

# Model BB6000 Portable Boring Bar



- Machine Features
- Setup & Operation
- Components & Accessories
- Technical Data



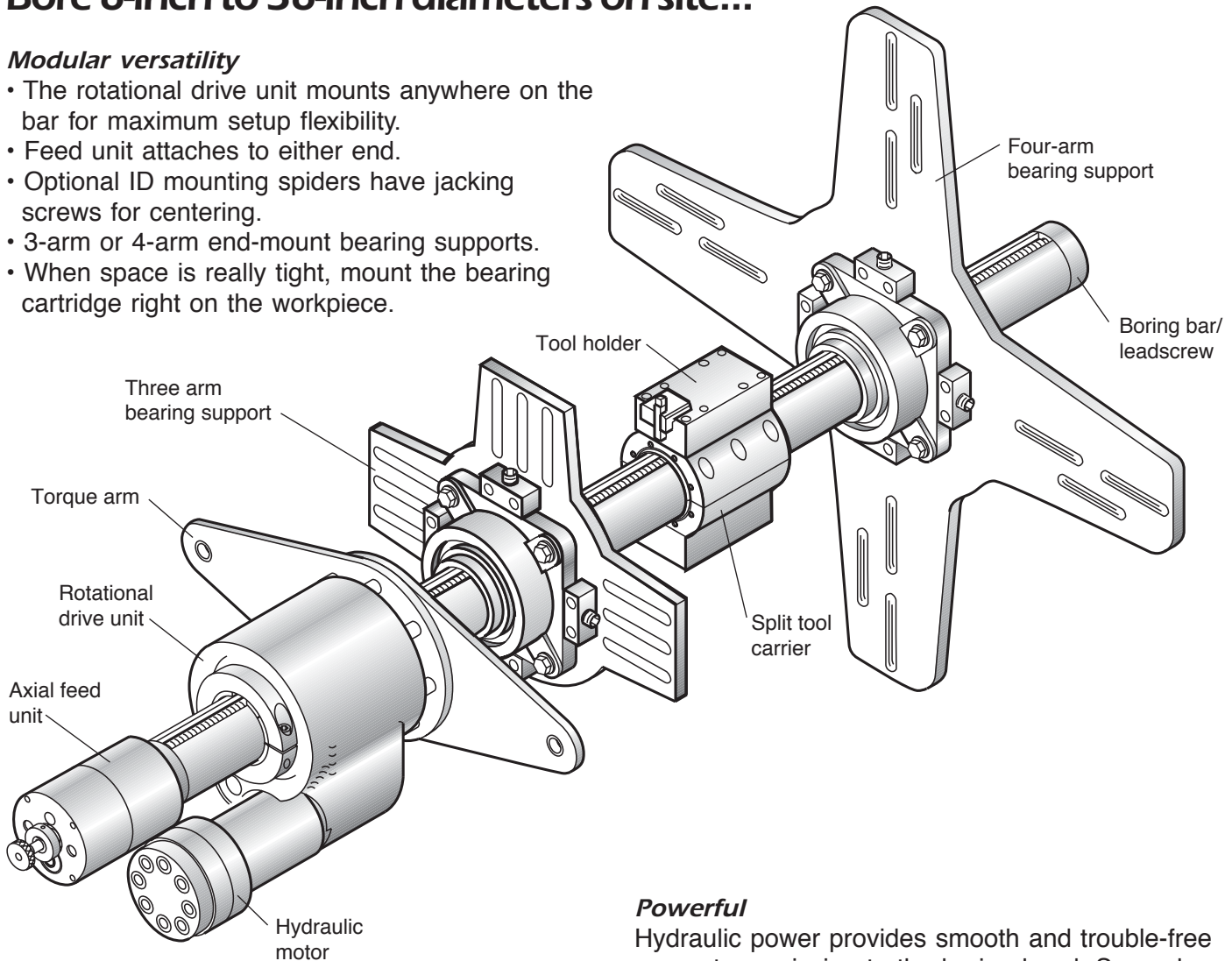
**CLIMAX**<sup>®</sup>  
Portable Machine Tools, Inc.

# BB6000 Design Features & Benefits

## Bore 6-inch to 36-inch diameters on site...

### **Modular versatility**

- The rotational drive unit mounts anywhere on the bar for maximum setup flexibility.
- Feed unit attaches to either end.
- Optional ID mounting spiders have jacking screws for centering.
- 3-arm or 4-arm end-mount bearing supports.
- When space is really tight, mount the bearing cartridge right on the workpiece.



### **Compact**

The Model BB6000 is the smallest in our line of traveling head portable boring bars (the smaller BB2020 and BB1149 models feed by moving the bar). Boring diameter range is 6" to 36" (152.4 to 914.4 mm). The compact hydraulic rotational drive unit provides almost 1300 ft•lb of torque. Compared to competitive machines, the rotational drive unit provides a high power-to-weight ratio. Efficient design and cast aluminum housing keep the rotational drive weight at only 110 lbs. (50 kg), with the hydraulic motor attached. The compact mechanical axial feed unit is only a little larger in diameter than the bar itself.

### **Powerful**

Hydraulic power provides smooth and trouble-free power transmission to the boring head. Several hydraulic motors are available to provide a range of rpm and torque. The Model BB6000 requires a minimum 5 hp hydraulic power unit.

### **Rugged, practical design**

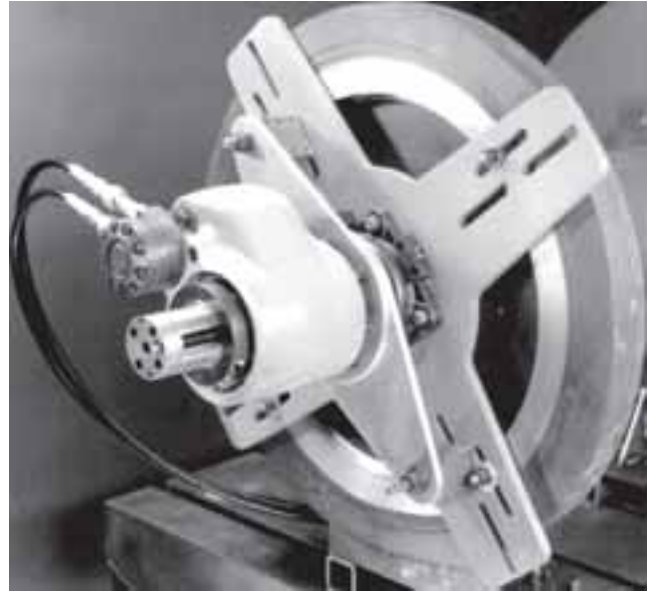
- Support fixtures feature ball bearings rather than bronze bushings.
- Split tool carrier is easy to mount on the bar.
- Tool head spacer blocks can be added to increase the boring diameter.
- The leadscrew is mounted in the boring bar with roller bearings, not bushings.
- Facing heads, taper boring systems, and other accessories increase the versatility of the machine.
- Easy setup and operation.
- High quality, precision design means many years of trouble-free service.

# Setup & Operation

## Easy setup and operation help minimize downtime.

There are several ways to set up the Model BB6000 depending on the application and clearances around the work area. If you have to mount one of the bearing supports on the surface that needs boring, weld standoffs on the workpiece to allow access for tool adjustment.

