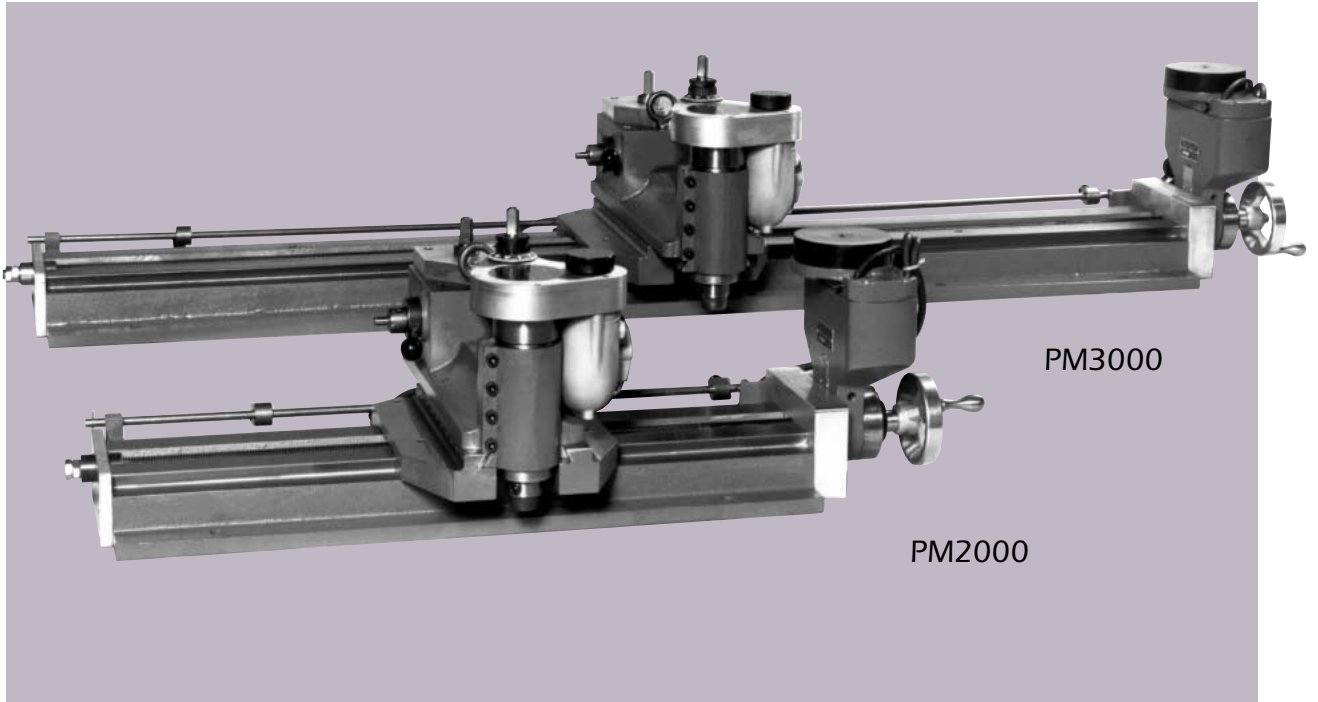


# Model PM Series Three Axis Mills



- Features
- Setup & Operation
- Technical Data



**CLIMAX**  
Portable Machine Tools, Inc.

# Features

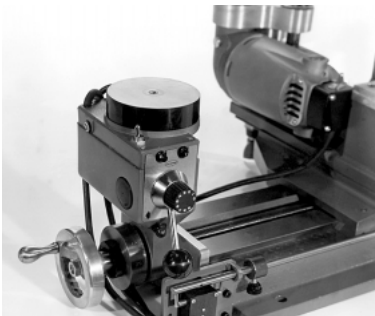
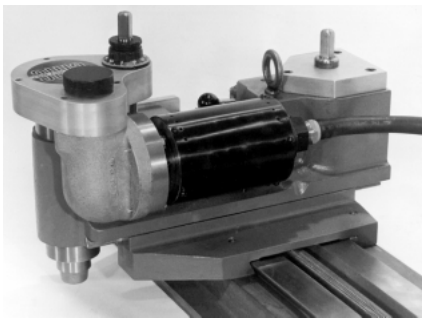
Climax's PM Series 3-axis portable milling machines provide precise and versatile on-the-job milling capabilities. They are designed to be attached either to the work piece or to a fabricated frame beside it. Downtime savings will pay for the machine in a short time.

