

# BB5000 PORTABLE BORING MACHINE

## TECHNICAL DATA AND CONFIGURATION GUIDE

### A powerful boring machine that you can customize to match your needs.

**Fits into restricted spaces:** The Model BB5000 can be used easily in cramped, tight workspaces. Exclusive, Climax-patented mounting components provide the flexibility to handle tough boring jobs, even when space is limited. The BB5000's through-bar design allows you to mount the rotational drive and feed unit anywhere along the bar. This flexibility means the BB5000 will complete your job where others won't even fit.

**The most powerful boring machine in its class:** You'll be amazed at the power of this portable boring machine. The BB5000 is capable of producing over 544 N•m (400 ft lbs.) of torque at the bar — more than any other portable boring machine in its boring range. The BB5000's specially designed rotational drive unit (RDU) applies a 4-to-1 gear reduction ratio to the power drive. This provides extremely high torque even at lower bar RPMs. The result: you get your job done fast.

**Quick setup means you get up and running quickly:** Setup of the BB5000 is quick and easy using Climax's unique system of set-up cones and spherical mounts. Typical setup is 30 minutes or less.

**Customize the BB5000 for your specific needs:** This portable boring machine is truly a versatile tool. Its broad array of accessories means you can use the BB5000 for blind boring, line boring, drilling, facing, threading, valve repair and trepanning. A special interface kit allows you to quickly attach and precisely align a borewelder to the BB5000's mounting fixtures. Climax also offers the industry's broadest range of electric, hydraulic and pneumatic power options for added flexibility.

#### The BB5000 is now used by these industries:

- Construction
- Mining
- Transportation
- Power generation
- Ship building
- Petrochemical
- Pulp and paper
- Steel and aluminum

#### Typical applications:

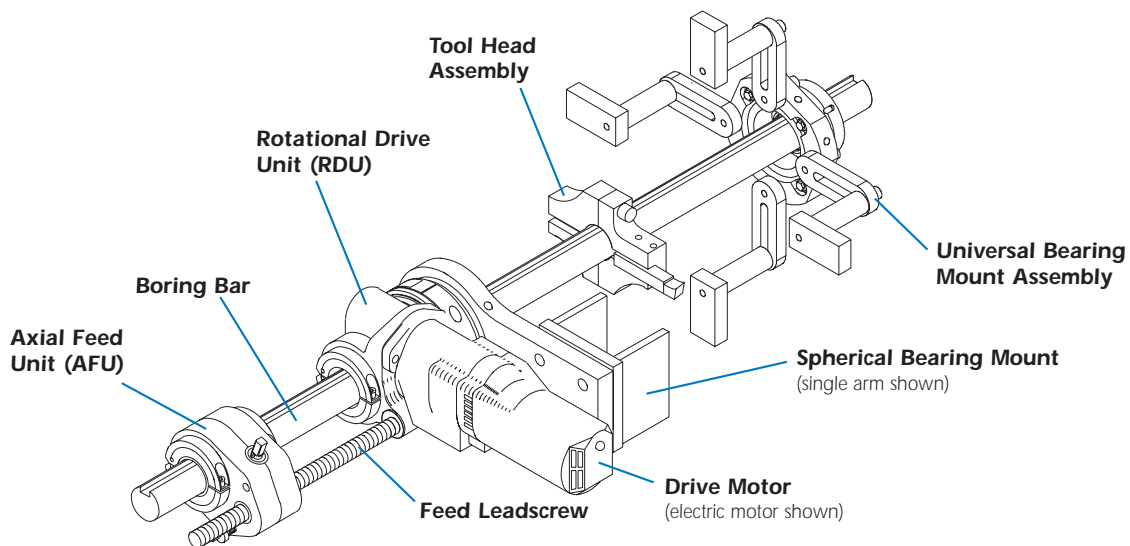
- Heavy equipment repair
- Stern tube boring
- Bridge building/re-building
- Wicket gate repair
- Turbine coupling boring
- Engine block repair
- Bearing seat repair
- Press repair
- Valve body boring
- Pump body boring
- Large fab bore alignment

#### Overall boring range:

Standard: 64mm–305mm (2.5"–12")

Optional\*: 35mm–610mm (1.375"–24")

