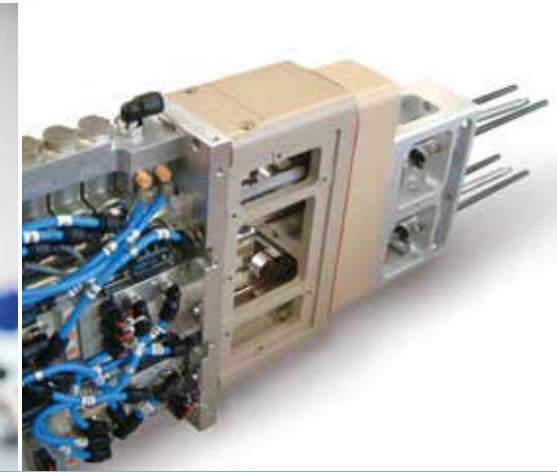




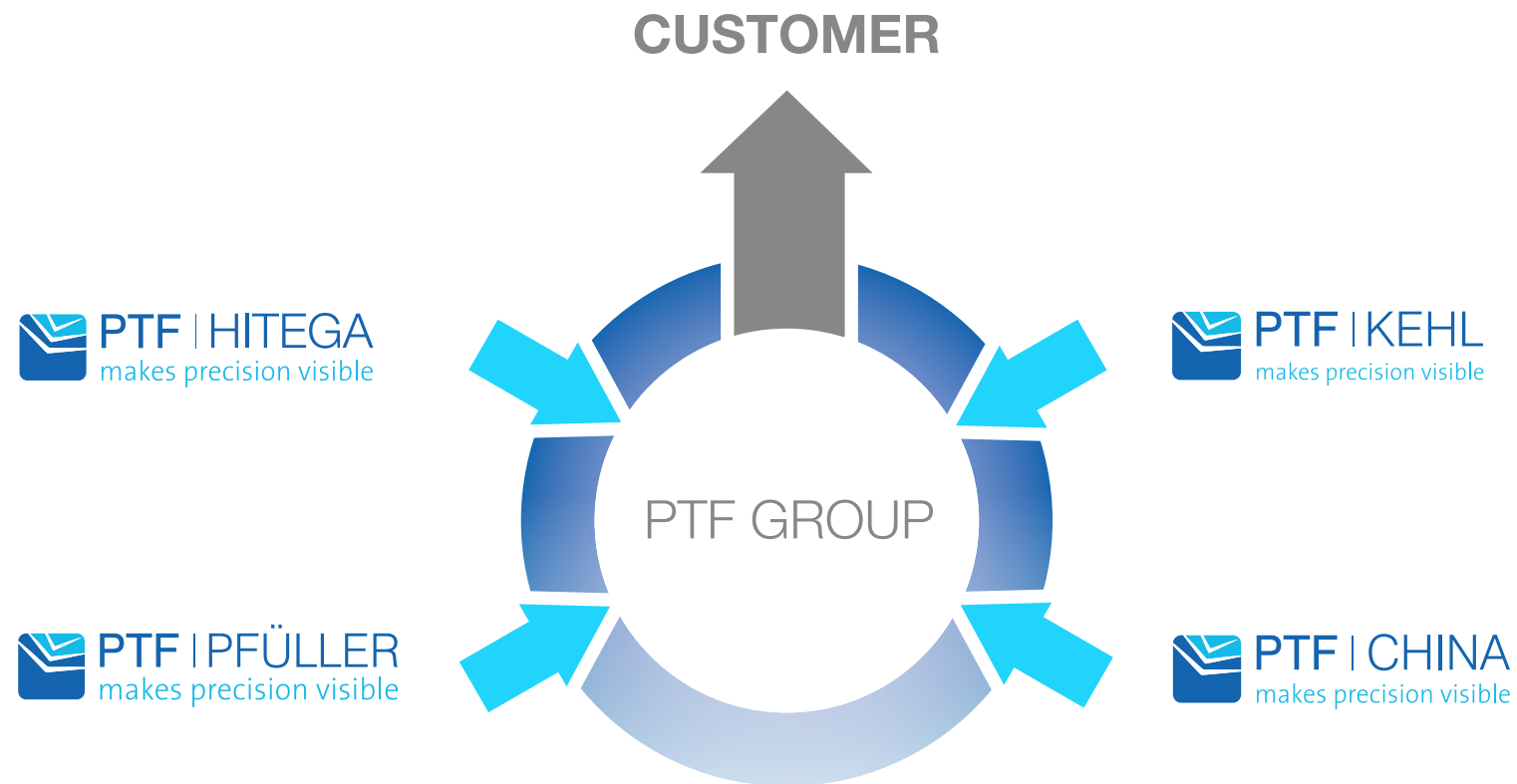
Stollberg Gangkofen Suzhou (CN)

