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Roller Swage Machines

4777-PLC-1 Roller Swage

Eaton’s model 4777 is a power-assisted roller swaging machine. The programmable logic controllers control the swaging process, electronically linked through a torque transducer, and provides a swage identical to that performed by model 6777. This kit is ideal for low volume or repair shop applications.

Eaton’s manual 4777-PLC-1 Roller Swage is capable of swaging all types of internally swaged fittings including flareless, flared, fuel coupling, beam seal, ball-nose, and other hydraulic and pneumatic fittings.

- Capable of swaging up to 100 in-lb of torque
- Uses 110 Volt-60Hz, or 220 Volts-50Hz
- Swages sizes 1/4" to 1-1/2" O.D. tubing (6mm to 38mm)

Features
- Light production use, ideal for field repair
- Compact flash memory for accurate torque control
- Variable motor speed for optimum swage
- Accurate calibration in the field
- Compatible with all tubing materials
- Easy to operate and relocate

Technical Features
- Weight: 200 lbs (91 Kg)
- Dimensions: 20" W x 26.1" L x 37.8" H (508 mm W x 663 mm L x 960mm H)
- Swage Capacity: 130 in/lbs (1.5 Kg-M)
- Tubing Size Capacity: Size 24
- Tooling Specified by fitting number and Technical Information Bulletin (TIB)
- Capacity – Designed for prototype and light production use only
- Noise level: 65 dba

6777-PLC-1 Roller Swage

Eaton’s TorkPlus is a dual mode swaging machine capable of internally swaging tubes to fittings—either by torque control or diameter control.

An on-board microprocessor is programmed to produce:
- Pulse width modulated speed control governed by real time torque analysis, resulting in the most accurate torque control in the industry.
- Variable operating speed to obtain optimum swage on tube sizes from 1/4" (6mm) through 1-1/2" (38.0 mm), in seconds.
- A diameter control mode option is at the operator’s fingertips, and is indicated by a flashing LED display. In this mode, the model 6777 TorkPlus machine can swage other manufacturer’s fittings to their inspection criteria.
- Options include:
  - On-board printout device for quality assurance records
  - In-field calibration capability

Eaton’s single head Roller Swage, model 6777, is capable of swaging all types of internally swaged fittings, including flareless, flared, beam seal, ball-nose, and other hydraulic and pneumatic fittings.

- Capable of swaging up to 100 in-lb of torque
- Swages sizes 1/4" to 1 1/2" O.D. tubing (6mm to 38mm)

The model 6777 Swage is available for the following electric power sources:
- 380 VAC, 50 Hz, 3-phase
- 460 VAC, 60 Hz, 3-phase
- 220 VAC, 50/60 Hz, 3-phase

Features
- On-board programmable logic controllers (PLC) to make accurate swages
- Dual Mode—torque and diameter control
- Easy to operate with safety features
- Variable motor speed for optimum swage
- Accurate calibration in the field
- Compatible with all tubing materials
- Rolled easily within the shop for relocation
- Touch-screen controller

Technical Features
- Weight: estimated 600 lbs (272 Kg)
- Dimensions: 26" W x 46" L x 60" H (66 cm W x 117 cm L x 152 cm H)
- Swayne Capacity: 130 in/lbs (1.5 Kg-M)
- Maximum Tubing Size Capacity: 1 1/2" (38.0 mm)
- Pneumatic Requirements
  - Air Pressure Supply: 80 psi - 100 psi (551.5 kPa - 689.5 kPa)
  - Tooling Specified by fitting number and Technical Information Bulletin (TIB)
  - Capacity – Designed for production use
Roller Swage Machines

8777-PLC-1 Roller Swage

Eaton’s double head Roller Swage, model 8777, is capable of swaging all types of internally swaged fittings including fuel couplings, flareless, flared, beam seal, ballnose, and other hydraulic and pneumatic fittings.

- Capable of swaging up to 1,500 in-lb of torque
- Uses 220, 380 or 440 volts and shop air
- Swages sizes 1/4” to 3-1/2” O.D. tubing (6mm to 89mm)

Features
- On-board programmable logic controllers (PLC) to make accurate swages
- Touch-screen controller
- Easy to operate with safety features
- Torque or diameter-control mode capabilities
- Variable motor speed for optimum swage
- Accurate calibration in the field
- Compatible with all tubing materials
- Rolled easily within the shop for relocation

8777-PLC-1 Roller Swage

3777 Portable Swaging Kit

Manually Operated—Diameter Control

This tool kit is a derivative of the reliable, field-proven manual system used by OEM and the airlines for field swaging. It includes a durable, customer-fitted carrying case, suitable for flight line use, containing all tools necessary to produce a high integrity swage.

