One of a family of rugged, heavy-duty flange facers with facing AND milling capabilities.

**Rugged Machine Design**
- Large, heavy duty construction-grade bearings provide powerful, rigid performance throughout the entire machine facing range, even machining over bolt hole patterns.
- Oversized ring gear accommodates extremely high torque levels for challenging flange repair applications, and these machines are able to generate a phonographic finish.

**Flexible and Versatile**
- Both radial and axial feed is achieved with a pneumatic feedbox. Manual feeding for rapid positioning is also possible.
- Feed rate is adjusted remotely at the pneumatic conditioning unit, providing the ultimate in operator safety and the flexibility for feed rate adjustments even during machining operations.
- Infinitely variable feed rates from 0.002 - 0.035 inches (0.0508 - 0.889 mm)/rev provides operational flexibility.
- Reversible feed box can be mounted to provide either radial or axial feed.
- Turning and counterweight arms can both be adjusted for the desired swing clearance and machining range.
- Tool head can be rotated a full 360° providing the ability to create a variety of chamfers, O-Ring grooves, lens rings and other angular surfaces as needed.
- Pneumatic & hydraulic drive options available.
- Chucking system can be removed to allow the flange facer to be face-mounted.
- Can be mounted both OD and ID or surface-mounted
- Milling option available with precision downfeed ball screw
- Grinding option available for fine finish work.
- Back facing attachment available for heat exchanger repair.

**Quick and Easy Setup**
- Modular design allows many of the machine components to be removed to facilitate easier setup and storage.
- Unique chucking system minimizes parts to greatly simplify machine setup and tear down.
- Quick-adjust leveling feet make setup quick and easy.
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Machine Performance Ranges</th>
<th>US</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID: Mounting range</td>
<td>45 - 120 inches</td>
<td>1143.0 - 3048.0 mm</td>
</tr>
<tr>
<td>Faceing diameter range</td>
<td>45 - 120 inches</td>
<td>1143.0 - 3048.0 mm</td>
</tr>
<tr>
<td>Milling diameter range</td>
<td>45 - 120 inches</td>
<td>1143.0 - 3048.0 mm</td>
</tr>
<tr>
<td>Grinding diameter range</td>
<td>45 - 120 inches</td>
<td>1143.0 - 3048.0 mm</td>
</tr>
<tr>
<td>Swing diameter @ minimum</td>
<td>84.7 inches</td>
<td>2151.4 mm</td>
</tr>
<tr>
<td>Radial tool slide travel</td>
<td>12 inches</td>
<td>304.8 mm</td>
</tr>
<tr>
<td>Axial tool head travel</td>
<td>4 inches</td>
<td>101.6 mm</td>
</tr>
<tr>
<td>Depth required inside bore for ID chuck</td>
<td>12.13 ± 0.25 inches</td>
<td>308.1 ± 6.4 mm</td>
</tr>
<tr>
<td>Feed Rate</td>
<td>0.002 - 0.040 in/rev</td>
<td>0.051 - 1.016 mm/rev</td>
</tr>
</tbody>
</table>

**OD: Mounting range**
- 89.8 - 136.4 inches
- 2280.9 - 3464.6 mm

- Facing diameter range
- Milling diameter range
- Grinding diameter range (w/ feed box)
- Grinding diameter range (w/o feed box)
- Swing diameter @ minimum (with feedbox on end of arm) 84.7 inches
- Radial tool slide travel 12 inches
- Axial tool head travel 4 inches
- Depth required inside bore for ID chuck (± 0.25 inches ± 6.4 mm)
- Feed Rate 0.002 - 0.040 in/rev

**Surface Mount: minimum machining diameter**
- ID: 36.0 inches
- OD: 914.4 mm

**Milling Option:**
- Vertical Stroke, milling head
  - 8 inches
  - 203.2 mm

**Rotational Drive System**

- Drive type: Pneumatic or hydraulic drive with pinion and internal ring gear
- Pinion gear to ring gear reduction: 7.429:1
- Single point turning speed range:
  - Pneumatic: 5 - 29 RPM
  - Hydraulic (based on motor choice): 1.8 - 18 RPM

**Milling & grinding speed ranges (with 150:1 reducer):**

- Pneumatic: 0.004 - 0.173 RPM
- Feed rate at 120 inch (3048.0 mm) diameter: 1.5 - 65.2 inches/minute
- Hydraulic (based on motor choice): 0.002 - 0.374 RPM

