



中华人民共和国国家标准

GB/T 3478.4—2008
代替 GB/T 3478.4—1995

圆柱直齿渐开线花键 (米制模数 齿侧配合) 第4部分：45°压力角尺寸表

Straight cylindrical involute splines—Metric module, side fit—
Part 4: 45° pressure angle dimensions tables

2008-09-22 发布

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中华人民共和国国家质量监督检验检疫总局
中国国家标准化管理委员会

发布

前 言

GB/T 3478《圆柱直齿渐开线花键(米制模数 齿侧配合)》分为九个部分:

- 第1部分:总论;
- 第2部分:30°压力角尺寸表;
- 第3部分:37.5°压力角尺寸表;
- 第4部分:45°压力角尺寸表;
- 第5部分:检验;
- 第6部分:30°压力角 M 值和 W 值;
- 第7部分:37.5°压力角 M 值和 W 值;
- 第8部分:45°压力角 M 值和 W 值;
- 第9部分:量棒。

本部分为 GB/T 3478 的第4部分。

本部分参考了 ISO 4156-2:2005《圆柱直齿渐开线花键(米制模数 齿侧配合) 第2部分:尺寸》的内容,是对 GB/T 3478.4—1995《圆柱直齿渐开线花键模数 45°压力角尺寸表》的修订。与 GB/T 3478.4—1995 相比主要差异如下:

- 标准名称由《圆柱直齿渐开线花键 45°压力角 尺寸表》改为《圆柱直齿渐开线花键(米制模数 齿侧配合) 第4部分:45°压力角尺寸表》;
- 修改了原标准中的错误,并按 GB/T 1.1 做了编辑性的修改。

本部分由全国机器轴与附件标准化技术委员会提出并归口。

本部分起草单位:中机生产力促进中心、哈尔滨东安发动机制造公司、石家庄链轮总厂、中国第二重型机械集团公司、太原重工股份有限公司。

本部分主要起草人:明翠新、常宝印、许文江、谭仁万、王晓凌、邓高见。

本部分代替标准的历次版本发布情况为:

- GB 3478.2—1983、GB/T 3478.4—1995。

圆柱直齿渐开线花键

(米制模数 齿侧配合)

第4部分：45°压力角尺寸表

1 范围

GB/T 3478 的本部分规定了 45°标准压力角圆齿根(以下简称 45°圆齿根)的圆柱直齿渐开线花键所需的全部花键尺寸。

本部分适用于 GB/T 3478.1—2008 标准中规定的压力角为 45°、模数为 0.25 mm~2.5 mm、齿侧配合的渐开线花键。

本部分的尺寸表是按 GB/T 3478.1—2008 表 3 计算公式和齿侧配合为 H/h、并采用基本检验方法编制的。

2 规范性引用文件

下列文件中的条款通过 GB/T 3478 的本部分的引用而成为本部分的条款。凡是注日期的引用文件,其随后所有的修改单(不包括勘误的内容)或修订版均不适用于本部分,然而,鼓励根据本部分达成协议的各方研究是否可使用这些文件的最新版本。凡是不注日期的引用文件,其最新版本适用于本部分。

GB/T 1800.1 产品几何技术规范(GPS)极限与配合 第1部分:公差、偏差和配合的基础

GB/T 3478.1—2008 圆柱直齿渐开线花键(米制模数 齿侧配合) 第1部分:总论(ISO 4156-1:2005,MOD)

3 尺寸表

3.1 45°圆齿根,模数为 0.25 mm~2.5 mm,公差等级为 4、5、6 和 7 级的花键尺寸表,见表 1~表 18。

3.2 内花键小径 D_{ii} 的极限偏差和外花键大径 D_{ee} 的公差见 GB/T 3478.1—2008 表 25。

3.3 内花键大径 D_{ii} 和外花键小径 D_{ee} 的公差,从 GB/T 1800.1 的标准公差 IT12、IT13 或 IT14 中选取。

3.4 用展成法加工内、外花键时,齿根圆弧半径是变化的,本部分给出的是齿根圆弧最小曲率半径,见 GB/T 3478.1—2008 表 26。

3.5 当选择的检验方法不为基本方法时,其作用齿槽宽最大值、实际齿槽宽最小值、作用齿厚最小值和实际齿厚最大值按下式计算:

$$\text{作用齿槽宽最大值 } E_{v, \max} = E_{\max} - \lambda;$$

$$\text{实际齿槽宽最小值 } E_{\min} = E_{\min} + \lambda;$$

$$\text{作用齿厚最小值 } S_{v, \min} = S_{\min} + \lambda;$$

$$\text{实际齿厚最大值 } S_{\max} = S_{\max} - \lambda。$$

3.6 当花键齿侧配合类别不为 H/h 时,尺寸表中外花键的尺寸应按下式计算:

$$\text{作用齿厚最大值 } S_{v, \max} = S + es_;$$

$$\text{实际齿厚最小值 } S_{\min} = S_{\max} - (T + \lambda)。$$

式中:

es_v ——作用齿厚的上偏差,见 GB/T 3478.1—2008 表 23;