Historic Milestones



- 1992** PTF founded by Steffen Pfüller, start with 1 conventional turning machine
- 1994** First CNC milling center
- 1997** Opening of manufacturing site in Stollberg / Germany (2,500 m²)
- 2005** Opening of new manufacturing site in Suzhou / China 1,500 m²
- 2010** Conversion of the sole proprietorship to PTF Pfüller GmbH & Co. KG
- 2011** PTF group: take-over by Silver Investment Partners and the management of PTF Pfüller GmbH & Co. KG
- 2012** PTF takes over Heinz Kehl & Sohn GmbH, Hattersheim/Main (Founded in 1960)
- 2013** Founding of the PTF site in Racine/Sturtevant, WI, United States
- 2014** PTF takes over Hitega Präzisionsmechanik GmbH (Founded in 1990)
- 2014 -2015** New extension building with 1,600m² production area and 450m² office and workshop space
- 2015** Production relocation of Heinz Kehl GmbH to Stollberg





Supply Chain / Full Service Provider

Europe | Asia | America



Engineering
Support

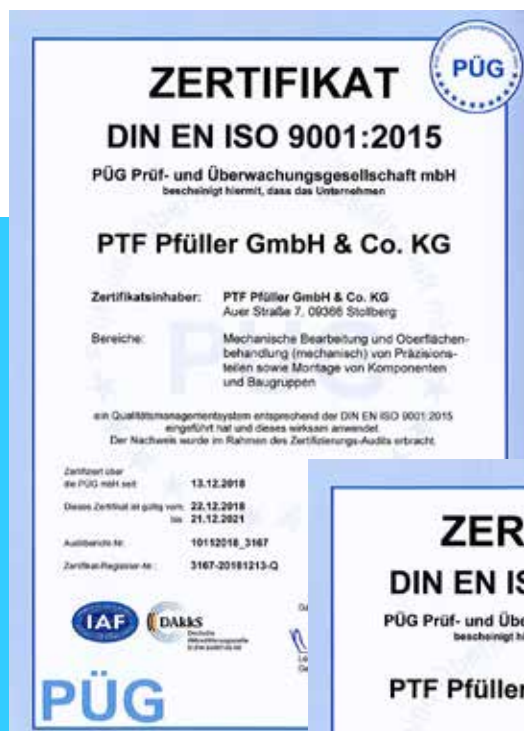
Mechanical
Processing

Assembly

Testing/
Quality Control

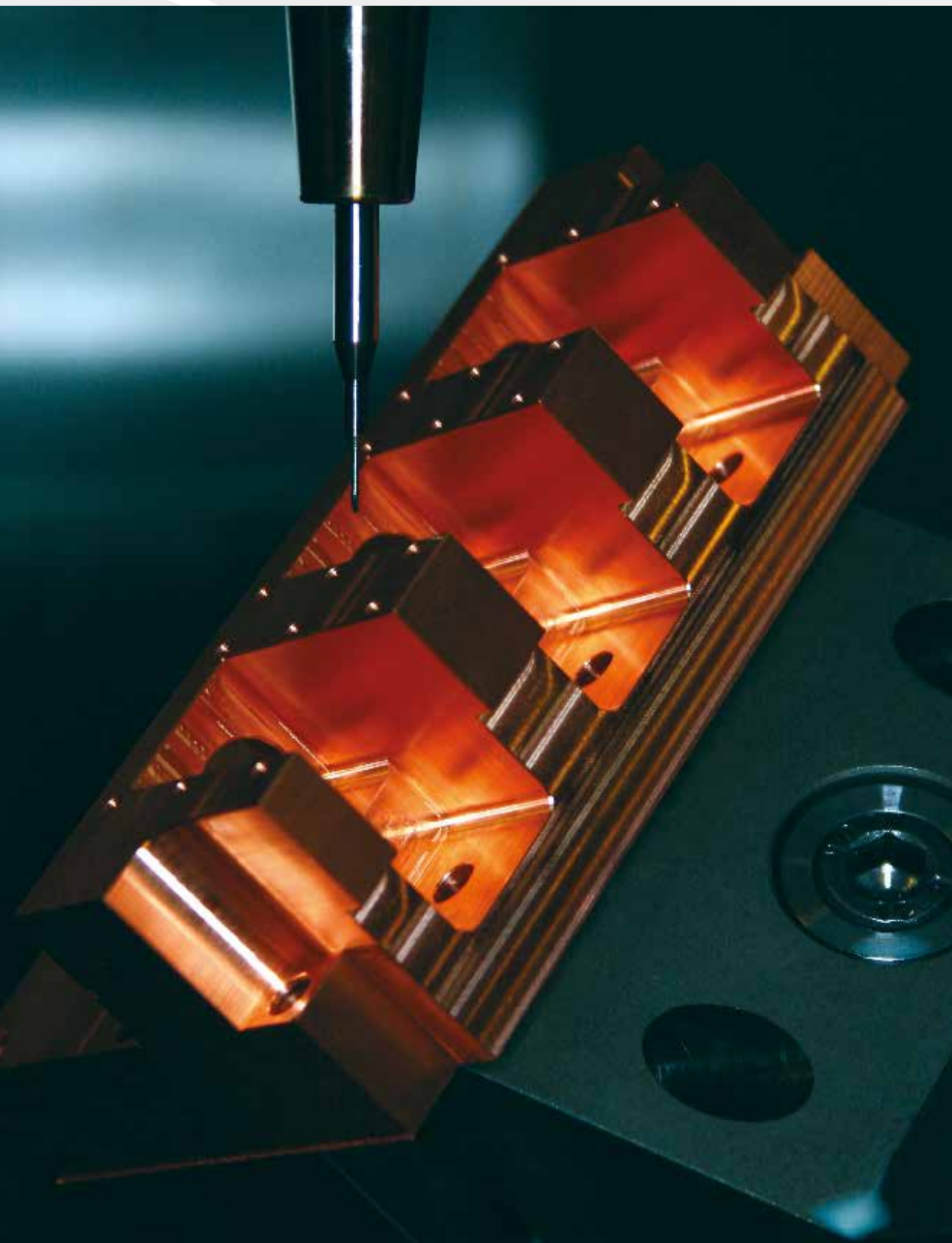
Storage/
Shipping





Highest QM – Standards certified by:

- DIN EN ISO 9001 : 2015
- DIN EN ISO 14001 : 2015 (Environment)
- and recognised hightech companies (EADS Space Transportation, Brooks, Infineon...)
- DIN EN ISO 13485 : 2016



- High – precision parts with fine and very complex geometrical contours
- Excellent surfaces and virtually no microscopic burr (e.g. glasball blasting)
- Assembly of components, if necessary in clean room

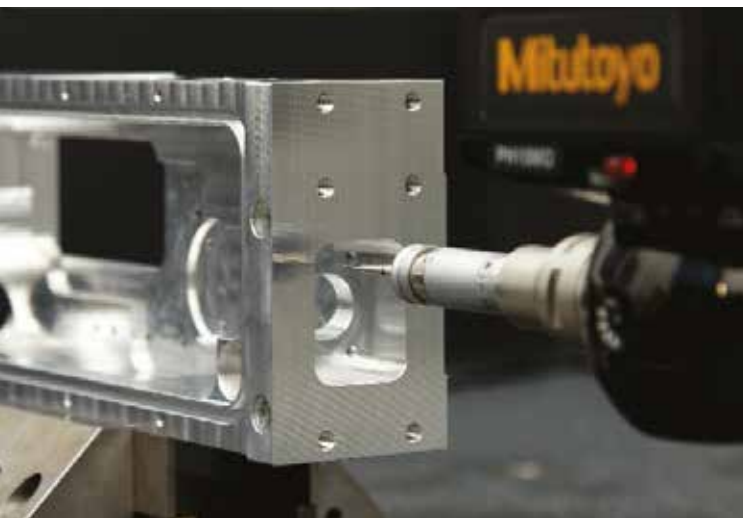
Milling / Turning / Grinding

- Flatness: down to $1\text{ }\mu\text{m}^*$
- Roughness: $R_a < 0.05\text{ }\mu\text{m}^*$
- Length tolerances: $< 5\text{ }\mu\text{m}^*$
- Max. Traverse: Max. 2,600 x 1,100 x 900 mm (GER)
 Max. 2,600 x 1,150 x 750 mm (GER)
 Max. 410 x 770 x 700 mm (CN)
- Typical part dimensions:
 1mm^3 up to 400 x 400 x 250 mm

