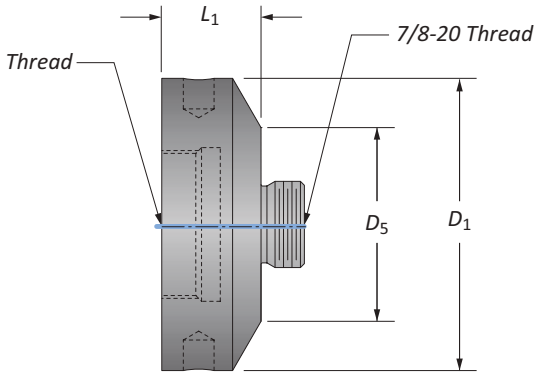
	Insert Form	Insert *IC*	Insert T_1	Insert R_1	Part No.
	CC..215..	0.250	0.094	0.008	**CCMT060202**
	CC..215..	0.250	0.091	0.016	**CCMT060204**
	CC..215..	0.250	0.094	0.031	**CCMT060208**
ⓘ	CC..325..	0.375	0.156	0.008	**CCMT09T302**
	CC..325..	0.375	0.156	0.016	**CCMT09T304**
	CC..325..	0.375	0.156	0.031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

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

ⓘ = Imperial (in)
ⓜ = 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)	⅞ - 20	**CB1500-IRCB1000**
	1.500	1.250	1.000	0.450 (lbs)	⅞ - 20	**CB1500-IRCB1250**
	2.000	1.000	1.000	0.720 (lbs)	⅞ - 20	**CB2000-IRCB1000**
	2.000	1.250	1.000	0.760 (lbs)	⅞ - 20	**CB2000-IRCB1250**
ⓘ	2.000	1.500	1.000	0.800 (lbs)	⅞ - 20	**CB2000-IRCB1500**
	3.000	1.000	1.250	1.610 (lbs)	1½ - 18	**CB3000-IRCB1000**
	3.000	1.250	1.250	1.750 (lbs)	1½ - 18	**CB3000-IRCB1250**
	3.000	1.500	1.250	1.840 (lbs)	1½ - 18	**CB3000-IRCB1500**
	3.000	2.000	1.250	2.020 (lbs)	1½ - 18	**CB3000-IRCB2000**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55
B20: 46 - 50
B20: 14
B20: 24 - 43

ⓘ = Imperial (in)
ⓜ = 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.

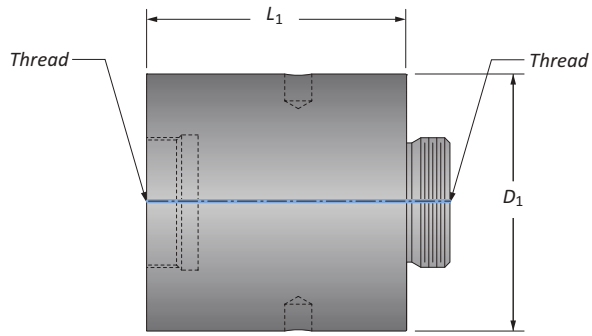
Factory technical assistance is also available for specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

⚠ 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**

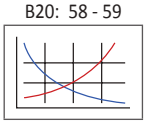
Intermediate Modules

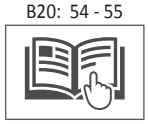
Extensions

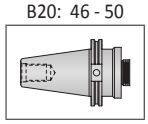


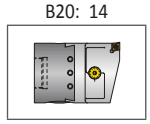
	Extension				
	D_1	L_1	Weight	Thread	Part No.
	1.000	1.000	0.190 (lbs)	⅞ - 20	**CB1000-IA1000**
	1.000	2.000	0.390 (lbs)	⅞ - 20	**CB1000-IA2000**
	1.250	1.250	0.390 (lbs)	⅞ - 20	**CB1250-IA1250**
	1.250	2.500	0.800 (lbs)	⅞ - 20	**CB1250-IA2500**
ⓘ	1.500	1.500	0.700 (lbs)	⅞ - 20	**CB1500-IA1500**
	1.500	3.000	1.410 (lbs)	⅞ - 20	**CB1500-IA3000**
	2.000	2.000	1.660 (lbs)	⅞ - 20	**CB2000-IA2000**
	2.000	4.000	3.350 (lbs)	⅞ - 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**

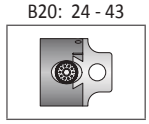
Key on B20: 1











ⓘ = Imperial (in)
ⓜ = 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.