$(T+\lambda)$ ——总公差,见 GB/T 3478.1—2008 表 7~表 15。

外花键大径和小径的上偏差见 GB/T 3478.1—2008 表 24。

3.7 尺寸表中外花键渐开线起始圆直径最大值 $D_{Fe\max}$ 的数值是按齿条形刀具加工原理推导的公式计算的。

当花键齿侧配合类别不为 H/h 时, $D_{Fe\max}$ 可根据 GB/T 3478.1—2008 表 3 中的公式计算。

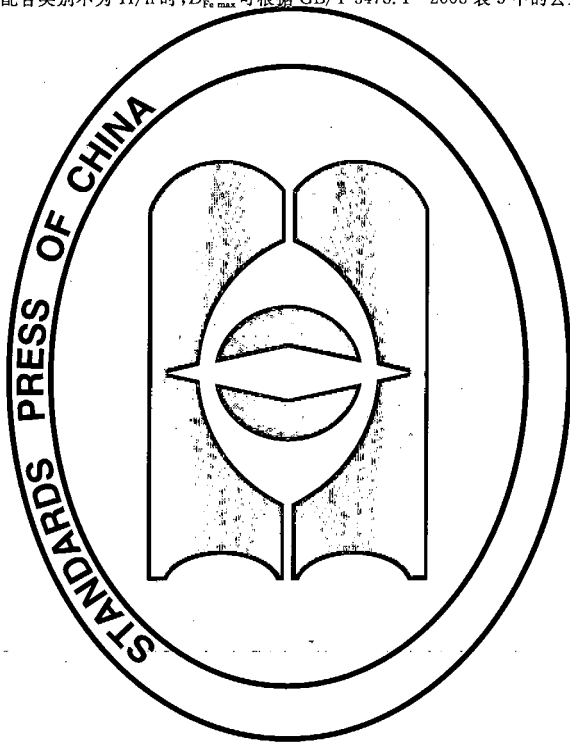


表.1—45°内花键
模数 $m=0.25\text{ mm}$ 作用齿槽宽最小值 $E_{\min}=0.393\text{ mm}$ 单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e 圆齿根	渐开线终 止圆直径 $D_{f\min}$	小径 D_i	实际齿槽宽最大值 $E_{\max}=E_{\min}+(T+\lambda)$				齿数 z
						4H	5H	6H	7H	
10	2.50	1.767 8	2.80	2.75	2.31	0.412	0.424	0.441	0.470	10
11	2.75	1.944 5	3.05	3.00	2.56	0.412	0.424	0.442	0.471	11
12	3.00	2.121 3	3.30	3.25	2.81	0.412	0.424	0.442	0.472	12
13	3.25	2.298 1	3.55	3.50	3.06	0.413	0.425	0.442	0.472	13
14	3.50	2.474 9	3.80	3.75	3.31	0.413	0.425	0.443	0.473	14
15	3.75	2.651 7	4.05	4.00	3.56	0.413	0.425	0.443	0.474	15
16	4.00	2.828 4	4.30	4.25	3.81	0.413	0.425	0.444	0.474	16
17	4.25	3.005 2	4.55	4.50	4.06	0.413	0.426	0.444	0.475	17
18	4.50	3.182 0	4.80	4.75	4.31	0.413	0.426	0.444	0.475	18
19	4.75	3.358 8	5.05	5.00	4.56	0.414	0.426	0.445	0.476	19
20	5.00	3.535 5	5.30	5.25	4.81	0.414	0.426	0.445	0.476	20
21	5.25	3.712 3	5.55	5.50	5.06	0.414	0.426	0.445	0.477	21
22	5.50	3.889 1	5.80	5.75	5.31	0.414	0.427	0.446	0.477	22
23	5.75	4.065 9	6.05	6.00	5.56	0.414	0.427	0.446	0.478	23
24	6.00	4.242 6	6.30	6.25	5.81	0.414	0.427	0.446	0.478	24
25	6.25	4.419 4	6.55	6.50	6.06	0.414	0.427	0.447	0.479	25
26	6.50	4.596 2	6.80	6.75	6.31	0.414	0.427	0.447	0.479	26
27	6.75	4.773 0	7.05	7.00	6.55	0.414	0.428	0.447	0.480	27
28	7.00	4.949 7	7.30	7.25	6.80	0.415	0.428	0.447	0.480	28