- All gears and drives are permanently lubricated and sealed to allow operation in any position.
- Precision machined dovetail ways and adjustable gibs provide smooth accurate travel.

## **Longitudinal travel (bed):**

- 20" (508 mm) for PM2000
- 49" (1244.6 mm) for PM3000
- 78" (1981 mm) for PM4000.

***A 1 hp electric motor is standard equipment; a pneumatic power option is available for flammable vapor areas.***

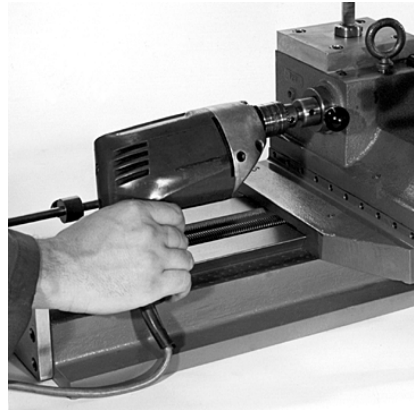


***Power feed on the longitudinal axis provides an infinitely variable feed rate from 0 to 20 IPM with push-button rapid traverse.***

- Push-button rapid traverse saves time between cuts.
- Adjustable feed stops on the slide are standard.
- Forward, neutral and reverse modes are controlled by a shift lever. A hand wheel is provided for fine adjustments.

## **Cross travel (top slide):**

- 8-inch (203 mm)
- Hand-fed with a crank or power-fed with your 3/8 inch drill.



***A portable variable speed drill motor may be used as a power cross feed drive by applying it to the external stud provided.***

## **Vertical travel (spindle):**

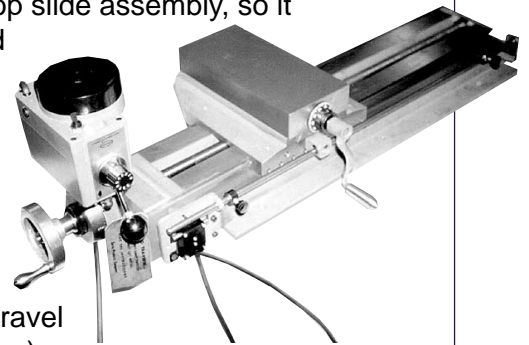
- 3" (76 mm) for all models, controlled by hand crank.
- The vertical adjusting screw is calibrated for accurate adjustments and has a locking nut for zeroing.
- Power is delivered by a triple gear reduction power head with in-line electronic speed control providing spindle speeds from 280 to 525 rpm.
- Spindle accepts standard 3/4" Weldon-type shank cutting tools. A 20 mm spindle is available for metric applications.

## The PM-B Series Portable Mill

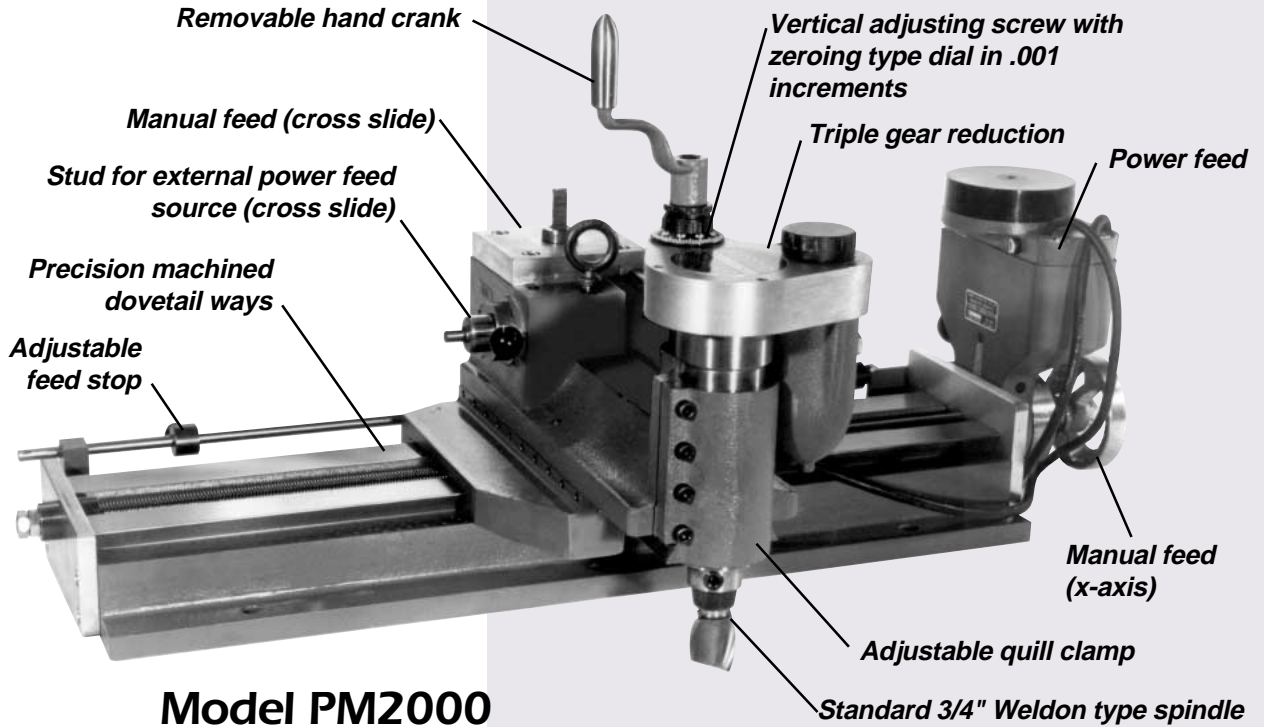
This 2-axis machine has a blank tool post slide instead of the top slide assembly, so it can be modified to suit the job site needs.