\*with optional BB5000 Accessories



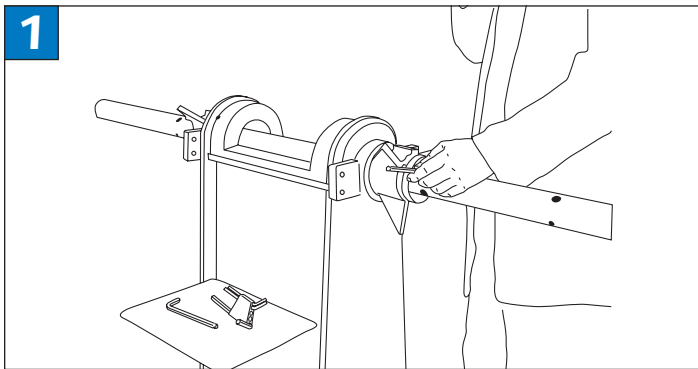
**CLIMAX**

Portable Machine Tools, Inc.

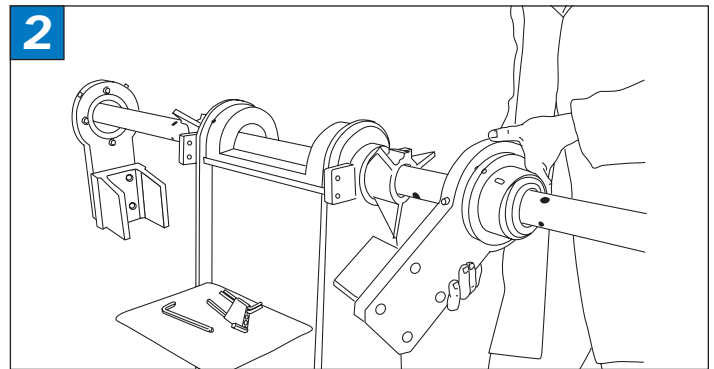
## Machine setup takes 30 minutes or less so you get up and running quickly

- The BB5000s through-bar design means you can mount the rotational drive unit and feed box anywhere along the bar. They do not have to be mounted next to each other. This allows you to set up the BB5000 in very restricted spaces. Special setup cones make it easy to center the bar in the bore.
- You won't have to spend a lot of time attaching/welding tack mounting plates to exact alignment. The initial fixture mounting can be 5 degrees or more out of alignment and Climax's exclusive, patented spherical mounting system will allow you to bring the BB5000 into perfect alignment with your bore. The BB5000 also features four precision alignment screws for precisely dialing into the center of an existing bore or into a bore that is not exactly true.
- The BB5000 modular design also eliminates the problem of lifting heavy, bulky, one-piece machines on the job site. The BB5000 quickly assembles/disassembles one component at a time.

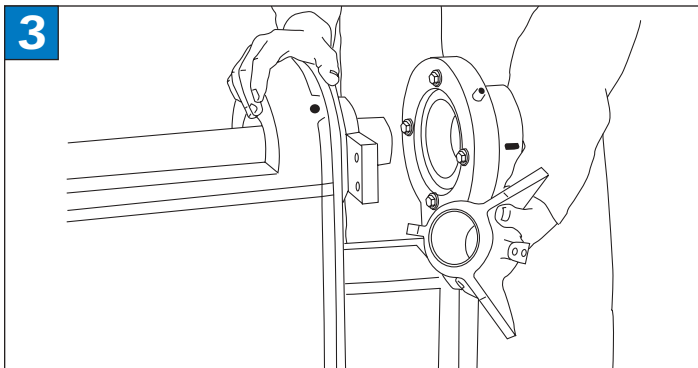
### BB5000 set-up is a fast six-step process.



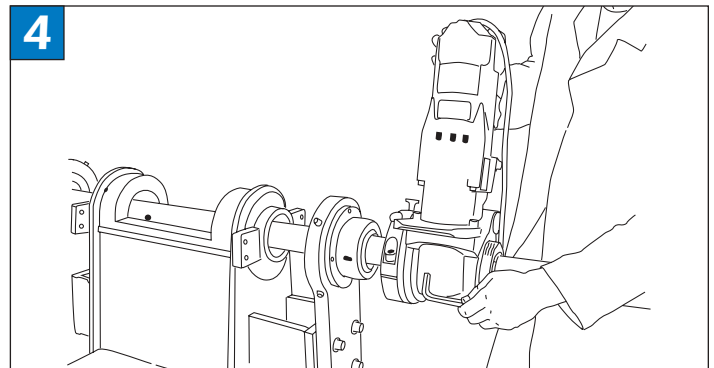
1 Insert the bar through the holes to be bored and center it with the setup cones.