29	7.25	5.126 5	7.55	7.50	7.05	0.415	0.428	0.448	0.481	29
30	7.50	5.303 3	7.80	7.75	7.30	0.415	0.428	0.448	0.481	30
31	7.75	5.480 1	8.05	8.00	7.55	0.415	0.428	0.448	0.481	31
32	8.00	5.656 9	8.30	8.25	7.80	0.415	0.428	0.448	0.482	32
33	8.25	5.833 6	8.55	8.50	8.05	0.415	0.428	0.449	0.482	33
34	8.50	6.010 4	8.80	8.75	8.30	0.415	0.429	0.449	0.483	34
35	8.75	6.187 2	9.05	9.00	8.55	0.415	0.429	0.449	0.483	35
36	9.00	6.364 0	9.30	9.25	8.80	0.415	0.429	0.449	0.483	36
37	9.25	6.540 7	9.55	9.50	9.05	0.415	0.429	0.450	0.484	37
38	9.50	6.717 5	9.80	9.75	9.30	0.416	0.429	0.450	0.484	38
39	9.75	6.894 3	10.05	10.00	9.55	0.416	0.429	0.450	0.484	39
40	10.00	7.071 1	10.30	10.25	9.80	0.416	0.429	0.450	0.485	40
41	10.25	7.247 8	10.55	10.50	10.05	0.416	0.430	0.450	0.485	41
42	10.50	7.424 6	10.80	10.75	10.30	0.416	0.430	0.451	0.485	42
43	10.75	7.601 4	11.05	11.00	10.55	0.416	0.430	0.451	0.486	43
44	11.00	7.778 2	11.30	11.25	10.80	0.416	0.430	0.451	0.486	44
45	11.25	7.955 0	11.55	11.50	11.05	0.416	0.430	0.451	0.486	45
46	11.50	8.131 7	11.80	11.75	11.30	0.416	0.430	0.451	0.487	46
47	11.75	8.308 5	12.05	12.00	11.55	0.416	0.430	0.452	0.487	47
48	12.00	8.485 3	12.30	12.25	11.80	0.416	0.430	0.452	0.487	48
49	12.25	8.662 1	12.55	12.50	12.05	0.416	0.431	0.452	0.487	49
50	12.50	8.838 8	12.80	12.75	12.30	0.416	0.431	0.452	0.488	50
51	12.75	9.015 6	13.05	13.00	12.55	0.417	0.431	0.452	0.488	51
52	13.00	9.192 4	13.30	13.25	12.80	0.417	0.431	0.452	0.488	52
53	13.25	9.369 2	13.55	13.50	13.05	0.417	0.431	0.453	0.489	53
54	13.50	9.545 9	13.80	13.75	13.30	0.417	0.431	0.453	0.489	54
55	13.75	9.722 7	14.05	14.00	13.55	0.417	0.431	0.453	0.489	55

