

## Packing big boring capability into a compact, modular machine, maximizing efficiency and minimizing downtime.

### Powerful Yet Compact

- Take the power of a stationary machine to the job site to solve tough machining challenges in record time.
- Using 11.3 in<sup>3</sup> (185 cm<sup>3</sup>) Hydraulic motor, produces 2280 ft-lbs (3090 N•m) of torque at the bar, at 29 rpm.
- Compact, modular components, many which can be lifted by hand, allow fast, easy setup, maximizing efficiencies, and minimizing downtime.

### Versatile and Flexible

- Huge machining range bores from 10.25 - 57.5 inches (260.4 - 1460.5 mm) in diameter, and faces from 9.6 - 62.5 inches (243.8 - 1587.5 mm).
- ID and End mount bearings feature spherical taper-lock roller bearings.
- End mount can be fine adjusted by +/- 0.625 inches (15.9 mm) to center the bar.
- Optional dual action boring/facing arms increase facing range, and allow for both boring and facing without switching equipment. Full-length square ways on boring/facing arms allow for quick positioning anywhere along the arm. Attaches to the net fit tool carrier by compression-clamping, to provide maximum tool stability.
- Machine is highly adjustable. The tool carrier, half nut, alignment of boring/facing arm, and tool carriage can each be adjusted to maximize machining performance.
- With leading & trailing boring head configuration, 2 boring heads can be used simultaneously.
- For even greater facing range and longer continuous stroke, the new boring/facing arms are available. Setup is quick & easy, featuring industry standard quick-change tooling for both boring and facing operations.



- Highly versatile tool holder block accepts industry standard tooling with a nominal 1 inch (25.4 mm) square shank.
- Tool post on the boring/facing arm can be rotated to provide maximum flexibility in machining setup (including some cantilevered configurations).
- Net fit tool carrier can be clamped to bar for facing operations. For boring operations, carrier can be adjusted to remove clearance between carrier and the bar. This flexibility also ensures maximum rigidity for either operation
- Net fit tool carrier designed with a split frame to simplify installation on the boring bar. It can be configured to use either the boring head set for boring or facing, or the new boring/facing arm assembly.

### High Quality Design

- Features a uniquely-designed modular tool carrier which provides a new level of strength and rigidity by channeling machining forces directly to the boring bar through strategically-located adjustable guide shoes.
- Chromed bars, straight to within 0.001 inch per foot (0.0254 per 304.8 mm)
- Gun-drilled bars with optical targets available.
- Adjustable, removable half nut increases net fit tool carrier flexibility. Easy removal of tool carrier allows for machining of multiple bores.
- Backlash adjustment nut allows in-the-field adjustment to eliminate backlash in the tool carrier, and extend the life of the machine.