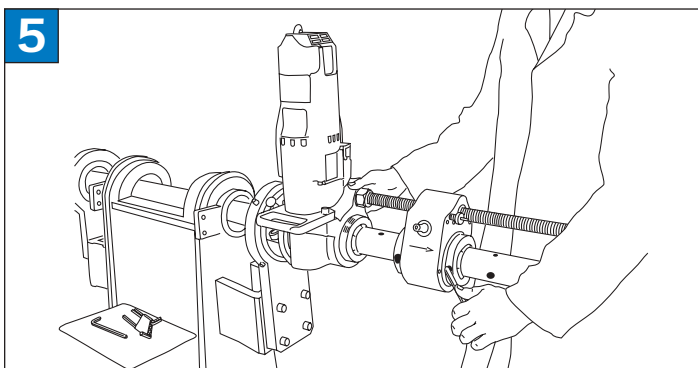
2 Slide the bearing mounts onto the bar and weld in place. The mounts have spherical bearings that allow up to 5 degrees of misalignment.



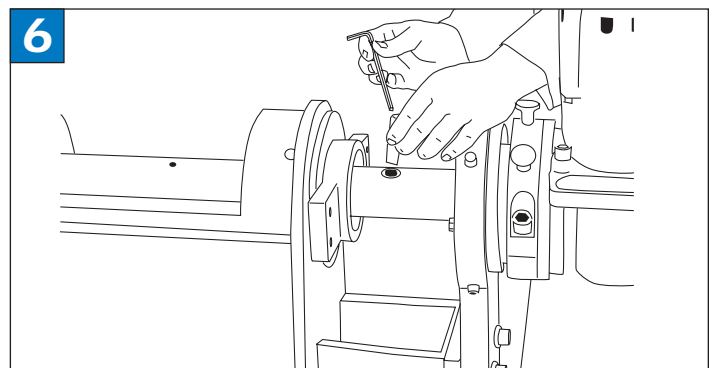
3 Remove the setup cones and replace the bar.



4 Slide on the rotational drive and tighten with a single bolt clamp.



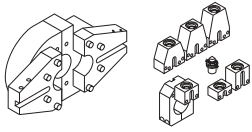
5 Slide the axial feed onto the bar and screw the lead screw into the rotational drive unit. Tighten the two clamp collar bolts.



6 Insert tool bit into the bar and adjust for depth of cut.

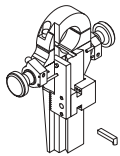
## Expand the versatility of your BB5000 Boring Bar with high quality Climax accessories.

(Refer to the BB5000 accessories worksheet for specific part numbers and additional specifications)



### Boring Head Sets

- Standard boring head set for bores 114mm–305mm (4.5"–12") diameter
- Optional boring head set for bores 305mm–610mm (12"–24") diameter (includes 13mm (0.5") cemented carbide tool bits)
- Optional carbide tenthset boring head set for bores 151mm–324mm (5.96"–12.75") diameter

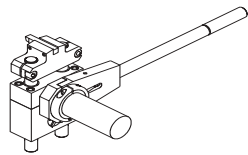


### Facing & Grooving Head Assembly

Mounts anywhere on the bar.

Facing range: 76mm–483mm (3"–19")

Grooving range: 102mm–483mm (4"–19")

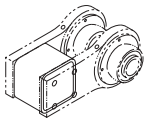


### Facing Head Assembly

Facing head mounts anywhere on the bar. Radial feed with dual lead screws & single point tool holder.

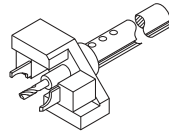
Facing range: 64mm–457mm (2.5"–18")

Models available for 57mm (2.25") and 32mm (1.25") diameter bars.



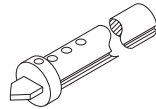
### Cantilever Mounting Assembly

Insures machine stability when blind boring, trepanning, spade drilling or tapping.