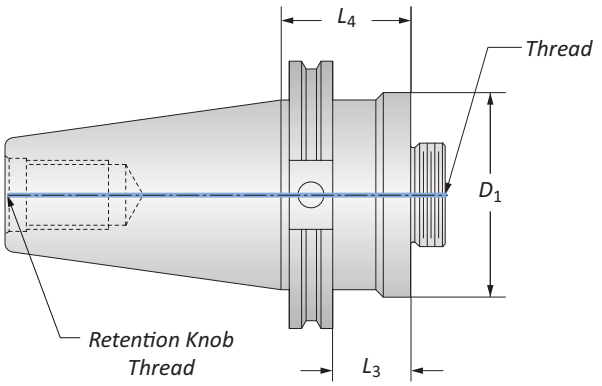
Factory technical assistance is also available for specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

⚠ 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 Master Shanks

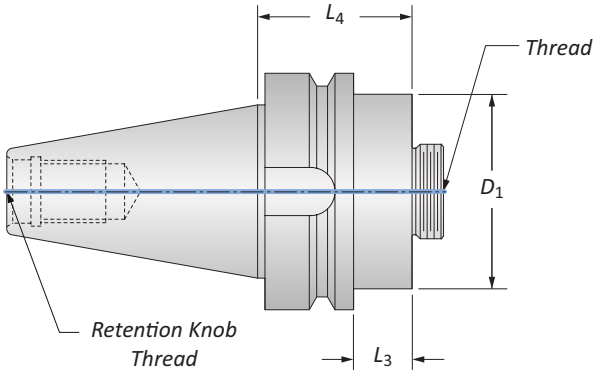
CAT 40/50 | BT Flange



CAT 40/50 Shanks

	Style	D_1	Shank L_3	Shank L_4	Shank Weight	Shank Thread	Retention Knob Thread	Part No.
	CAT40	1.500	0.370	1.770	2.490 (lbs)	⅞ - 20	⅝ - 11	**CB1500-CV40**
	CAT40	2.000	1.130	1.880	2.700 (lbs)	⅞ - 20	⅝ - 11	**CB2000-CV40**
	CAT40	2.500	1.130	1.880	3.120 (lbs)	1½ - 18	⅝ - 11	**CB2500-CV40**
	CAT40	3.000	1.180	1.880	3.410 (lbs)	1½ - 18	⅝ - 11	**CB3000-CV40**
ⓘ	CAT50	1.500	0.370	1.770	7.120 (lbs)	⅞ - 20	1 - 8	**CB1500-CV50**
	CAT50	2.000	1.130	1.880	7.330 (lbs)	⅞ - 20	1 - 8	**CB2000-CV50**
	CAT50	2.500	1.130	1.880	7.740 (lbs)	1½ - 18	1 - 8	**CB2500-CV50**
	CAT50	3.000	1.130	1.880	8.030 (lbs)	1½ - 18	1 - 8	**CB3000-CV50**
	CAT50	3.380	1.380	2.130	9.440 (lbs)	2¼ - 10	1 - 8	**CB6000-CV50**

NOTE: Taper ground to AT3 tolerance.



BT Flange Shanks

	Style	D_1	Shank L_3	Shank L_4	Shank Weight	Shank Thread	Retention Knob Thread	Part No.
	BT30	1.500	0.900	1.770	1.360 (lbs)	⅞ - 20	M12 x 1.75	**CB1500-BT30**
	BT40	1.500	0.710	1.770	2.540 (lbs)	⅞ - 20	M16 x 2	**CB1500-BT40**
	BT40	2.000	0.500	1.560	2.620 (lbs)	⅞ - 20	M16 x 2	**CB2000-BT40**
	BT40	2.500	0.870	2.060	3.690 (lbs)	1½ - 18	M16 x 2	**CB2500-BT40**
ⓘ	BT40	3.000	1.000	2.060	3.980 (lbs)	1½ - 18	M16 x 2	**CB3000-BT40**
	BT50	1.500	0.270	1.770	8.220 (lbs)	⅞ - 20	M24 x 3	**CB1500-BT50**
	BT50	2.000	0.060	1.560	8.250 (lbs)	⅞ - 20	M24 x 3	**CB2000-BT50**
	BT50	3.000	0.500	2.060	9.410 (lbs)	1½ - 18	M24 x 3	**CB3000-BT50**
	BT50	3.380	0.630	2.130	10.500 (lbs)	2¼ - 10	M24 x 3	**CB6000-BT50**

NOTE: Taper ground to AT3 tolerance.

⚠ 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.

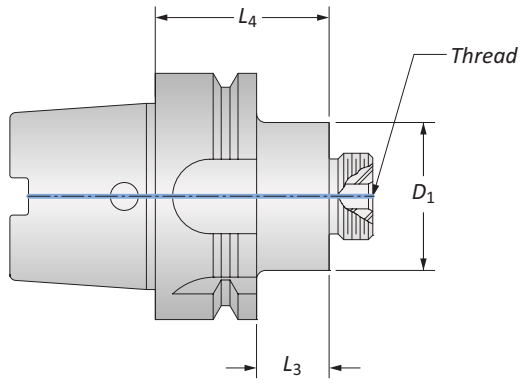
Factory technical assistance is also available for specific applications through our Application Engineering department. *ext:* **7611** | *email:* **appeng@alliedmachine.com**