# SPECIFICATIONS

	US	Metric
<b>Boring and Facing Ranges:</b>		
Boring diameter range, standard stack block assembly:	10.25 - 57.5 inches	260.4 - 1460.5 mm
Boring diameter range, boring/facing arm assembly:		
with 18 inch (457.2 mm) boring/facing arm	22.1 - 30.5 inches	561.3 - 774.7 mm
with 23 inch (584.2 mm) boring/facing arm	25.1 - 40.5 inches	637.5 - 1028.7 mm
with 34 inch (863.6 mm) boring/facing arm	35.9 - 62.5 inches	911.9 - 1587.5 mm
Facing diameter range, mechanical facing head assembly:	12.0 - 57.5 inches	304.8 - 1460.5 mm
Facing diameter range, boring/facing arm assembly:		
with 18 inch (457.2 mm) boring/facing arm	17.8 - 30.5 inches	452.1 - 774.7 mm
with 23 inch (584.2 mm) boring/facing arm	17.8 - 40.5 inches	452.1 - 1028.7 mm
with 34 inch (863.6 mm) boring/facing arm	17.8 - 62.5 inches	452.1 - 1587.5 mm
Facing diameter range, boring/facing arm assembly (tool post reversed):		
("tool post reversed" refers to rotating the tool post so that the tool is on the bar side of the tool post.)		
with 18 inch (457.2 mm) boring/facing arm	9.6 - 17.4 inches	243.8 - 442.0 mm
with 23 inch (584.2 mm) boring/facing arm	9.6 - 27.4 inches	243.8 - 696.0 mm
with 34 inch (863.6 mm) boring/facing arm	9.6 - 49.4 inches	243.8 - 1254.8 mm
<b>Performance Data</b>		
Rotational Drive Unit (RDU) Gear Ratio:	10.59:1 gear reduction	
Hydraulic motor size affects torque and speed		
Theoretical values calculated using a 25 Hp hydraulic power unit producing 2000 psi (13790 kPa) continuous, [normal operation is 1200 psi (8270 kPa)] and pumping 15 gpm (68 l/min).		
Hydraulic motor size range:	3.6 - 17.9 in <sup>3</sup>	59.9 - 293.3 cm <sup>3</sup>
Boring Bar Torque:	750 - 2900 ft•lb	1020 - 3930 N•m
Max boring rpm:	90 - 18 rpm	90 - 18 rpm
For example, with 11.3 in <sup>3</sup> (185.3 cm <sup>3</sup> ) hydraulic motor (43457):		
Boring Bar Torque:	2280 ft•lb	3090 N•m
Max boring rpm:	29 rpm	29 rpm
Feed rate of mechanical Axial Feed Unit (AFU):	0.003 - 0.025 in/min.	0.076 - 0.635 mm/rev.
Feed rate of electric Axial Feed Unit (AFU):		
In "slow" speed	0 - 0.3 in/min.	0 - 7.6 mm/min.
In "fast" speed	2.0 - 100 in/min.	50 - 2500 mm/min.
<b>Measures:</b>		
Operating weight (estimated)	2012.3 lbs.	912.8 kg
Typical machine consisting of Rotational Drive Unit (RDU), Axial Feed Unit (AFU), boring head set, tool carrier, 2 bearing mounts, 12 foot (365.8 cm) bar, tool kit, and hydraulic motor.		
Shipping weight (estimated), for machine (metal crate)	2203 lbs.	999.3 kg
Shipping weight (estimated), for machine (wood crate)	2117.3 lbs.	960.4 kg
(machine with RDU, AFU, boring head set, tool carrier, tool kit, and hydraulic motor.)		
Shipping weight (estimated), set of 2 Bearings	780 lbs.	353.8 kg
Shipping weight (estimated), Boring Bar	5.9 lbs/inch	1.05 kg/cm
Shipping weight (estimated), 15 Hp Hydraulic Power Unit	750 lbs	340.2 kg
Shipping weight (estimated), 25 Hp Hydraulic Power Unit	875 lbs	396.9 kg
<b>Shipping dimensions:</b>		
Machine, in wood crate, W, D, H	24 x 37 x 20.6 inches	610 x 940 x 524 mm
Machine, in steel crate, W, D, H	43.3 x 29.5 x 22.5 inches	1099 x 749 x 571.5 mm
Bearing (each bearing shipped separately) W, D, H	36.5 x 36.5 x 17 inches	927 x 927 x 432 mm
12 foot (365.8 cm) bar W, D, H	15 x 14 x 158 inches	381 x 356 x 4013 mm
15 or 25 Hp Hydraulic Power Unit W, D, H	24 x 43 x 47 inches	610 x 1092 x 1194 mm

All dimensions should be considered reference. Contact your Climax Representative for precision dimensions. Specifications are subject to change without notice. There are no systems or components on this machine that are capable of producing hazardous EMC, UV or other radiation hazards. The machine does not use lasers nor does it create hazardous materials such as gasses or dust.

# TOOL CONFIGURATIONS

## Configure your BB7100 in eight easy steps.

To configure your BB7100 Boring Machine:

- 1 Select a Base Unit
- 2 Select an Axial Feed Assembly
- 3 Select Bearing Assemblies
- 4 Select a Boring Bar
- 5 Select a Tool Head Assembly
- 6 Select a Boring/Facing Arm Assembly
- 7 Select a Hydraulic Motor
- 8 Select a Shipping Container

To configure the boring machine you require, simply select the option you need in each step, then contact your Climax representative.