Longitudinal travel is the same as for the PM series machines.

Tool post slide travel is 6.4" (162.5 mm).



# Applications

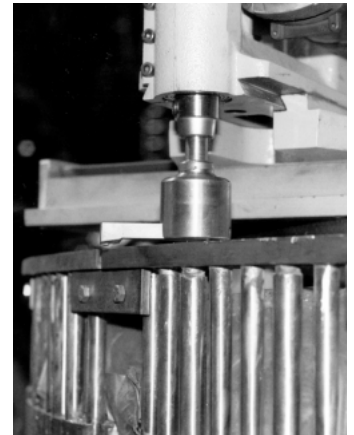


## A Wide Variety of Applications

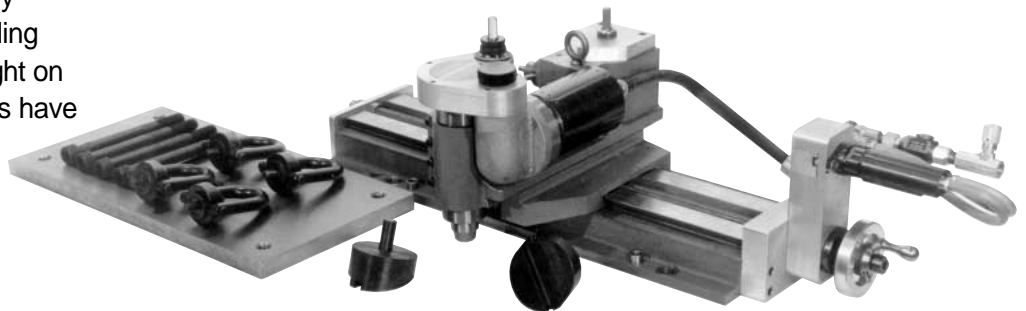
The Climax PM Series are especially useful for milling large cumbersome parts. Anyone familiar with basic machining practices will find these portable mills simple to operate. Many customers use the PM Series machines when welding up and re-machining worn parts on production machinery such as stamping presses. Long motor mount slots are easily machined, often without dismantling since the mill can be mounted right on the part. Aluminum smelter plants have used a PM2000 with a fly cutter to quickly face off the pitted surface of 20-foot beams used as bus bars.



*A PM3000 milling a turbine diaphragm at Philadelphia Electric.*



*Using a PM2000 with a fly cutter to mill the flange on a large pump on-site.*



*A PM2000 with pneumatic motor, shown here with fly cutters, was used to reface 20 foot bus bars in an aluminum plant.*

# Setup and Operation

The PM Series is designed to meet the requirements of a variety of applications and can be mounted in any position the job calls for - even upside down. Electronic speed control provides reduced spindle speeds for harder materials. Gear box, spindle, quill, and vertical adjusting screw assembly may be removed as a unit to sharpen or replace the end mill.

