

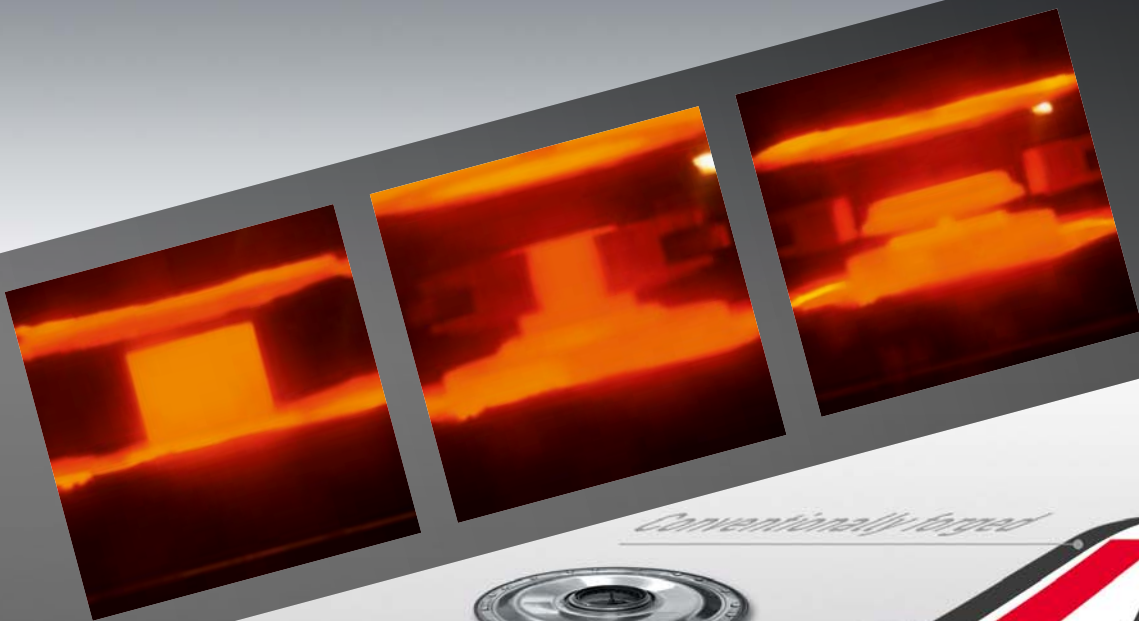


ALD Vacuum Technologies

High Tech is our Business

Vacuum Isothermal Forging (HIF)

Superplastic Deformation with Near Net Shape Potential

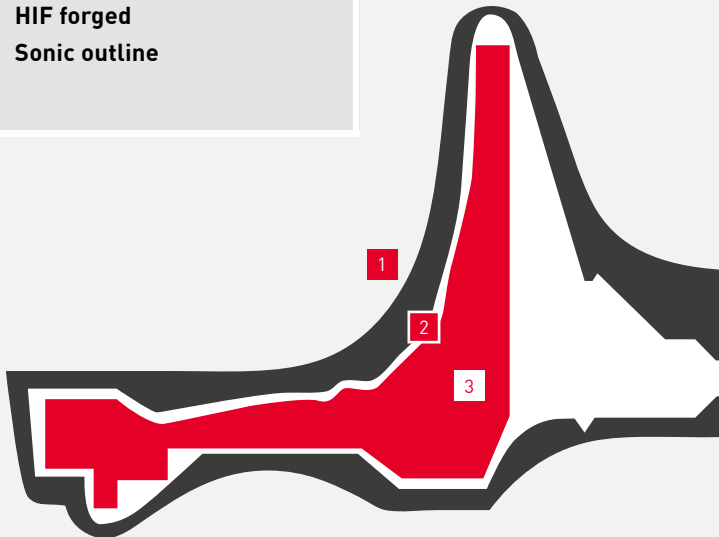


HIF Systems from ALD

- Multizone billet heating furnace
- Multizone die-heating system
- Microprocessor temperature control
- Manipulator tunnel
- 3 axis billet & part manipulator

- Homogeneous temperature distribution
- Perfect die preparation
- Precise temperature control
- Multi arrangements possible
- Fully automatic handling of parts inside

- 1 Conventionally forged
- 2 HIF forged
- 3 Sonic outline



Isothermal forging system for the production of rotation components of titanium or superalloys

Vacuum Isothermal Forging

Parts from metals and alloys, such as titanium and various superalloys, that are hard to shape and are used in jet-engine parts subjected to high stresses, as well as metals such as molybdenum with retain high strength at high temperatures are usually finished by hot isothermal forging (HIF). Hot isothermal forging has developed in recent years into an important – and for many applications indispensable – process for production high-quality parts in “near net shape”.