### 1 Base Unit

Rotational drive unit, tool carrier assembly, tool kit, and instruction manual. 54399

### 2 Axial Feed Assembly

Mechanical axial feed assembly 42407  
 Electrical axial feed assembly, 120V 43736  
 Electrical axial feed assembly, 230V 41563

### 3 Bearing Assemblies

Spider assembly end bearing support up to 34.5 inch (876.3 mm) diameter 53711  
 Spider assy end bearing support with extension up to 60 inch (1524.0 mm) diameter 54969  
 ID Bearing mount assembly, jack bolt, for ID diameter of 19 - 46 inches (482.6 - 1168.4 mm) 54305  
 ID Bearing mount assembly, face adjust, for ID diameter of 19 - 46 inches (482.6 - 1168.4 mm) 54302  
 ID Bearing mount assembly, jack bolt, for ID diameter of 19 - 72 inches (508.0 - 1828.8 mm) 54311  
 ID Bearing mount assembly, face adjust, for ID diameter of 19 - 72 inches (508.0 - 1828.8 mm) 54310

\* Multiple units may be ordered.

### 4 Boring Bar (5 inch (127 mm) diameter)

Boring bar assembly, 8 ft (243.8 cm) 45211  
 Boring bar assembly, 10 ft (304.8 cm) 45039  
 Boring bar assembly, 12 ft (365.8 cm) 45036  
 Boring bar assembly, 14 ft (426.7 cm) 45037  
 Boring bar assembly, 16 ft (487.7 cm) 45038  
 Boring bar assembly, 18 ft (548.6 cm) 45287  
 Boring bar assembly, 20 ft (609.6 cm) 44814  
 Gun-drilled bars with optical targets:  
 Boring bar assembly, with optics, 8 ft (243.8 cm) 54579  
 Boring bar assembly, with optics, 10 ft (304.8 cm) 42317  
 Boring bar assembly, with optics, 12 ft (365.8 cm) 54580  
 Boring bar assembly, with optics, 14 ft (426.7 cm) 54581  
 Boring bar assembly, with optics, 16 ft (487.7 cm) 54582  
 Boring bar assembly, with optics, 18 ft (548.6 cm) 54583  
 Boring bar assembly, with optics, 20 ft (609.6 cm) 54584

\* Multiple units may be ordered.

### 5 Tool Head Assembly

Boring head set, 10.25 - 27.5 inches (260.4 - 698.5 mm) tenthset 54332  
 Boring head set, 10.25 - 57.5 inches (260.4 - 1460.5 mm) tenthset 54333  
 Boring head set, 10.25 - 27.5 inches (260.4 - 698.5 mm) tenthset, leading and trailing 54338  
 Boring head set, 10.25 - 57.5 inches (260.4 - 1460.5 mm) tenthset, leading and trailing 54339  
 Boring head set, 13 - 27.5 inches (330.2 - 698.5 mm) solid tooling 54340  
 Boring head set, 13 - 57.5 inches (330.2 - 1460.5 mm) solid tooling 54341

### 6 Boring/Facing Arm Assembly

(for use with boring head set)  
 Mechanical facing head assy, 4 inch (101.6 mm) 22680  
 Mechanical facing head assy, 6 inch (152.4 mm) 49753  
 Mechanical facing head assy, 8 inch (203.2 mm) 49754  
 Boring/facing arm assembly, 18 inch (457.2 mm) 54258  
 Boring/facing arm assembly, 23 inch (584.2 mm) 54259  
 Boring/facing arm assembly, 34 inch (863.6 mm) 54260

\* Additional arms may be purchased separately.

### 7 Hydraulic Motor Assembly

Hydraulic motor assembly, 3.6 CIR (59 cm<sup>3</sup>/rev) 90 bar rpm @ 15 gpm\*\* 43453  
 Hydraulic motor assembly, 5.9 CIR (97 cm<sup>3</sup>/rev) 55 bar rpm @ 15 gpm\*\* 43454  
 Hydraulic motor assembly, 7.3 CIR (120 cm<sup>3</sup>/rev) 44 bar rpm @ 15 gpm\*\* 43455  
 Hydraulic motor assembly, 8.9 CIR (146 cm<sup>3</sup>/rev) 36 bar rpm @ 15 gpm\*\* 43456  
 Hydraulic motor assembly, 11.3 CIR (185 cm<sup>3</sup>/rev) 29 bar rpm @ 15 gpm\*\* 43457  
 Hydraulic motor assembly, 14.1 CIR (231 cm<sup>3</sup>/rev) 22 bar rpm @ 15 gpm\*\* 43458  
 Hydraulic motor assembly, 17.9 CIR (293 cm<sup>3</sup>/rev) 18 bar rpm @ 15 gpm\*\* 43459

\* Multiple units may be ordered.

