



EXPANDERS

JET ENGINE COMPONENTS

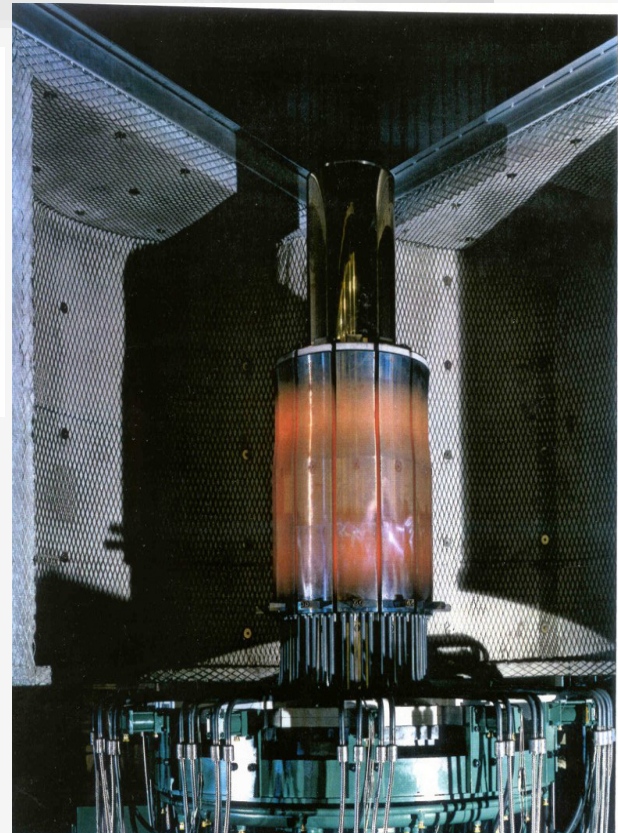
Highly stressed jet engine parts made from super alloys such as titanium, inconel and hastelloy, are often difficult to form. Grotnes expanders are used extensively in the aerospace industry by well established companies to form nozzles, plugs, exhaust cones and combustion liners, made of sheet metal.

APPLICATIONS

Grotnes Expanders are used for forming combustion chambers for jet engines. The part is formed from a cylindrical blank



Grotnes Expanders are used for forming superalloys that require heat during the process. We build Hot Expanders that form parts with temperatures in excess of 1,600 degrees farenheight. These machines use heated dies and water cooled jaws.





EXPANDERS

FEATURES

- * Wide range of sizes and configurations
- * Position control system
- * Gauge Mode
- * User friendly touch screen interface
- * Automatic lubrication system
- * Optional collapsable outer dies
- * Optimal heated dies and water cooled jaws

APPLICATIONS

Cylindrical or tubular applications that require very tight tolerance from end to end. Different lengths or heights.

Conical shapes that require knowledge of tooling and forming of critical dimensions are always a challenge.

With over 120 years of experience. Grotnes has built more expanders to meet the tight tolerances of Aerospace and Defense applications all around the world than anyone. We pride ourselves in the relationships we have with our customers as we provide unique solutions to metal forming.

BENEFITS

- Expansion is a highly accurate and repeatable forming process with a shorter cycle time than comparable forming techniques.
- Grotnes Expanders make it possible to form intricate profiles in a wide range of materials.
- Grotnes has a knowledge center of materials and software to determine deformation possibilities.
- By using an Expander less material is needed and the machining time is dramatically reduced.
- There is virtually no limit to the materials that can be formed or sized.