## **Setup**

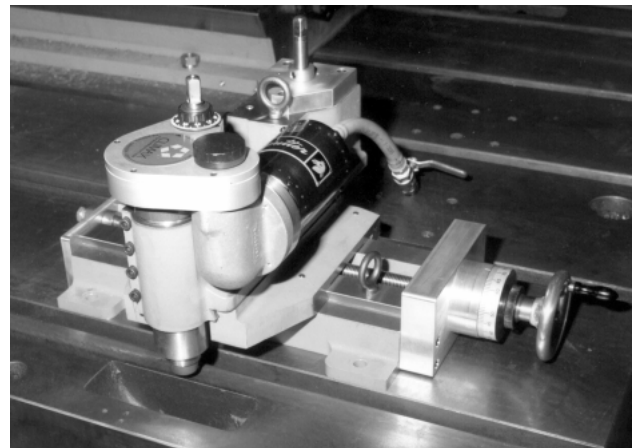
Setup of the portable mill consists of positioning it where you want it in relation to the work piece and clamping or bolting it securely in place. Attach the base directly to the work piece using the bolt-down bosses provided or position it next to the work on a fabricated frame. Mounting rigidity is very important. The best way to mount the machine is to weld attachment points right on the work piece. This eliminates vibration, flexing and other sources of chatter. If you are using an overhead frame for mounting the machine upside down, be sure the frame is rigid enough to handle the weight and side torque forces of milling operations.

## **Operation**

Operation of a PM Series mill is similar to any 3-axis milling machine. Once the machine is rigidly mounted, insert the proper cutter in the spindle, and position for the cut. A rapid travel button allows for faster milling head positioning. Feed control varies with the power option. It is possible to operate both the X and Y-axis feeds at the same time. After positioning, the gibs should be adjusted to provide a smooth, even cut. The hand crank may be used for travel in all three axes.

## **Look to Climax**

Climax has over 7,000 portable metal-cutting machines in service worldwide. Our years of experience mean we probably have a machine to solve your maintenance problem; if not, we can modify an existing machine or design one to fit your application. Our machines are designed to get the job done for you accurately and save you downtime in the process. Give us a call today... we will be happy to talk with you about your application.