- Insert the bar into the bore, allowing it to rest on wooden V-blocks.
- Slip the bearing support assemblies onto each end.
- Lift the bar to bore center and into the support spiders attached to the workpiece, either internally or externally.



Face mounted 4-arm mounting spider for up to 36" (914.4mm) dia. Torque arms prevent rotational drive turning.



Three-arm mounting assembly for up to 20" (508 mm) diameters.



Speed wrench or portable drill motor can be used to move tool head from either end of the bar, with or without the axial feed unit attached.



- Make final centering adjustments with the jacking screws on the bearing plates.
- Once the bar is accurately positioned, slip the rotational drive unit in place and lock to the bar with the two locking collars.
- Tie-down arms are provided to secure the rotational drive and keep it from turning during boring operations.
- Place the axial feed unit on either end of the bar.
- Install the tool carrier, spacer blocks, and one or two tool heads.

The machine is ready to make the first boring pass. Boring operations are simply a matter of adjusting the boring depth at the cutter, setting the feed rate, and engaging the feed in forward or reverse mode. The hydraulic power unit is turned on and bar rotation is started with the control pendant.



Tool head accepts either HSS tool bits or carbide insert holders as shown here.

# Components & Accessories

## Modular components allow you to choose exactly what you need for your application.

The Model BB6000 Portable Boring Bar is designed in modules for as wide a range of applications as possible. Select only those components you need for your particular situation. A complete machine must have the following components to be functional:

1. Rotational drive unit
2. Hydraulic drive motor
3. Axial feed unit
4. Boring bar
5. Tool carrier
6. Boring head
7. Hydraulic power unit
8. Bearing supports (2)



**Rotational drive unit** Compact cast aluminum unit mounts anywhere along the bar, and weighs 86 lbs (40 kg) with a 6:1 gear reduction. Clamp collars lock the unit to the bar securely. Torque arms keep unit from turning with the bar. Maximum torque at the bar with the largest displacement hydraulic motor is almost 1300 ft•lbs (1768 N•m). Fits any 3.5" (88.9mm) diameter bar.



**Drive motors** Hydraulic motors in various displacements are available and provide the smoothest power transmission for most boring operations. Standard SAE flange mount reversible motors with 2-bolt mounting.

**Axial feed unit** Reversible automatic feed with manual feed rate and direction controls, mounts on either end of the boring bar. Variable feed rate from .003"-.020" (.08-.51mm) per revolution.



**Boring bars** Chromed bars are 3.5" (88.9mm) dia. with full length lead screws and replaceable ends. Bar lengths from 5 to 12 ft (1.5-3.7m) with longer bars available on special order.

**Tool carrier** Split tool carrier may be positioned anywhere along bar. Way wipers are provided for carrier and bar protection. A threaded key drives the carrier along bar during boring operations. If you are using this carrier with an existing bar, be sure the key threads are compatible with the leadscrew.



**Boring heads** Boring heads are available in two sets that cover 6" to 24" (152.4-609.6 mm) and 6" to 36" (152.4-914.4mm) respectively. Boring heads mount directly to both sides of tool carrier with or without spacers. Use boring heads alone or in tandem. Spacers increase boring diameter. Heads accept .5" (12mm) square tool bits or 1" (25.4mm) square indexable carbide tooling.



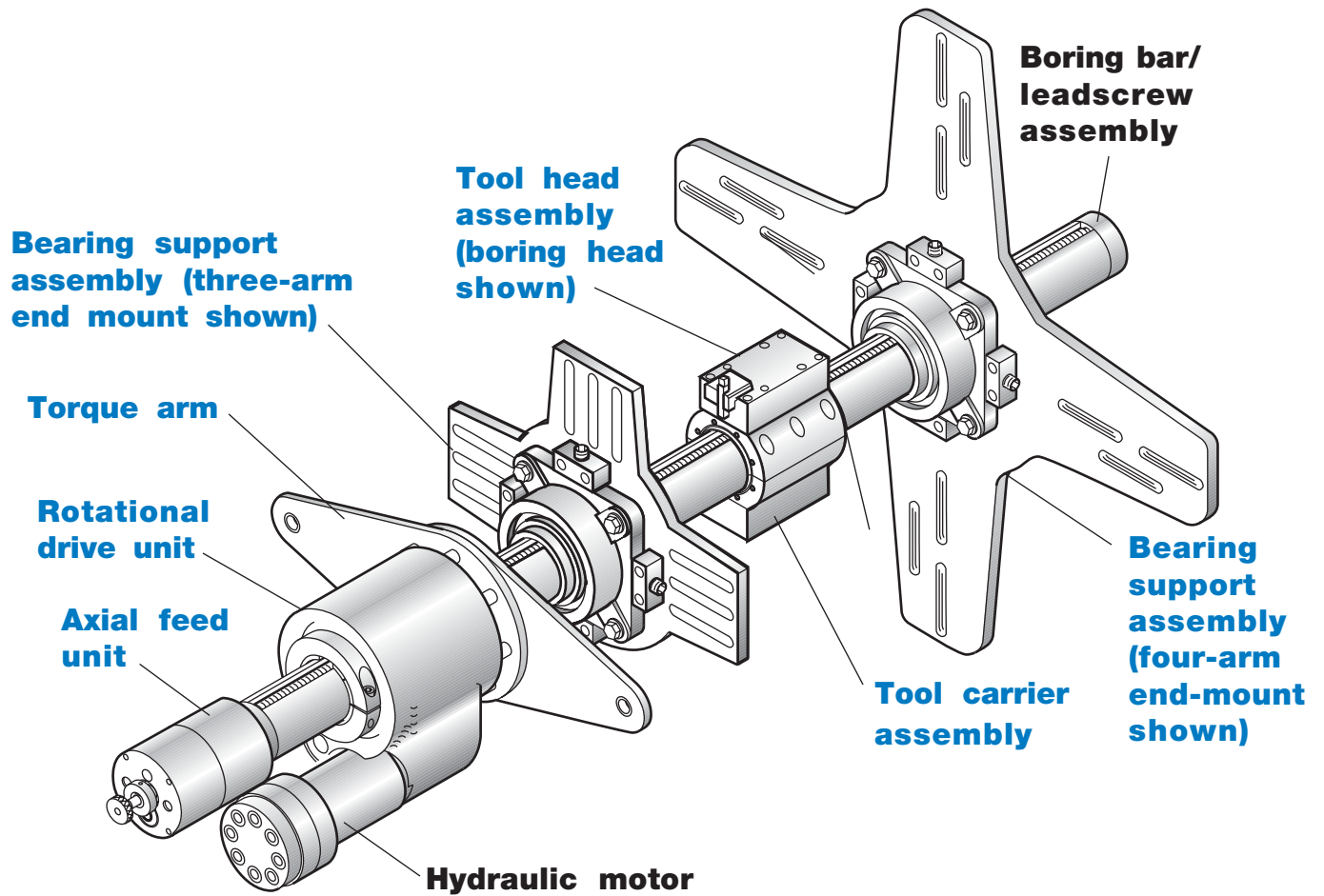
**Facing head** The facing head mounts on the tool carrier in place of the boring head. The unit can face from 10.5" to 36" (267-914.4mm) in 4" (101mm) increments.