**Power input requirements**

- Pneumatic: 3.5 Hp (2.6 kW) 50 ft³/min @ 90 psi
- Hydraulic: 10 gpm@1200 psi 37.9 L/min @ 8273 kPa

**Measures**

- For machine dimensions, please refer to dimensional drawings
- ID machine weight, approximate: 4000 lb
- OD machine weight, approximate: 3775 lb
- ID machine weight with mill, approximate: 4150 lbs
- OD machine weight with mill, approximate: 3925 lbs

**Chuck crate dimensions, (for ID and OD machines) (WxDxH) (in):**

- Wood, approx: 93 x 40.5 x 40 in
- Metal, approx: 90.2 x 40.2 x 36.2 in

**Leg crate dimensions (for ID and OD machines) (WxDxH) (in):**

- Wood, approx: 94 x 43.5 x 19 in
- Metal, approx: 94.2 x 42.7 x 19.2 in

**OD mount hardware crate dimensions (for OD machine only) (WxDxH) (in):**

- Wood, approx: 94 x 43.5 x 19 in
- Metal, approx: 94.2 x 42.7 x 19.2 in

**Testing Data**

- Flatness at 82 inch (2083 mm) diameter: .0068 inches (0.17 mm)

On a dedicated fixture made of A-36 steel in a controlled environment with single point machine, after warm-up.

* OD mount minimum arm swing is 84.7 inches (2151.4 mm) diameter. An additional customer supplied structure will be required to chuck below the minimum swing diameter with the feedbox attached*. 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.
The FF8200 can be configured in several ways to meet your specific machining needs.

Select OPTION 1 for single pointing only
Select OPTION 2 for milling only
Select OPTION 3 for BOTH milling and single pointing

OPTION 1: To configure your FF8200 for Single Pointing Only

To configure your machine, please follow these steps.

1. **Select a Base Package**
   - Rotary table, tool kit, operator's manual...
   - 58187

2. **Feed Assembly**
   - Pneumatic Feed Assembly with Remote Air Control
   - 58671

3. **Drive Motor Assembly**
   - Pneumatic Motor and Drive Assembly
     - (Pneumatic drive system includes: Pneumatic motor w/fittings and mount, rotary union, hoses, feed trip valve, cam, and pneumatic conditioning unit with low pressure drop-out.)
     - Hydraulic Drive Assy w/ Feed Conditioning Unit
       - 58180 - DOES NOT INCLUDE MOTOR
     - Hydraulic Drive Assy w/ Feed Conditioning Unit
       - (Hydraulic drive system includes: Hyd motor mount, hoses, fittings, rotary union, feed trip valve, cam, and feed pneumatic conditioning unit.)
   - 58186

4. **Hydraulic Motor for Rotary Table Drive**
   - (If Hydraulic drive is selected in step 3)
     - Rated at 10 gpm, 1200 PSI
     - Hydraulic Motor, 14.9 cu in (244.2 cu cm), 3.6 - 18 RPM
     - Hydraulic Motor, 18.7 cu in (306.4 cu cm), 2.8 - 14 RPM
     - Hydraulic Motor, 24.0 cu in (393.3 cu cm), 2.2 - 11 RPM
     - Hydraulic Motor, 29.8 cu in (488.3 cu cm), 1.8 - 9 RPM
     - 69216
     - 69217
     - 69218
     - 69219
   - * Multiple units may be ordered.

5. **Optional Grinder Attachment**
   - Grinding Attachment for Pneumatic Table Drive Motor
   - 62537
   - Grinding Attachment for Hydraulic Table Drive Motor
   - 62570

6. **Hydraulic Power Unit**
   - For Hydraulic Drive Machine
   - Single Pump (single pointing only):
     - HPU 230V, 10 HP (7.5 kW) Single pump
     - HPU 380V, 10 HP (7.5 kW) Single pump
     - HPU 415V, 10 HP (7.5 kW) Single pump
     - HPU 460V, 10 HP (7.5 kW) Single pump
     - HPU 575V, 10 HP (7.5 kW) Single pump
   - Single Pump with Air (for use with grinder):
     - HPU 230V, 10 HP (7.5 kW) Single pump with Air
     - HPU 380V, 10 HP (7.5 kW) Single pump with Air
     - HPU 415V, 10 HP (7.5 kW) Single pump with Air
     - HPU 460V, 10 HP (7.5 kW) Single pump with Air
     - HPU 575V, 10 HP (7.5 kW) Single pump with Air
   - Pendant Cable and Hose
     - 0.5 in (12.7 mm) Hose and Pendant Cable Assy, 20 ft (6.1 m)
     - 0.5 in (12.7 mm) Hose and Pendant Cable Assy, 30 ft (9.1 m)
     - 0.5 in (12.7 mm) Hose and Pendant Cable Assy, 50 ft (15.2 m)
     - 0.5 in (12.7 mm) Hose and Pendant Cable Assy, 100 ft (30.5 m)
   - 62799