***A specially modified PM2000 with an air motor.***

# PM Technical Information

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

## MACHINE SPECIFICATIONS:

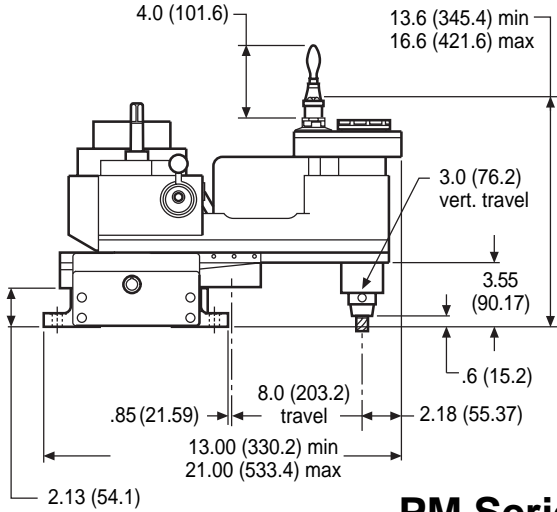
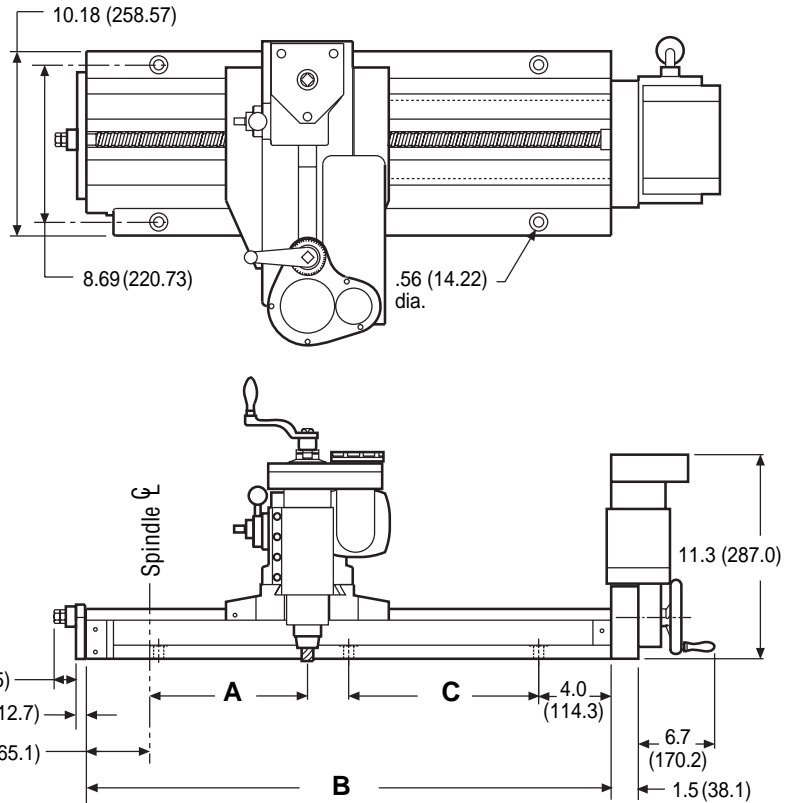
	<b>PM2000/PM2000-B</b>	<b>PM3000/PM3000-B</b>	<b>PM4000/PM4000-B</b>
<b>Overall length</b> (w/o feed assembly):	36.85 (935.99)	64.85 (1672.99)	94.85 (2409.19)*
<b>Overall width</b>			
Minimum:	13.22 (335.79)	13.22 (335.79)	13.22 (335.79)
Maximum (top slide extended):	20.22 (513.59)	20.22 (513.59)	20.22 (513.59)
<b>Overall height</b> (std mach)			
Minimum:	13.6 (345.4)	13.6 (345.4)	13.6 (345.4)
Maximum:	16.6 (421.6)	16.6 (421.6)	16.6 (421.6)
<b>Overall height</b> (B-series):	11.3 (287.0)	11.3 (287.0)	11.3 (287.0)
<b>Height from mounting surface to spindle nose</b>			
Minimum:	0.6 (15.2)	0.6 (15.2)	0.6 (15.2)
Maximum:	3.6 (91.4)	3.6 (91.4)	3.6 (91.4)
<b>Milling area</b> (single setup):	8.0 x 20.0 (203.2 x 508.0)	8.0 x 49.0 (203.2 x 1244.6)	8.0 x 78.0 (203.2 x 1981.2)
<b>Longitudinal travel:</b>	20.0 (508.0)	49.0 (1244.6)	78.0 (1981.2)
<b>Cross slide travel:</b>	8.0 (203.2)	8.0 (203.2)	8.0 (203.2)
<b>Vertical travel:</b>	3.0 (76.2)	3.0 (76.2)	3.0 (76.2)
<b>Spindle size:</b>	.75" (20)	.75" (20)	.75" (20)
<b>No-load spindle speed</b>			
(electric motor):	280-525 rpm	280-525 rpm	280-525 rpm
(air motor*):	Up to 900 rpm	Up to 900 rpm	Up to 900 rpm
(hydraulic motor**):	Up to 274 rpm	Up to 274 rpm	Up to 274 rpm
<b>Blank tool slide length:</b>	11.0 (279.4)	11.0 (279.4)	11.0 (279.4)
<b>Blank tool slide travel:</b>	6.4 (162.5)	6.4 (162.5)	6.4 (162.5)
<b>Working weight</b>			
Machine only:	332 lb (151 kg)	544 lb (248 kg)	710 lb (323 kg)

\* Air motor requires 105 cubic feet per minute (3m<sup>3</sup>/min) at 80 psi (550 kPa).

\*\* Configurations including special bed lengths and hydraulic milling heads available upon special request.