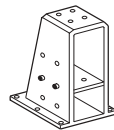
### Trepanning Tools

Improves the versatility of your BB5000 by allowing you to cut discs 60mm–300mm (2.4"–11.8") in diameter.



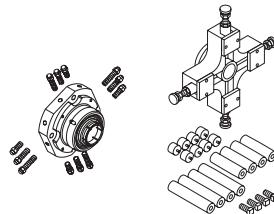
### Spade Drill Accessories

Drills holes 38–85mm (1.5–3.5") in diameter.



### Right Angle Drill Stand

Allows you to utilize your BB5000 for heavy-duty drilling operations.

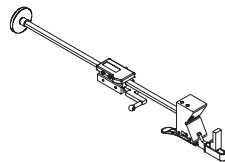


### ID Bearing Mount

Provides 4-way adjustable bar alignment and rigidity for bar mounting inside the bore.

Two styles and mounting ranges available:

- 222mm–305mm (8.75"–12")
- 292mm–610mm (11.5"–24")

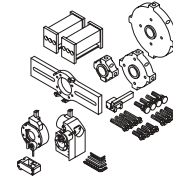


### Bore Measuring Instrument

Allows precision bore measurement while the bar is still mounted in the work piece.

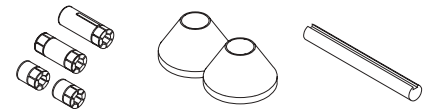
Two range settings available:

- 75mm–305mm (3"–12")
- 75mm–610mm (3"–24")



### Valve Accessory Kit

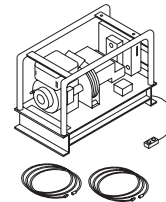
Enables the BB5000 to machine 152mm–406mm (6"–16") diameter valves.



### Small Bore Kit

Includes the accessories you need for boring holes down to 38mm (1.5") in diameter. Kit includes:

- Set of adapter sleeves
- Small diameter set-up cones
- Small diameter bar: 32 mm (1.25")



### Hydraulic Power Units

Provides a reliable power source for the BB5000 hydraulic motor.

- Electric powered (3-phase)
- Diesel powered
- Gasoline powered
- Multiple voltages:
  - 230V
  - 380V
  - 460V
  - Other voltages available
- 5 hp (6 GPM) & 10 hp (10GPM)
- CE models available upon request

Your part number is: **BB5000** .  .  .  . **0**   .   .   .   .   .   **0**

(To generate your part number, write the number of each option you require in the corresponding box.)

## Configure your BB5000 in five easy steps.

To configure your BB5000 Boring Bar, you will need to:

- 1 Select a Base Configuration.
- 2 Select a Drive Option (motor control & motor).
- 3 Select a Feed System Option.
- 4 Select a Mounting Option.
- 5 Select a Main Boring Bar Option.

To generate the correct part number for the boring bar you require, simply select the option you need in each step, then write the number of that option in the corresponding box at the top of this page. Contact your Climax representative for additional configurations.

### Step 1: Select a Base Configuration

**A** Write the number of the Base Configuration you need in box "A."

Base Configuration Number 1:  
(Standard Inch Package)

Includes

- Rotational Drive Unit (RDU)
- Tool Kit with Cutting Tools (inch)
- Tool Head Set (4.5"-12")
- Set-up Cones
- Operator's Manual, Instructional Video & Rugged Shipping/Storage Case

Base Configuration Number 2:  
(Standard Metric Package)

Includes

- Rotational Drive Unit (RDU)
- Tool Kit with Cutting Tools (metric)
- Tool Head Set (114mm-305mm)
- Set-up Cones
- Operator's Manual, Instructional Video & Rugged Shipping/Storage Case

Base Configuration Number 3:  
(Standard Inch Package)

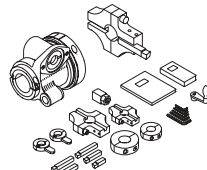
Includes

- Rotational Drive Unit (RDU)
- Tool Kit with Cutting Tools (inch)
- Tool Head Set (4.5"-12")
- Operator's Manual, Instructional Video & Rugged Shipping/Storage Case

