

FF5000 PORTABLE FLANGE FACER

**FEATURES ■ SETUP & OPERATION
COMPONENTS & ACCESSORIES ■ TECHNICAL DATA**

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 setting up and alignment of this machine quick and easy. It allows one operator to easily set up the machine and be machining in just a few minutes.

Lightweight

- Body of machine weighs only 60 lbs (27 kg).
- Smallest mounting chuck weighs about 5 lbs (2.2 kg).

Quick and Easy Setup

- Separate mounting chuck.
- All centering and leveling is done right on chuck.

Low Profile

- Right angle motor mount.
- Machine extends only 7.6 inches (193 mm) above flange.

Simplified Operation

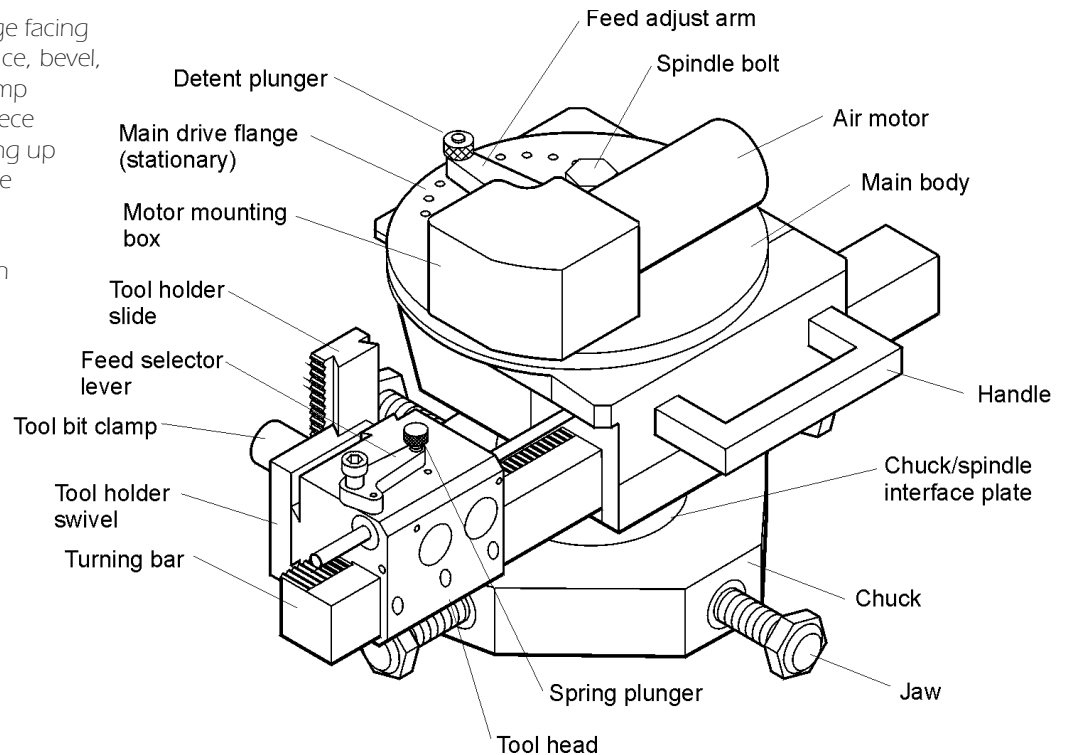
- Single selector for bidirectional radial or downfeed.
- One wrench for clamping jaws and body draw bolt.

Quiet

- Exhaust air is routed through body of machine for muffling.

Safe Operation

- Stationary feed rate selector.
- Machine is controlled without touching any moving parts.



Easy Mounting/Dismounting

- Loosen one bolt and machine can be removed from the chuck without disturbing alignment.

Cuts Chamfers and Groves

- Compound tool head and downfeed for cutting angles and groves



CLIMAX®
Portable Machine Tools, Inc.