**Mounting system** Combinations of ID or end-mounted bar support systems are available. Self-aligning bearings and jacking screws for centering allow fast setup. ID mounts are available for 12" to 36" (304.8-914.4mm) dia. End mounted bearing support assemblies are available for 12" to 38" (304.8-965.2mm) mounting diameters.

**Special adaptations** One-off accessories such as tapered boring systems, and bar extension couplings have been designed to fit particular customer applications.

**Hydraulic power units** Variable displacement piston pump hydraulic power units are available in 5 or 10 hp (3.73 or 7.46 kW) models. These are compact units designed for portable machining applications.

# BB6000 Work Sheet



## Model BB6000 Portable Boring Bar

To accommodate a wide range of applications, the Model BB6000 is sold as a combination of components. To get a complete machine, you must specify:

**Axial feed assembly**  
**Rotational drive assembly**  
**Bearing support assemblies, ID or end mount (at least two required)**  
**Tool carrier assembly**  
**Tool head assembly: boring or facing**  
**Tool kit (not shown)**

**Boring bar/leadscrew assembly**  
**Hydraulic power unit (not shown)**  
**Hydraulic motor**

Items shown in blue are included in all component packages.

# BB6000 Worksheet

## Component packages:

Component packages include: rotational drive unit, axial feed assembly, two three-arm end-mount bearing support assemblies, tool carrier assembly, 6" to 24" (152.4 to 609.6mm) diameter boring head set, and tool kit with instruction manual. Customer must order bar/leadscrew assembly, hydraulic power unit, and hydraulic motor separately.

6" -24" boring bar package 23222 \_\_\_  
6" -36" boring bar package 23223 \_\_\_

## Components:

Choose a bar/leadscrew assembly, a hydraulic motor, and a hydraulic power unit to complete your machine. Other parts are offered separately for spares.

Component	Part number
-----------	-------------

**Mechanical axial feed assembly<sup>1,2</sup>:**  
23299 \_\_\_

**Rotational drive assembly<sup>1,2</sup>:**  
22221 \_\_\_

**Hydraulic motor:**

3.6 in <sup>3</sup>	25472 ___
5.6 in <sup>3</sup>	25473 ___
7.3 in <sup>3</sup>	25474 ___
8.9 in <sup>3</sup>	25475 ___
11.3 in <sup>3</sup>	25476 ___
14.3 in <sup>3</sup>	25477 ___
17.9 in <sup>3</sup>	25478 ___

**Hydraulic motor fitting kit:**

3/8" fittings	25492 ___
1/2" fittings	25495 ___

**Bearing support assembly**  
(at least two recommended):

Three-arm end-mount bearing support assembly, 20" diameter<sup>1</sup>: 22072 \_\_\_  
Three-arm spider only: 22073 \_\_\_  
Four-arm end-mount bearing support assembly, 38" diameter<sup>2</sup>: 22091 \_\_\_  
Four-arm spider only: 22092 \_\_\_  
ID-mount bearing support assembly, 22.53": 23228 \_\_\_  
ID-mount bearing support assembly, 37.53": 23230 \_\_\_

## Components, continued:

Component	Part number
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**Tool carrier assembly<sup>1,2</sup>:** 22377 \_\_\_

**Tool head assembly:**

Boring head set 6"-24" ID	22769 <sup>1</sup> ___
Boring head set 6"-36" ID	22383 <sup>2</sup> ___

**Mechanical feed facing head assembly:**  
22680 \_\_\_

**Boring bar/leadscrew assembly:**

4 ft	25221 ___
5 ft	22107 ___
6 ft	22108 ___
7 ft	22109 ___
8 ft	22110 ___
9 ft	22111 ___
10 ft	22112 ___
11 ft	22113 ___
12 ft	22114 ___

**Tool kit<sup>1,2</sup>:** 22771 \_\_\_

**Hydraulic power unit - 5 hp:**

3-Ph/230V/60 Hz	25318 ___
3-Ph/460V/60 Hz	25319 ___
3-Ph/550V/50 Hz	25320 ___
3-Ph/575V/60 Hz	25321 ___
1-Ph/230V/60 Hz	25322 ___
1-Ph/220V/50 Hz	25323 ___
3-Ph/440V/50 Hz	24592 ___
3-Ph/220V/50 Hz	24593 ___
3-Ph/380V/50 Hz	24594 ___
3-Ph/200V/50 Hz	24595 ___

**Optional remote pendant for 5 hp electric powered hydraulic power units:**  
- 1 \_\_\_

## Components, continued:

Component	Part number
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**Hydraulic power unit - 10 hp:**

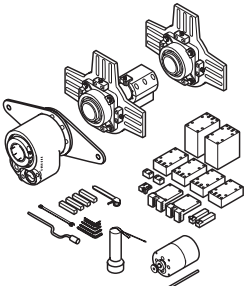
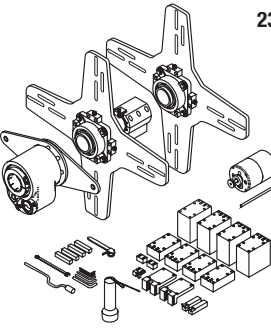
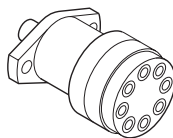
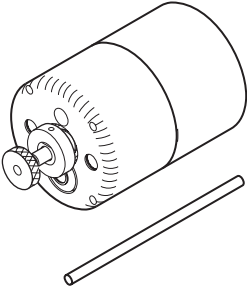
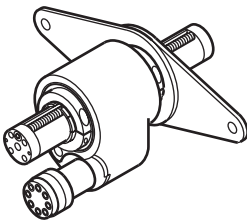
3-Ph/230V/60 Hz	24596 ___
3-Ph/460V/60 Hz	24597 ___
3-Ph/550V/50 Hz	24598 ___
3-Ph/575V/60 Hz	24599 ___
3-Ph/440V/50 Hz	24602 ___
3-Ph/220V/50 Hz	24603 ___
3-Ph/380V/50 Hz	24604 ___
3-Ph/200V/50 Hz	24605 ___

**Optional remote pendant for 10 hp electric powered hydraulic power units:**  
- 1 \_\_\_


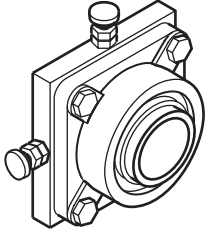
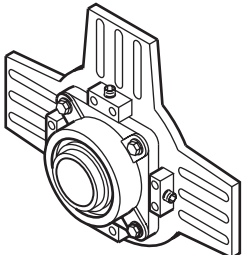
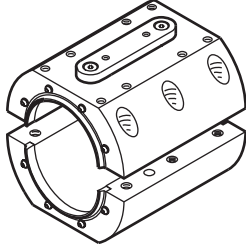
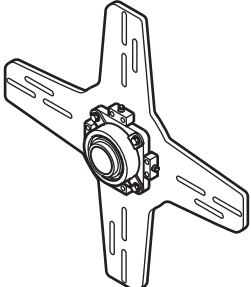
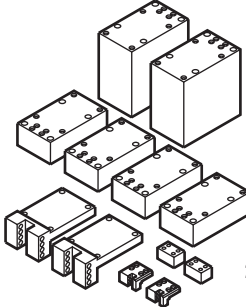
**Replacement hydraulic filter element:**  
25882 \_\_\_

<sup>1</sup> Included in component package 23222.    <sup>2</sup> Included in component package 23223.

