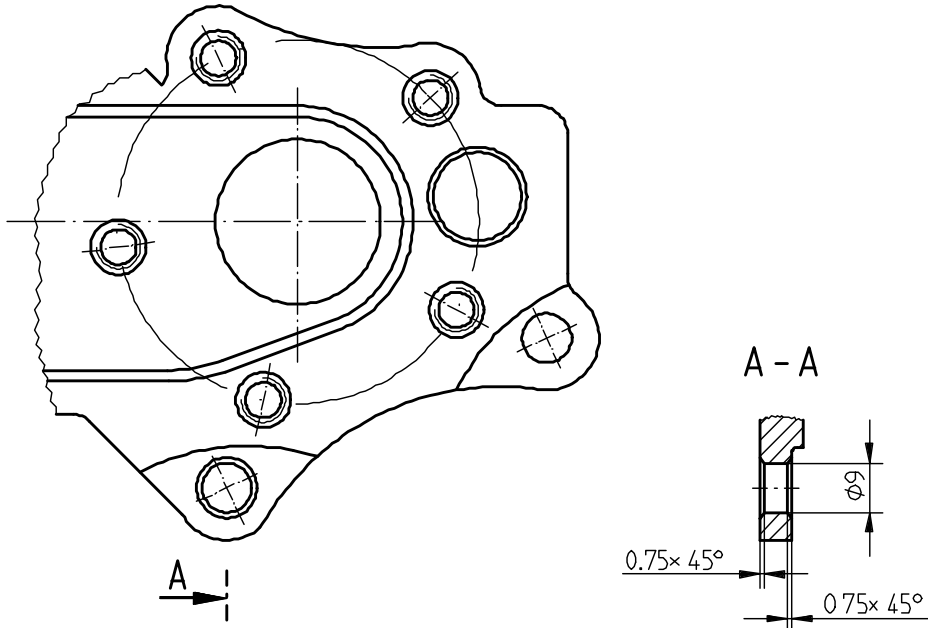
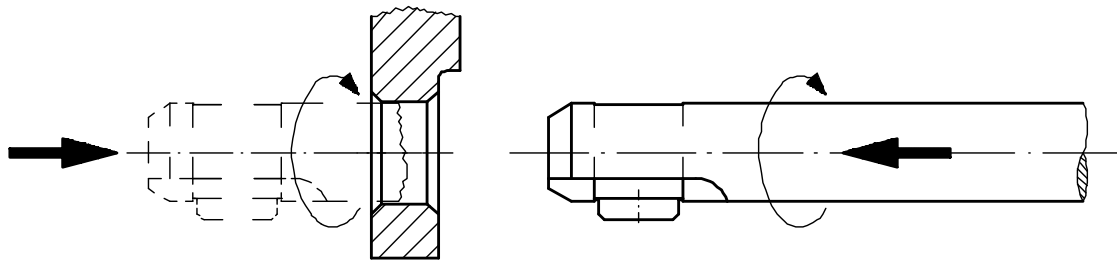


Industry	Automobile
Work piece	Rear axle
Material	Steel
What is machined	Holes $\varnothing 9\text{mm}$ must be chamfered forward and backward $0.75 \times 45^\circ$ .

Sketch of work piece



Sketch of tool and work piece



Tool	SNAP8/9.0
Speed	2'000 1/min
Feed	0.08 mm/rev
Coolant	Emulsion
Notes	In one single work operation without stopping or reversing the spindle.

**Workpiece**



Field	Automotive industry / Schäffler KG
Workpiece	Drive bush
Material	CF53V (similar C40)
Processing	Ø 7.8mm preprocessed (finished Ø8.0 -0.003/-0.018)
Output	30 Mio. pieces per year

**Application**

- Bore- Ø 8.0mm, 1mm from the middle, front- and backward chamfer
- Chamfersize Ø 8.7mm x 60°



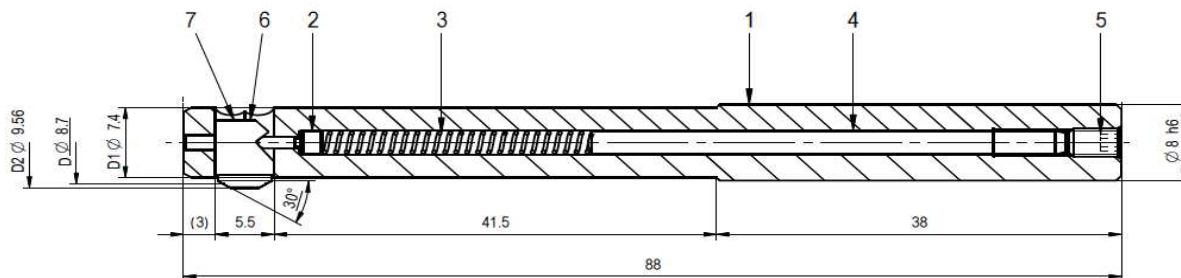
unchamfered (backside)



chamfered

**Tool:** standard chamfer tool SNAP5/7.5

**Blade:** special blade SNAP5 Ø8.7 DR 60°, carbide TiAlN, forward- backward cutting



**Processing**

- Speed: 1500 rev / min
- Feed: 0.1 mm / rev
- Cooling: external coolant

**Remarks**

SNAP tool use before reaming.