⚠ 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**

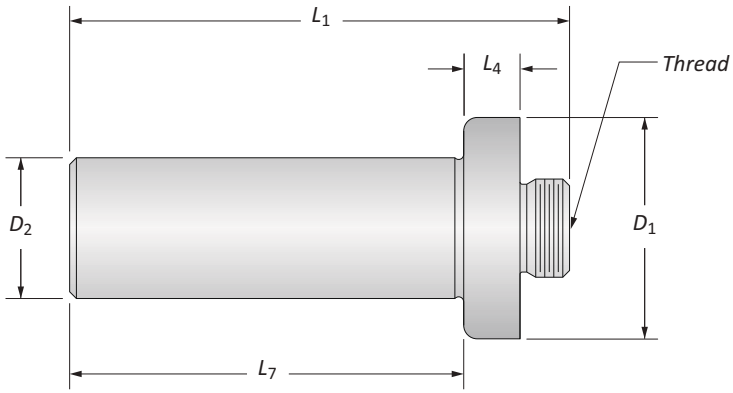
Criterion Master Shanks

HSK | Straight Shank



HSK Shanks

	Style	D_1	Shank L_3	Shank L_4	Shank Weight	Shank Thread	Part No.
	HSK63	1.500	0.730	1.750	1.820 (lbs)	⅞ - 20	**CB1500-HSK63A**
	HSK63	2.000	0.730	1.750	2.090 (lbs)	⅞ - 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)	⅞ - 20	**CB1500-HSK100A**
	HSK100	2.000	0.500	2.270	6.470 (lbs)	⅞ - 20	**CB2000-HSK100A**
	HSK100	3.000	0.500	2.270	7.180 (lbs)	1½ - 18	**CB3000-HSK100A**



Straight Shanks

	D_1	Shank D_2	Shank L_4	Shank L_7	Shank L_1	Shank Weight	Shank Thread	Part No.
	1.110	0.500	0.250	2.000	2.690	0.240 (lbs)	⅞ - 20	**SS0500-087520**
	1.110	0.625	0.250	2.370	3.060	0.340 (lbs)	⅞ - 20	**SS0625-087520**
	1.110	0.750	0.250	2.750	3.440	0.480 (lbs)	⅞ - 20	**SS0750-087520**
	1.110	1.000	0.250	3.120	3.810	0.820 (lbs)	⅞ - 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**

⚠ 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

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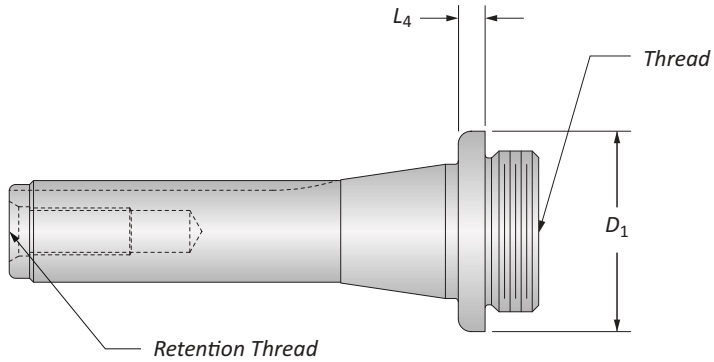
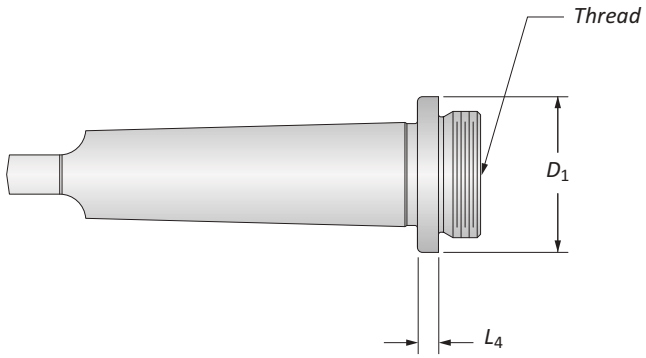
Criterion Shanks

R-8 | Morse Taper



R-8 Shanks

	Shank					
	D_1	L_4	Weight	Thread	Retention Thread	Part No.
ⓘ	1.110	0.470	0.990 (lbs)	⅞ - 20	7⁄16 - 20	**R8-087520**
	1.860	0.370	1.270 (lbs)	1-½ - 18	7⁄16 - 20	**R8-150018**



Morse Taper Shanks

			Shank			
	Style	D_1	L_4	Weight	Thread	Part No.
	2 Taper	1.110	0.250	0.380 (lbs)	⅞ - 20	**MT2-375THD87520***
	2 Taper	1.110	0.250	0.390 (lbs)	⅞ - 20	**MT2-087520**
	3 Taper	1.110	0.250	0.710 (lbs)	⅞ - 20	**MT3-087520**
ⓘ	3 Taper	1.860	0.250	1.000 (lbs)	1½ - 18	**MT3-150018**
	4 Taper	1.230	0.250	1.350 (lbs)	⅞ - 20	**MT4-087520**
	4 Taper	1.860	0.250	1.700 (lbs)	1½ - 18	**MT4-150018**
	5 Taper	1.860	0.250	3.770 (lbs)	1½ - 18	**MT5-150018**

*Item features a ⅜ - 16 thread instead of tang.

