

Light, Portable, and Powerful - Designed to get the job done FAST!

The FF5000 is a versatile flange facing machine that allows you to face, bevel, and turn pipe, valve, and pump flanges with ease. The two-piece mounting system makes setup and alignment of this machine quick and easy. It allows one operator to easily set up the machine and begin machining in just a few minutes.

Quick and Easy Setup & Removal

- Separate mounting chuck.
- All centering and leveling is done on the chuck.
- Loosen one bolt and machine can be removed from the chuck without disturbing alignment or calibration.

Lightweight

- Body of machine weighs only 60 lbs (27.2 kg).
- Smallest mounting chuck weighs about 5 lbs (2.2 kg).

Low Profile

- Right angle motor mount.
- Machine extends only 7.6 inches (193.0 mm) above flange.

Safe and Quiet Operation

- Stationary feed rate selector.
- Machine is controlled without touching any moving parts.
- Exhaust air is routed through body of machine for increased muffling.



Simplified Operation

- Single selector switch for bidirectional radial feed or vertical downfeed.
- One wrench size for clamping jaws and body draw bolt.

Cuts Chamfers and Grooves

- Compound tool head and downfeed for cutting angles and grooves.

447-3377

oficina@vendo.com.pe

SPECIFICATIONS

	US	Metric
Facing Diameter:		
Min Facing Diameter	5.0 inches	127.0 mm
Max Facing Diameter	24.0 inches	609.6 mm
ID Mounting Diameter		
Min I.D. Mount	3.5 inches	88.9 mm
Max I.D. Mount (optional chuck)	18.0 inches	457.2 mm
Stroke:		
Radial Tool Feed Stroke	8.5 inches	215.9 mm
Vertical Tool Stroke	2.0 inches	50.8 mm
Counterbore Machining Dia. and Depth	5.0 - 24.0 inches dia. and depth 1.97 inch in one setup	127.0 - 609.6 mm dia and depth 50.0 mm in one setup
Feed:		
Power Radial & Vertical Feed	Automatic, adjustable and reversible	
Automatic Radial Tool Feed	0 - 0.03 inch/rev. in eight increments	0 - 0.76 mm/rev, in eight increments
Automatic Vertical Tool Feed	0 - 0.02 inch in eight increments	0 - 0.51 mm in eight increments
Swing Radius at 24 inches (609.6 mm)	Min 9.5 inches, Max 15.2 inches	Min 241.3 mm Max 386mm
Height Above Flange	7.6 inch	193 mm
Tool Head Adjustment	+/- 60° from vertical	
Torque at Cutter	150 ft-lbs	204 N•m
Motor Hp (pneumatic)	1.2 Hp	0.89 kW
Gear Reduction	28.2:1	28.2:1
Rotational Speed	0 - 40 rpm (29 rpm maximum power)	
Air Requirements	90 psi 30 ft ³ per min. (max power)	620 kPa 0.85 m ³ per min (max power)
Approx. Operational Wt	60 lbs	27 kg
Approx. Shipping Wt	175 lbs	80 kg
Approx. Shipping Dimensions (1 container)	25 x 25 x 18 inches	635 x 635 x 457 mm