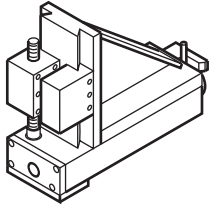
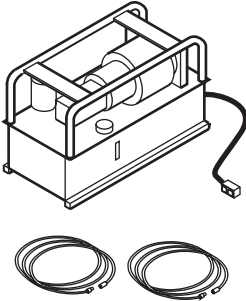
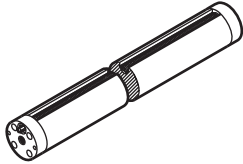
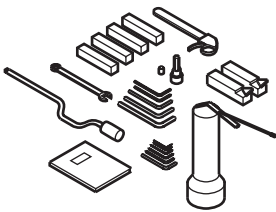
# BB6000 Components

No.	Description																																																																																																												
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Motor ports are 7/8-14 SAE O-ring type. For 50 Hz power units, reduce the bar rpm by 15%; torque at the bar remains the same. Torque ratings (at the bar) are constant.            Power unit specifications:            5 hp - max bar rpm @ 6 gpm (22.7 L/min)            10 hp - max bar rpm @ 10 gpm (37.9 L/min)</p> <table border="1"> <thead> <tr> <th></th> <th>5 hp</th> <th>10 hp</th> </tr> </thead> <tbody> <tr> <td><b>25472 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>3.6 in<sup>3</sup> (59.1 cm<sup>3</sup>)</td> <td>3.6 in<sup>3</sup> (59.1 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>363</td> <td>617</td> </tr> <tr> <td>motor torque:</td> <td>253 ft-lb (344 N•m)</td> <td>244 ft-lb (332 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>54</td> <td>92</td> </tr> <tr> <td><b>25473 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>5.9 in<sup>3</sup> (96.8 cm<sup>3</sup>)</td> <td>5.9 in<sup>3</sup> (96.8 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>221</td> <td>375</td> </tr> <tr> <td>motor torque:</td> <td>430 ft-lb (549 N•m)</td> <td>415 ft-lb (564 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>33</td> <td>56</td> </tr> <tr> <td><b>25474 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>7.3 in<sup>3</sup> (119.7 cm<sup>3</sup>)</td> <td>7.3 in<sup>3</sup> (119.7 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>177</td> <td>302</td> </tr> <tr> <td>motor torque:</td> <td>544 ft-lb (740 N•m)</td> <td>527 ft-lb (717 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>26</td> <td>45</td> </tr> <tr> <td><b>25475 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>8.9 in<sup>3</sup> (146.0 cm<sup>3</sup>)</td> <td>8.9 in<sup>3</sup> (146.0 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>145</td> <td>247</td> </tr> <tr> <td>motor torque:</td> <td>663 ft-lb (902 N•m)</td> <td>643 ft-lb (874 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>21</td> <td>37</td> </tr> <tr> <td><b>25476 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>11.3 in<sup>3</sup> (185.3 cm<sup>3</sup>)</td> <td>11.3 in<sup>3</sup> (185.3 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>115</td> <td>196</td> </tr> <tr> <td>motor torque:</td> <td>850 ft-lb (1156 N•m)</td> <td>827 ft-lb (1125 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>17</td> <td>29</td> </tr> <tr> <td><b>25477 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>14.1 in<sup>3</sup> (231.2 cm<sup>3</sup>)</td> <td>14.1 in<sup>3</sup> (231.2 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>93</td> <td>158</td> </tr> <tr> <td>motor torque:</td> <td>1054 ft-lb (1433 N•m)</td> <td>1026 ft-lb (1395 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>14</td> <td>23</td> </tr> <tr> <td><b>25478 Hydraulic motor</b></td> <td></td> <td></td> </tr> <tr> <td>displacement</td> <td>17.9 in<sup>3</sup> (293.6 cm<sup>3</sup>)</td> <td>17.9 in<sup>3</sup> (293.6 cm<sup>3</sup>)</td> </tr> <tr> <td>motor rpm:</td> <td>73</td> <td>125</td> </tr> <tr> <td>motor torque:</td> <td>1330 ft-lb (1809 N•m)</td> <td>1292 ft-lb (1757 N•m)</td> </tr> <tr> <td>bar rpm:</td> <td>11</td> <td>18</td> </tr> </tbody> </table>		5 hp	10 hp	<b>25472 Hydraulic motor</b>			displacement	3.6 in <sup>3</sup> (59.1 cm <sup>3</sup> )	3.6 in <sup>3</sup> (59.1 cm <sup>3</sup> )	motor rpm:	363	617	motor torque:	253 ft-lb (344 N•m)	244 ft-lb (332 N•m)	bar rpm:	54	92	<b>25473 Hydraulic motor</b>			displacement	5.9 in <sup>3</sup> (96.8 cm <sup>3</sup> )	5.9 in <sup>3</sup> (96.8 cm <sup>3</sup> )	motor rpm:	221	375	motor torque:	430 ft-lb (549 N•m)	415 ft-lb (564 N•m)	bar rpm:	33	56	<b>25474 Hydraulic motor</b>			displacement	7.3 in <sup>3</sup> (119.7 cm <sup>3</sup> )	7.3 in <sup>3</sup> (119.7 cm <sup>3</sup> )	motor rpm:	177	302	motor torque:	544 ft-lb (740 N•m)	527 ft-lb (717 N•m)	bar rpm:	26	45	<b>25475 Hydraulic motor</b>			displacement	8.9 in <sup>3</sup> (146.0 cm <sup>3</sup> )	8.9 in <sup>3</sup> (146.0 cm <sup>3</sup> )	motor rpm:	145	247	motor torque:	663 ft-lb (902 N•m)	643 ft-lb (874 N•m)	bar rpm:	21	37	<b>25476 Hydraulic motor</b>			displacement	11.3 in <sup>3</sup> (185.3 cm <sup>3</sup> )	11.3 in <sup>3</sup> (185.3 cm <sup>3</sup> )	motor rpm:	115	196	motor torque:	850 ft-lb (1156 N•m)	827 ft-lb (1125 N•m)	bar rpm:	17	29	<b>25477 Hydraulic motor</b>			displacement	14.1 in <sup>3</sup> (231.2 cm <sup>3</sup> )	14.1 in <sup>3</sup> (231.2 cm <sup>3</sup> )	motor rpm:	93	158	motor torque:	1054 ft-lb (1433 N•m)	1026 ft-lb (1395 N•m)	bar rpm:	14	23	<b>25478 Hydraulic motor</b>			displacement	17.9 in <sup>3</sup> (293.6 cm <sup>3</sup> )	17.9 in <sup>3</sup> (293.6 cm <sup>3</sup> )	motor rpm:	73	125	motor torque:	1330 ft-lb (1809 N•m)	1292 ft-lb (1757 N•m)	bar rpm:	11	18
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motor torque:	850 ft-lb (1156 N•m)	827 ft-lb (1125 N•m)																																																																																																											
bar rpm:	17	29																																																																																																											
<b>25477 Hydraulic motor</b>																																																																																																													
displacement	14.1 in <sup>3</sup> (231.2 cm <sup>3</sup> )	14.1 in <sup>3</sup> (231.2 cm <sup>3</sup> )																																																																																																											
motor rpm:	93	158																																																																																																											
motor torque:	1054 ft-lb (1433 N•m)	1026 ft-lb (1395 N•m)																																																																																																											
bar rpm:	14	23																																																																																																											
<b>25478 Hydraulic motor</b>																																																																																																													
displacement	17.9 in <sup>3</sup> (293.6 cm <sup>3</sup> )	17.9 in <sup>3</sup> (293.6 cm <sup>3</sup> )																																																																																																											
motor rpm:	73	125																																																																																																											
motor torque:	1330 ft-lb (1809 N•m)	1292 ft-lb (1757 N•m)																																																																																																											
bar rpm:	11	18																																																																																																											
 <p><b>23299<sup>1,2</sup> Mechanical axial feed assembly</b>            Assembly mounts to either end of the bar/leadscrew assembly. Mechanical feed is reversible and variable, with a feed rate of .003" to .020" (.076 to .508mm) per revolution</p>																																																																																																													
 <p><b>22221<sup>1,2</sup> Rotational drive assembly</b>            6:1 gear ratio drive assembly mounts anywhere along the bar. Adjustable shaft collars hold the assembly securely to the bar. Includes torque arms for stability. Fits 3.5" (88.9mm) diameter bar/leadscrew assemblies.</p> <p><b>Drawings may not represent product.</b>  <sup>1</sup> Included in component package 23222.  <sup>2</sup> Included in component package 23223.</p>																																																																																																													

