

Nozzle Dimensions: 7x10x8 mm

- produces fine, defined spray mist from compressed air and water
- integrated functions (thread, hose attachments) • diameter: 80 um
- printed thread: M3

Heat exchanger cross section Inductor Dimensions: 21x13x7.2 mm

- material: 1.4404 (316L)
- *web width:* 130 μm
- channel width: 870 µm

ratio

- channel height: 170 µm • high surface area to weight

Dimensions: 27.7x18x7.7 mm

- material: CuCr1Zr
- relative density: > 99.5 %
- electrical conductivity (with heat treatment): 93 % IACS
- wall thickness: 500 µm
- inner channels: Ø 1 mm

• weight: 3.2 g

- Impeller Dimensions: Ø 12x7.8 mm
- material: 1.4404 (316L)
- 200 µm thin impeller blades • Overhang angle from 33°
- without support structures
- applications for miniaturisation of gas liquefaction systems

Probe Dimensions: 31.6x5.4x4.9 mm

- material: 1.4404 (316L)
- thin, individually shaped
- probe tip with 7 holes
- fluid flow measurement
- low volume and aerodynamic design

Watch plate

- channels of 120 µm

Dimensions: Ø 26x2.2 mm

- material: 3.7165 (Ti6Al4V)
- high customisability
- wall thickness: 150 µm
- precision of many small bores with Ø 200 µm
- thread hole: M1.2

Oculus

Dimensions: 8x6x8 mm 4x3x4 mm

- material: 1.4542 (17-4PH)
 - thin wall structures
 - medical applications - fiber optic guide / endoscope

Applications print-as-one

3D micro PRINT

Twin-tipped Arthroscopic Shaver

Task

To print parts for an arthroscopic shaver for veterinary medicine based on a novel technical idea and concept draft. Redesign of the 6-parts assembly to create a print-as-one solution with the twin shavers, gear set, body, clip and outer shell.

Solution and added value

- print-as-one solution instead 6-parts assembly
- improved functionality by sturdy design
- integrated water flushing and suction channels for shavings
- integrated channel for lighting
- tight tolerances reduce wear and tear
- single part production without assembly
- less total cost for the final part
- reduced lead time to market availability
- diameter: 6 mm

Micro Forceps / Gripper

Task

Conventional 5 parts assembly design was transformed to a print-as-one concept without assembly.

Solution and added value

- one piece instead of 5 single parts and multiple suppliers
- integrated channel for lighting
- single part production without assembly
- reduced lead time to market availability
- length: 20 mm
- diameter: 1.6 mm

Spot-jet Nozzle

Task

Conventionally designed nozzle assembly creates high input cost and 6 weeks lead time due to manufacturing 7 sub assembly components individually and assembling as one.

Solution and added value

- print-as-one solution instead of 7 parts assembly
- reduced quality inspection and post processing steps
- improved functionality with self alignment feature and printed M3 fixing thread
- all stainless steel without galvanic corrosion issues
- production cost reduced by 60 %
- lead time reduction from 6 weeks to 2 days