In a 60° chamfer ist he lateral pressure on the blade relatively high and our fear was the blade enters inside the tool body before reaching the retired chamfer size. This could be prevented by a special blade with „Drall-geometry“. The advantage of the „Drall-geometry“ ist the very low secondary burr and the dimensional accuracy of the chamfer.

To consider is the blade pressure. The set screw (5) in the shank from the tool should be screwed into the shank with about 8 -10 revolutions. Then the system is operating with an ideal blade pressure.

**The results speak for themselves.**

Industry	Valves and accessoires
Work piece	Tube fitting
Material	Stainless steel
What is machined	Cross hole $\varnothing 2.5\text{mm}$ in a main hole of $\varnothing 20\text{mm}$ deburred forward and backward in one single work operation.

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**Work piece**

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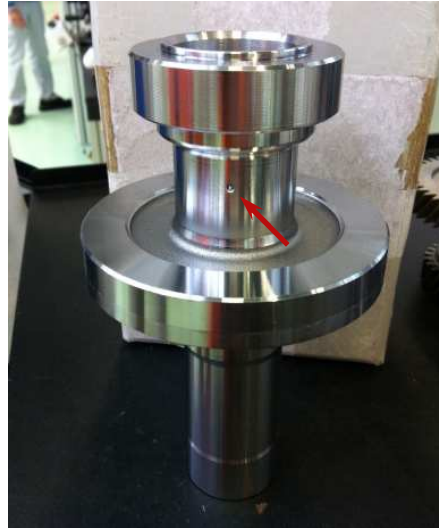
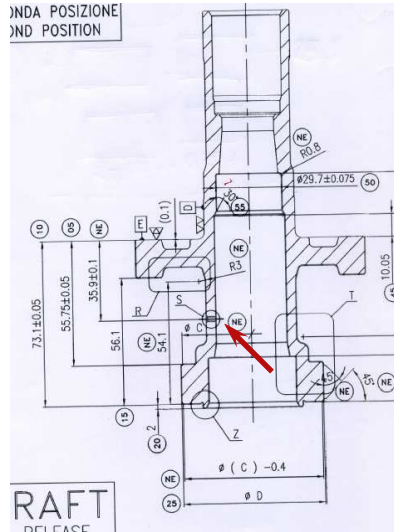
**Tool**

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Tool	SNAP2/2.3/10 SNAP2 blade 3.0 GS 90° fab carb-TiAlN
Speed	4'000 rev/min
Feed	0.04 mm/rev
Coolant	Dry
Life	Blade ~10'000 bores Control bolt ~ 500'000 bores

Branch of industry      Automotive (FPT Verone Italy)  
 Workpiece                Splined shaft  
 Material                    Steel  
 Application                Crosshole  $\varnothing 2\text{mm}$  in mainbore  $\varnothing 32\text{mm}$  backward deburring.

Workpiece



Tool



Tool	SNAP2/2.0/10 SNAP2 Blade 2.4 GS 90° nrs HM-TiAlN
Speed	7'200 rev/min
Feed	0.03 mm/rev
Cycletime	4.3s of tool change to tool change
Coolant	Emulsion
Remark	In the beginning the customer use a deburring fork for editing the bore backward. With the HEULE SNAP2 tool we have halved the process time, increased the security process and we have also improved the quality from the deburring.

Industry	Automotive (truck)
Work piece	Turbine housing
Material	Casted steel
Processing	Bore Ø22.0mm chamfering / Intereference/collision risk with Ø62.0mm

Work piece



Clamping (internal testing)



Tool	SNAP20/Ø21 with blade SNAP20 Ø23.0/90°, forward and backwards cutting carbide-TiN coated, GH-Q-M-03772
Spindle speed	500 rev/min
Feed	0.1 mm/rev
Spring force	+3 revolutions
Cooling	With external coolant
Remarks	Entering with positioned and stillstanding spindle. Blade cutting edge should be tangentially in touch with the bore Ø62 or better orientate the spindle so that the blade is opposite 180° (see images). Please consider that when moving out of the part as well.