B20: 58 - 59 | B20: 54 - 55 | B20: 44 - 45 | B20: 14 | B20: 24 - 43

Key on B20: 1

ⓘ = Imperial (in)
ⓜ = 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.

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⚠ 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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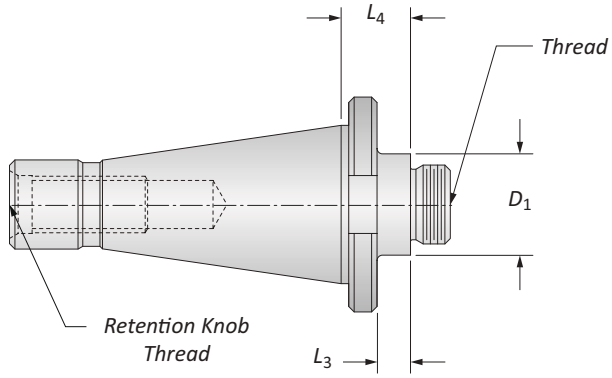
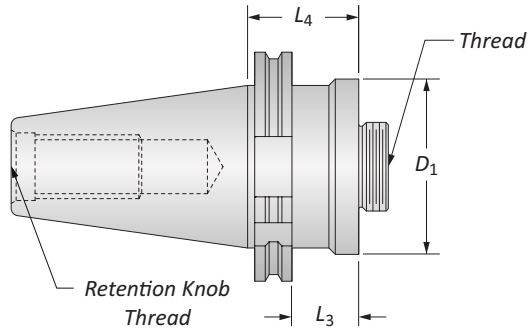
Criterion Master Shanks

NMTB Taper | DIN69871A



NMTB Taper Shanks

	Style	D_1	Shank L_3	Shank L_4	Shank Weight	Shank Thread	Shank Retention Thread	Part No.
	NMTB 30	1.120	0.370	0.790	0.810 (lbs)	⅞ - 20	½ - 13	**NMTB30-087520**
	NMTB 30	1.850	0.630	1.050	1.190 (lbs)	1½ - 18	½ - 13	**NMTB30-150018**
	NMTB 40	1.120	0.370	0.770	1.780 (lbs)	⅞ - 20	⅝ - 11	**NMTB40-087520**
ⓘ	NMTB 40	1.850	0.630	1.020	2.310 (lbs)	1½ - 18	⅝ - 11	**NMTB40-150018**
	NMTB 50	1.970	0.510	1.250	6.750 (lbs)	⅞ - 20	1 - 8	**NMTB50-087520**
	NMTB 50	1.870	0.400	1.210	6.870 (lbs)	1½ - 18	1 - 8	**NMTB50-150018**
	NMTB 50	3.380	0.500	1.250	8.320 (lbs)	2¼ - 10	1 - 8	**NMTB50-225010**



DIN 69871A

	D_1	Shank L_3	Shank L_4	Shank Weight	Shank Thread	Shank Retention Thread	Part No.
	38.00	19.00	38.40	1.18 (kg)	⅞ - 20	M16 x 2.0	**CB038M-DIN40**
	50.00	22.00	41.50	1.18 (kg)	⅞ - 20	M16 x 2.0	**CB050M-DIN40**
ⓜ	76.00	45.00	48.00	1.68 (kg)	1½ - 18	M16 x 2.0	**CB076M-DIN40**
	38.00	19.00	38.40	3.36 (kg)	⅞ - 20	M24 x 3.0	**CB038M-DIN50**
	50.00	22.00	41.50	3.45 (kg)	⅞ - 20	M24 x 3.0	**CB050M-DIN50**
	76.00	22.00	48.00	3.66 (kg)	1½ - 18	M24 x 3.0	**CB076M-DIN50**

NOTE: Taper ground to AT3 tolerance.

B20: 58 - 59 | B20: 54 - 55 | B20: 44 - 45 | B20: 14 | B20: 24 - 43

Key on B20: 1

ⓘ = Imperial (in)
ⓜ = 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

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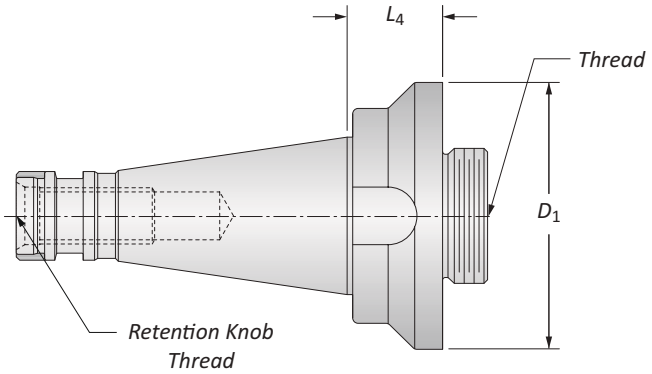
Criterion Shanks