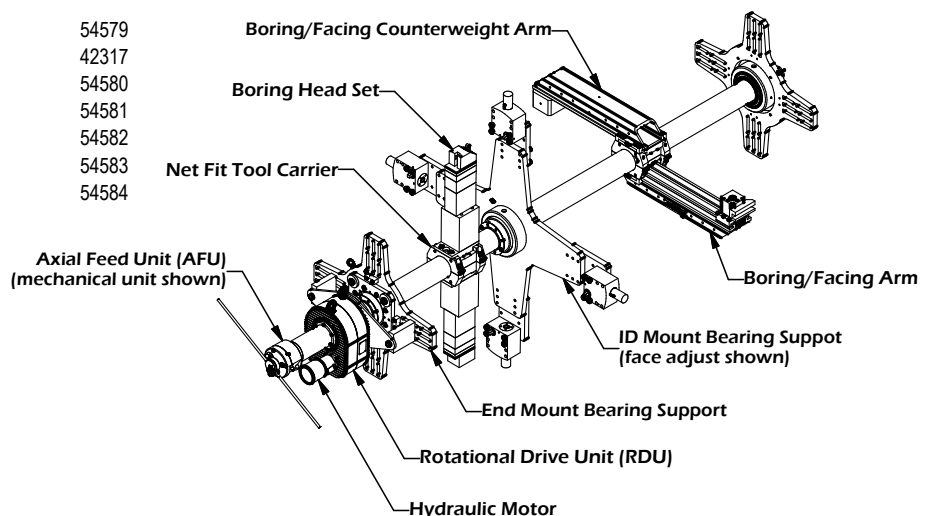
\*\* Theoretical, calculated values shown

### 8 Shipping Container

Plywood hinged crate, 24 x 37 x 20-5/8 (610 x 940 x 524 mm) 28560  
 Metal shipping container 43 x 30 x 23\* (1092 x 762 x 584 mm) 54352

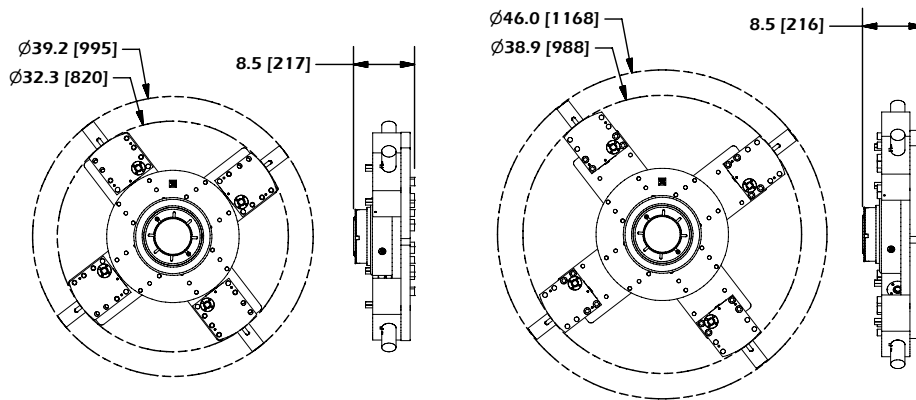
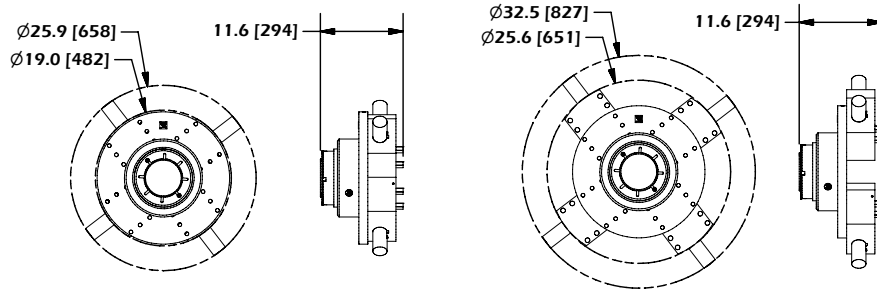
\* Machine components only.

Bars and bearings available in wood only.