7. **Turning Arm Assembly**
   - Turning Arm Assembly with Single Point Tool Head
   - 57872
   - Milling Arm Assembly with Single Point Tool Head
   - 62578

8. **Counterweight Assembly**
   - Counterweight Milling Arm Assembly
     - 58066
   - 62515

9. **Chuck Assembly**
   - ID Chuck Assembly
     - 57881
   - OD Chuck Assembly
     - 61372
   - ID/OD Chuck Assembly
     - 61454

10. **Shipping Container**
    - Wooden Crate for ID Mount Machine
     - 58421
     - Metal Container for ID Mount Machine
     - 59936
    - Wooden Crate Set for ID/OD Mount Machine
     - 62679
    - Metal Container Set for ID/OD Mount Machine
     - 61724
**TOOL CONFIGURATIONS**

**OPTION 2:** To configure your FF8200 for Milling Only

To configure your machine, please follow these steps.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select a Base Package</td>
</tr>
<tr>
<td>2</td>
<td>Drive Motor Assembly</td>
</tr>
<tr>
<td>3</td>
<td>Hydraulic Motor for Rotary Table Drive (If hydraulic drive is selected in step 2)</td>
</tr>
<tr>
<td>4</td>
<td>Optional Grinder Attachment</td>
</tr>
<tr>
<td>5</td>
<td>Hydraulic Power Unit</td>
</tr>
<tr>
<td>6</td>
<td>Turning Arm Assembly</td>
</tr>
<tr>
<td>7</td>
<td>Counterweight Assembly</td>
</tr>
<tr>
<td>8</td>
<td>Milling Head</td>
</tr>
<tr>
<td>9</td>
<td>Milling Head Swivel Assembly</td>
</tr>
<tr>
<td>10</td>
<td>Hydraulic Motor for Milling Head</td>
</tr>
<tr>
<td>11</td>
<td>Chuck Assembly</td>
</tr>
<tr>
<td>12</td>
<td>Shipping Container</td>
</tr>
</tbody>
</table>

**NOTE:**
- Multiple units may be ordered.

---

**Dual Pump (for hydraulic table rotation and hydraulic milling head, and for air for grinding attachment):**
- HPU 230V, 25HP Dual Pump with Air
- HPU 380V, 25HP Dual Pump with Air
- HPU 415V, 25HP Dual Pump with Air
- HPU 460V, 25HP Dual Pump with Air
- HPU 575V, 25HP Dual Pump with Air

---

**Dual Pump (with air) for hydraulic table rotation**
OPTION 3: To configure your FF8200 for Milling, or Milling with Single Pointing

To configure your machine, please follow these steps.

1. Select a Base Package
2. Select a Feed Assembly
3. Select a Drive Motor Assy
4. Select a Hydraulic Motor
5. Select an Optional Grinder
6. Select a Hydraulic Power Unit
7. Select a Turning Arm Assembly
8. Select a Counterweight Assy

---

### Base Package
- Rotary table, tool kit, drag brake assemblies, operator's manual.

### Feed Assembly
- Pneumatic Feed Assembly w/ Remote Air Control

### Drive Motor Assembly
- Pneumatic Motor and Drive Assembly
  - (Pneumatic drive system includes: Pneumatic motor w/ fittings and mount, gearbox, rotary union, hoses, feed trip valve, cam, & pneumatic conditioning unit with low pressure drop out.)
- Hydraulic Drive Assy w/ Gearbox & Feed Conditioning Unit - DOES NOT INCLUDE MOTOR (Hydraulic drive system includes: Hyd motor mount, gearbox, hoses, fittings, rotary union, feed trip valve, cam, and feed pneumatic conditioning unit.)