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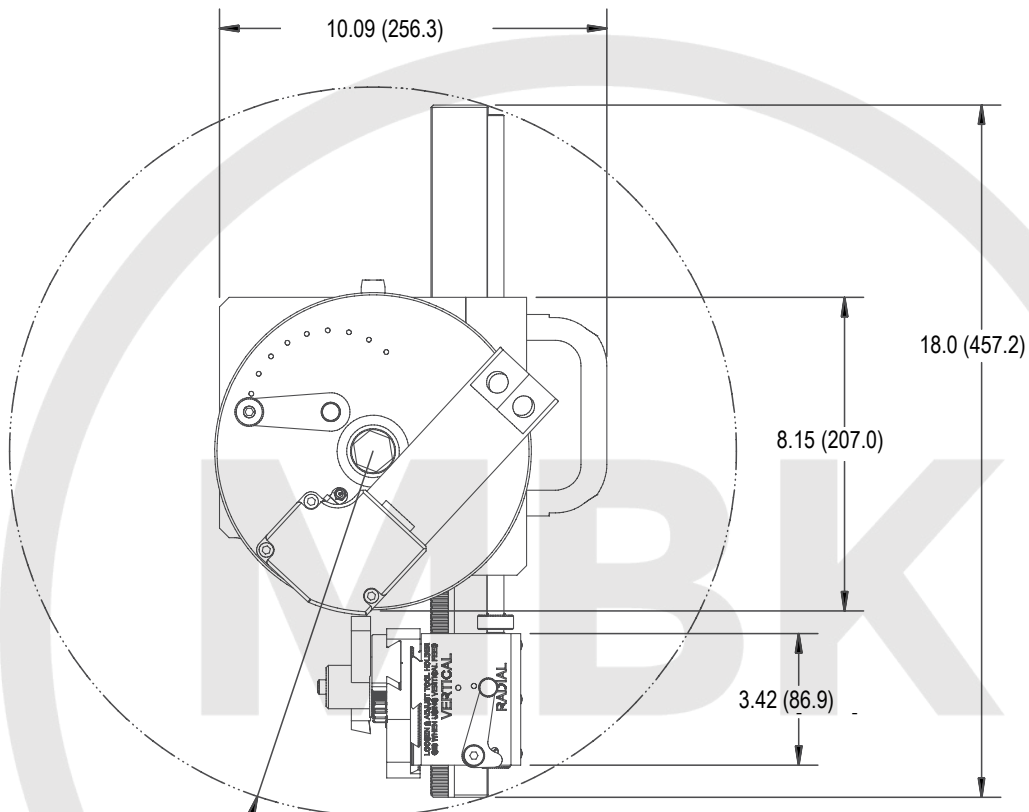
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All dimensions should be considered reference. Contact your Climax Representative for precision dimensions. Specifications are subject to change without notice. There are no systems or components on this machine that are capable of producing hazardous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

OPERATIONAL DIMENSIONS

Overhead View

Dimensions in Inch (mm)

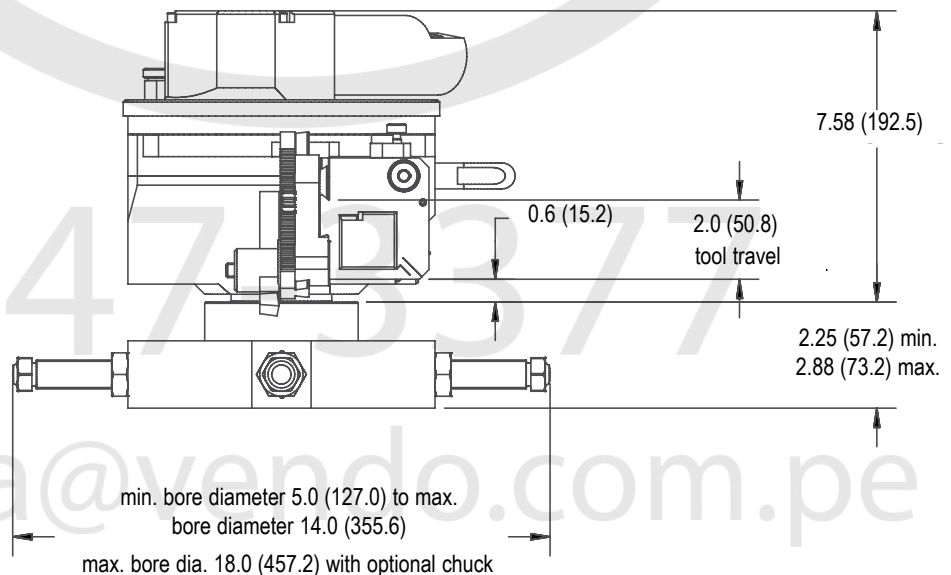


R9.47 [240.5]

min. clearance required

Clearances less than 9.47 inch (240.5 mm) radius requires a special short bar.

