

# Mechanical expansion shaft

## Series 416

with individual expansion lugs

The Vorwald expansion shafts of the Series 416 are the standard models with individual expansion lugs that may be used in all applications. The simple construction ensures long service life.

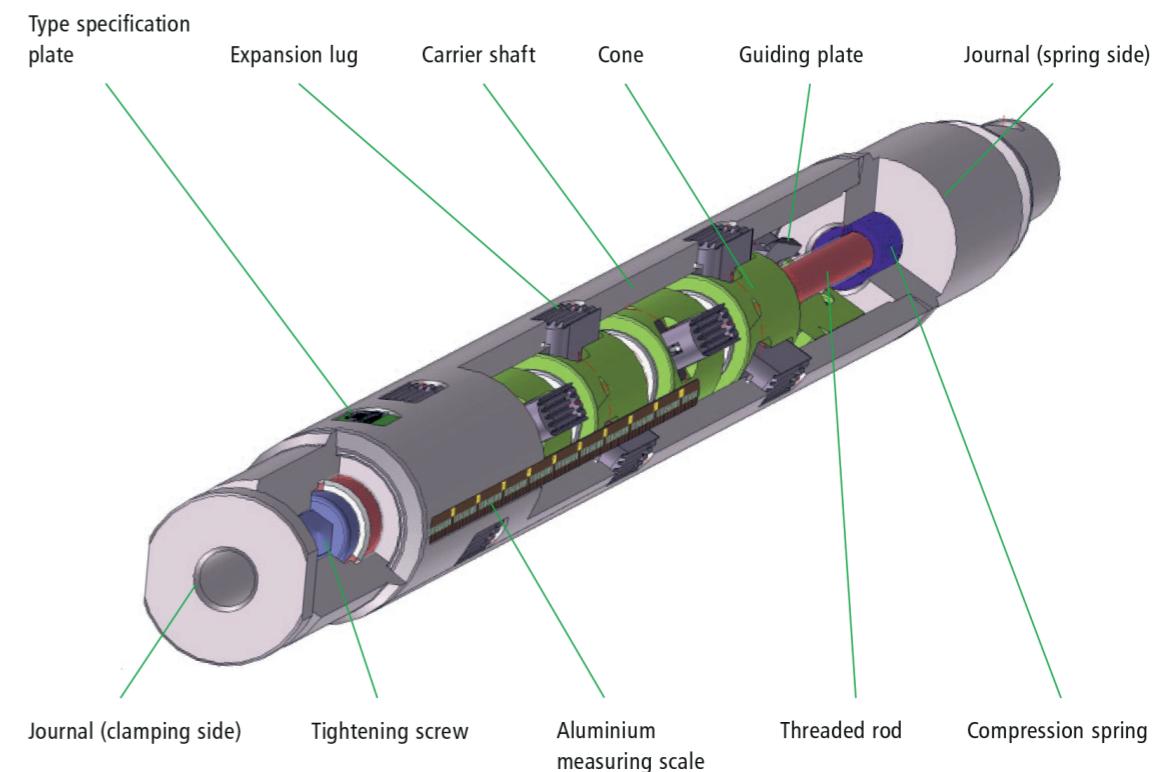
Two expansion lug types are available in order to cover all requirements: Lengthwise grooved expansion lugs made of steel and expansion lugs with smooth surface made of polyurethane. The number and positioning of the expansion lugs in the shaft body are determined by the customer specifications. The lengthwise grooved and hardened surface of the steel lugs permits greatest possible torque transmission with cardboard cores. The smooth surface of the polyurethane lugs permits this force transmission with steel and plastic cores.

All expansion lugs are equipped with a leg spring to ensure slide-back into the shaft body. This makes simple push-on and push-off of the material cores possible.

Expansion shafts with expansion lugs are available for cores with internal diameters in the range from 50 to 500 mm.

The functional principle is based on the inclined plane. By actuating the tightening screw the cone is pushed via a threaded rod under the expansion lugs like a wedge. The cone and the expansion lug have the same bevel, so that a radial movement is produced from an axial movement. By this means the expansion shaft acquires a very large clamping force. A further very important advantage of this method is the absolutely concentric clamping of the cores, since all expansion lugs expand to the same extent. This makes very high winding speeds possible. The shaft bodies can be made of numerous materials with numerous wall thicknesses – depending on the application by the customer.

Based on the Vorwald standard, the expansion shafts are customised according to the modular design principle. The clamping mechanism can be actuated in various ways by various means: e.g. with an internal clamping screw, an external clamping nut or a radial clamping screw.



### Options

- Expansion screw mounted axially in the journal
- Radial expansion nut / expansion screw
- Also available as cantilevered version with bearing on only one side
- Special dimensions are possible on inquiry

### Advantages

- + Very high weight bearing capability for heavy reels
- + Absolutely concentric clamping, thus very high web speeds possible
- + High torque transmission
- + Simple handling
- + Very little maintenance required

Available shaft diameters  
from 50 to 500 mm



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