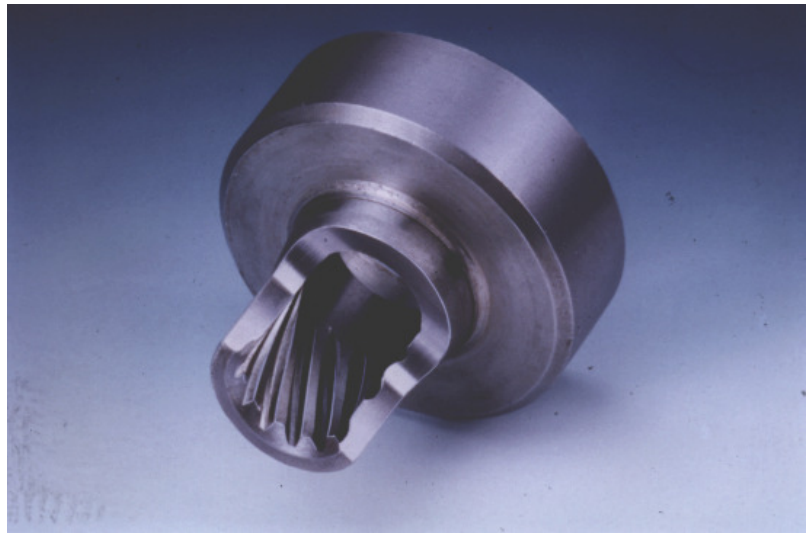


Components produced by Precision Rotary Swaging:

## Starter Bush and Internal Spline



91 0611/M

### Workpiece:

Material: 16 MnCr 5  
(Chrome manganese steel alloy)

Blank: turned or cold extruded part with tenon  
O.D.29 mm and wall thickness 4.5 mm

### Manufacturing requirement:

Forming the helical internal spline in one operation.

### Previous technique:

none / new design

### Operation sequence:

Feed swaging over mandrel  
(The mandrel is provided with the required helical shape)

### Advantages:

- Chipless forming of the internal spline over a mandrel
- Helical spline with a 20° angle
- Low tool costs
- High precision
- Increased strength resulting from the cold forming of the spline
- If quantities justify, the part can also be formed on an automatic machine

### Machine description:

Semi-automatic machine consisting of:

1 swaging unit

### Production rate:

Cycle time: 10 sec  
(= 6 pieces/min.)

### Machine:

Model: HA 40-1 VH

Required floor space including sound enclosure: (L x W x H)  
approx. 5,400 x 1,800 x 3,000 mm

Weight: approx. 4,500 kg

Required power: approx. 13.4 kW