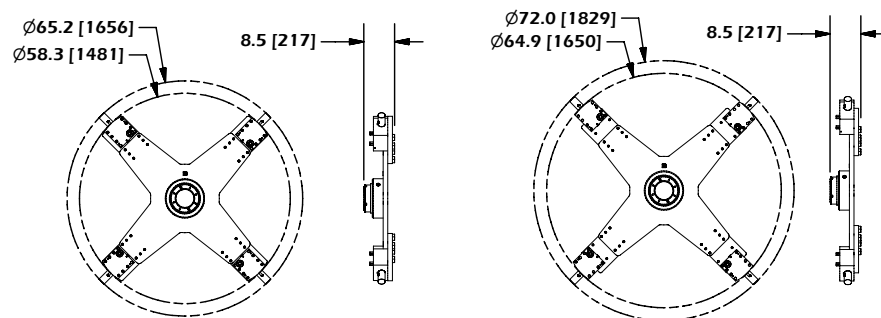
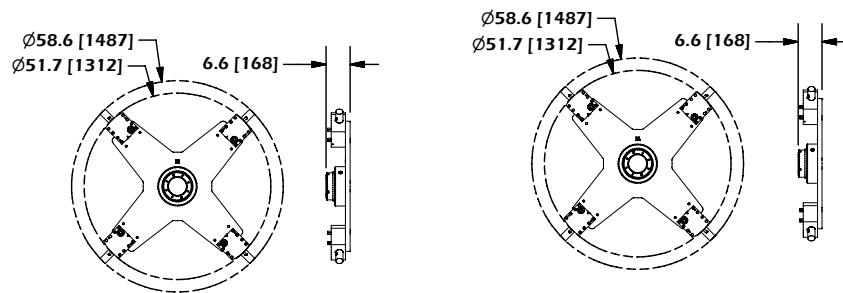


# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)



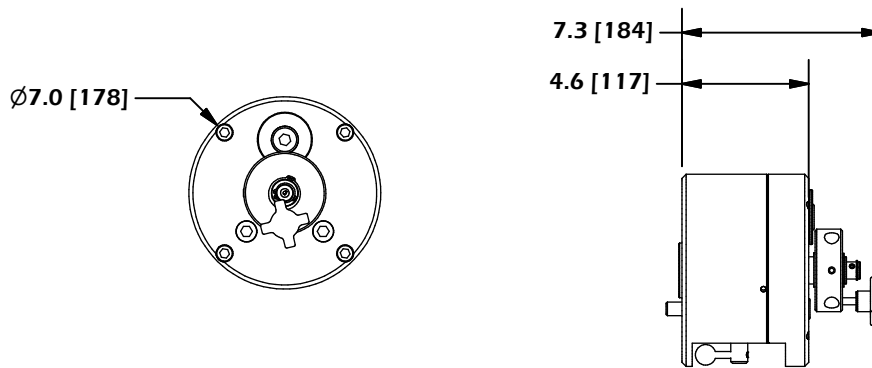
20 - 46 inch (508.0 - 1168.4 mm) ID Mount  
(Face Adjust shown. Jack screw adjust ranges are the same)



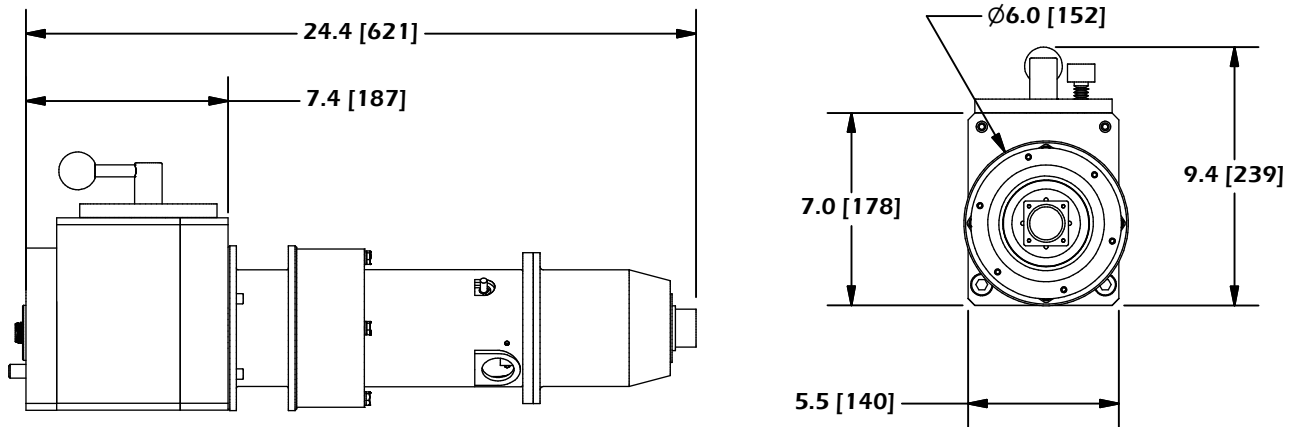
46 - 72 inch (1168.4 - 1828.8 mm) ID Mount  
(Face Adjust shown. Jack screw adjust ranges are the same)