Technical Features

<table>
<thead>
<tr>
<th>Weight</th>
<th>estimated 2000 lbs (907.2 Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>30” W x 52” L x 60” H (76 cm W x 132 cm L x 152 cm H)</td>
</tr>
<tr>
<td>Swage Capacity</td>
<td>1500 in-lbs (17.28 Kg-M) [Large Head]</td>
</tr>
<tr>
<td></td>
<td>130 in-lbs (1.5 Kg-M) [Small Head]</td>
</tr>
<tr>
<td>Tubing Size Capacity</td>
<td>3 1/2” [-56 size] [Large Head]</td>
</tr>
<tr>
<td></td>
<td>1 1/2” [-24 size] [Small Head]</td>
</tr>
</tbody>
</table>

Pneumatic Requirements

| Air Pressure Supply | 80 psi - 100 psi (551.5 kPa - 689.5 kPa) |
|                     | Tooling specified by fitting number and Technical Information Bulletin (TIB) |
|                     | Capacity – Designed for production use |
Roller Swage Assembly Tooling
Flareless Fittings 7320 Series

(Example: 7320-08035 for 1/2" [12.7 mm] OD tube, 0.035" wall)

Also Available:
6960 Series – to be used with Lip Seal fittings
7175A Series – to be used with Flared fittings
7400 Series – to be used with 4000 psi (27580 kPa)
7500 Series – to be used with 5000 psi (34475 kPa)
8500 Series – to be used with fuel couplings
### Jaw Sets

#### Jaw Set Assembly, Sleeves - Roller Swage

P/N 6884

(Example: 6884-08 for use on 1/2" [12.7 mm] OD tube fittings)

![Diagram of Jaw Set Assembly][1]

#### Sleeve Retainer, P/N 6885

For use with Jaw Sets (above)

(Example: 6885-108 for use with 6884-08 Jaw Set)

![Diagram of Sleeve Retainer][2]

**Dimensions: inches/mm**

<table>
<thead>
<tr>
<th>SIZE DASH NUMBER</th>
<th>TUBE SIZE (O.D.)</th>
<th>A ± .010</th>
<th>B</th>
<th>TUBE RETAINER PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>-04</td>
<td>0.250/6.3</td>
<td>2.00/50.8</td>
<td>0.50/12.7</td>
<td>6901-04</td>
</tr>
<tr>
<td>-05</td>
<td>0.312/7.9</td>
<td>2.00/50.8</td>
<td>0.50/12.7</td>
<td>6901-05</td>
</tr>
<tr>
<td>-06</td>
<td>0.375/9.5</td>
<td>1.99/49.9</td>
<td>0.38/9.6</td>
<td>6901-06</td>
</tr>
<tr>
<td>-08</td>
<td>0.500/12.7</td>
<td>1.92/48.7</td>
<td>0.42/10.6</td>
<td>6901-08</td>
</tr>
<tr>
<td>-10</td>
<td>0.625/15.8</td>
<td>1.91/48.5</td>
<td>0.41/10.4</td>
<td>6901-10</td>
</tr>
<tr>
<td>-12</td>
<td>0.750/19.0</td>
<td>1.92/49.0</td>
<td>0.42/10.9</td>
<td>6901-12</td>
</tr>
<tr>
<td>-16</td>
<td>1.000/25.4</td>
<td>2.00/50.8</td>
<td>0.50/12.7</td>
<td>6901-16</td>
</tr>
</tbody>
</table>