# BB6000 Components

No. Description	No. Description
 <p><b>Hydraulic motor fitting kit</b> Fitting kit to connect any hydraulic motor listed above to the hoses from customer's hydraulic power unit. Fittings are included with every Climax hydraulic power unit.</p> <p><b>25492 Hydraulic motor fitting kit - 3/8" fittings</b> Fittings to connect motors above to power units with 3/8" female quick disconnect fittings. Standard for 5 hp units</p> <p><b>25495 Hydraulic motor fitting kit - 1/2" fittings</b> Fittings to connect motors above to power units with 1/2" female quick disconnect fittings. Standard for 10 hp units.</p>	 <p><b>ID-mount bearing support assembly</b> Bearing support assembly provides four-way adjustable bar alignment. Bar is held in place by a self-aligning bearing. Center the bar by adjusting the four jacking screws. At least two bearing support assemblies are required to adequately support the bar. Different styles may be used together.</p> <p><b>23228 ID-mount bearing support assembly, 22.53" (572.3mm) dia.</b> One bearing + two chucks + jaws to fit inside bores with ID's from 12" to 22.53" (304.8 to 572.3mm)</p> <p><b>23230 ID-mount bearing support assembly, 37.53" (953.2mm) dia.</b> Same as above, but includes extra spacer and jaws to fit inside bores with ID's from 12" to 37.53" (304.8 to 953.2mm).</p>
<p><b>End-mount bearing support assembly</b> Bearing support assembly fits onto the end of the work piece through a slotted spider. Hold the bar in place with the self-aligning bearing and center the bar with the four adjusting screws. At least two bearing assemblies are required to adequately support the bar. Different styles may be used together.</p>  <p><b>22072 Three-arm end-mount bearing support assembly, 20" (508.0 mm) diameter</b> Bearing support assembly fits onto the end of the work piece with mounting diameters from 12.0" to 20.0" (304.8 to 508.0mm).</p>	<p><b>22377<sup>1,2</sup> Tool carrier</b> Split design tool carrier mounts anywhere along the boring bar. Built-in wipers protect the carrier and bar from dirt and chips. Boring and facing heads mount to the tool carrier with screws and, if required, spacers. Carrier includes axial leadscrew nut. <b>Customer must purchase boring head set and tool bits separately.</b></p> 
 <p><b>22091 Four-arm end-mount bearing support assembly, 38" (965.2 mm) diameter</b> Bearing support assembly fits onto the end of the work piece with mounting diameters from 18.0" to 38.0" (457.2 to 965.2 mm).</p> <p><b>Support spider only</b> Because both end-mount bearing assemblies use the same self-aligning bearing, spiders can be ordered separately to accommodate various size work pieces.</p> <p><b>22073 Three-arm support spider only</b> <b>22092 Four-arm support spider only</b></p>	<p><b>Boring head set</b> Boring heads mount to the tool carrier (above) with screws and, if required, spacers. The range of diameters the boring head will cut is determined by the number of spacers mounted between the tool carrier and the boring head. Small tool holders use .5" (12mm) square HSS tooling. Large tool holders use 1" (25.4mm) square HSS or indexable carbide tooling. <b>Customer must purchase tool carrier and tool bits separately.</b></p>  <p><b>22769<sup>1</sup> Boring head set, 6" -24" (152.4-609.6 mm) ID</b> <b>22383<sup>2</sup> Boring head set, 6"-36" (152.4 - 914.4mm) ID</b></p> <p><b>Drawings may not represent product.</b> <b><sup>1</sup> Included in component package 23222.</b> <b><sup>2</sup> Included in component package 23223.</b></p>