### Hydraulic Motor for Rotary Table Drive
- (If Hydraulic drive is selected in step 3)
  - Rated at 10 gpm, 1200 PSI
  - Fast RPM = Single Point Machining / Slow RPM = Milling
    - Hydraulic Motor, 4.9 cu in (80.3 cu cm), 16 - 56 RPM / 0.1 - 0.35 RPM
    - Hydraulic Motor, 8.0 cu in (131.1 cu cm), 8 - 32 RPM / 0.05 - 0.20 RPM
    - Hydraulic Motor, 14.9 cu in (244.2 cu cm), 3.6 - 18 RPM / 0.02 - 0.11 RPM
    - Hydraulic Motor, 18.7 cu in (306.4 cu cm), 2.8 - 14 RPM / 0.018 - 0.09 RPM
    - Hydraulic Motor, 24.0 cu in (393.3 cu cm), 2.2 - 11 RPM / 0.014 - 0.07 RPM
    - Hydraulic Motor, 29.8 cu in (488.3 cu cm), 1.8 - 9 RPM / 0.012 - 0.06 RPM
    - * Multiple units may be ordered.

### Optional Grinder Attachment
- Grinding Attachment for Pneumatic Table Drive Motor
- Grinding Attachment for Hydraulic Table Drive Motor
- Grinder Tooling
  - Grinding Wheel 1.5 in (38.1 mm), CBN 130 Grit
  - Grinding Wheel 2.25 in (57.2 mm), CBN 130 Grit

### Hydraulic Power Unit
- Single Pump (for pneumatic table rotation):
  - HPU 230V, 25HP Single Pump with Air
  - HPU 380V, 25HP Single Pump with Air
  - HPU 415V, 25HP Single Pump with Air
  - HPU 460V, 25HP Single Pump with Air
  - HPU 575V, 25HP Single Pump with Air

- Dual Pump (with air) for hydraulic table rotation, hydraulic milling head, and air for grinding attachment:
  - HPU 230V, 25HP Dual Pump with Air
  - HPU 380V, 25HP Dual Pump with Air
  - HPU 415V, 25HP Dual Pump with Air
  - HPU 460V, 25HP Dual Pump with Air
  - HPU 575V, 25HP Dual Pump with Air

### Milling Head
- Milling Head Assembly (hydraulic milling head):
  - HPU 230V, 25HP Dual Pump
  - HPU 380V, 25HP Dual Pump
  - HPU 415V, 25HP Dual Pump
  - HPU 460V, 25HP Dual Pump
  - HPU 575V, 25HP Dual Pump

- Pendant Cable & Hose, Single Pump
  - 0.75 in (19.1 mm) Hose and Pendant Cable Assy, 20 ft (6.1 m)
  - 0.75 in (19.1 mm) Hose and Pendant Cable Assy, 30 ft (9.1 m)
  - 0.75 in (19.1 mm) Hose and Pendant Cable Assy, 50 ft (15.2 m)
  - 0.75 in (19.1 mm) Hose and Pendant Cable Assy, 100 ft (30.5 m)

### Turning Arm Assembly
- Milling Arm Assembly with Single Point Tool Head

### Counterweight Assembly
- Counterweight Milling Arm Assembly

### Milling Head
- Milling Head Assembly Inch #50 Taper NMTB
- Milling Head Assembly Inch #50 Taper CATV
- Milling Head Assembly Metric #50 Taper NMTB
- Milling Head Assembly Metric #50 Taper CATV

### Tooling (for inch milling head assembly only)
- #50, NBTB 4 in (101.6 mm) Face Mill w/ Inserts
- #50, NBTB 5 in (127.0 mm) Face Mill w/ Inserts
- #50, NBTB 6 in (152.4 mm) Face Mill w/ Inserts
- #50, NBTB 8 in (203.2 mm) Face Mill w/ Inserts
- #50, NBTB 10 in (254.0 mm) Face Mill w/ Inserts
- Carbide Inserts

### Milling Head Swivel Assembly
- Milling Head Swivel Plate Assembly

### Hydraulic Motor for Milling Head
- Hydraulic Motor Assembly 8.0 cu in (131.1 cu cm)
- Hydraulic Motor Assembly 9.6 cu in (157.3 cu cm)
- Hydraulic Motor Assembly 11.9 cu in (195.0 cu cm)
- Hydraulic Motor Assembly 14.9 cu in (244.2 cu cm)
- Hydraulic Motor Assembly 18.7 cu in (306.4 cu cm)
- Hydraulic Motor Assembly 24.0 cu in (393.3 cu cm)

### Chuck Assembly
- ID Chuck Assembly
- OD Chuck Assembly

### Shipping Container
- Wooden Crate for ID Mount Machine
- Wooden Crate Set for ID/OD Mount Machine
Get even more out of your Flange Facer with these accessories:

