

DIN 3970:2010-04 (E)

Master gears for checking cylindrical gears - Gear blanks and gearing

Contents		Page
1	Scope	5
2	Normative references	5
3	Master gear applications	5
4	Symbols, subscripts and units	6
5	Dimensions	7
5.1	Gear body	7
5.2	Centre hole diameter, D_1	8
5.3	Axial runout of the gear face and radial runout of the clocking bend	9
6	Geometry	10
6.1	Design	10
6.2	Number of teeth, z	10
6.3	Tooth thickness, s_n	11
6.4	Tooth system edge finish	11
6.5	Tip diameter, d_a	13
6.6	Active tip diameter, d_{Na}	13
6.7	Root form diameter, d_{Ff}	13
6.8	Root diameter, d_f	13
6.9	Modifications	13
7	Tolerances	14
7.1	Tolerances of deviations	14
7.2	Special pressure angles	16
8	Material	16
9	Technical drawings of master gears	17
10	Marking and designation	17
11	Ordering information	19
12	Quality inspection	20
12.1	Test certificate	20
12.2	Measurement equipment requirements	20
12.3	Evaluation of tooth system measurements	20
13	Wear inspection and re-working	21
14	Packaging, storage and handling	21
15	Master gears not conforming to all individual specifications of this standard	21
15.1	Special designs	21
15.2	Centre hole diameter, D_1	21
Annex A (informative) Some examples of standard numbers of teeth		22
Bibliography		23

Figures	Figure 1 -- Master gear, sizes 1 to 5	8
	Figure 2 -- Master gear, sizes 6 to 8	8
	Figure 3 -- Designation of tooth edges	12
	Figure 4 -- Tooth profile with a tip edge chamfer, cross-section of tooth system	12
	Figure 5 -- Location of marking on master gears	17
	Figure 6 -- Marking on tooth number 1 of master gears of sizes 1 to 4	17
	Figure 7 -- Marking and designation of master gears	19
Tables	Table 1 -- Master gear body dimensions	7
	Table 2 -- Permissible dimensional deviations and form deviations for the centre hole	9
	Table 3 -- Permissible relative positional deviations of master gears from the axis A of the centre hole	9
	Table 4 -- Recommended tooth thickness tolerances	11
	Table 5 -- Quality parameters for master gear accuracy classes A, B and C	14
	Table 6 -- Tolerances of deviations F, fp, Fp, Fr for accuracy class A	15
	Table 7 -- Tolerances of deviations F, fp, Fp, Fr for accuracy class B	15
	Table 8 -- Tolerances of deviations F, fp, Fp, Fr for accuracy class C	15
	Table 9 -- Tolerances of total helix deviation F for accuracy classes A, B and C	16
	Table A.1 -- Examples of standard numbers of teeth	22