15 inch (381.0 mm) radius max. clearance required when using down feed at 24 inches (609.6 mm)



TOOL CONFIGURATIONS

Configure your FF5000 in 3 easy steps.

To configure your FF5000 Flange Facer:

- 1 Select a Base Unit
- 2 Select a Drive Option
- 3 Select a Mounting Option

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

The base unit includes the base assembly, alignment assembly, interface assembly, standard compound tool head, a tool kit and instruction manual.

1 Base Unit 49594

Includes primary machine, alignment assembly, standard compound tool head, and tool kit

2 Drive Option 37140 81071

Drive motor assembly with no motor
Pneumatic motor assembly

3 Mounting Option 29168 29167 29459

5 - 9 inch (127.0 - 228.6 mm) ID mounting chuck
9 - 14 inch (228.6 - 355.6 mm) ID mounting chuck
14 - 18 inch (355.6 - 457.2 mm) ID mounting chuck
More than one mounting chuck may be selected.

By purchasing extra chuck/spindle interface and chuck assemblies, you can set up one flange while another is being machined, significantly reducing downtime in an outage).

Accessories

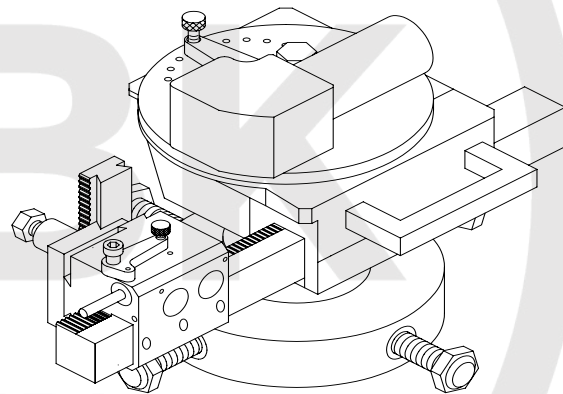
3.5 - 5 inch (88.9 - 127.0 mm) ID mounting chuck	31627
Chuck spindle interface assembly	29559
Tooling Package	37809

Tool Kit

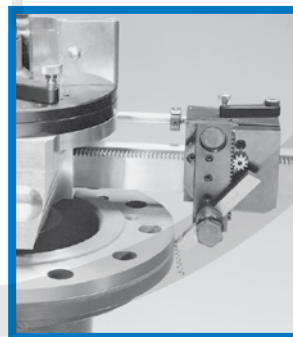
Tool Bits for Single Point Machining	
1/2 x 4.0 inch (12.7 - 102 mm) LH Roughing	31868
1/2 x 4.0 inch (12.7 - 102 mm) LH & RH Finishing (ground on both ends)	25710

Tools (inch size)

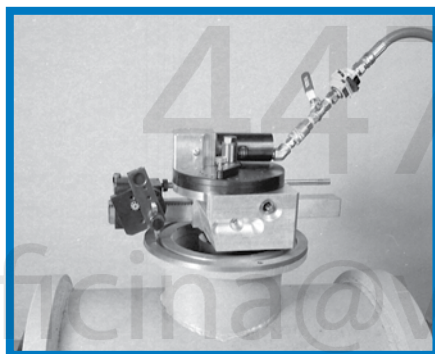
Hex wrench set, 0.050 - 3/8 inch	33999
End wrench, long, 7/8 inch	29173
End wrench, thin, 1-1/8 inch	14668
Crank Handle	29082