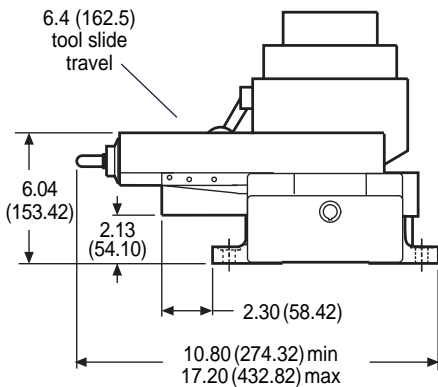
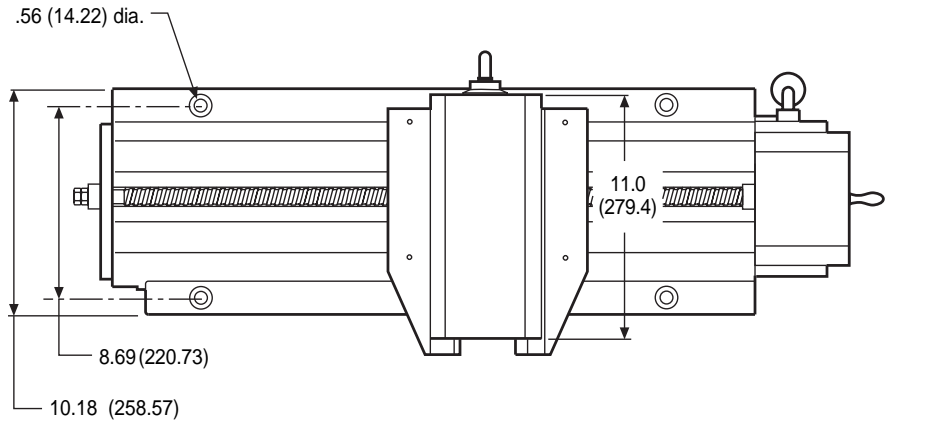
# PM Operational Dimensions

Model	Dim. A Long. Travel	Dim. B Bed Length	No. of Mtg Holes	Dim. C Hole Spacing
PM2000	20.0 (508.0)	29.0 (736.6)	6	10.5 (266.7)
PM3000	49.0 (1244.6)	58.0 (1473.2)	12	10.0 (254.0)
PM4000	78.0 (1981.2)	87.0 (2209.8)	18	9.88 (250.83)