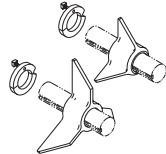
Base Configuration Number 4:  
(Standard Metric Package)

Includes

- Rotational Drive Unit (RDU)
- Tool Kit with Cutting Tools (metric)
- Tool Head Set (114mm-305mm)
- Operator's Manual, Instructional Video & Rugged Shipping/Storage Case



Base Unit



Set-Up Cones

(Included with base configurations 1 & 2)

**These motors are also available for your BB5000 (order separately):**

28695:

Hydraulic, 8.9 cu. in.,  
36 bar rpm @ 6 GPM

21533:

Hydraulic, 14.1 cu. in.,  
23 bar rpm @ 6 GPM

39112:

Pneumatic, 3 Hp, 120 bar rpm  
(includes air conditioning unit)

### Step 2: Select a Drive Option (Motor Control & Motor)

**B** Write the number of the Motor Control you need in box "B."  
(Motor Control is required with electric motors.)

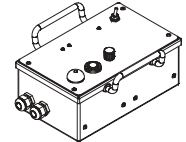
Number 0: No Speed Control  
(pneumatic & hydraulic motors)

Number 1: 120V Speed Control

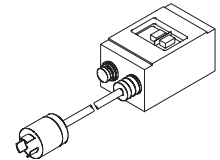
Number 2: 230V Speed Control

Number 3: 120V Manual Motor Starter  
(single speed on/off)

Number 4: 230V Manual Motor Starter  
(single speed on/off)



Electronic Speed Control



Motor Starter

**C** Write the number of the Motor you need in box "C."

Number 1: Electric 120 VAC, 50/60 Hz Single Phase, 168/82 bar rpm

Number 2: Electric 120 VAC, 50/60 Hz Single Phase, 112/55 bar rpm

Number 3: Electric 230 VAC, 50/60 Hz Single Phase, 168/82 bar rpm

Number 4: Electric 230 VAC, 50/60 Hz Single Phase, 112/55 bar rpm

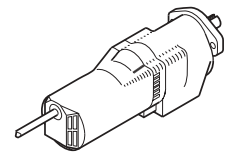
Number 5: Hydraulic, 2.2 cu. in.,  
148 bar rpm @ 6 GPM

Number 6: Hydraulic, 3.6 cu. in.,  
90 bar rpm @ 6 GPM

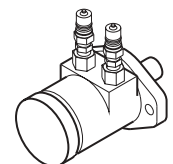
Number 7: Hydraulic, 5.9 cu. in.,  
55 bar rpm @ 6 GPM

Number 8: Hydraulic, 7.3cu. in.,  
44 bar rpm @ 6 GPM

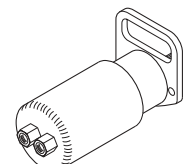
Number 9: Pneumatic, 3 Hp, 57 bar rpm  
(includes air conditioning unit)



Electric Motor Assembly  
(two-speed)



Hydraulic Motor Assembly



Pneumatic Motor Assembly

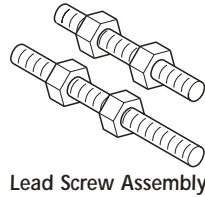
### Step 3: Select a Feed System Option

**D** Write the number of the Lead Screw Length you need in box "D."

Number **1**: 305mm (12") stroke lead screw

Number **2**: 609mm (24") stroke lead screw

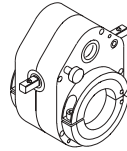
Number **3**: 915mm (36") stroke lead screw



Lead Screw Assembly

**E** Write the number of the Feed System you need in box "E."

Number **1**: Mechanical Feed



Axial Feed Assembly

### Step 4: Select a Mounting Option\*

**F** Write the number of the Arm Style Mount (with spherical bearings, support and hardware) you need in box "F."

Number **0**: None

Number **1**: 1 Single Arm Mount

Number **2**: 2 Single Arm Mounts

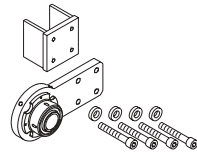
Number **3**: 3 Single Arm Mounts

Number **4**: 4 Single Arm Mounts

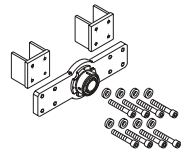
Number **5**: 1 Double Arm Mount

Number **6**: 2 Double Arm Mounts

Number **7**: 3 Double Arm Mounts



Single Arm Mount



Double Arm Mount

\*If bore is wider than 305mm (12"), a double arm mount is recommended.

