

## 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 - 58.25 inches (260.4 - 1479.6 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 0.5, 0.75, or 1 inch (12.7, 19.1, or 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 - 58.25 inches	260.4 - 1479.6 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/rev.	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 20-5/8 inches	609.6 x 939.8 x 523.9 mm
Machine, in steel crate, W, D, H	43.3 x 29.5 x 22.5 inches	1099.8 x 749.3 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 nine 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 Boring Diameter Ranges
- 6 Select Boring Heads
- 7 Select a Boring/Facing Arm Assembly
- 8 Select a Hydraulic Motor
- 9 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, 54399  
tool kit, and instruction manual.

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

\* 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

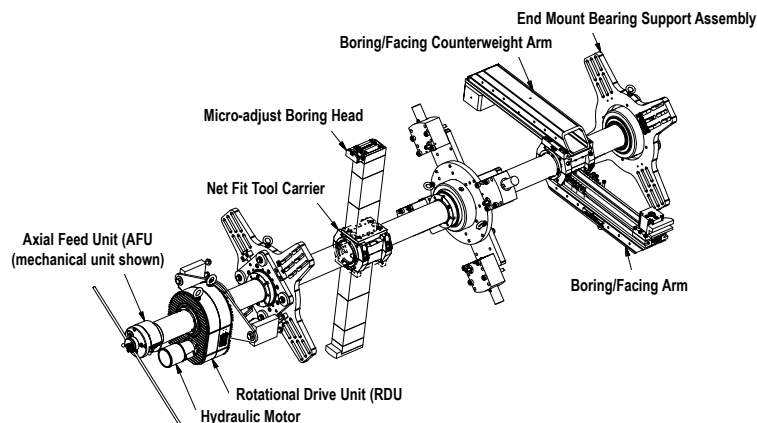
\* Multiple units may be ordered.

## 5 Boring Diameter Ranges (select tooling in next step)

Stack up blocks, boring diameter range 81251  
10.25 - 26.25 inches (260.4 - 666.8 mm)  
Stack up blocks, boring diameter range 81252  
10.25 - 58.25 inches (260.4 - 1479.6 mm)

## 6 Boring Heads

Micro adjust boring head 79020  
¾ inch (19.1 mm) tooling (½ inch (12.7 mm) ready)\*  
Micro adjust boring head 79021  
1 inch (25.4 mm) tooling  
Solid trailing boring head, leading & trailing 81246  
\* Multiple units may be ordered for leading & trailing



## 7 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.

## 8 Hydraulic Motor Assembly

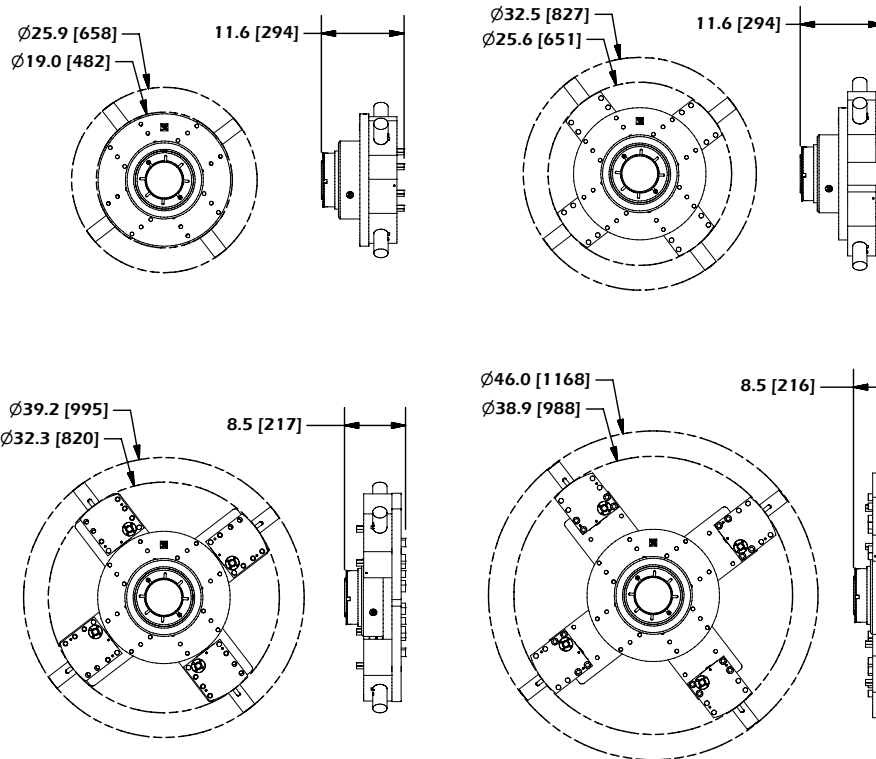
Motor Capacity		Max Bar RPM at (Intermittent operation only)				Torque at bar Calculated ft-lbs, (N•m)	Part No. Motors with 60 Series QD Fittings	Part No. Motors with ISO 16028 QD Fittings
In <sup>3</sup>	cm <sup>3</sup>	RDU Gear Ratio = 10.59:1						
		8.3 gpm* (31.5 L/min) with 50 Hz mains power	10 gpm* (37.9 L/min) with 60 Hz mains power	15 gpm* (56.8 L/min) maximum continuous	20 gpm* (75.7 L/min) maximum intermittent			
3.6	59	48	58	87	116	621 (842)	43453	84230
5.9	96.7	29	35	53	71	1060 (1437)	43454	84321
7.3	119.6	24	29	43	57	1317 (1786)	43455	84232
8.9	145.8	19	23	35	47	1282 (1738)	43456	84233
11.3	185.2	15	18	28	37	1815 (2461)	43457	84234
14.1	231.1	12	15	22	30	2068 (2804)	43458	84235
17.9	293.3	10	12	17	23	2410 (3268)	43459	84236