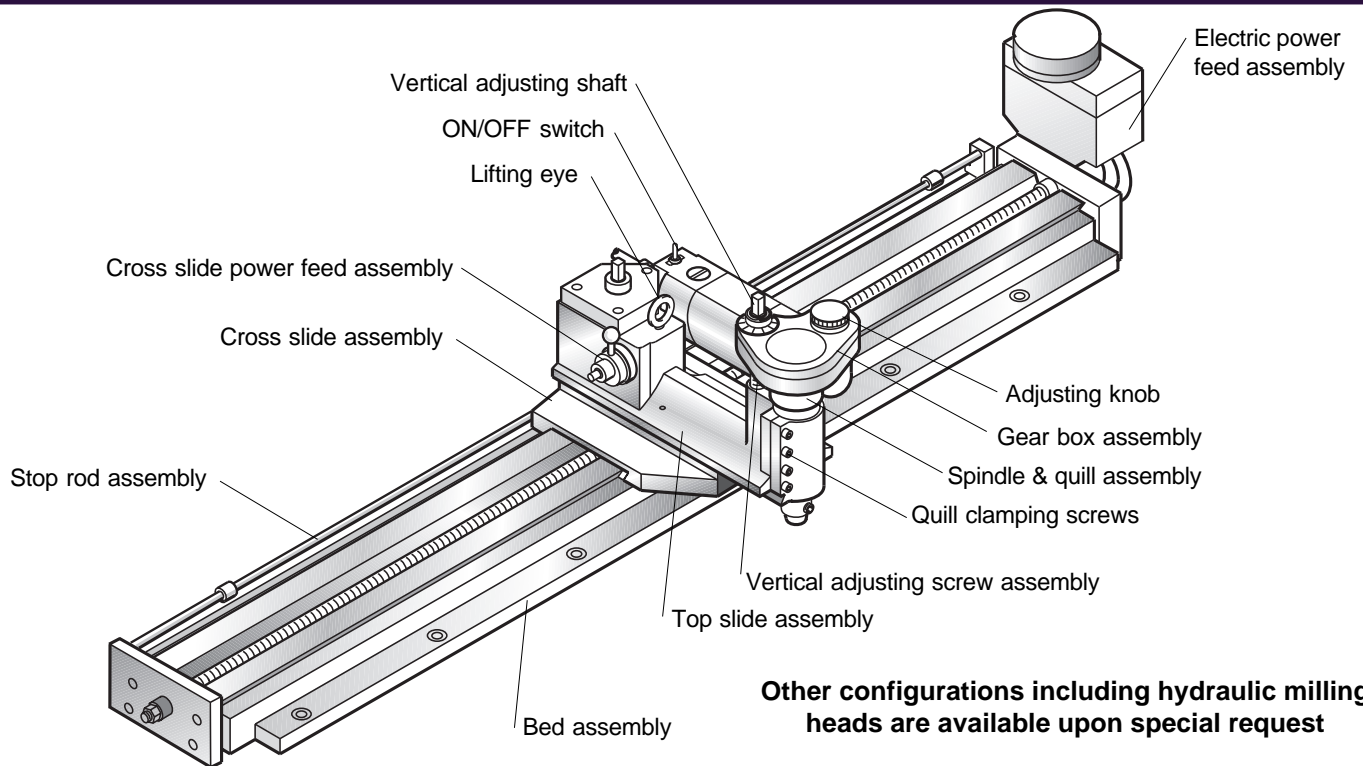
**PM Series Portable Mill**

Inches (mm)  
 Specifications subject to change without notice.  
 Please refer to the Technical Information page for further details.



**PM-B Series Portable Mill**

# PM Series Components



NO.	DESCRIPTION	NO.	DESCRIPTION	NO.	DESCRIPTION
	<b>PM2000 Portable Milling Machine</b> Three-axis milling machine with 20" (508 mm) of longitudinal travel. Machine comes complete with one end mill, tool kit, speed control, and instruction manual.		<b>PM3000 Portable Milling Machine</b> Three-axis milling machine with 49" (1244.6 mm) of longitudinal travel. Machine comes complete with one end mill, tool kit, speed control, and instruction manual.		<b>PM4000 Portable Milling Machine</b> Three-axis milling machine with 78" (1981.2 mm) of longitudinal travel. Machine comes complete with one end mill, tool kit, speed control, and instruction manual.
10726	<b>PM2000 -inch, 115V power head, 115V power feed</b> Machine includes one .75" dia. x .75" shank end mill, 115V milling head, and 115V longitudinal feed and in-line speed control.	10732	<b>PM3000 -inch, 115V power head, 115V power feed</b> Machine includes one .75" dia. x .75" shank end mill, 115V milling head, and 115V longitudinal feed and in-line speed control.	10739	<b>PM4000 - inch, 115V power head, 115V power feed</b> Machine includes one .75" dia. x .75" shank end mill, 115V milling head, and 115V longitudinal feed and in-line speed control.
10730	<b>PM2000 - metric, 230V power head, 115V power feed</b> Machine includes one 20 mm dia. x 20 mm shank end mill, 230V milling head, and 115V longitudinal feed and in-line speed control.	10736	<b>PM3000 - metric, 230V power head, 115V power feed</b> Machine includes one 20 mm dia. x 20 mm shank end mill, 230V milling head, and 115V longitudinal feed and in-line speed control.	10743	<b>PM4000 - metric, 230V power head, 115V power feed</b> Machine includes one 20 mm dia. x 20 mm shank end mill, 230V milling head, and 115V longitudinal feed and in-line speed control.
11680	<b>PM2000 -inch, air power head, air power feed</b> Machine includes one .75" dia. x .75" shank end mill, 2 hp (1.49 kW) air milling head**, and .31 hp (.23 kW) air longitudinal feed.	12340	<b>PM3000 - inch, air power head, air power feed</b> Machine includes one .75" dia. x .75" shank end mill, 2 hp (1.49 kW) air milling head**, and .31 hp (.23 kW) air longitudinal feed.	25419	<b>PM4000 - inch, air power head, air power feed</b> Machine includes one .75" dia. x .75" shank end mill, 2 hp (1.49 kW) air milling head**, and .31 hp (.23 kW) air longitudinal feed.
17365	<b>PM2000 - B Series, 115V power feed</b> Same as machine described above except it has a tool post in place of the milling head, and 6" (152 mm) cross slide travel. Includes 115V longitudinal feed.	17366	<b>PM3000 - B Series, 115V power feed</b> Same as machine described above except it has a tool post in place of the milling head, and 6" (152 mm) cross slide travel. Includes 115V longitudinal feed.	17367	<b>PM4000 - B Series, 115V power feed</b> Same as machine described above except it has a tool post in place of the milling head, and 6" (152 mm) cross slide travel. Includes 115V longitudinal feed.

\*Other configurations including hydraulic milling heads available upon special request.

\*\*Air motor requires 105 ft<sup>3</sup>/min (3 m<sup>3</sup>/min) at 80 psi (550 kPa).



**CLIMAX**

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