### Step 5: Select Your Main Boring Bar Option

**G** Write the number of the Universal Mounting Kit (with spherical bearings, support and hardware) you need in box "G."

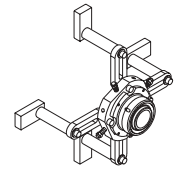
Number **0**: None

Number **1**: 1 Universal Bearing Mount

Number **2**: 2 Universal Bearing Mounts

Number **3**: 3 Universal Bearing Mounts

Number **4**: 4 Universal Bearing Mounts



Universal Mount

**H** Write the number of the Standard 2-1/4" Bars you need in box "H."

Number **1**: 48" Bar, 1/2" square tooling holes

Number **2**: 72" Bar, 1/2" square tooling holes

Number **3**: 96" Bar, 1/2" square tooling holes

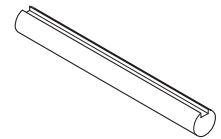
Number **4**: 144" Bar, 1/2" square tooling holes

Number **5**: 1219mm (48") Bar, 12mm square tooling holes

Number **6**: 1829mm (72") Bar, 12mm square tooling holes

Number **7**: 2438mm (96") Bar, 12mm square tooling holes

Number **8**: 3657mm (144") Bar, 12mm square tooling holes



2-1/4" Boring Bars

### Further customize your BB5000 Boring Machine with these main boring bar options Order separately (special customized bars available on request):

#### 2-1/4" bars, 1/2" square tooling holes, spaced 254mm (10") apart

Part #	Length
34629	3048mm (120")
37474	4267mm (168")

#### 1-1/4" bars for BB5000 small bore kit, 3/8" square tooling holes, spaced 254mm (10") apart

Part #	Length
37337	1219mm (48")
37338	1829mm (72")
37339	2438mm (96")
37340	3048mm (120")
37341	3658mm (144")

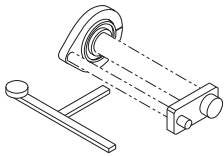
#### 2-1/4" bars, 12mm square tooling holes, spaced 254mm (10") apart

Part #	Length
34638	3048mm (120")

#### 1-1/4" bars for BB5000 small bore kit, 10mm square tooling holes, spaced 254mm (10") apart

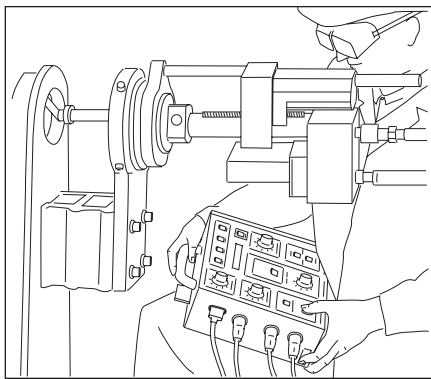
Part #	Length
37327	1219mm (48")
37328	1829mm (72")
37329	2438mm (96")
37330	3048mm (120")
37331	3658mm (144")

Add a bore welder to your BB5000 Boring System. Climax makes it easy with our convenient bore welder interface kit. Attach your bore welder to the BB5000's mounting fixtures. Insures perfect alignment for both welding and machining. And one setup for both welding and boring saves time and helps you get the job done fast.

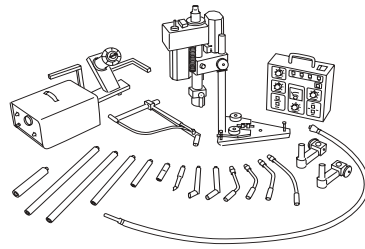


### Bore Welding Interface Kit

Allows you to attach a bore welder to your BB5000's mounting fixture, insuring perfect alignment for both welding and boring.