# OPERATIONAL DIMENSIONS

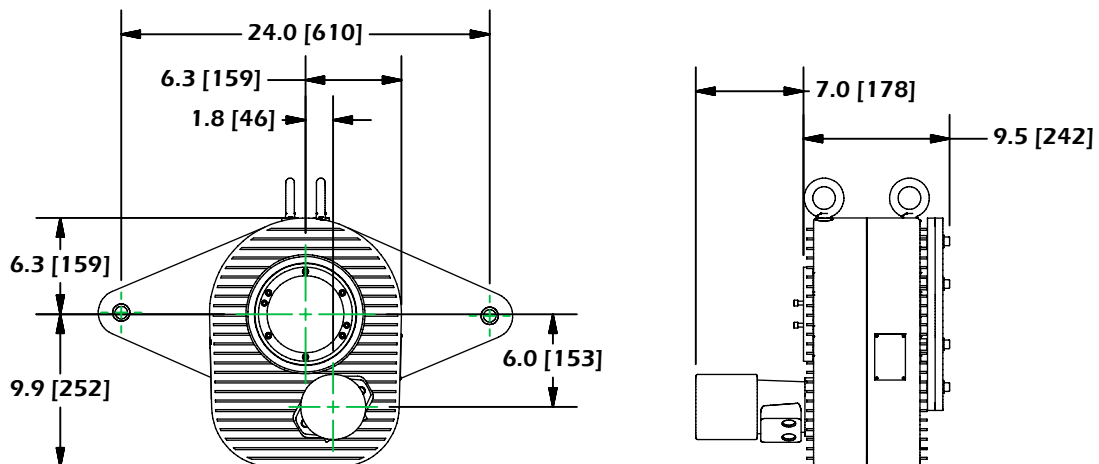
Dimensions in Inch (mm)



Mechanical Axial Feed Assembly



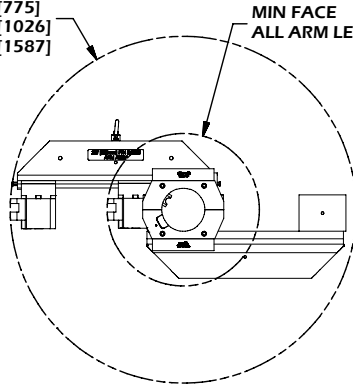
Electrical Axial Feed Assembly



Rotational Drive Unit

# OPERATIONAL DIMENSIONS

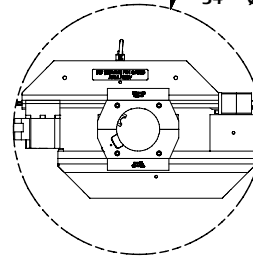
MAX FACE/BORE  
 18" Ø30.5 [775]  
 23" Ø40.5 [1026]  
 34" Ø62.5 [1587]



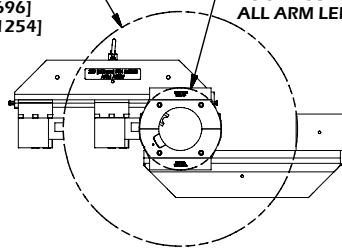
MIN FACE  
 ALL ARM LENGTHS Ø17.8 [453]

Dimensions in Inch (mm)

MIN FACE SWING  
 18" Ø24.3 [618]  
 23" Ø29.2 [742]  
 34" Ø40.0 [1016]

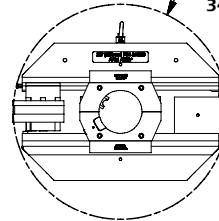


MAX FACE  
 TOOL POST REVERSED  
 18" Ø17.4 [442]  
 23" Ø27.4 [696]  
 34" Ø49.4 [1254]