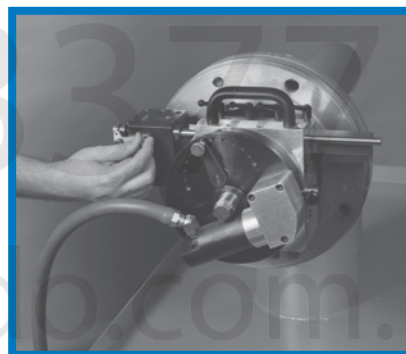
Standard configuration



Downfeed on a flange edge

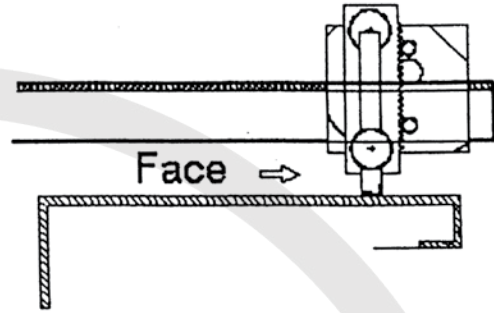


Cutting O-ring and seal groove

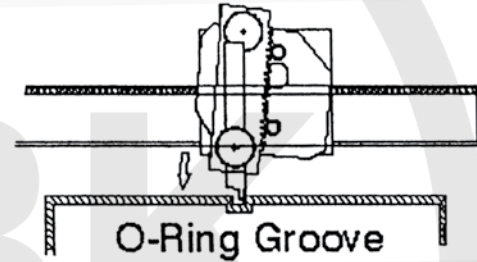


Vertical flange facing

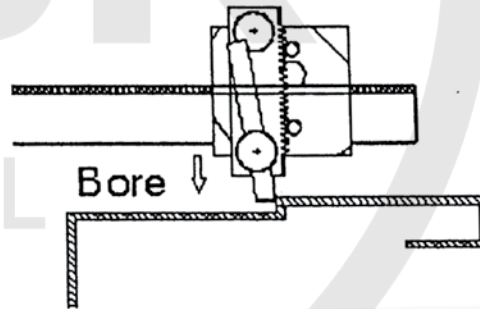
Face



O-Ring/RTJ Groove

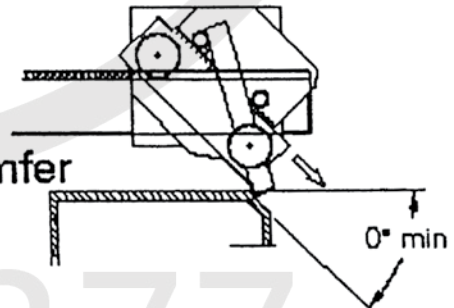


Counterbore

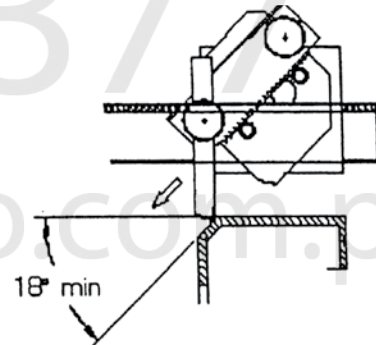


Chamfer

OD Chamfer



Chamfer of Counterbore

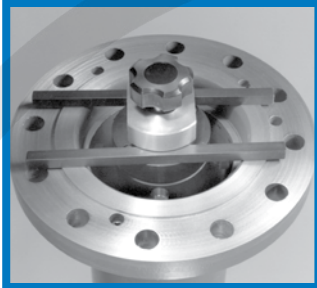


SETUP AND OPERATION

A Fast Four-Step Process

Typically, less than 15 minutes for the experienced operator.

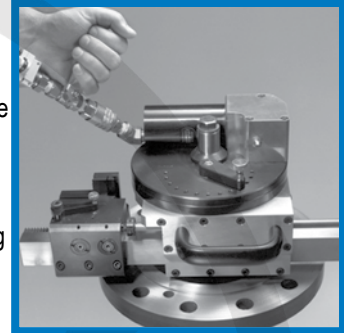
1 With the proper set of jaws inserted, place the mounting chuck into the flange bore resting on the setup bars. Snug the jaws to hold the chuck in place.