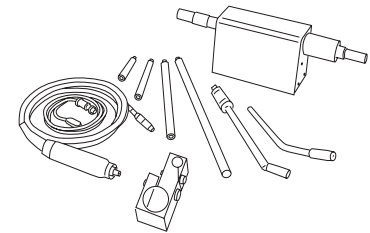


Automated welder model 306-P shown mounted on the BB5000 mounting fixtures



### Model 306-P Automated Welding System

Advanced bore welding system featuring microprocessor control for automated weld pattern procedures



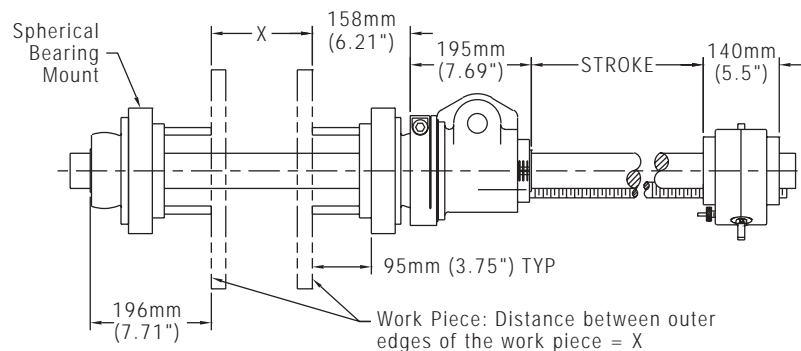
### Dozer Model Automated Welding System

Quality, entry level automated bore welding system

### Here's how to determine the length of the boring bar you will require.

$$\text{Length of boring bar required} = X + 686\text{mm (27')} + \text{Required Stroke}$$

Maximum unsupported (distance between bearings) bar length is 1200mm (48")



A 95mm (3.75") spacer plate required for cone removal on flat mounting surfaces. If the spacer plate is attached to a shoulder or boss a thicker plate will be required. If thicker plate is used, increase bar length accordingly.

## BB5000 Quick Specs Guide

### Boring Bar Diameter

57mm (2.25") Standard  
32mm (1.25") Optional

### Boring Diameter

64–305mm (2.5"–12") Standard  
35–610mm (1.375"–24") Optional

### Boring Stroke

304, 609, 914mm (12", 24", 36")

### Power Options

Electric, Pneumatic, or Hydraulic

### Mounting Options

Single Arm, Double Arm, Universal

### Rotational Drive Unit

4-to-1 gear ratio reduction

### Set-Up Cones

70–305mm (2.75"–12") Standard  
35–127mm (1.375"–5") Optional

### Feed

Mechanical

### Feed Rate

0–0.48mm (0–.019") per revolution

### Typical Machine Ship Weight

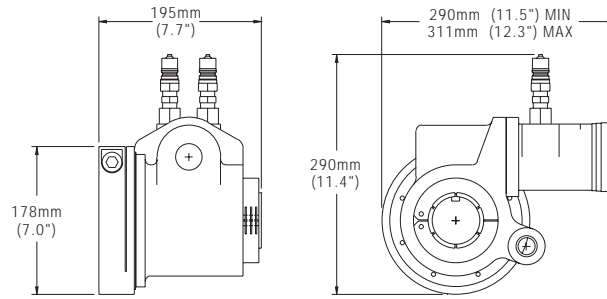
201 kg (444 lbs). Typical machine with single arm mounts, set-up cones & hydraulic motor.

### Approximate Boring Bar Ship Weight

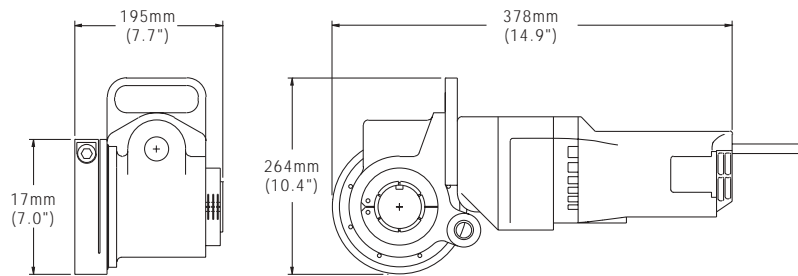
0.264 kg/cm (1.48 lbs/in). Includes metal shipping container.

