PRODUCT STORY

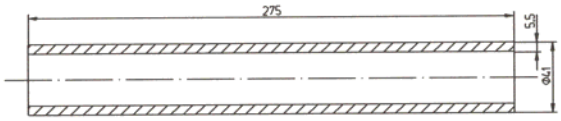
FELSS

No. 047-195 E

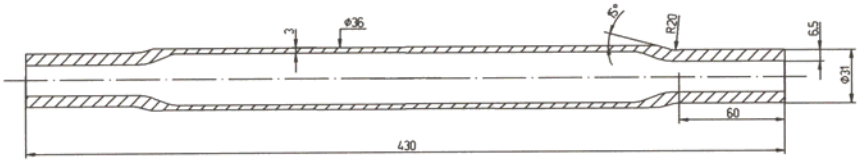
Components produced by Precision Rotary Swaging:

Thick / thin Blank for Drive Shafts of Cars

Blank



Finished part



94-1495/M

Workpiece:

Material: 33 Mb 5 or similar

Blank: cold drawn tubing
dia. 41 to 45 x 5.5 mm
length 230 to 380 mm

Finished part: length 275 to 600 mm

Manufacturing requirement:

Manufacture of drive shaft blank with variable wall thickness in one machine pass

Previous technique:

Drawing on press using bonderized and phosphated material

Operation sequence:

1. Recess swaging over mandrel dia. 36 x 3 - preparation for achieving desired wall thickness at change in diameter
2. Recess swaging over mandrel, first workpiece end to dia. 31 x 6.5
3. Feed swaging with stretching over mandrel dia. 36 x 3
4. Feed swaging with stretching over mandrel dia. 36 x 3

4a. Turning workpiece by 180°

5. Recess swaging over mandrel, second workpiece end dia. 31 x 6.5
6. Turn end face

Advantages:

- Good dimensional accuracy
- Excellent surface finish
- Material saving of approx. 40%
- No chips produced / no chip removal
- Simplified process and cost savings by using non-bonderized and non-phosphated material
- Favourable grain structure
- Work hardening of material
- Complete manufacture of part on one transfer line
- Good performance of drive shaft

Machine description:

Automatic transfer line consisting of:

5 swaging stations

1 end face turning stations

Production rate:

between 4 and 6 pieces/min. depending on the workpiece length

Machine:

Model: HA 60-6 VUE

Required floor space without sound enclosure: (L x W x H)
approx. 9930 x 7260 x 3800 mm

Weight: approx. 39 t

Required power: approx. 205 kW

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