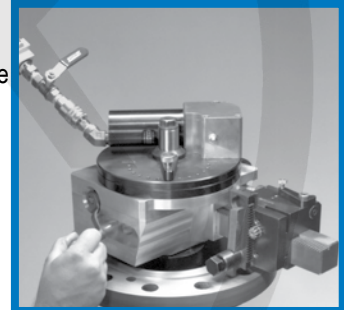
2 Use the special indicator accessory to center the chuck in the bore, then tighten the jaws securely. Align the chuck for flatness across the flange by adjusting the leveling screws.



3 Attach the machine body with one draw bolt. The machine may be removed and replaced if necessary, without disturbing the alignment.



4 Position the tool head with the hand crank so the cutter is at the desired starting point. The model FF5000 Flange Facer is ready to run.



Calculating RPM

$$\frac{12 \times \text{SFPM (Surface Feet per Minute)}}{\pi \times \text{Diameter}}$$

$$\frac{1000 \times \text{SMPM (Surface Meters per Minute)}}{\pi \times \text{Diameter}}$$

Example 1 (Inch):
 $12 \times 75 \text{ SFPM} = 3.141 (\pi) \times 13.38 \text{ inch dia. } \times ? \text{ (RPM)}$
 $900 = 42.03 \times ? \text{ (RPM)}$
 $900 \div 42.03 = 21 \text{ RPM}$

Example 2 (Metric):
 $1000 \times 23 \text{ SMPM} = 3.141 (\pi) \times 340 \text{ mm dia } \times ? \text{ (RPM)}$
 $23000 = 1067.94 \times ? \text{ (RPM)}$
 $23000 \div 1067.94 = 21.5 \text{ RPM}$

Calculating Machining Time

$$\text{Machining Time} = \frac{\text{Length of cut } ((\text{OD} - \text{ID}) / 2)}{\text{RPM} \times \text{Feed}}$$

Example (Inch):
 Length of Cut: 2.75 inches
 Inches / Minute: 0.01 inches
 Revolutions / Minute: 21 RPM
 Machining Time = 13 minutes / pass

Machining	2.75
Time =	21 x 0.01
	2.75
	0.21

Example (Metric):
 Length of Cut: 70 mm
 mm / minute: 0.25 mm
 Revolutions / minute: 21.5 RPM
 Machining Time = 13 minutes / pass

Machining	70
Time =	21.5 x 0.25
	70
	5.375

CLIMAX Training Facilities

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.

We offer several training facilities across the United States - the Global Learning Center, situated in our corporate headquarters near Portland, Oregon, our Amherst, New Hampshire Training Facility, and our Houston, Texas Training Facility. All facilities offer training for machine tool operators on 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 one of our training facilities, or custom curriculum conducted at your facility, your machinists will benefit from courses developed by some of the most respected authorities in the business.