# BB6000 Components

No. Description	No. Description
 <p><b>22680 Mechanical feed facing head assembly</b> Facing head assembly mounts to tool carrier (not included) with screws and, if required, spacers. The range of diameters the facing head will machine is determined by the number of spacers (not included) mounted between the tool carrier and the facing head. When used with the spacers from the 24" boring head set (22769), the facing head will machine 10.5" to 24.0" (266.7 to 609.6 mm). When used with the spacers from the 36" boring head set (22383), the facing head will machine 10.5" to 36.0" (266.7 to 914.4 mm). Stroke is 4" (101.6 mm) and feed rate is up to .010" (.254 mm) per feed trip. Use multiple trip mechanisms to increase feed rate. Facing head uses .5" (12mm) tool bits. <b>Customer must purchase boring head set (spacers), tool carrier and tool bits separately.</b></p>	 <p><b>5 hp (3.73 kW) hydraulic power unit</b> Variable displacement piston pump power unit comes complete with a 5 gallon (19 liter) reservoir, start/stop pendant, flow control, pressure gauge, 20 foot (6 meter) x 3/8" hydraulic hoses with quick disconnect fittings, and 7/8-14 SAE O-ring fittings for hydraulic motors. Order motors separately</p> <p><b>25325 Hydraulic power unit</b> 3-ph/230V/60 Hz/1800 rpm motor. Pumps 6gpm (22.7 l/min). Full load 13.2 amps.*</p> <p><b>25319 Hydraulic power unit</b> 3-ph/460V/60 Hz/1800 rpm motor. Pumps 6gpm (22.7 l/min). Full load 6.6 amps.*</p> <p><b>25320 Hydraulic power unit</b> 3-ph/550/50Hz/1400 rpm motor. Pumps 6gpm (22.7 l/min). Full load 5.6 amps.*</p> <p><b>25321 Hydraulic power unit</b> 3-ph/575V/60 Hz/1800 rpm motor. Pumps 6gpm (22.7 l/min). Full load 5.5 amps.*</p> <p><b>25322 Hydraulic power unit</b> 3-ph/230V/60 Hz/1800 rpm motor. Pumps 6gpm (22.7 l/min). Full load 22.8 amps.*</p> <p><b>25323 Hydraulic power unit</b> 3-ph/220V/50 Hz/1400 rpm motor. Pumps 5gpm (19.0 l/min). Full load 22 amps.*</p> <p><b>24592 Hydraulic power unit</b> 3-ph/440/50 Hz/1400 rpm motor. Pumps 5gpm (19.0 l/min). Full load 5.5 amps.*</p> <p><b>24593 Hydraulic power unit</b> 3-ph/220V/50 Hz/1400 rpm motor. Pumps 5gpm (19.0 l/min). Full load 14 amps.*</p> <p><b>24594 Hydraulic power unit</b> 3-ph/380V/50 Hz/1400 rpm motor. Pumps 5gpm (19.0 l/min). Full load 8.12 amps.*</p> <p><b>24595 Hydraulic power unit</b> 3-ph/200V/50 Hz/1400 rpm motor. Pumps 5gpm (19.0 l/min). Full load 15.4 amps.*</p> <p>*Full load amp rating cannot be used to determine required generator size. Contact your generator manufacturer/dealer to determine required generator size.</p>
 <p><b>Boring bar/leadscrew assembly</b> 3.5" (88.9 mm) diameter chromed bar with full-length leadscrew. Bar end caps enable the axial feed assembly to be mounted to either end of the bar. Other length bars are available upon special request.</p> <p><b>25221 Boring bar</b>, 4 ft (1.22 m) <b>22107 Boring bar</b>, 5 ft (1.53 m) <b>22108 Boring bar</b>, 6 ft (1.83 m) <b>22109 Boring bar</b>, 7 ft (2.13 m) <b>22110 Boring bar</b>, 8 ft (2.44 m) <b>22111 Boring bar</b>, 9 ft (2.75 m) <b>22112 Boring bar</b>, 10 ft (3.05 m) <b>22113 Boring bar</b>, 11 ft (3.35 m) <b>22114 Boring bar</b>, 12 ft (3.66 m)</p>	
 <p><b>22771<sup>1,2</sup> Tool kit</b> Complete set of tools needed to operate the BB6000 Portable boring bar.</p>	<p><b>Drawings may not represent product.</b> <b><sup>1</sup> Included in component package 23222.</b> <b><sup>2</sup> Included in component package 23223.</b></p>



# BB6000 Technical Information

## Specifications in inches (mm)

Specifications subject to change without notice.

For precision dimensions consult your factory representative.

### Boring diameter:

Standard 6 (152.4) min  
36 (914.4) max.

### Machine ship weight (approx.): 640 lb (291 kg)

Typical machine consisting of rotational drive assembly (22221), axial feed assembly (23299), manual boring head set (22383), two three-arm bearing assemblies (22072), and 3.5" diameter x 8 foot boring bar (22110).

### Boring bar:

#### Ship weight (approx.):

3.5" dia x 5 ft bar (22107): 175 lb (80 kg)  
3.5" dia x 12 ft bar (22114): 518 lb (236 kg)

#### Ship dimensions:

3.5" dia x 12 ft bar: 11 x 13 x 154 (28 x 33 x 392cm)

### Hydraulic power unit (10 hp):

Ship weight (approx.): 500 lb (228 kg)

#### Ship dimensions (approx.):

27 x 33 x 48 (69 x 84 x 122 cm)

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## Components:

### Mechanical axial feed assembly:

Feed rate variable, reversible, .003-.020/rev.  
(.076-.508/rev)

### Rotational drive assembly:

Net weight (w/o motor): 86 lb (40 kg)  
Gear ratio: 6:1 gear reduction  
(Theoretical values calculated using a 5 hp hydraulic power unit producing 1200 psi (8268 kPa) continuous, 2000 psi (13780 kPa) intermittent and pumping 6 gpm (22.7 l/min.).

With 17.9 in<sup>3</sup> (293.6 cm<sup>3</sup>) hydraulic motor (25478):

Boring bar torque: 1292 ft•lb (1757 n•m)  
Max boring rpm: 12 rpm @ 6gpm  
(12 rpm @ 22.7 l/min)  
Boring bar: 3.1 hp (2.3 kW)

### Motor, hydraulic:

Displacement: 3.6 - 17.9 in<sup>3</sup> (59.1 - 293.6 cm<sup>3</sup>)  
Net weight: 15.5 - 19.2 lb (7.1 - 8.7 kg)  
Fittings: 7/8-14 SAE O-ring

### Bearing support assembly:

End mount three-arm bearing diameter range:  
12-20 (304.8-508.0)  
End mount four-arm bearing diameter range:  
18-38 (457.2-965.2)  
ID-mount bearing ID diameter range:  
12-37.53 (304.8-953.3)  
Mounting spiders require 5/8" or smaller bolts

### Manual boring head assembly:

Tooling: .5" (12mm) square HSS tool bits  
1" square indexable carbide tooling (ass'y requires tool carrier)  
Diameter range: 6-36 (152.4-914.4)

### Mechanical feed facing head assembly:

Feed rate: automatic, up to .010/rev (.254/rev)  
Stroke: 4 (101.6)  
Facing diameters:  
Using 24" boring head set spacers:  
10.5 - 24.0 (266.7 - 609.6)  
Using 36" boring head set spacers:  
10.5 - 36.0 (266.7 - 914.4)  
Tooling: .5" (12mm) and 1" (24mm) square HSS or 1" square indexable carbide tooling (ass'y requires tool carrier)

### Boring bar:

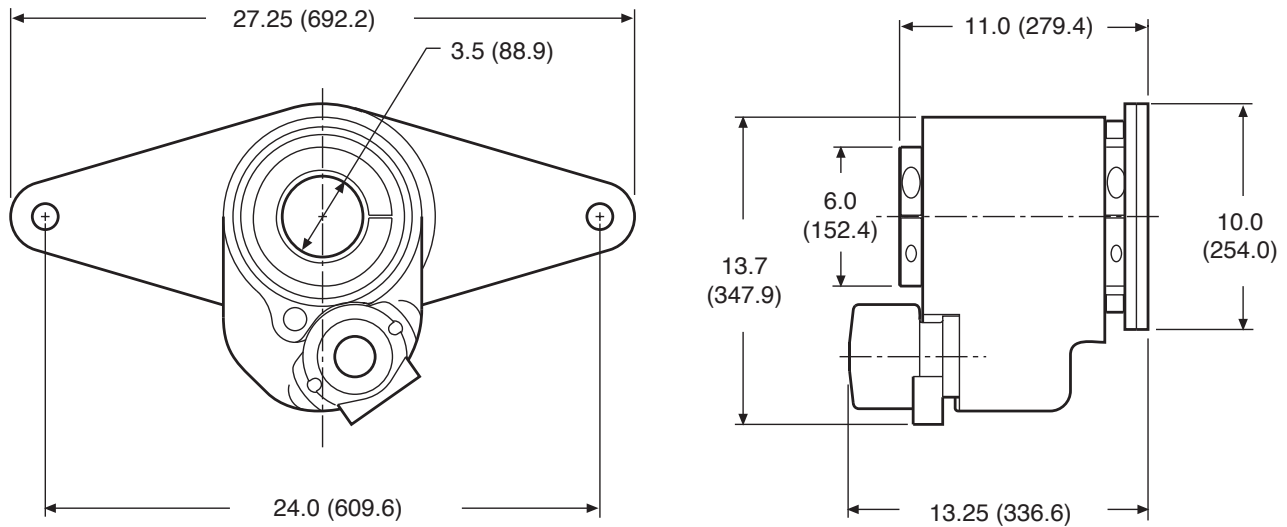
Chromed, with full-length leadscrew. Bar end caps with anti-friction leadscrew bearings allow the axial feed assembly to be mounted to either end of the bar.  
Net weight: 3.5" dia. x 5 ft: 175 lb (80 kg)  
3.5" dia. x 12 ft: 518 lb (236 kg)