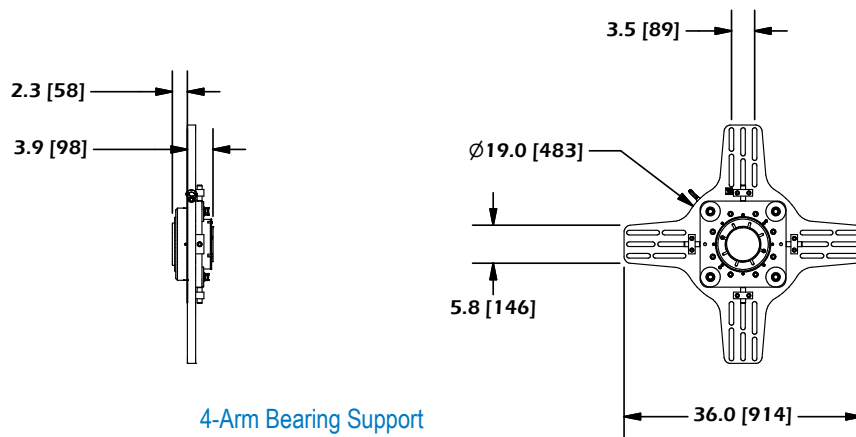


MIN FACE  
 TOOL POST REVERSED  
 ALL ARM LENGTHS 9.6 [244]

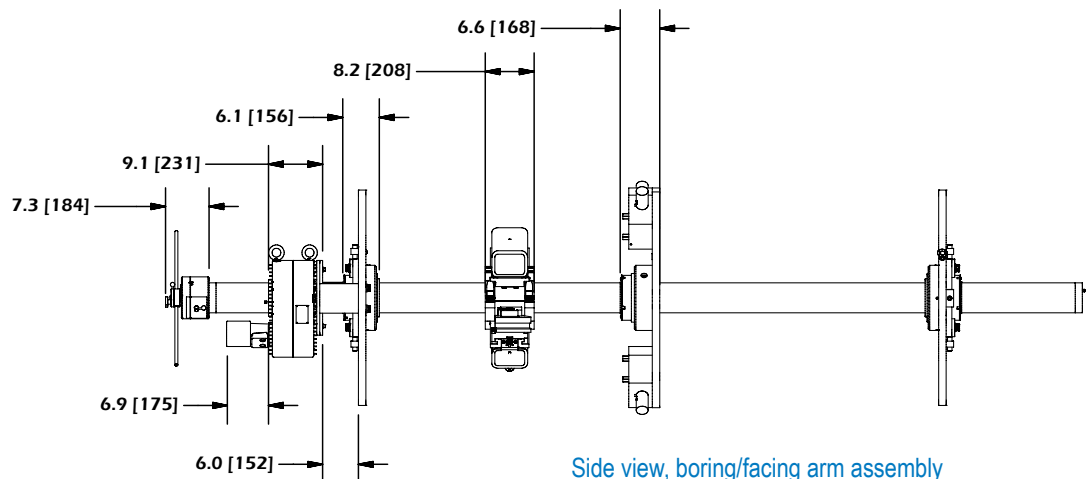
MIN BORE  
 18" Ø22.1 [562]  
 23" Ø25.1 [638]  
 34" Ø35.9 [912]



Boring/facing arm configurations



4-Arm Bearing Support



Side view, boring/facing arm assembly

# Training at the Global Learning Center

Climax has been teaching the fundamentals and fine points of portable machine tool operation for practically as long as we've been inventing and building the tools.

At the Climax Global Learning Center situated in our corporate headquarters near Portland, Oregon, we provide training for machine tool operators on portable machine tool safety, and machine setup and operation. Trainees also receive technical tips and tools to improve operational efficiencies, with the vast majority of every program devoted to hands-on activities and skill development.



The Climax instructional team includes specialists in shipbuilding, power generation, civil engineering, bridge re-building, petrochemical and other industries.

Whether it's a regularly scheduled course at the Global Learning Center, or custom curriculum conducted at your facility, your machinists will benefit from courses developed by some of the most respected authorities in the business.

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# CLIMAX GLOBAL LOCATIONS



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Climax has been solving complicated on-site machining and welding problems for our customers since 1964.

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With seven locations in North America, two in Europe and two in Asia, you are never far away from a Climax portable machine tool.

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