Internal involute scanning measurement standard (PTB, Germany)

PTB designed and manufactured an internal involute scanning measurement standard (SAFT 3g). For transportation and mounting on different measurement systems a support has been developed. The device embodies an internal and an external involute profile which enable to characterize the dynamic behavior of probing systems. The measurement standard is designed as a disc with two high accurate reference surfaces (a circle and a plane) to define the datum axis of the workpiece. A precise bore is used to define the *x*-axis.

Both the internal and external involute profiles have been calibrated as unmodified gear profiles according to existing standards and guidelines (e.g. ISO 1328-1), i.e. for both profiles the total deviation F_α, the form deviation $f_{f\alpha}$ and the slope deviation $f_{H\alpha}$ have been calibrated.

Geometry parameters	
Outer diameter	290 mm
Facewidth	20 mm
Involute parameters: • Radius of base circle • Range of involute function inv(α)	 20 mm Int. involute: 0° - 270°; ext. involute: 0° - 200°

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