## 9 Shipping Container

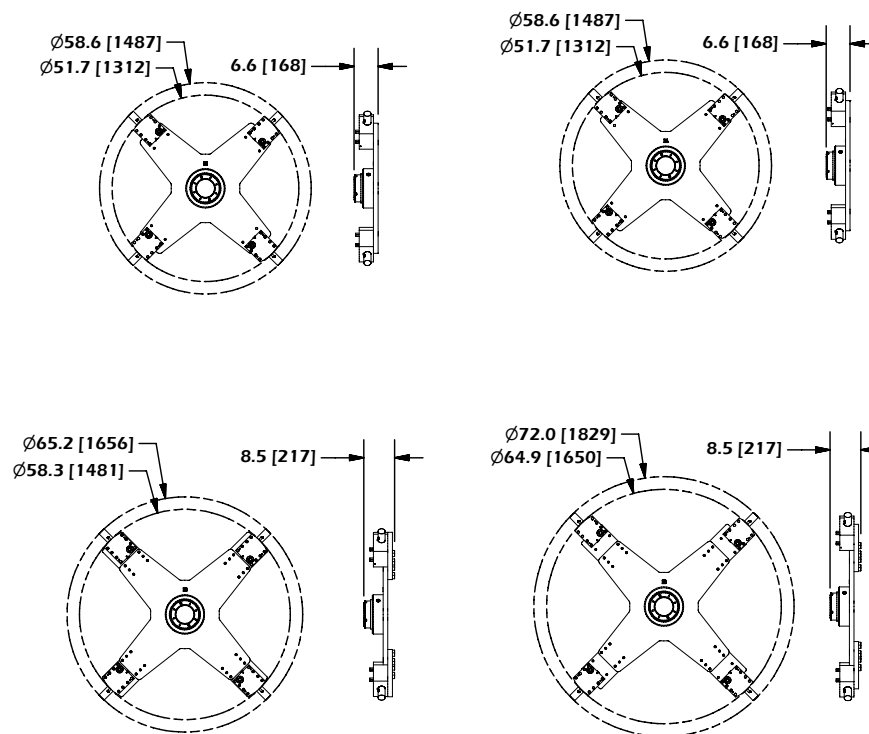
Plywood hinged crate, 24 x 37 x 20-5/8 inches 28560  
(609.6 x 939.8 x 523.9 mm)  
Metal shipping container 43.3 x 29.5 x 22.5 inches\* 54352  
(1099.8 x 749.3 x 571.5 mm)  
\* Machine components only.  
Bars and bearings available in wood only.

# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)



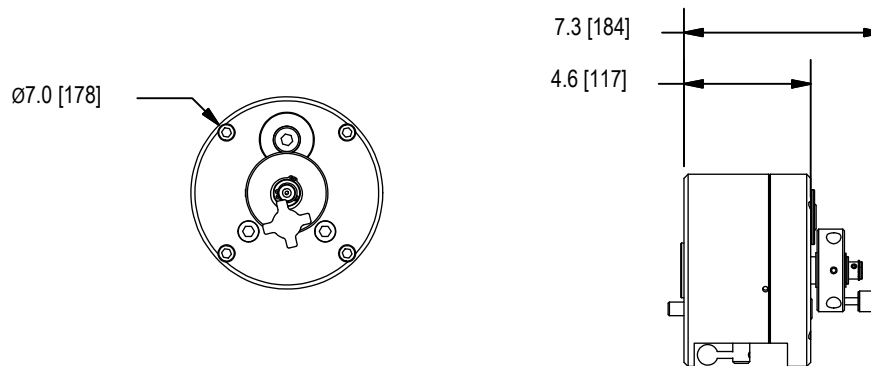
20 - 46 inch (508.0 - 1168.4 mm) ID Mount  
(Face Adjust shown. Jack screw adjust ranges are the same)



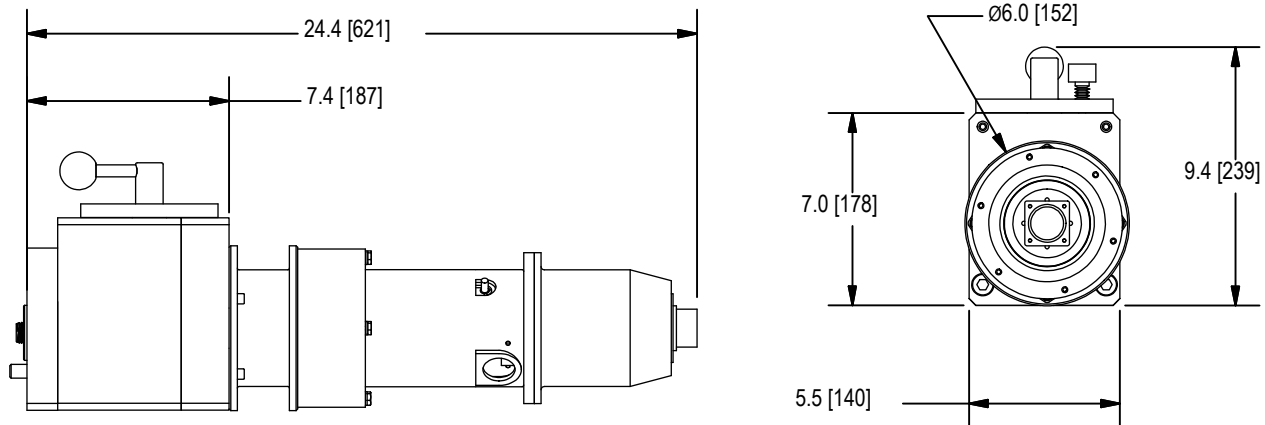
46 - 72 inch (1168.4 - 1828.8 mm) ID Mount  
(Face Adjust shown. Jack screw adjust ranges are the same)

# OPERATIONAL DIMENSIONS

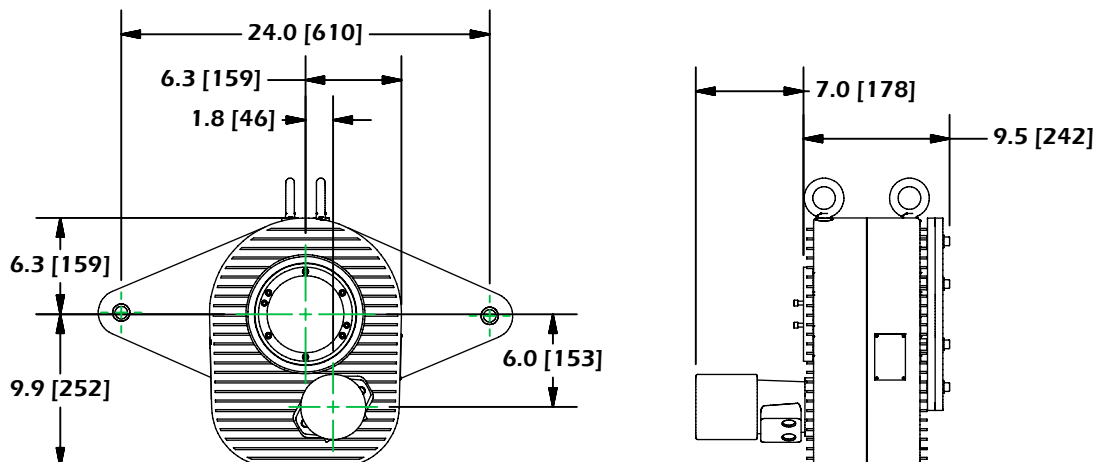
Dimensions in Inch (mm)