### Machine Shipping Dimensions

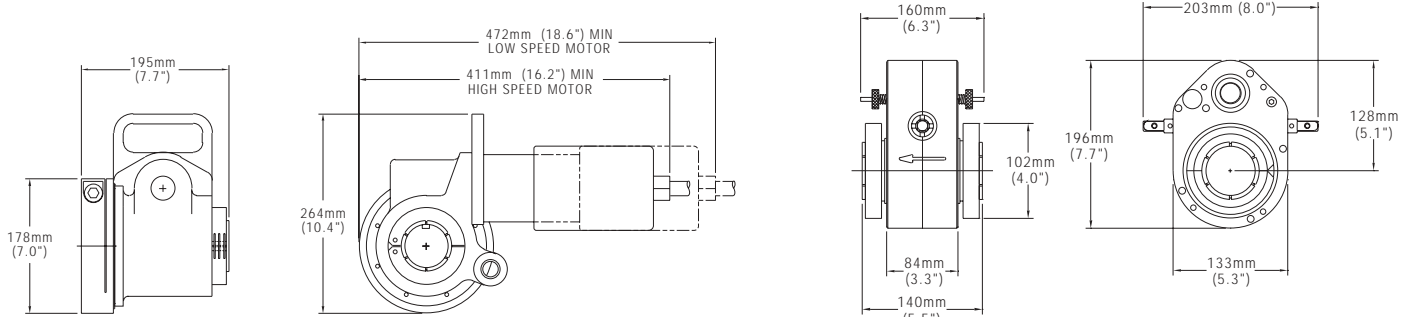
Shipped in 2 containers, 3 containers for hydraulic power unit option  
Machine (W, D, H): 1334mm x 686mm x 419mm (52.5" x 27" x 16.5")  
Bar [1829mm (72")] (W, D, H): 1892mm x 165mm x 178mm (74.5" x 6.5" x 7")  
HPU [5 hp] (W, D, H): 737mm x 660mm x 1118mm (29" x 26" x 44")



Rotational drive unit with hydraulic motor

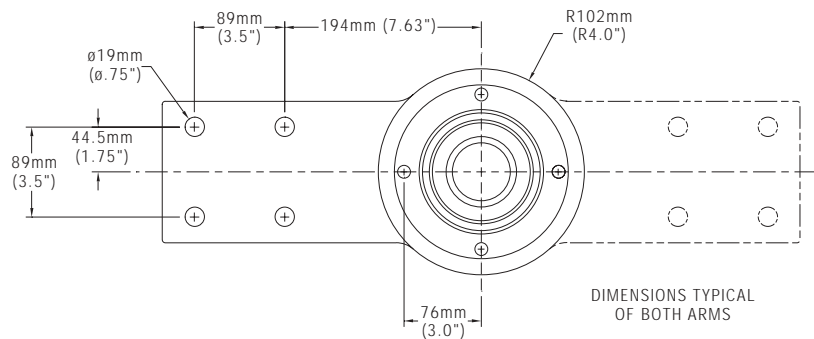


Rotational drive unit with electric motor



Rotational drive unit with pneumatic motor

Axial feed unit



Spherical bearing mounting bracket

DIMENSIONS TYPICAL OF BOTH ARMS

## Climax also offers you these specialized services:

### • Machine Rentals

With eight worldwide rental depots, you are never far from a Climax Portable Machine Tool. Contact our staff of fully trained product and logistics experts who can have a machine delivered to your site in a matter of days.

### • Special Projects

Climax has been solving our customers' complex on-site machining problems for more than 35 years. Call us today for a solution to your specific application.

### • Training

Climax is committed to providing you with comprehensive training programs. We offer classes at our headquarters training facility or can provide you with customized training programs at your facility.

## Other portable machine tools manufactured by Climax

Contact Climax Portable Machine Tools for information on our comprehensive range of portable machine tools including:

- Boring Bars
- Key Mills
- Flange Facers
- Lathes
- 3-Axis Mills
- Valve Repair

## Product Warranty

Climax warrants that all new machines are free of defects in materials and workmanship for a period of one year after delivery. Within the warranty period, Climax will, at its option, either repair or replace the defective machine.

## Climax Portable Machine Tools Worldwide Rental & Manufacturing Facilities

To rent a Climax Portable Machine Tool call 1-800-333-8311 (USA/Canada);  
49 (0) 2421.9177.0 (Europe); 1-503-538-2185 (all other countries)



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