FF5000 FLANGE FACER

Glacier Energy

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.

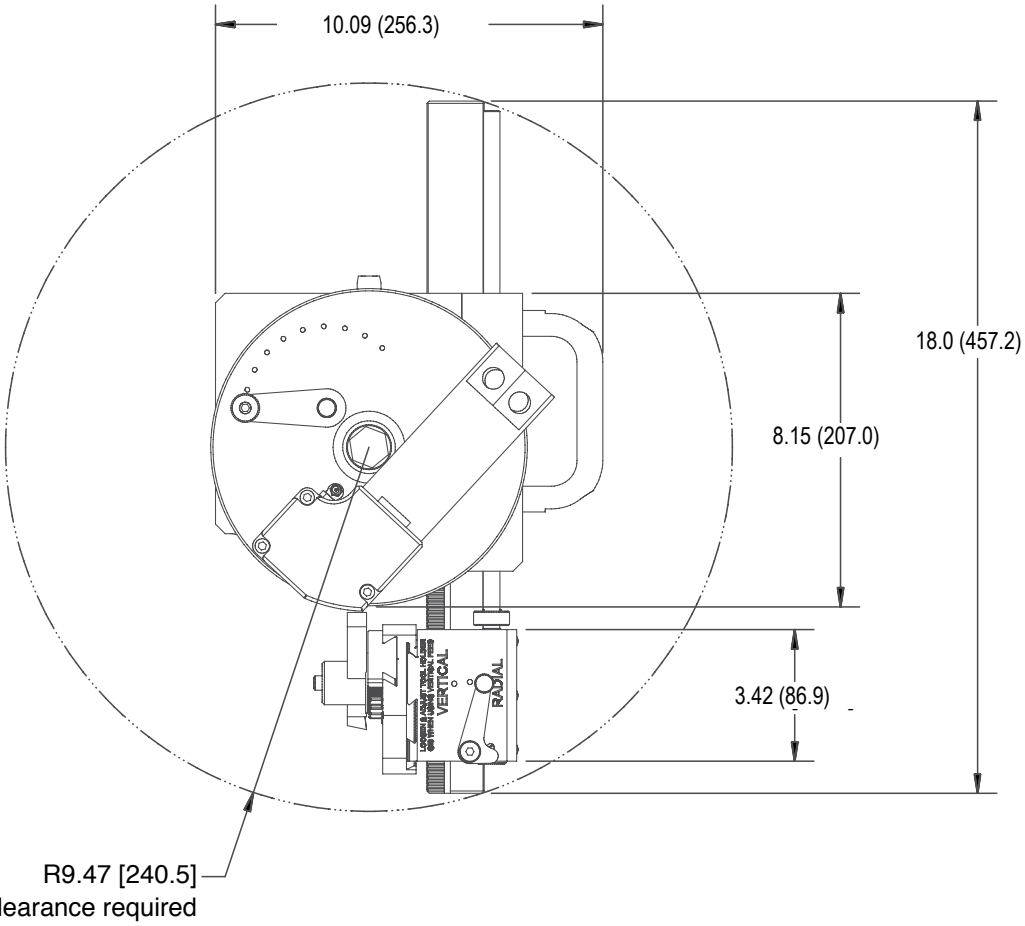
SPECIFICATIONS

	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	620 kPa
	30 ft^3 per min. (max power)	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

OPERATIONAL DIMENSIONS

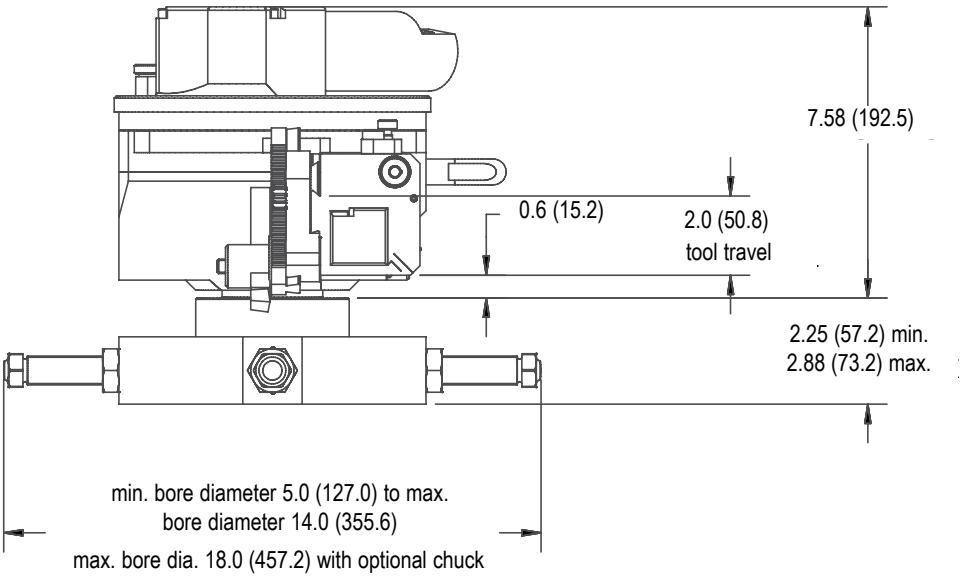
Overhead View

Dimensions in Inch (mm)