Mechanical Axial Feed Assembly



Electrical Axial Feed Assembly



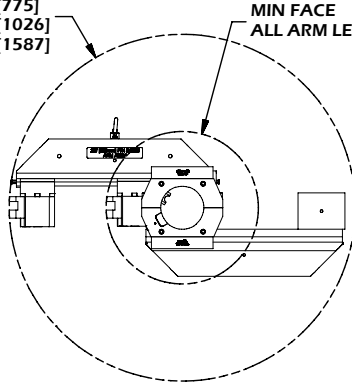
Rotational Drive Unit

# OPERATIONAL DIMENSIONS

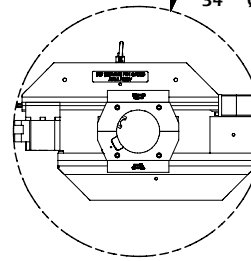
Dimensions in Inch (mm)

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

**MIN FACE**  
 ALL ARM LENGTHS Ø17.8 [453]

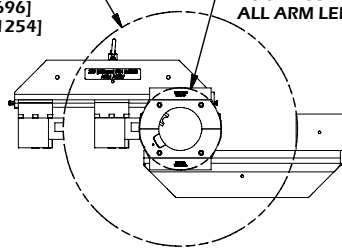


**MIN FACE SWING**  
 18" Ø24.3 [618]  
 23" Ø29.2 [742]  
 34" Ø40.0 [1016]

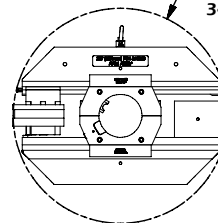


**MAX FACE**  
**TOOL POST REVERSED**  
 18" Ø17.4 [442]  
 23" Ø27.4 [696]  
 34" Ø49.4 [1254]

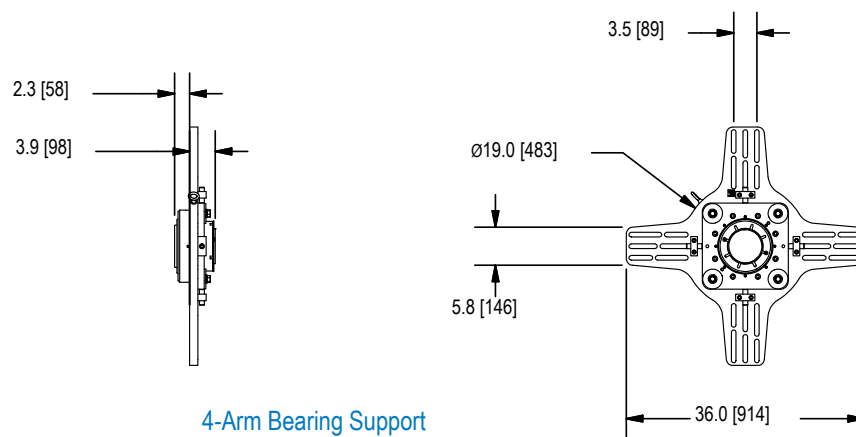
**MIN FACE**  
**TOOL POST REVERSED**  
 ALL ARM LENGTHS 9.6 [244]



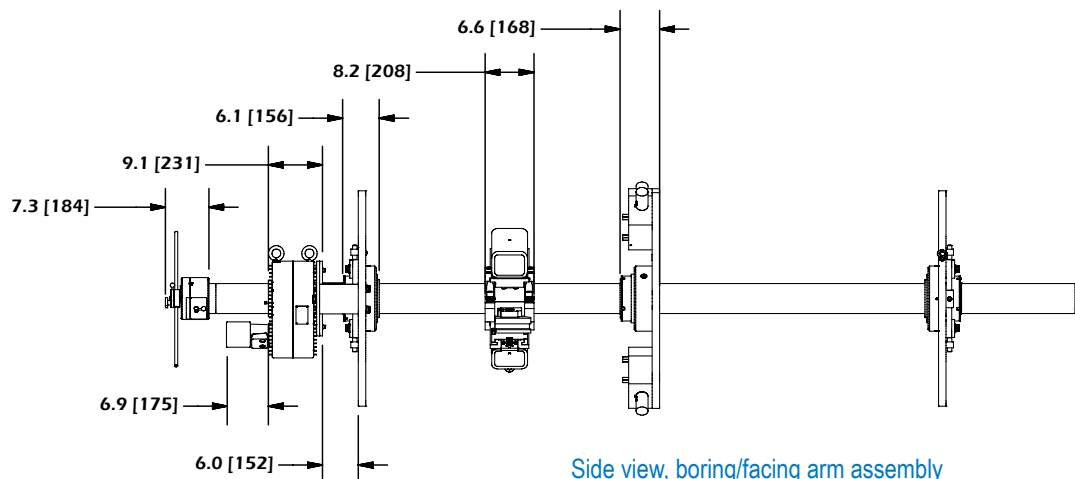
**MIN BORE**  
 18" Ø22.1 [562]  
 23" Ø25.1 [638]  
 34" Ø35.9 [912]



