Large ring gear measurement standard (PTB, Germany)

A large ring gear measurement standard has been developed which embodies three different internal and external gears each one with helix angles of 0°, 10° and 20°. For monitoring the temperature distribution inside the workpiece 12 boreholes for Pt100 temperature sensors are included. Further holes for the especially designed and manufactured supporting base as well as for eye bolts to lift the workpiece with a crane are provided.

Six internal and six external gear flanks have been calibrated according to existing standards and guidelines (e.g. ISO 1328-1). For all the profiles the total deviation F_{α}, the form deviation $f_{f\alpha}$and the slope deviation $f_{H\alpha}$have been evaluated. Equivalently, the helices are calibrated in terms of F_{β}, $f_{f\beta}$ and $f_{H\beta}$. In all this gives 72 calibrated parameters describing the large ring gear measurement standard.

Geometry parameters	
Helix angle / hand	external: 0° / spur; 10° / right; 20° / left internal: 0° / spur; 10° / left; 20° / right
Number of teeth	external: 107 /105 / 101; internal: -95 / -93 / -89
Normal module	18 mm
Pressure angle	20°
Facewidth	external: 420 mm; internal 424 mm
Outer diameter	1980 mm
Inner diameter	1685 mm
Weight (estimated)	2700 kg

For further information please contact

Dr. Martin Stein
martin.stein@ptb.de
+49 (0)531 592 5335

Physikalisch-Technische Bundesanstalt
Bundesallee 100
38116 Braunschweig, Germany

600 01 s