

Components produced by Precision Rotary Swaging:  
**Push Rods**



88 0202/M

**Workpiece:**

Material: St 35 (standard steel with low carbon content)

Blank: tube O.D. 16 mm and wall thickness 3 mm

**Manufacturing requirement:**

Forming the pivot end in one pass out of tubing.

**Previous technique:**

Turning and grinding (solid bars)

**Operation sequence:**

1. Expansion of the workpiece in 2 stages followed by flanging.
2. Forming the pivot end and groove by recess swaging.

**Advantages:**

- Expansion and rotary swaging operations combined on a 2-station transfer line.
- Forming spherical shape on pre-formed tube in one operation. Due to the quality of shape and surface achieved, grinding is no longer required.
- Forming the spherical shape by rotary swaging was made possible by changing from bar to tube material and accepting a small hole in the end of the sphere

**Machine description:**

Automatic transfer line consisting of:

- 1 infeed magazine for approx. 500 blanks
- 1 horizontal press with triple die change system
- 1 precision rotary swaging head

**Production rate:**

Cycle time: approx. 15 sec.  
(= 4 pieces/min.)

**Machine:**

Model: HA 32-2 VUE

Required floor space without sound enclosure: (L x W x H)  
approx. 6100 x 5500 x 3500 mm

Weight: approx. 11,800 kg

Required power: approx. 70 kW