Specifications

Min Facing Dia.	5 inches (127 mm)
Max Facing Dia.	5 - 24 inches (127 - 609 mm)
Min I.D. Mount	5 – 14 inches (127 – 355 mm)
Max I.D. Mount (optional chuck)	18 inches (457 mm)
Radial Tool Feed Stroke	9.45 inches (240 mm)
Vertical Tool Stroke	2 inches (50 mm)
Counterbore Machining Dia. and Depth	5 - 24 inches (127 - 609 mm) dia, and depth 1.97 inch (50 mm) in one set up
Power Radial & Vertical Feed	Automatic, adjustable and reversible
Automatic Radial Tool Feed	0 - 0.03 inch (0 - 0.76 mm) / revolution in six steps
Automatic Vertical Tool Feed	0 - 0.02 inch (0 - 0.51 mm) in six steps
Swing Radius, at 24 inches (609.6 mm)	Max 9.5 inch (241.3 mm), Min 15.2 inch (386.1 mm)
Clearance from Flange Surface	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
Rotational Speed	0 - 40 rpm (29 rpm maximum power)
Air Requirements	90 psi (620 kPa), 30 ft ³ (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) 25 x 25 x 18 inches (635 x 635 x 460 mm)

Tool Kit

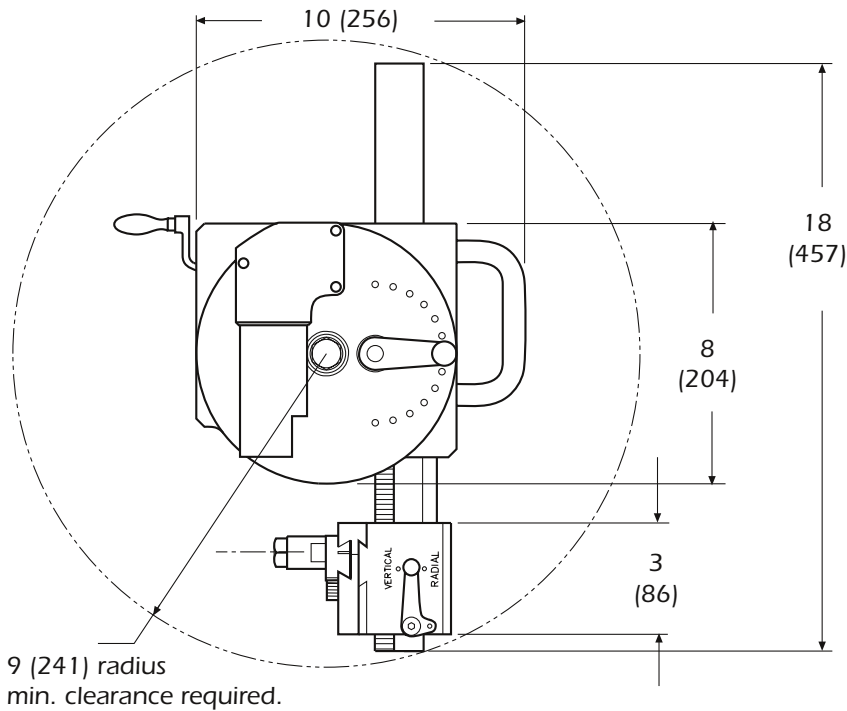
Tool Bit for Point Single Machining 1.2 inch x 102 mm LH roughing 1.2 inch x 102 mm LH & RH roughing (machined on both ends)
Tools (inch size) Hex wrench set, 0.050 – 3/8 inch End wrench, long, 7/8 inch End wrench, thin, 1-1/8 inch Crank handle

Machining Ability

HSS tool bit (recommended):	1210 inches/minute @ 13.3 inch flange dia. and 29 rpm (30,722 mm/minute) @ 337 mm flange dia and 29 rpm)
Carbide tool bit: (not recommended)	3019 inches/minute (76,930 mm/minute)
Maximum radial feed rate: (rough facing)	0.0315 inch/revolution (0.80 mm/revolution)
Minimum radial feed rate: (finished facing)	0.00394inch/revolution (0.10 mm/revolution)
Depth of cut:	0.0078 inch (0.2 mm)