Lapping / Polishing

- Flatness $1\text{ }\mu\text{m}$
- Roughness $R_a < 0.05\text{ }\mu\text{m}$

* depending on workpiece geometry

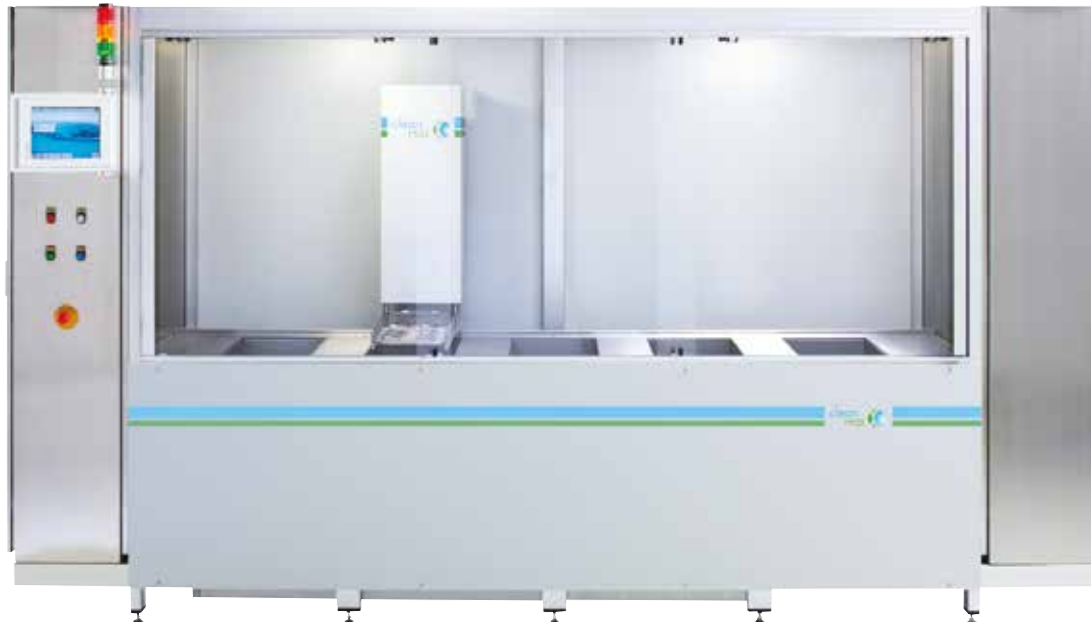


- State-of-the-art CNC-equipment
- more than 110 milling centers, also with 5-axis simultaneous technology / lathe machines (5 up to 10 programmable axes and freeform surfaces)
- automated loading/unloading of parts with robots
- wire EDM technology of AgieCharmilles
- Laser welding, laser marking
- CAD/CAM systems Schott, SolidWorks and Master Cam
- 3 dimensional digital measurement equipment
- Clean room class DIN ISO 6 according to DIN EN ISO 14644
- ESD assembly line

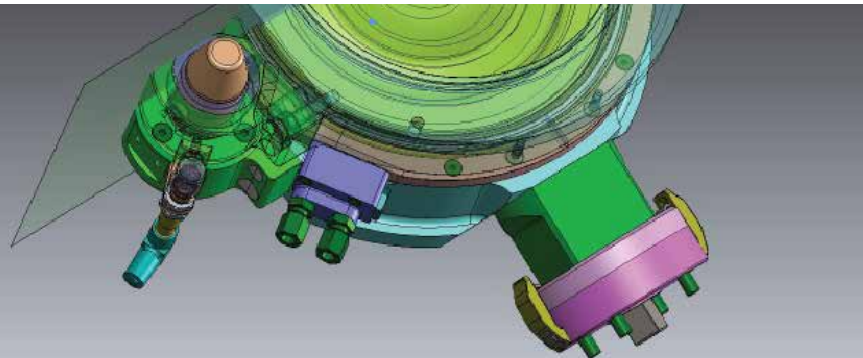


cleanmax ultrasonic VS1 ultrasonic cleaning machine

- very compact design
- 5-step cleaning process
- 25 - 132 kHz ultrasonic oscillator
- for sensitive industries
- incl. water treatment
- incl. fully automated SPS controls
- incl. movement of goods
- incl. transport of goods between the tanks
- incl. heatable tanks



PTF offers engineering and technical design services in the field of product development.