DIN 2080



DIN 2080

	Shank						
	D_1	L_3	L_4	Weight	Thread	Retention Thread	Part No.
	50.00	17.00	25.70	0.45 (kg)	⅞ - 20	M12	**CB050M-ISO30**
	50.00	11.00	27.70	0.91 (kg)	⅞ - 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)	⅞ - 20	M24	**CB038M-ISO50**
	76.00	36.00	39.40	3.36 (kg)	1½ - 18	M24	**CB076M-ISO50**

B20: 58 - 59
B20: 54 - 55
B20: 44 - 45
B20: 14
B20: 24 - 43
Key on B20: 1

ⓘ = Imperial (in)
ⓜ = 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	Insert Screws Part No.	Thread	Insert Driver Part No.	Technical Information Torque Specs	Technical Information 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 (<Ø37mm)	**115672**	M3.5x7.5	**115664**	3.0 (Nm)	T15
CC..32500 CC..09T3 (<Ø36mm)	**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	Pin Spanner Wrench 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**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

Criterion Hardware Kits

Corresponding Boring Head Item Number	Hardware Kit Part No.
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	**CB0750-HDW**
TMT-0750H, TMT-1000H	**TMT0750-HDW**
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	**CB1000-HDW**
CT1000-0, CT1000-1, CT1000-2	**CT1000-HDW**
CB025MCC, CB025MTC, CB025M-TPMA, CB025M-CPMA, CB025M-TP, CB025M-CP	**CB025M-HDW**
CT025M-0, CT025M-1, CT025M-2	**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	**CB1250-HDW**
CT1250-0, CT1250-1, CT1250-2	**CT1250-HDW**
CB032MCC, CB032MTC, CB032M-TPMA, CB032M-CPMA, CB032M-TP, CBO32M-CP	**CB032M-HDW**
CT032M-0, CT032M-1, CT032M-2	**CT032M-HDW**
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	**CB1500-HDW**
CT1500-0, CT1500-1, CT1500-2	**CT1500-HDW**
SQ-1500B	**S1500-HDW**
CB038MCC, CB038MTC, CB-038MA, CB-038MB, CB038M-TPMA, CB038M-CPMA, CB038M-TP, CB038M-CP	**CB038-HDW**
CT038M-0, CT038M-1, CT038-2	**CT038M-HDW**
SQ-2000B	**S2000-HDW**
CB2000CC, CB2000TC, CB202B, CB2500BMA CSL-202, CB-202A, CB-202B, CB-2500BMA, CB2000-TPMA, CB2000-CPMA, CB050M-TP, CB050M-CP	**CB2000-HDW**
CT2000-0, CT2000-1, CT2000-2	**CT2000-HDW**
CB050MCC, CB050MTC, CB-050MA, CB-050MB, CB-064MBMA, CB050M-TPMA, CB050M-TPMA, CB050M-TPMA, CB050M-CPMA, CB050M-TP, CP050M-CP	**CB050M-HDW**
CT050M-0, CT050M-1, CT050M-2	**CT050M-HDW**
SQ-3000D, SQ-3000E	**S3000-HDW**
CB3000CC, CB3000TC, CB203D, CSL-203, CB-203D, CB-3000DMA, CB3000-TPMA, CB3000-CPMA, CB3000-TP, CB3000-CP	**CB3000-HDW**
CT3000-0, CT3000-1, CT3000-2	**CT3000-HDW**
CB076MCC, CB076MTC, CB-076MD, CB-076MDMA, CB076M-TPMA, CB076M-CPMA, CBO76M-TP, CB076M-CP	**CB076M-HDW**
CT076M-0, CT076M-1, CT076M-2	**CT076M-HDW**
CB204E, CSL-204, CB-204E, CB4000-TP, CB4000-TP, CB4000-TP, CB4000-CP	**CB4000-HDW**
CB-101ME, CB101M-TP, CB101-CP	**CB101M-HDW**
CB206F, CB-206F	**CB6000-HDW**

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

Technical Information

Assembly Item Number	Torque Specs: Lock Screw	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	-

