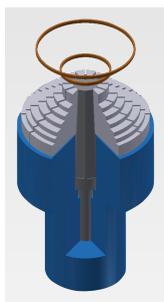
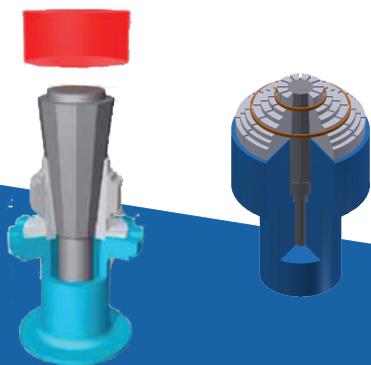


EXPANDERS

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



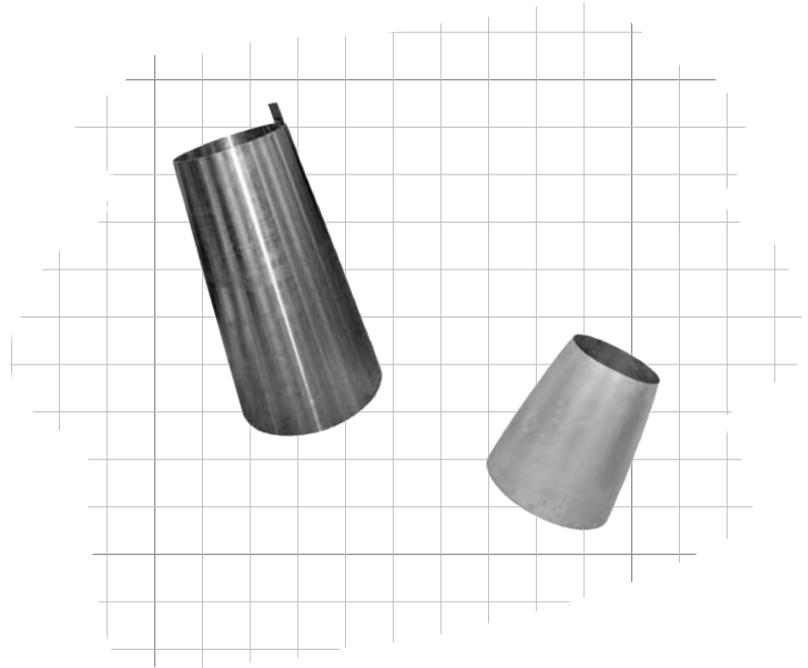
Conical Shaped Parts

Fontijne Grotnes Expanders are widely used to form and size conical parts from blanks including, tubing, pipe or coiled and welded sheet metal. Parts are rollformed to acquire the conical shape, then calibrated on a Fontijne Grotnes Expander to get the inner diameter to tight tolerances. For example, calibrating and/or forming components with a conical shape for the aerospace industry.

Applications

Some applications require special formed conical shaped parts with precise tolerances. Industries include the aerospace-, defense-, wind energy-, nuclear-, and offshore petroleum industry, where high quality parts with tight tolerances are required.

Conical parts are common in the aerospace industry where extreme accuracy is also required. For example, Fontijne Grotnes Expanders are used for forming and sizing to give contours for jet drop fuel tanks, jet engine rings and other jet engine parts.



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.