**Dimensions: inches/mm**

<table>
<thead>
<tr>
<th>SIZE DASH NUMBER</th>
<th>TUBE SIZE (O.D.)</th>
<th>ØA</th>
<th>ØB</th>
<th>ØC</th>
<th>ØD</th>
<th>ØE</th>
</tr>
</thead>
<tbody>
<tr>
<td>-104</td>
<td>0.250/6.3</td>
<td>1.45/36.8</td>
<td>1.24/31.4</td>
<td>0.75/19.0</td>
<td>0.33/8.3</td>
<td>0.22/5.5</td>
</tr>
<tr>
<td>-105</td>
<td>0.312/7.9</td>
<td>1.45/36.8</td>
<td>1.24/31.4</td>
<td>0.92/23.3</td>
<td>0.40/10.1</td>
<td>0.21/5.3</td>
</tr>
<tr>
<td>-106</td>
<td>0.375/9.5</td>
<td>1.45/36.8</td>
<td>1.24/31.4</td>
<td>0.86/21.8</td>
<td>0.40/10.1</td>
<td>0.21/5.3</td>
</tr>
<tr>
<td>-108</td>
<td>0.500/12.7</td>
<td>1.45/36.8</td>
<td>1.24/31.4</td>
<td>0.88/22.3</td>
<td>0.40/10.1</td>
<td>0.23/5.8</td>
</tr>
<tr>
<td>-110</td>
<td>0.625/15.8</td>
<td>1.49/37.8</td>
<td>1.49/37.8</td>
<td>0.97/24.6</td>
<td>0.47/11.9</td>
<td>0.22/5.5</td>
</tr>
<tr>
<td>-112</td>
<td>0.750/19.0</td>
<td>1.49/37.8</td>
<td>1.49/37.8</td>
<td>0.95/24.3</td>
<td>0.46/11.6</td>
<td>0.23/5.8</td>
</tr>
<tr>
<td>-116</td>
<td>1.000/25.4</td>
<td>1.49/37.8</td>
<td>1.49/37.8</td>
<td>1.06/26.9</td>
<td>0.47/11.9</td>
<td>0.31/7.8</td>
</tr>
</tbody>
</table>

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[1]: https://example.com/jaw-set-diagram.png
[2]: https://example.com/sleeve-retainer-diagram.png
# Roll Swage Assemblies & Components

## How to Order

**Part Number Example - Roller Expander Assembly**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Mandrel Part Number</th>
<th>Roller Part Number</th>
<th>Cage Part Number</th>
<th>Material To Be Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-04016</td>
<td>7321-04016</td>
<td>7322-04016</td>
<td>7323-04016</td>
<td>Titanium and 21-6-9 CRES (3000 psi System)</td>
</tr>
<tr>
<td>7320-06019</td>
<td>7321-06019</td>
<td>7322-06019</td>
<td>7323-06019</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
<tr>
<td>7320-10020</td>
<td>7321-10020</td>
<td>7322-10020</td>
<td>7323-10020</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
<tr>
<td>7320-12032</td>
<td>7321-12032</td>
<td>7322-12032</td>
<td>7323-12032</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
</tbody>
</table>

### 3000 psi or Lower Pressure System

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Mandrel Part Number</th>
<th>Roller Part Number</th>
<th>Cage Part Number</th>
<th>Material To Be Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-04020</td>
<td>7339-04020</td>
<td>7340-04020</td>
<td>7338-04020</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
<tr>
<td>7320-06026</td>
<td>7339-06026</td>
<td>7340-06026</td>
<td>7338-06026</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
<tr>
<td>7320-08026</td>
<td>7339-08026</td>
<td>7340-08026</td>
<td>7338-08026</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
<tr>
<td>7320-10028</td>
<td>7339-10028</td>
<td>7340-10028</td>
<td>7338-10028</td>
<td>321 CRES, 304 CRES, Aluminum</td>
</tr>
</tbody>
</table>

### 1000 psi or Lower Pressure System

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Mandrel Part Number</th>
<th>Roller Part Number</th>
<th>Cage Part Number</th>
<th>Material To Be Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-20024</td>
<td>7509-20024</td>
<td>7508-20024</td>
<td>7507-20024</td>
<td>21-6-9 CRES &amp; Aluminum</td>
</tr>
<tr>
<td>7320-20035</td>
<td>7509-20035</td>
<td>7508-20035</td>
<td>7507-20035</td>
<td>21-6-9 CRES &amp; Aluminum</td>
</tr>
</tbody>
</table>

### Notes:
- **Tube Wall Thickness:** (0.035 in. [0.889 mm]Wall)  
- **Tube O.D. Size:**
- **Basic Part Number (Roller Expander Assembly):**

---

**Mandrel**

**Cage**

**Roller**
Three-Groove Installation Sequence

Fitting Swages to Tubing in Seconds

The following illustrations show Eaton's semi-automatic Swage in operation.

1. Install external tooling.
2. Install internal tooling.
3. Tube and fitting installation.
5. Enter torque requirements.
6. Press start and move sled forward, let it complete cycle, and retract sled.
7. Remove and inspect.
8. Finished attachment. Sleeve is permanently swaged to tubing.