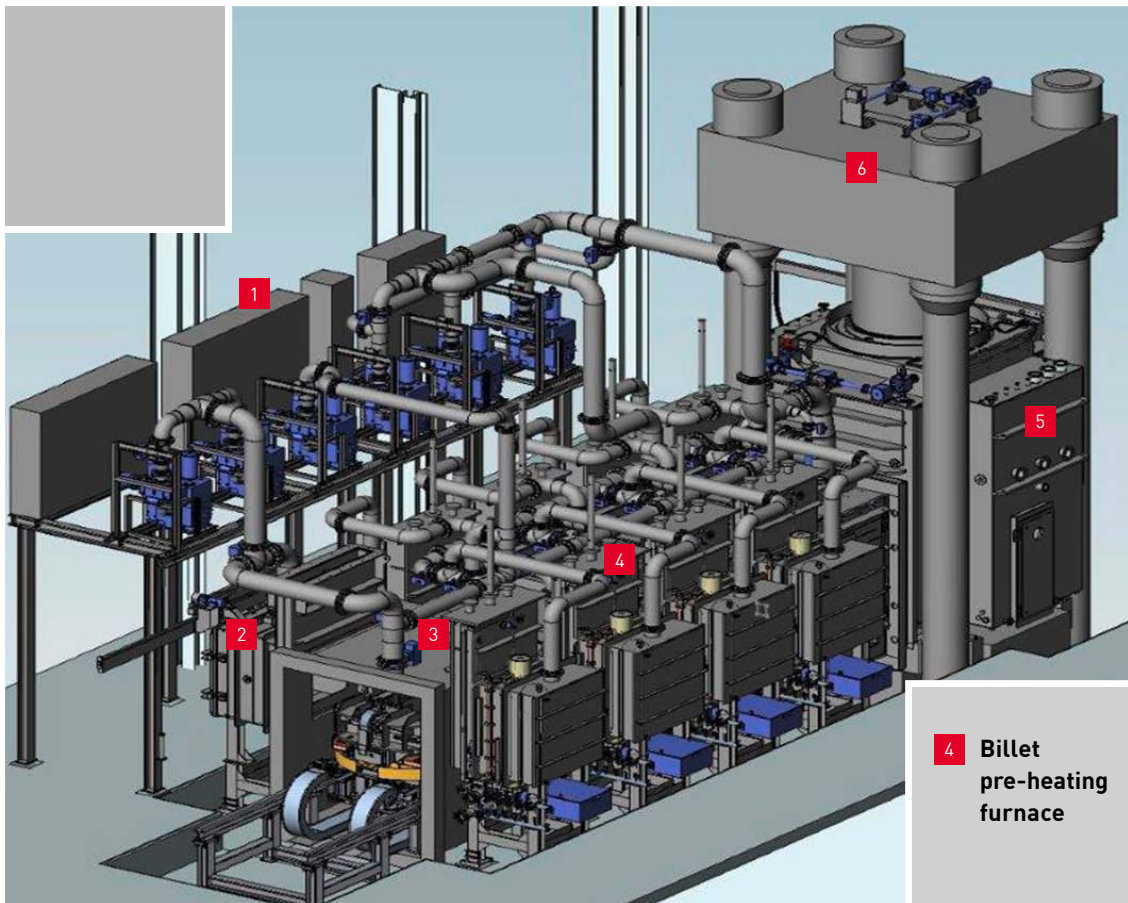
Superplastic Deformation with Near Net Shape Potential

A prerequisite for such metallurgical “constancy” of workpiece is the superplastic deformation, which can be achieved by extremely low deformation rates in a narrow temperature band. If the forging is done under superplastic conditions, maintaining certain para-

eters, only small stresses occur in the workpiece and the grain size remains nearly unchanged. Another advantage of this deformation method is the “near net shape” potential and the related savings in materials plus a greatly reduced need for subsequent machining.

- Microprocessor-controlled vacuum system
- Vacuum tight, high accurate RAM module
- HIF systems from ALD

- Fast evacuation process
- Easy adaption to hydraulic press
- Capable to fulfill today highest industrial quality standards and to accomplish future demands of aircraft and energy supply industry, driven from the needs of future challenges



Isothermal forging system for the production of rotating components of titanium or superalloys

1 Control cabinet

2 Load and unload chamber

3 Manipulator tunnel

4 Billet pre-heating furnace

6 Hydraulic press

5 HIF process chamber



Interested in more information?

We would be glad to provide you with more details of our Hot Isothermal Furnaces.

Please contact us!



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