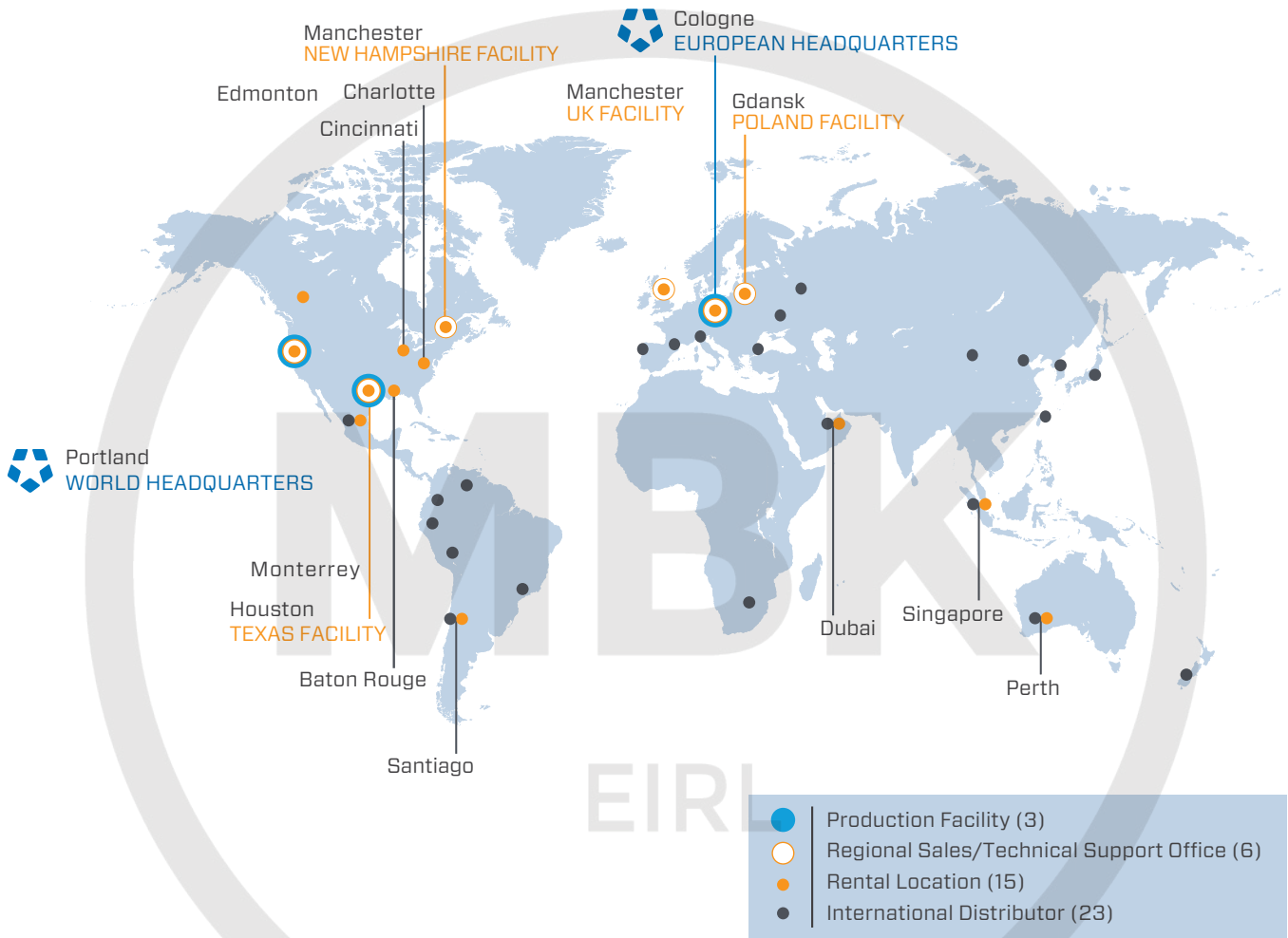
Call us today to register for a regularly scheduled class, or talk to us about how we can customize a training program for your specialized application.

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CLIMAX GLOBAL LOCATIONS



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With 15 worldwide rental depot locations, you are never far away from a CLIMAX tool.

On-site Training

Need some refresher courses in setting up and operating your CLIMAX machine tool?

Special Projects

CLIMAX has been solving complicated machining, welding and valve testing problems for our customers since 1964.

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Connect with us: [f](#) [t](#) [in](#) [g+](#)

World Headquarters

2712 E. Second Street
Newberg, Oregon 97132 USA
Worldwide Telephone: +1.503.538.2185
N. America Toll-Free: 1.800.333.8311
Fax: +1.503.538.7600
Email: info@cpmt.com

European Headquarters

Am Langen Graben 8
52353 Düren, Germany
Telephone: (+49) (0) 2421.9177.0
Fax: (+49) (0) 2421.9177.29
Email: info@cpmt.de

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