Overhead View

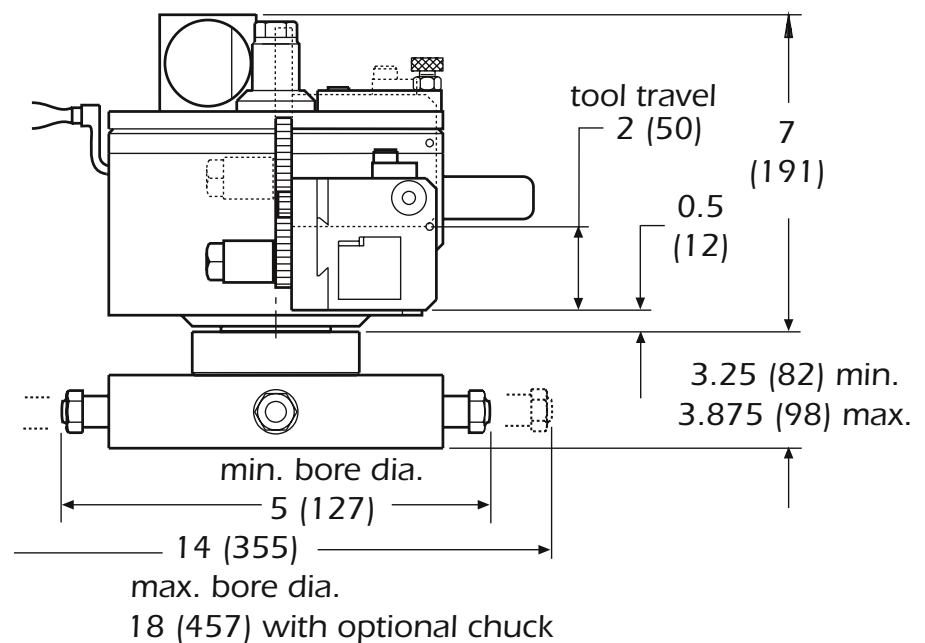
Dimensions in inch (mm)

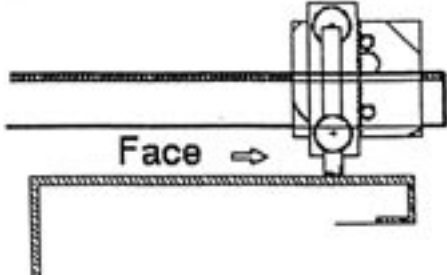
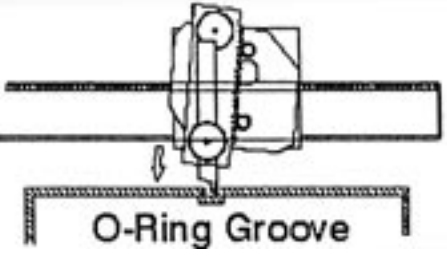
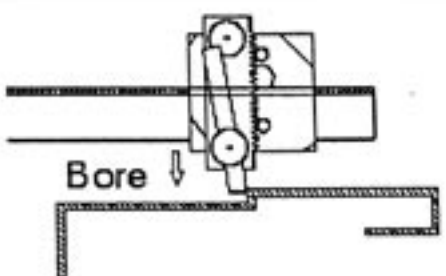
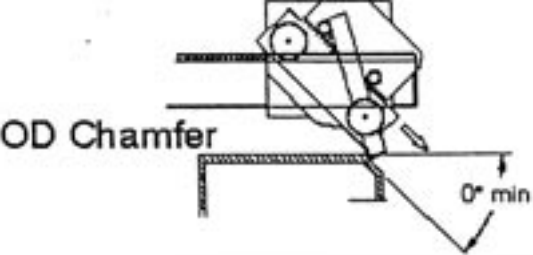
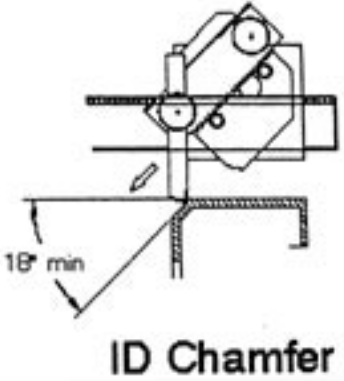


Clearances less than 9 (241) radius require a special short bar.

15 (386) radius max. clearance required when using down feed at 24 (609)

Side View

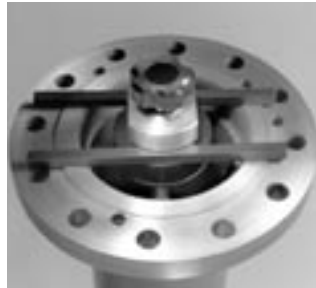


<p style="text-align: center;">Face</p>	
<p style="text-align: center;">O-ring Groove</p>	
<p style="text-align: center;">Counterbore</p>	
<p style="text-align: center;">Chamfer</p>	
<p style="text-align: center;">Chamfer of Counterbore</p>	

Set-up of the FF5000 Portable Flange Facer is easy!