Boring/facing arm configurations



4-Arm Bearing Support



Side view, boring/facing arm assembly



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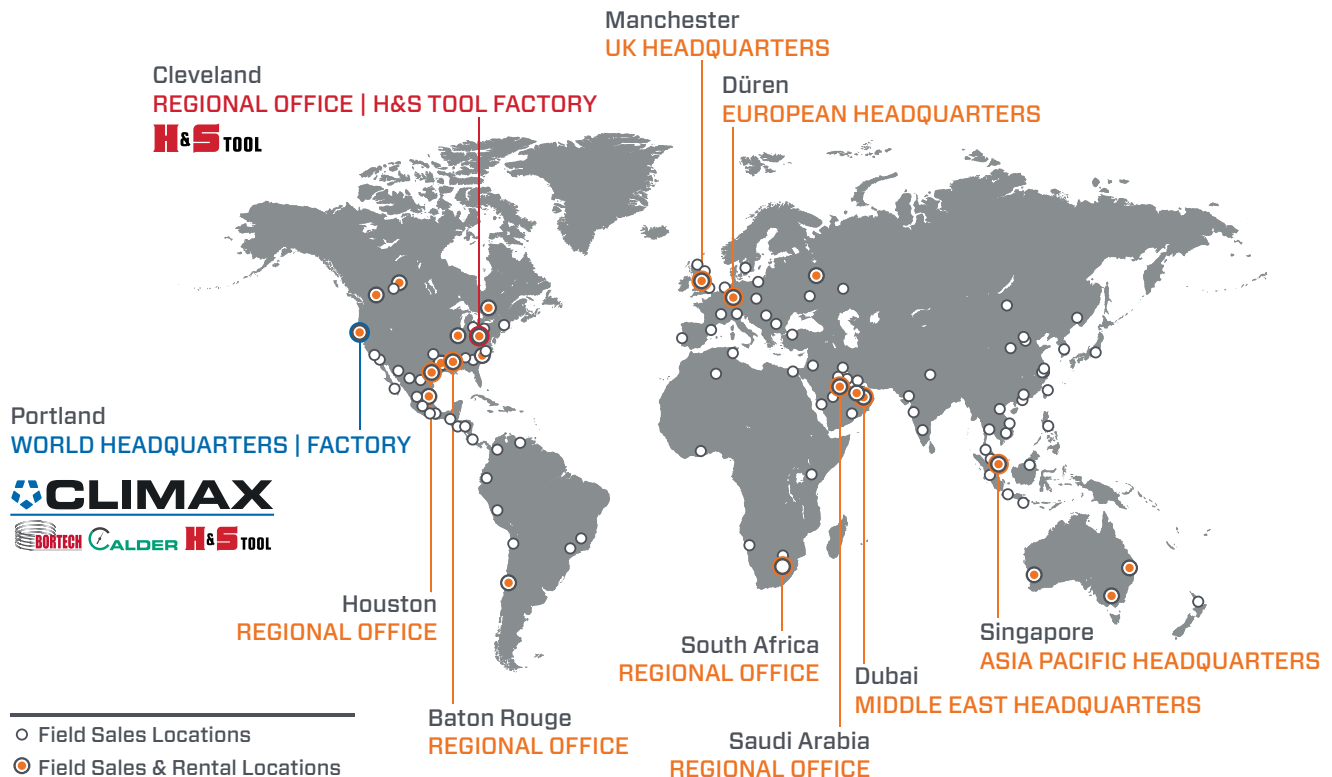
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