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Gear Cutters for Spur Gears
Tolerances, ^{Permissible} Allowable Deviations

DIN
1829 Part 2

The tolerances and deviations given in this standard apply to straight and helical toothed gear cutters with module m from 0.5 to 25 mm and pitch circle diameters up to 400 mm, and for all pressure angles.

Gear cutters are produced in three quality classes AA, A and B, AA being the finest and B being the coarsest.

1 Gear cutter body

The shape and positional tolerances of the gear cutter body in accordance with Table 1 are intended to ensure concentric mounting of the gear cutter on the shaping spindle, and the tolerances for the cutting geometry in accordance with Table 2 are intended to ensure an efficient pressure angle of the gear cutter, see also DIN 1829 Part 1.

(Here follows Table 1 in the original. Captions are keyed to this table).

- A - shape and positional tolerances of the gear cutter body
- B - Serial number
- C - Measured quantity
- D - Drawing details
- E - Flatness of the datum face
- F - Cylindrical shape of the bore
- G - Relationship of the datum clamping face to the bore axis measured externally
- H - Parallelism of the internal and external clamping faces
- I - Concentricity of the datum cylinder to the bore.
- J - Concentricity of the datum cylinder to the taper shank
- K - Taper tolerance of the taper shank.

Captions to Table 2:

- A - Tolerances of the cutting geometry
- B - Tolerance of the cutting face of straight toothed gear cutters measured on the closed surface of the cone.
- C - Tolerance of the cutting face of helical gear cutters , measured over the high cutting edge.
- D - Rake angle η at the crest of the tooth, measured in a plane lying at right angles to the cutting edge at the crest of the tooth and the cutter centre.
- E - Top relief angle ψ
- F - Cutting face helix angle γ on helical gear cutters.
- G - Side relief angle \int , measured on the pitch circle.
- H - Angle of inclination.
- I - Quality class
- J - N o t e : In view of the danger of confusion with the symbols of the tooth geometry, symbols other than those given in DIN 6581 are chosen for the cutting geometry of the gear cutters in DIN 1829 Part 2.

2 Gear Cutter tooth tolerances

2.1 The tooth tolerances refer to form, positional and dimensional deviations of the actual gear cutter teeth. For nomenclature see DIN 3960, symbols

2.2 Pitch, concentricity and tooth form deviations are measured in a plane normal to the axis at the average height of wear.

The deviations of the angle of inclination of the sides are generally measured by checking the side relief angle. (for tolerance of the side relief angle see Table 2, serial number 6). The angle of inclination of the actual