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

Includes primary machine, alignment assembly, standard compound tool head, and tool kit	**49594**

2 Drive Option

Drive motor assembly with no motor	**37140**
Pneumatic motor assembly	**81071**

3 Mounting Option

5 - 9 inch (127.0 - 228.6 mm) ID mounting chuck	**29168**
9 - 14 inch (228.6 - 355.6 mm) ID mounting chuck	**29167**
14 - 18 inch (355.6 - 457.2 mm) ID mounting chuck	**29459**

More than one mounting chuck may be selected.

By purchasing extra chuck/spindle interface and chuck assmeblies, 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**

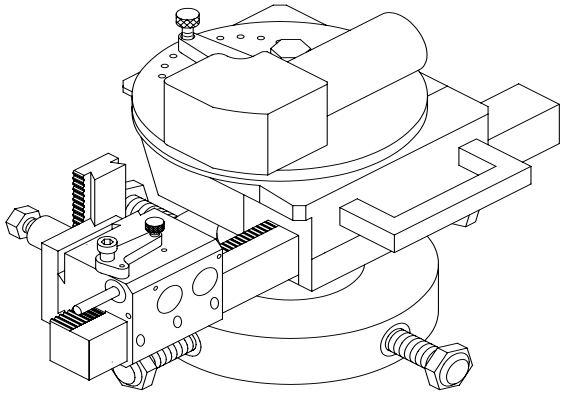
Tool Kit

Tool Bits for Single Point Machining

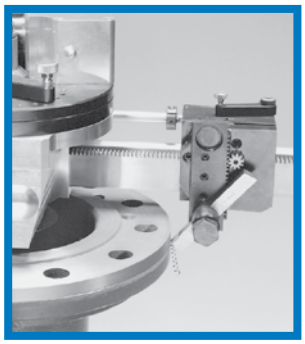
1/2 x 4.0 inch (12.7 - 102 mm) LH Roughing	**31868**
1/2 x 4.0 inch (12.7 - 102 mm) LH & RH Finishing (ground on both ends)	**25710**

Tools (inch size)

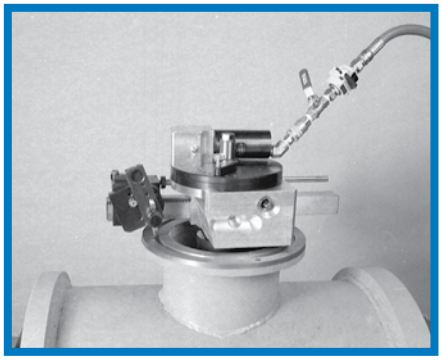
Hex wrench set, 0.050 - 3/8 inch	**33999**
End wrench, long, 7/8 inch	**29173**
End wrench, thin, 1-1/8 inch	**14668**
Crank Handle	**29082**