This includes CAD-design of parts and systems including electric, electronic, hydraulic and pneumatic components, finite element calculation and strength calculation of a construction as well as an optimised part design regarding manufacturability (Design For Manufacturing).

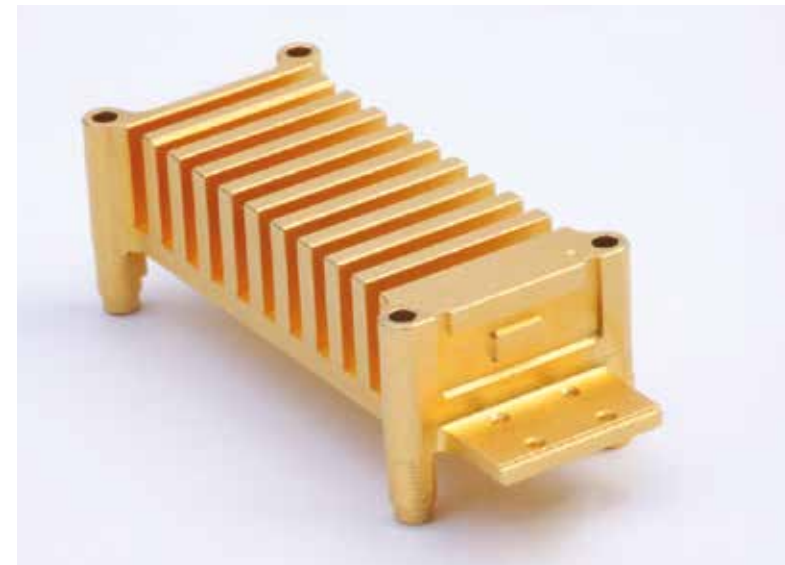
We lead our customers from design and development to prototyping and series production in our factory.

Wide variety of processable materials

- Aluminium alloys
- Stainless steels
- Titanium (e.g. Ariane V)
- Plastics (Peek, POM, others...)
- Brass
- Copper
- Special material
- Magnesium (only in Gangkofen)

Over 40 different methods of surface finishing

- Anodising – natural, black and colored
- Hard Anodising / Hard Coat
- Glasball Blasting
- Chemical nickel and gold
- Galvanized gold, silver, chrome, nickel, zinc
- Varnish and paint coating
- Spray -; Powder -; Plasma – and Ceramic Coating
- Kepla Coat and Top Coat
- Others





Assembly of mechanical assemblies with electronic, pneumatic and optical periphery, prototypes and samples, if required in clean room.

Inspection and testing of precision components and Plug & Play assemblies according to customer requirements.



We assemble for a variety of industries:

Laser industry / optical industry / measuring

Medical industry / implants / medical tools

Semiconductor industry

Aerospace

Complex machining industry

Hydraulics

Other precision industries





Germany

Currently:

- 4,100 m² (44,130 sq ft) production area
- 185 employees, 13 trainees
- Design department
- 50 CNC 5-10 axis machining centers (milling, turning, grinding, eroding)
- Assembly department
- Laser marking
- 5-stage ultrasonic cleaning system „Cleanmax Ultrasonic“ for sensitive industries
- New CNC 5-axis machining centers with automation
- 120m² (13,900 sq ft) vibration-free QA-department





Germany

Currently

- 1750 m² (18,900 sq ft) production area
- 81 employees / 16 trainees
- 14 partially automated CNC 5-axis machining centers
- 5-stage ultrasonic cleaning system „Cleanmax Ultrasonic“ for sensitive industries
- Assembly of complex assemblies with electronic, pneumatic and optical peripherals, ranging from prototyping / samples up to serial production
- Specially equipped ESD protected work area
- Clean room class 6 according to DIN ISO 14644
- 3D multi-sensor measuring machines
- Laser welding, Laser marking,
- Glass bead blasting
- 3D plastic printing





China



currently:

- 40 employees
- 20 machines / plants, of which:
 - 14 5-axis-CNC machining centers
 - 2 CNC-turning machines
- Extension of assembly department



Samples



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Germany - 09366 Stollberg
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Fax: +49 (0) 37296 / 927 23 - 22

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Operational Sales:
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Fax: +49 (0) 37296 / 927 23 - 890
Email: ptf@ptf-group.com

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Fax: +49 (0) 37296 / 927 23 - 22
Email: kehl@ptf-group.com

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