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

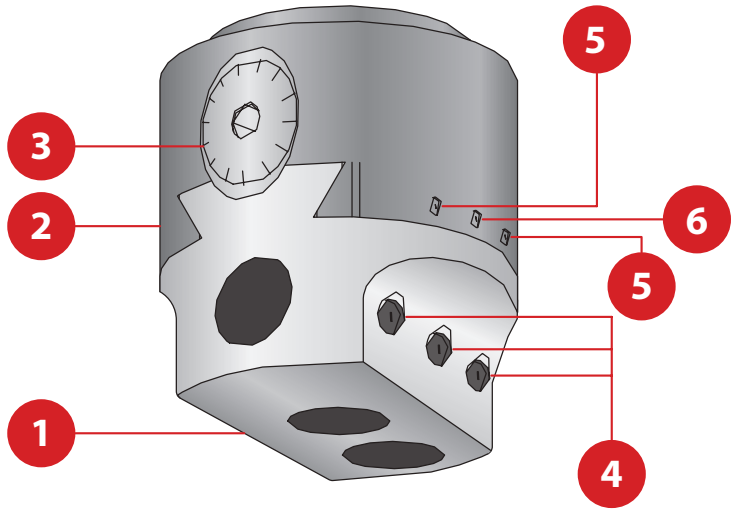


Figure B1

B20: 58 - 59
Key on B20: 1
B20: 54 - 55

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

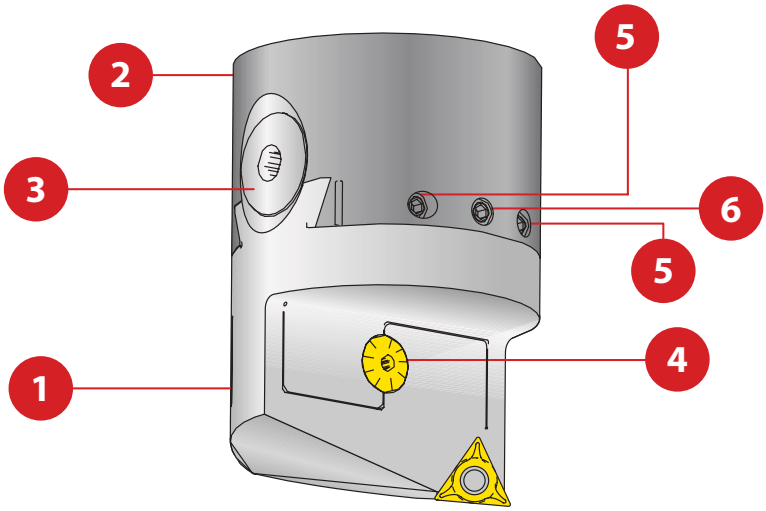
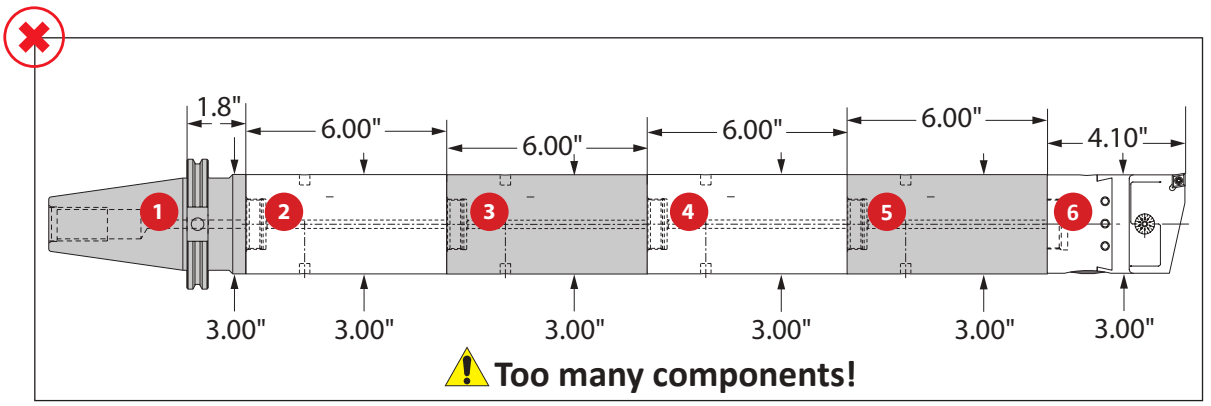


Figure B2

B20: 58 - 59
B20: 54 - 55
Key on B20: 1

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.

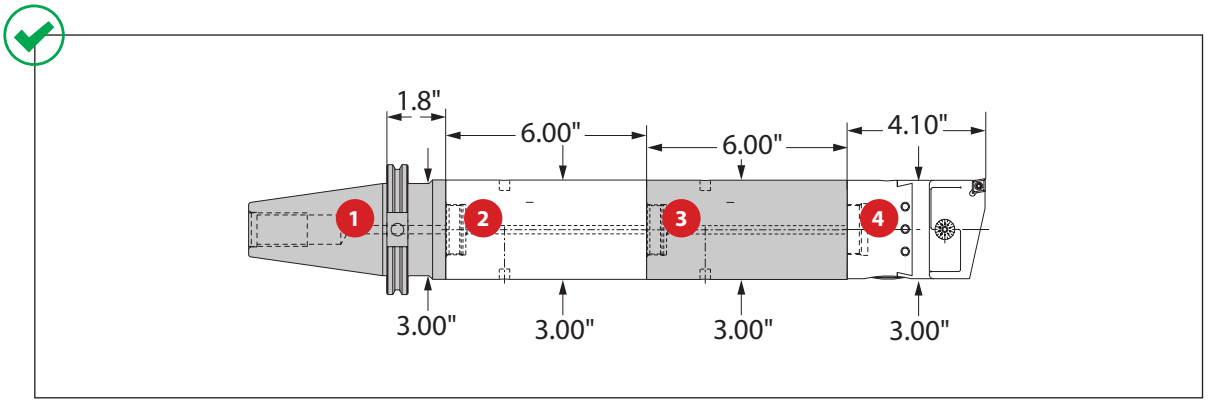
Step 1: Find L : D by component

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
2.0
2.0
2.0
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