Typically, <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 up 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.



Machining Time (inches)

Sample Calculation

ID = 7.87 inch, OD = 13.38 inch

1. Determine maximum cutting speed

For OD > 13.38 inch, max speed = $OD \times 29 / 13.27$

For OD < 13.38 inch, max speed = 29 rpm

(13.27 inch \approx 13.38 inch, therefore max cutting time is = 29 rpm.)

2. Determine roughing cutting time

Machining time = $(OD - ID) / (2 \times \text{speed} \times \text{feed rate})$

For roughing operation, feed rate = 0.031 inch/rev

Machining time = $(13.38 - 7.87) / (2 \times 29 \times 0.031) =$

(Add a minute to reset tool per pass.)

3. Determine finishing cutting time

Machining time = $(OD - ID) / (2 \times \text{speed} \times \text{feed rate})$

For finishing operation, feed rate = 0.008 inch/rev

Machining time = $(13.38 - 7.87) / (2 \times 29 \times 0.008) =$

12 min.

Machining Time (mm)

Sample Calculation

ID = 200 mm, OD = 340 mm

1. Determine maximum cutting speed

For OD > 337 mm, max speed = $OD \times 29 / 337$

For OD < 337 mm, max speed = 29 rpm

(340 mm \approx 337 mm, therefore max cutting time is = 29 rpm.)

2. Determine roughing cutting time

Machining time = $(OD - ID) / (2 \times \text{speed} \times \text{feed rate})$

For roughing operation, feed rate = 0.8 mm/rev

Machining time = $(340 - 200) / (2 \times 29 \times 0.8) = 3 \text{ min.}$

(Add a minute to reset tool per pass.)

3. Determine finishing cutting time

Machining time = $(OD - ID) / (2 \times \text{speed} \times \text{feed rate})$

For finishing operation, feed rate = 0.2 mm/rev

Machining time = $(340 - 200) / (2 \times 29 \times 0.2) = 12 \text{ min.}$

Your part number is: **FF5000** . **1** . **0** **A** **0** **0** **0** . **B** **C** . **0** **D**

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

Configure your FF5000 in three easy steps.

To configure your FF5000 Flange Facer, you will need to:

- 1 Select a Drive Option.
- 2 Select Your Mounting Option
- 3 Select Your Tooling Head

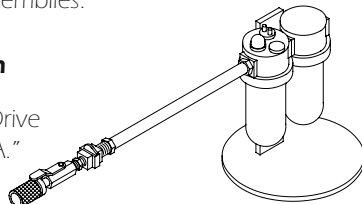
To generate the correct part number for the flange facer you require, simply select the option you need in each step, then write the number of that option in the corresponding box at the top of this page. Contact your Climax representative for additional configurations or help with this process.

The standard unit includes the base assembly, pneumatic motor, 5 – 9 inch (127 – 229 mm) and 9 – 14 inch (229 – 356 mm) chucks, jaw set and alignment assembly, standard tool head and tooling, tool kit and instruction manual. The unit comes packed in a durable metal container large enough to hold the optional large chuck assemblies.

Step 1: Select a Drive Option

A Write the number of the Drive Option you need in Box "A."

Number **1**: Pneumatic Motor Assembly (with air conditioning unit)



Pneumatic Motor

Number **2**: Hydraulic Motor Assembly

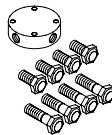
Number **3**: No motor

Step 2: Mounting Option

B Write the number of the standard bore mounting chuck option you need in Box "B."

Number **0**: No standard chuck

Number **1**: 5 – 9 inch (127 – 229 mm) standard ID mounting chuck

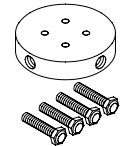


Mounting Chuck Option

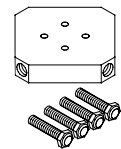
C Write the number of the bore mounting chuck option in Box "C."