<table>
<thead>
<tr>
<th>Accessory</th>
<th>PN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface mount</td>
<td>79540</td>
</tr>
<tr>
<td>Backfacing attachment</td>
<td>69711</td>
</tr>
<tr>
<td>(requires milling arm PN 62578 and counterweight arm PN 62527)</td>
<td></td>
</tr>
<tr>
<td>Surface mount retrofit kit</td>
<td>80046</td>
</tr>
<tr>
<td>(for existing machines)</td>
<td></td>
</tr>
</tbody>
</table>

### Backfacing Attachment

Machine Overview, Surface Mount Configuration

Machine Overview, ID-Mount Configuration
A Fast Eight-Step Process

This model is so fast and easy to set up that an experienced operator can usually mount the machine into the flange bore, align it, and start cutting in less than an hour. ID-mounting steps shown.

1. Measure the bore diameter. This will be used to determine the leg length.

2. Select the appropriate leg length and foot.

3. Install setup fingers.

4. Tighten legs.

5. Set machine onto flange using setup fingers. Lightly tighten leveling feet in the flange.

6. Extend feet into flange. Indicate, level and tighten leveling feet and stationary feet.

7. Install tool bit. Connect to power.

8. You are ready to begin machining!
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

ID Chuck Assembly, ID-Mount Configuration, Single-Point Machining

Machining diameters
Max Ø120.0 [3048]
Min Ø45.0 [1143]

Swing Diameter
Max Ø127.7 [3244]
Min Ø84.7 [2151]

Max Rotating Height:
Single point machining
15.71 ± 0.25 [399 ± 6.4]

Dim A ± 0.25 [Dim A±6.4]
Max clearance with tool head fully retracted
Turning arm, single point mach only 1.76 [44.7]
11.93 ± 0.25 [303 ± 6.4]
Minimum bore depth

NOTE: ±.25 is travel of leveling foot
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

ID Chuck Assembly, ID-Mount Configuration, Milling

Machining diameters (CL of spindle)
- Max Ø120.0 [3048]
- Min Ø45.0 [1143]

Swing Diameter
- Max Ø130.2 [3307]
- Min Ø82.8 [2103]

Max Rotating Height:
- Milling 24.05 ± .25 [611 ± 6.4]

Dim A ± .25 [Dim A±6.4]
- Max clearance with spindle fully retracted
  - Milling arm, milling 1.74 [44.2]
  - Milling & turning arm, grinding 1.64 [41.7]

11.93 ± .25 [303 ± 6.4]
- Minimum bore depth

NOTE: ± .25 is travel of leveling foot
**OPERATIONAL DIMENSIONS**

Dimensions in Inch (mm)

**OD Chuck Assembly, OD-Mount Configuration, Single-Point Machining**

- **Machining Diameter**
  - Max \(\phi 120.0 \ [3048.0]\)
  - Min \(\phi 45.0 \ [1143.0]\)

- \(\phi 147.0 \ [3733.8]\) Clearance at maximum machining

- **Dim A ± .25 [Dim A ± 6.4]**
  - Max clearance with tool head fully retracted
  - Turning arm, single point mach only 4.2 [106.7]
  - Milling & turning arm 4.2 [106.7]
  - (either milling or single point machining)
  - Milling & turning arm, grinding 4.1 [104.1]

---

**FOR REFERENCE ONLY**
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

OD Chuck Assembly, OD-Mount Configuration, Milling

Machining Diameter
Max $\odot 120.0$ [3048.0]
Min $\odot 45.0$ [1143.0]

$\odot 147.0$ [3733.8] Clearance at maximum machining

136.4 [3464.6] MAX -89.8 [2280.92] MIN

5.0 [127.0] 10.0 [254.0]

35.0 [889.5]

2.1 [53.2]

2.0 [49.5]
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

Surface Mount Configuration, Milling

Clearance with tool head fully retracted
- 1.38" with turning arm, single point only
- 1.36" with milling arm with milling head or single point head
- 1.26" with milling arm or turning arm and grinder

Ø36.0"
Min Mounting Dia
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

Milling Head Assembly

Dimensions in Inch (mm):
- 7.2 (182.9)
- 8.0 (485.1)
- 19.11 (485.4)
- 3.98 (101.1)
- 5.6 (142.2)
CLIMAX TRAINING AND SUPPORT

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.

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