

DIN 5480-16:2006-03 (E)

Involute splines based on reference diameters - Part 16: Tools

Contents	Page
Foreword	4
1 Scope	5
2 Normative references	5
3 Symbols, designations and units	6
4 Hobs for splined shafts with side-fit	8
4.1 Working range	8
4.2 Dimensions and tolerances	8
4.2.1 Basic rack profiles of tool	8
4.2.2 Overall sizes	10
4.2.3 Accuracy	10
4.3 Working dimensions	10
4.3.1 Root diameter	10
4.3.2 Tool infeed a_0	10
4.3.3 Generated mean root fillet radius	11
4.4 Form circle diameter, effective diameter	11
4.5 Marking	12
4.6 Special hobs	12
4.6.1 Working range	12
4.6.2 Marking	13
5 Pinion-type cutters for side-fit splines	13
5.1 Working range	13
5.2 Dimensions and tolerances	13
5.2.1 Basic rack profiles of tool	13
5.2.2 Overall sizes	15
5.2.3 Spline accuracy	17
5.3 Working dimensions	17
5.3.1 Root diameter	17
5.3.2 Tool infeed a_0	19
5.3.3 Generated root fillet radius f	21
5.4 Root form circle diameter, effective root diameter	21
5.5 Marking	22
5.6 Special pinion-type cutters	22
5.6.1 Working range	22
5.6.2 Marking	22
6 Internal broaches	22
6.1 Working range	22
6.2 Types, overall sizes	23
6.2.1 Types	23
6.2.2 Overall sizes	23
6.2.3 Spline-cutting accuracy of internal broaches	24
6.2.4 Working dimensions	24
6.3 Marking	25
7 Cold-rolling tools for side-fit splined shafts	25
7.1 Introduction	25
7.2 Working ranges	25

7.2.1	Longitudinal rolling	25
7.2.2	Transverse rolling	26
7.3	Types, overall sizes	27
7.4	Dimensions	27
7.4.1	Tooth profile	27
7.4.2	Tooth depths	27
7.4.3	Tip design	27
7.4.4	Root design	28
7.5	Marking	29
Figures	Figure 1 -- Basic rack profile of hobs	9
	Figure 2 -- Hob and shaft spline profile	12
	Figure 3 -- Basic rack profile of pinion-type cutters	14
	Figure 5 -- Pinion-type cutter and shaft spline profile	21
	Figure 6 -- Grob method, as an example of cold-rolling	26
	Figure 7 -- Tool run-out for the Grob method, as an example of cold-rolling	26
	Figure 8 -- Ex-Cell-O method as an example of cold-rolling	27
	Figure 9 -- Root fillet radius for fully-rounded tooth roots	28
Tables	Table 1 -- Basic rack profiles of hobs	9
	Table 2 -- Basic rack profiles of pinion-type cutters	14
	Table 4 -- Spline-cutting accuracy of internal broaches	24
	Table 5 -- Tool run-out for the Grob cold-rolling method	26