### Hydraulic power unit:

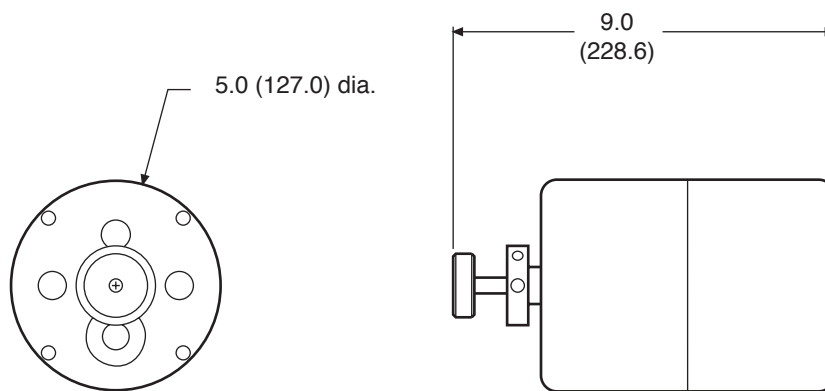
Net weight: 5 hp: 400 lb (182 kg)  
10 hp: 500 lb (228 kg)  
Power sources: 3-phase electric or 1-phase electric

# BB6000 Operational Dimensions

**Specifications in inches (mm)**  
**Specifications subject to change without notice.**  
**For precision dimensions consult your factory representative.**



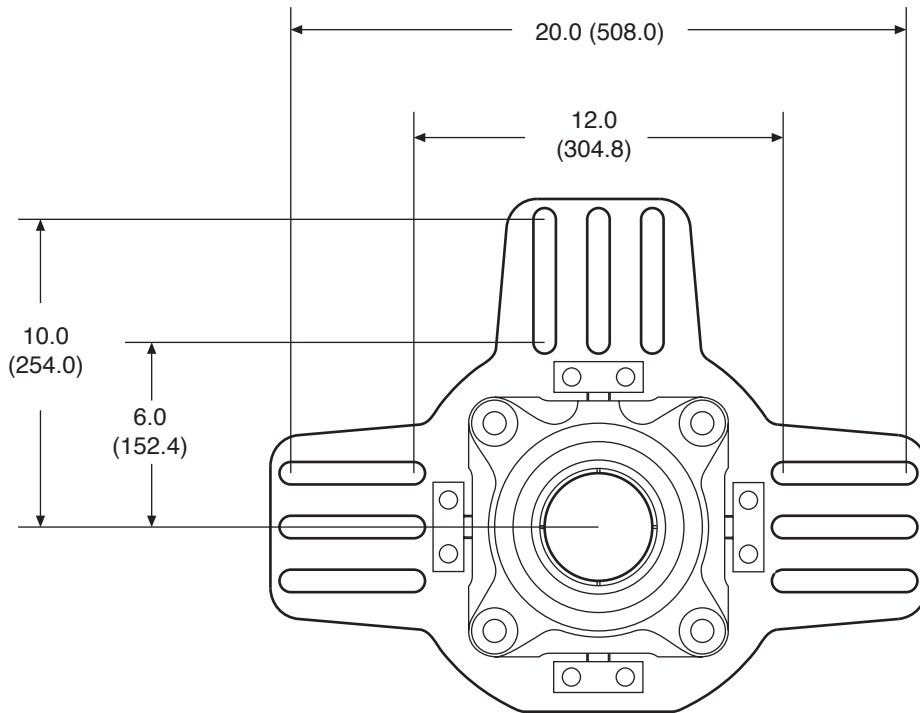
**Rotational Drive Assembly**



**Axial Feed Assembly**

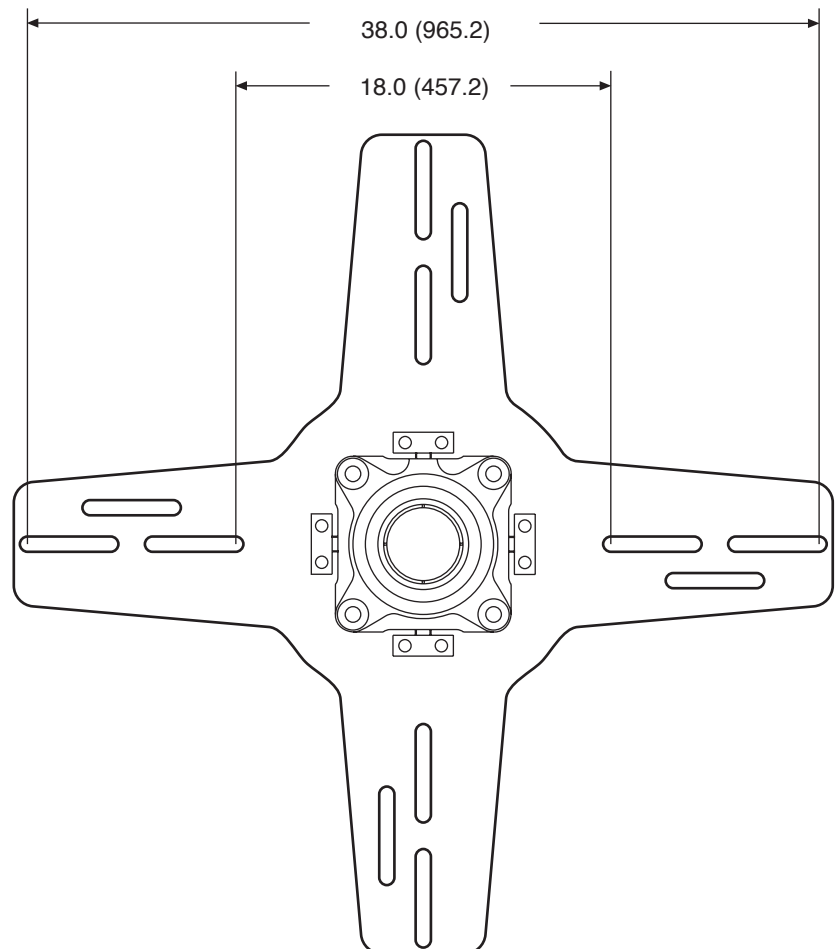
# BB6000 Operational Dimensions

**Specifications in inches (mm)**  
**Specifications subject to change without notice.**  
**For precision dimensions consult your factory representative.**