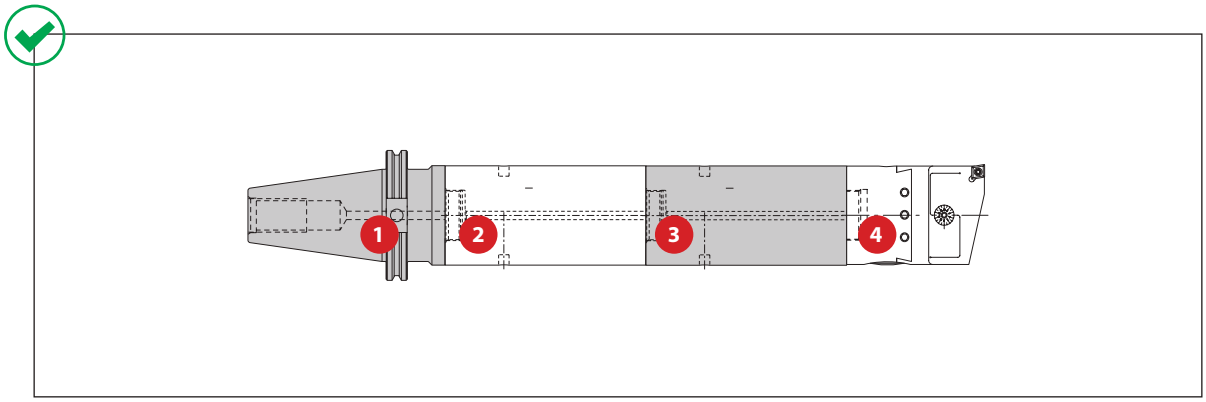
0.6
2.0
2.0
+ 1.4
6.0 = L : D ratio

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 L_1	D_2	Weight	Insert Form	Order Number
	1.050 - 1.320	⅞ - 20	2.690	1.000	0.50 (lbs)	CC..215...	**CB1000CC**
	1.050 - 1.320	⅞ - 20	2.690	1.000	0.50 (lbs)	TC..215...	**CB1000TC**
	1.300 - 1.600	⅞ - 20	2.900	1.250	0.80 (lbs)	CC..215...	**CB1250CC**
	1.300 - 1.600	⅞ - 20	2.900	1.250	0.80 (lbs)	TC..215...	**CB1250TC**
	1.585 - 2.700	⅞ - 20	3.200	1.500	1.30 (lbs)	CC..325...	**CB1500CC**
	1.585 - 2.700	⅞ - 20	3.200	1.500	1.30 (lbs)	TC..325...	**CB1500TC**
	2.060 - 3.320	⅞ - 20	3.590	2.000	2.40 (lbs)	CC..325...	**CB2000CC**
	2.060 - 3.320	⅞ - 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**
	27.00 - 33.00	⅞ - 20	68.35	25	0.23 (kg)	CC..0602...	**CB025MCC**
	27.00 - 33.00	⅞ - 20	68.35	25	0.23 (kg)	TC..1102...	**CB025MTC**
	33.00 - 41.00	⅞ - 20	73.65	32	0.36 (kg)	CC..0602...	**CB032MCC**
	33.00 - 41.00	⅞ - 20	73.65	32	0.36 (kg)	TC..1102...	**CB032MTC**
	41.00 - 68.00	⅞ - 20	81.25	38	0.59 (kg)	CC..09T3...	**CB038MCC**
	41.00 - 68.00	⅞ - 20	81.25	38	0.59 (kg)	TC..16T3...	**CB038MTC**
	53.00 - 84.00	⅞ - 20	91.30	50	1.09 (kg)	CC..09T3...	**CB050MCC**
	53.00 - 84.00	⅞ - 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

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 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
P	**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
P	**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
P	**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
P	**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
P	**Structural Steel** A36, A285, A516, etc.	100 - 350	Carbide	475 - 925	0001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
P	**Tool Steel** H-13, H-21, A-4, 0-2, 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
S	**Titanium Alloy**	140 - 310	Carbide	125 - 300	0.001 - 0.002	0.002 - 0.003	0.003 - 0.005	0.004 - 0.006
S	**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
M	**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
M	**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
H	**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
K	**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
N	**Wrought Aluminum**	30 - 180	Carbide	675 - 1000	0.001 - 0.003	0.002 - 0.005	0.004 - 0.006	0.006 - 0.009
N	**Aluminum Bronze**	100 - 250	Carbide	475 - 925	0.001 - 0.002	0.002 - 0.004	0.004 - 0.005	0.005 - 0.008
N	**Brass**	100	Carbide	675 - 1000	0.001 - 0.002	0.002 - 0.004	0.003 - 0.005	0.005 - 0.008
N	**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