Number **0**: No additional chucks

Number **1**: 9 – 14 inch (229 – 356 mm) ID mounting chuck



Number **2**: 14 – 18 inch (356 – 457 mm) ID mounting chuck



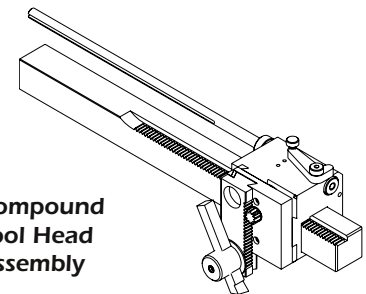
Number **3**: Includes both 9 – 14 inch (229 – 356 mm) and 14 – 18 inch (356 – 457 mm) ID mounting chucks

Step 3: Tooling Head

D Write the number of the Tooling Head you need in Box "D."

Number **0**: No tooling head

Number **1**: Standard compound tool head assembly

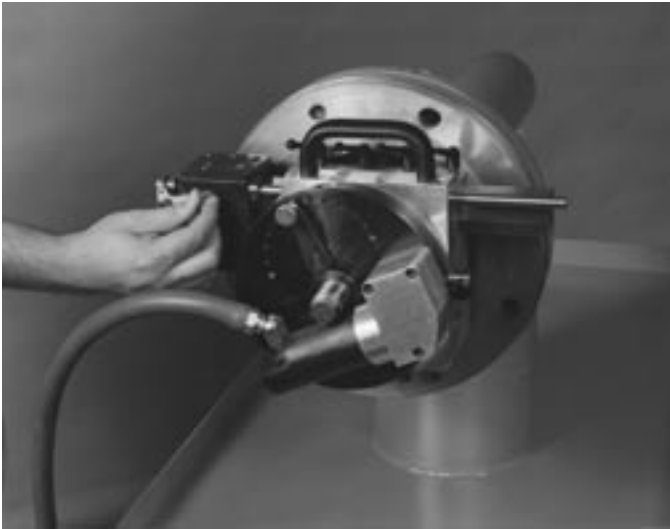


Compound Tool Head Assembly

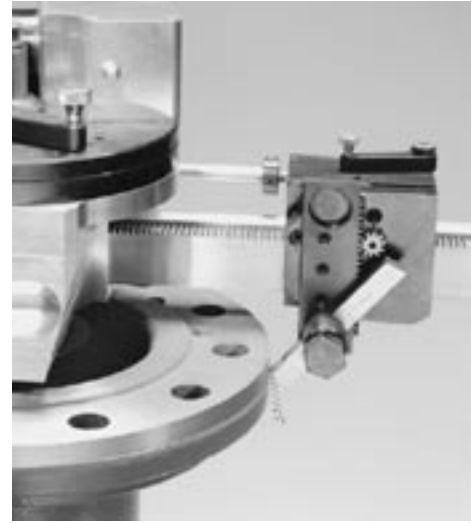
Mounting Chuck Options

**Further customize your FF5000 Flange Facer with these options
Order separately (special customized flange facers available upon request)**

- 29559** Chuck spindle interface assembly
- 29168** Chuck, 5 - 9 inches (127 - 228 mm) bores
- 29167** Chuck, 9 - 14 inches (228 - 355 mm) bores
- 29459** Chuck, 14 - 18 inches (355 - 457 mm) bore



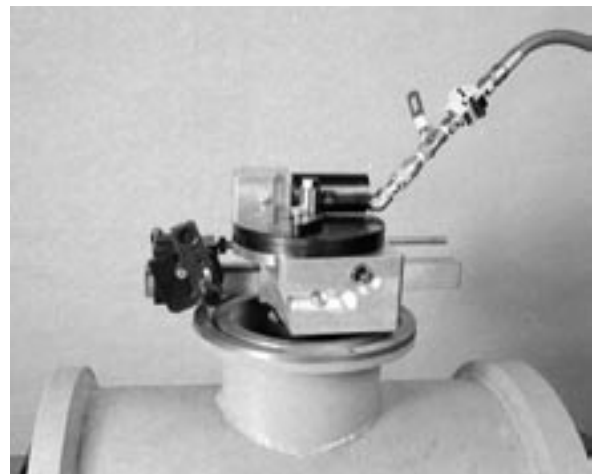
Vertical flange facing



Downfeed on a flange edge



Standard configuration FF5000



Cutting O-ring and seal groove

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