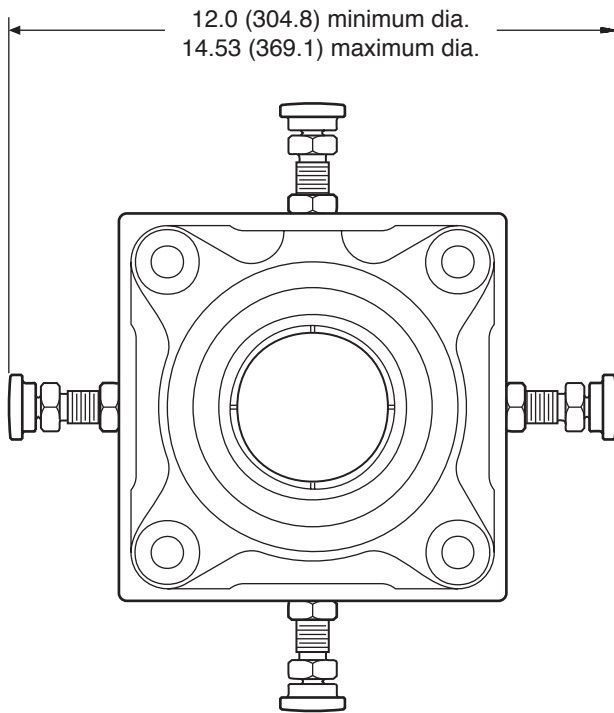


**Three-Arm  
End-Mount Bearing  
Support Assembly**

**Four-Arm End-Mount  
Bearing Support  
Assembly**



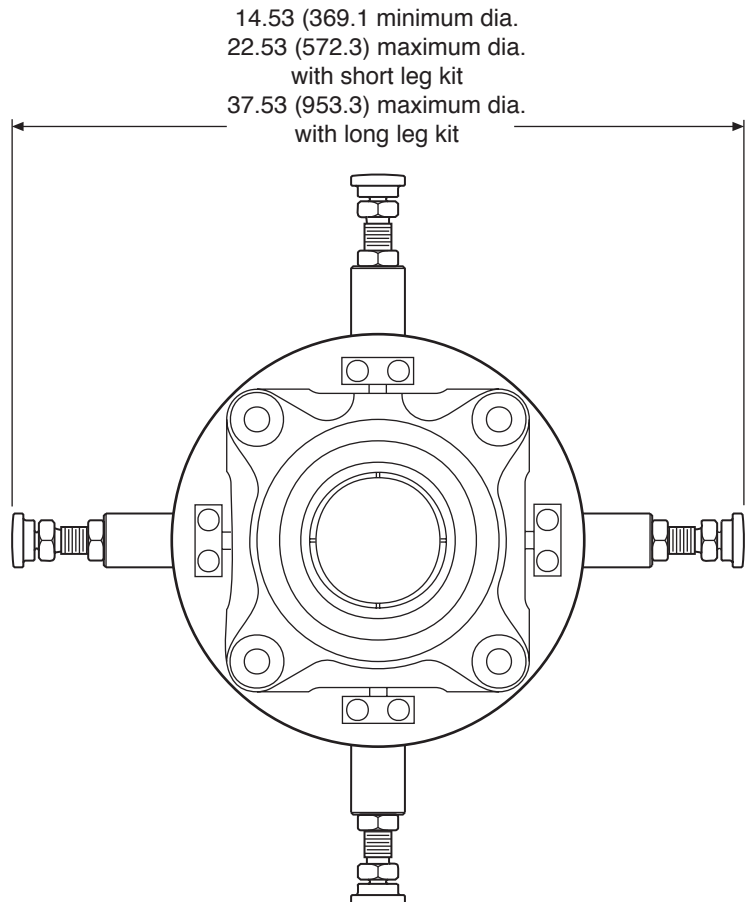
# BB6000 Operational Dimensions



**Specifications in inches (mm)**  
**Specifications subject to change without notice.**  
**For precision dimensions consult your factory representative.**

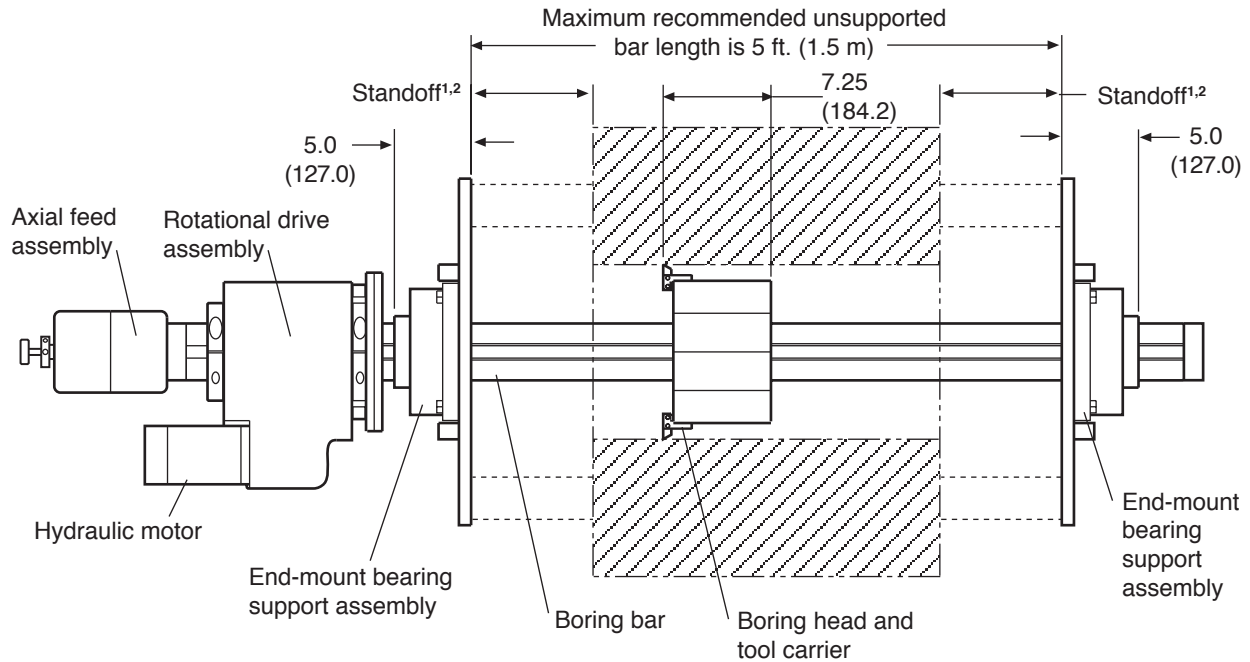
## **ID-Mount Bearing Support Assembly (small chuck)**

## **ID-Mount Bearing Support Assembly (large chuck)**



# BB6000 Operational Dimensions

**Specifications in inches (mm)**  
**Specifications subject to change without notice.**  
**For precision dimensions consult your factory representative.**



Total required bar length = 21 (533.4) + distance to bore + (2x standoff length)

<sup>1</sup>Recommended minimum standoff length for boring = 7.5 (190.5)

<sup>2</sup>Recommended minimum standoff for facing = 14.0 (355.6)

## Determining Required Bar Length



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