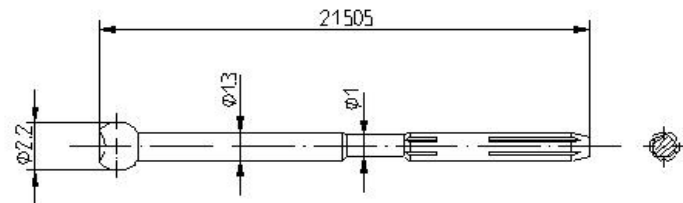


Components produced by Precision Rotary Swaging:
Valve Needle

Finished part



87 0771/M

Workpiece:

Material: stainless steel 1.4301

Blank: coil, wire dia. 2.2 mm

Manufacturing requirement:

Complete manufacture of valve needle in one machine pass

Previous technique:

Turning and milling

Operation sequence:

1. Straightening of wire and recess swaging of shaft
2. Recess swaging, forming of ball head
3. Cutting to length
4. Recess swaging, forming of recess and taper at end of needles
5. Recess swaging, forming of grooves
6. Recess swaging, calibrating recess and cylindrical part with grooves

Advantages:

- Good dimensional accuracy
- Excellent surface finish
- Considerable material savings
- No chips produced
- Favourable grain structure
- Work hardening of material
- Complete manufacture of part in only one machine pass

Machine description:

Automatic transfer line consisting of:

- 1 straightening and cutting station
- 5 swaging stations
- 1 cutting station

Production rate:

Cycle time: 12 sec.
 (= 5 pieces/min.)

Machine:

Model: HA 16-6 VUE

Required floor space without sound enclosure: (L x W x H)
 approx. 3,700 x 2,000 x 1,800 mm

Weight: approx. 4,800 kg

Required power: approx. 11.3 kW