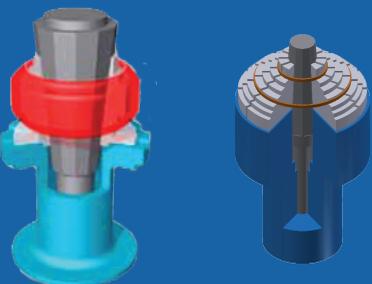
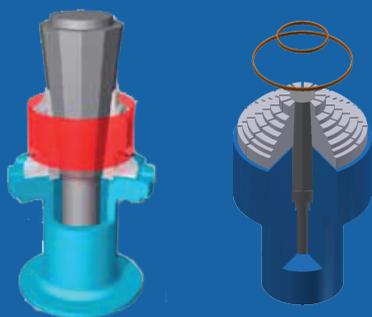
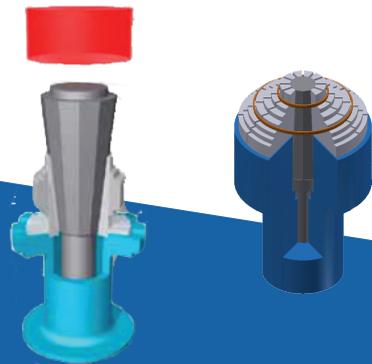




# EXPANDERS PROCESS



## Principle of an Expander

The part to be expanded is positioned around the collapsed dies. Cone and drawbar are in the extended position on pull type, and retracted position on push type.

As the drawbar pulls the cone down, or pushes up, the inclined surfaces of the cone force the jaws and dies outward. Outward expansion stretches the part past its yield point to the desired shape and size.

When the part reaches the desired shape and size, the drawbar/cone assembly returns, and the jaws and dies return to their original position. The part, formed and sized to close tolerances, is ready to be unloaded.

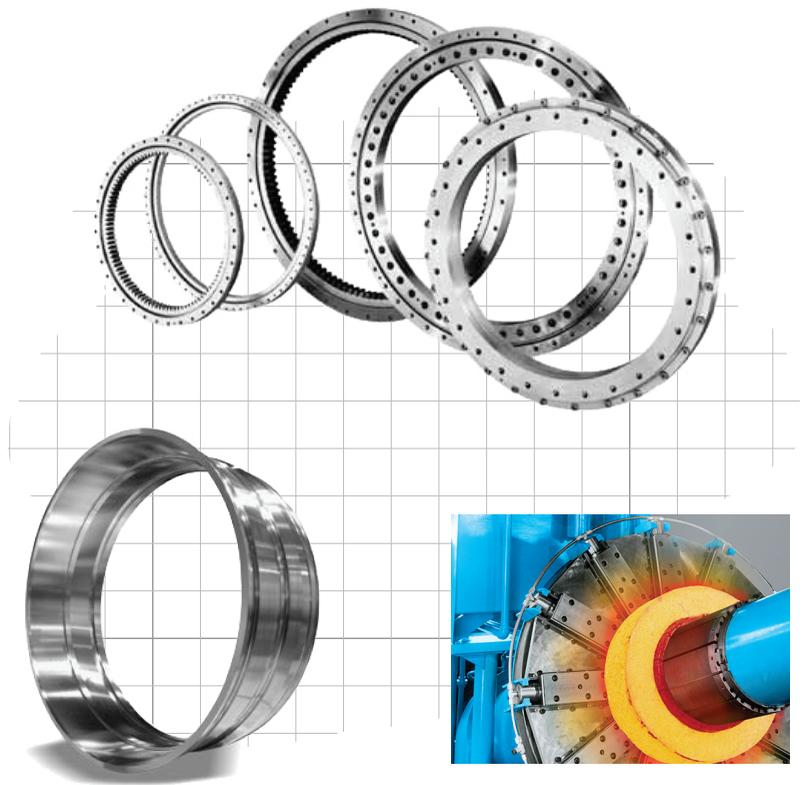
## Range of Specifications Expanding

- Tonnage: Less than 2 ton to over 3600 ton
- Diameter: 25 mm to over 8 m
- Height: 6 mm to over 5 m
- Wall Thickness: 1,5 mm to over 305 mm
- Materials: Steel, Aluminum, Nickel-based Aerospace Alloys, Titanium, Stainless Steel, etc
- Custom Ranges Available



## Seamless Rolled Rings

With an increased demand for large diameter seamless rings, rolled ring manufacturers face considerable challenges. To produce high quality rings for competitive prices and short delivery times, Fontijne Grotnes' Expanders help ring manufacturers improve the quality of their products, while lowering the production costs and shortening the lead time.



## Applications

Fontijne Grotnes Expanders are used for sizing seamless rolled rings for slewing bearings, flanges, and gear rings. A wide variety of applications includes wind turbines, offshore technology, construction machinery and automotive parts.

Forged rings for the aerospace industry are calibrated on Fontijne Grotnes Expanders. Seamless rings are widely used in this industry to fabricate jet engine parts made of exotic alloys with tight tolerances.

## Benefits

Expansion is a highly accurate and repeatable forming process with a shorter cycle time than comparable forming techniques.

Fontijne Grotnes Expanders make it possible to size and form profiles in a wide range of materials.

Fontijne Grotnes has knowledge of software programs to offer simulations regarding your forming processes.

By using an Expander less material is needed and the machining time is dramatically reduced, also there is virtually no limit to the materials that can be formed or sized.