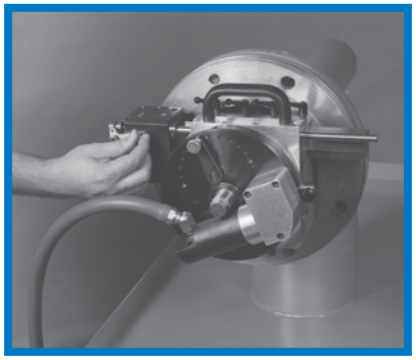
Standard configuration



Downfeed on a flange edge



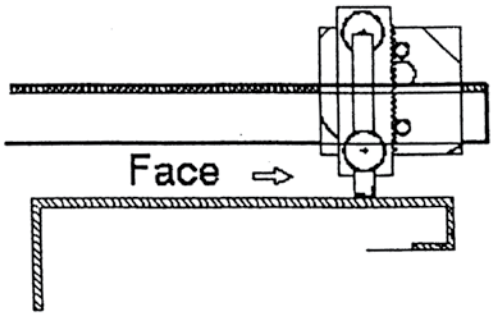
Cutting O-ring and seal groove



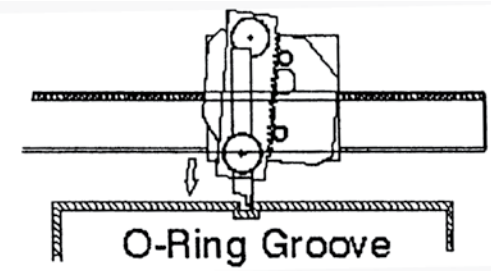
Vertical flange facing

APPLICATIONS

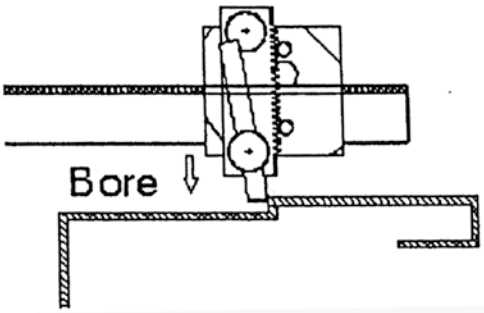
Face



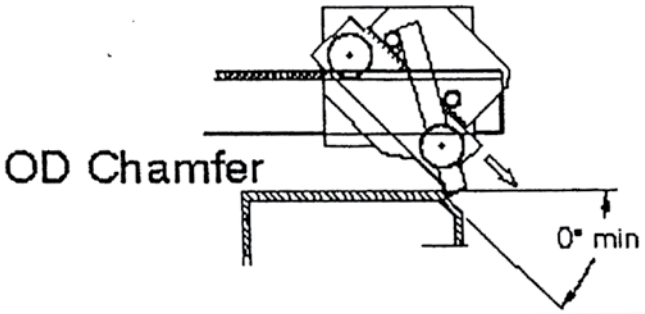
O-Ring/RTJ Groove



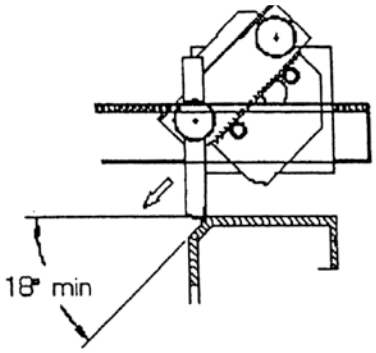
Counterbore



Chamfer



Chamfer of Counterbore

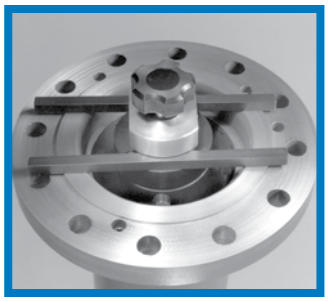


SETUP AND OPERATION

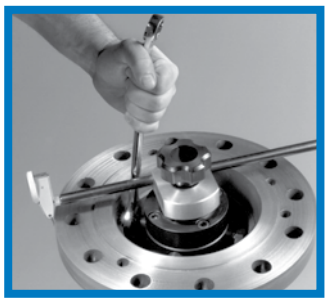
A Fast Four-Step Process

Typically, less than 15 minutes for the experienced operator.

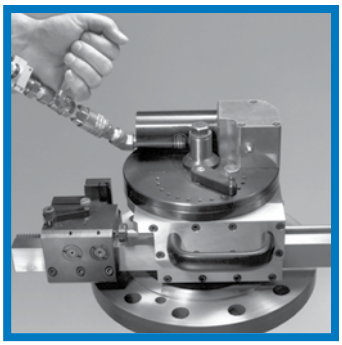
1 With the proper set of jaws inserted, place the mounting chuck into the flange bore resting on the setup bars. Snug the jaws to hold the chuck in place.



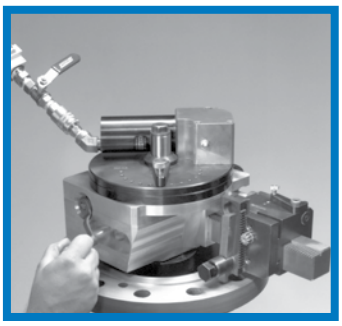
2 Use the special indicator accessory to center the chuck in the bore, then tighten the jaws securely. Align the chuck for flatness across the flange by adjusting the leveling screws.



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 x 75 SFPM = 3.141 (π) x 13.38 inch dia. x ? (RPM)
900 = 42.03 x ? (RPM)
900 π 42.03 = 21RPM

Example 2 (Metric):
1000 x 23 SMPM = 3.141 (π) x 340 mm dia x ? (RPM)
23000 = 1067.94 x ? (RPM)
23000 π 1067.94 = 21.5 RPM

Calculating Machining Time

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

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

$$\text{Machining Time} = \frac{2.75}{21 \times 0.01} = \frac{2.75}{0.21}$$

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

$$\text{Machining Time} = \frac{70}{21.5 \times 0.25} = \frac{70}{5.375}$$