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

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, 0-2, 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)

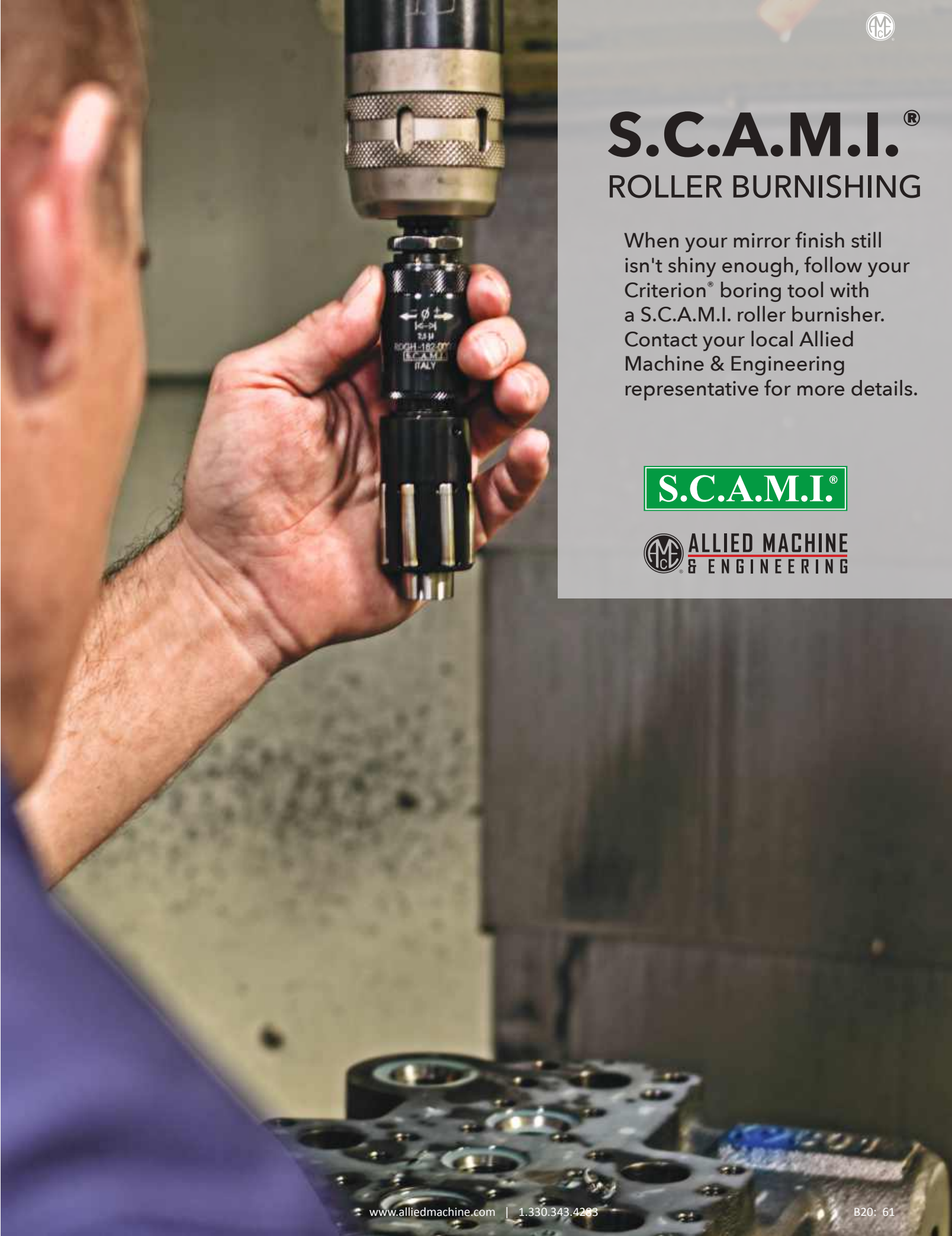
5xD = 260 m/min	8xD = 130 m/min

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**

Notes



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: _____ (Lathe, screw machine, machine center, etc.)

Builder: _____ (Haas, Mori Seiki, etc.)

Model #: _____

Shank Required: _____ (CAT50, Morse taper, etc.)

Power: _____ HP/KW

Thrust: _____ lbs/N

Rigidity:
- ☐ Excellent
- ☐ Good
- ☐ Poor

Orientation:
- ☐ Vertical
- ☐ Horizontal

Tool Rotating:
- ☐ Yes
- ☐ No

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

ALLIED MACHINE & ENGINEERING

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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.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Allied Machine shall have no liability or responsibility for any claim, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein.

Allied Machine shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for economic losses of any kind or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform this agreement.

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