表 1 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{F1\min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	14.00	9.899 5	14.30	14.25	13.80	0.417	0.431	0.453	0.489	56
57	14.25	10.076 3	14.55	14.50	14.05	0.417	0.431	0.453	0.490	57
58	14.50	10.253 0	14.80	14.75	14.30	0.417	0.432	0.453	0.490	58
59	14.75	10.429 8	15.05	15.00	14.55	0.417	0.432	0.454	0.490	59
60	15.00	10.606 6	15.30	15.25	14.80	0.417	0.432	0.454	0.490	60
61	15.25	10.783 4	15.55	15.50	15.05	0.417	0.432	0.454	0.491	61
62	15.50	10.960 2	15.80	15.75	15.30	0.417	0.432	0.454	0.491	62
63	15.75	11.136 9	16.05	16.00	15.55	0.417	0.432	0.454	0.491	63
64	16.00	11.313 7	16.30	16.25	15.80	0.417	0.432	0.454	0.491	64
65	16.25	11.490 5	16.55	16.50	16.05	0.417	0.432	0.455	0.492	65
66	16.50	11.667 3	16.80	16.75	16.30	0.418	0.432	0.455	0.492	66
67	16.75	11.844 0	17.05	17.00	16.55	0.418	0.432	0.455	0.492	67
68	17.00	12.020 8	17.30	17.25	16.80	0.418	0.433	0.455	0.492	68
69	17.25	12.197 6	17.55	17.50	17.05	0.418	0.433	0.455	0.493	69
70	17.50	12.374 4	17.80	17.75	17.30	0.418	0.433	0.455	0.493	70
71	17.75	12.551 1	18.05	18.00	17.55	0.418	0.433	0.455	0.493	71
72	18.00	12.727 9	18.30	18.25	17.80	0.418	0.433	0.456	0.493	72
73	18.25	12.904 7	18.55	18.50	18.05	0.418	0.433	0.456	0.494	73
74	18.50	13.081 5	18.80	18.75	18.30	0.418	0.433	0.456	0.494	74
75	18.75	13.258 3	19.05	19.00	18.55	0.418	0.433	0.456	0.494	75
76	19.00	13.435 0	19.30	19.25	18.80	0.418	0.433	0.456	0.494	76
77	19.25	13.611 8	19.55	19.50	19.05	0.418	0.433	0.456	0.494	77
78	19.50	13.788 6	19.80	19.75	19.30	0.418	0.433	0.456	0.495	78
79	19.75	13.965 4	20.05	20.00	19.55	0.418	0.434	0.457	0.495	79
80	20.00	14.142 1	20.30	20.25	19.80	0.418	0.434	0.457	0.495	80
81	20.25	14.318 9	20.55	20.50	20.05	0.418	0.434	0.457	0.495	81
82	20.50	14.495 7	20.80	20.75	20.30	0.418	0.434	0.457	0.496	82
83	20.75	14.672 5	21.05	21.00	20.55	0.418	0.434	0.457	0.496	83
84	21.00	14.849 2	21.30	21.25	20.80	0.419	0.434	0.457	0.496	84
85	21.25	15.026 0	21.55	21.50	21.05	0.419	0.434	0.457	0.496	85
86	21.50	15.202 8	21.80	21.75	21.30	0.419	0.434	0.457	0.496	86
87	21.75	15.379 6	22.05	22.00	21.55	0.419	0.434	0.458	0.497	87
88	22.00	15.556 3	22.30	22.25	21.80	0.419	0.434	0.458	0.497	88
89	22.25	15.733 1	22.55	22.50	22.05	0.419	0.434	0.458	0.497	89
90	22.50	15.909 9	22.80	22.75	22.30	0.419	0.434	0.458	0.497	90
91	22.75	16.086 7	23.05	23.00	22.55	0.419	0.435	0.458	0.497	91
92	23.00	16.263 5	23.30	23.25	22.80	0.419	0.435	0.458	0.498	92
93	23.25	16.440 2	23.55	23.50	23.05	0.419	0.435	0.458	0.498	93
94	23.50	16.617 0	23.80	23.75	23.30	0.419	0.435	0.458	0.498	94
95	23.75	16.793 8	24.05	24.00	23.55	0.419	0.435	0.459	0.498	95
96	24.00	16.970 6	24.30	24.25	23.80	0.419	0.435	0.459	0.498	96
97	24.25	17.147 3	24.55	24.50	24.05	0.419	0.435	0.459	0.499	97
98	24.50	17.324 1	24.80	24.75	24.30	0.419	0.435	0.459	0.499	98
99	24.75	17.500 9	25.05	25.00	24.55	0.419	0.435	0.459	0.499	99
100	25.00	17.677 7	25.30	25.25	24.80	0.419	0.435	0.459	0.499	100

表 2 45°内花键
模数 $m = 0.5 \text{ mm}$ 作用齿槽宽最小值 $E_{v \min} = 0.785 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{f1 \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{v \min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	5.00	3.535 5	5.60	5.50	4.63	0.810	0.824	0.846	0.883	10
11	5.50	3.889 1	6.10	6.00	5.12	0.810	0.825	0.847	0.884	11
12	6.00	4.242 6	6.60	6.50	5.62	0.810	0.825	0.848	0.885	12
13	6.50	4.596 2	7.10	7.00	6.12	0.810	0.826	0.848	0.886	13
14	7.00	4.949 7	7.60	7.50	6.62	0.811	0.826	0.849	0.887	14
15	7.50	5.303 3	8.10	8.00	7.12	0.811	0.826	0.849	0.887	15
16	8.00	5.656 9	8.60	8.50	7.62	0.811	0.827	0.850	0.888	16
17	8.50	6.010 4	9.10	9.00	8.12	0.811	0.827	0.850	0.889	17
18	9.00	6.364 0	9.60	9.50	8.61	0.811	0.827	0.851	0.890	18
19	9.50	6.717 5	10.10	10.00	9.11	0.812	0.827	0.851	0.890	19
20	10.00	7.071 1	10.60	10.50	9.61	0.812	0.828	0.851	0.891	20
21	10.50	7.424 6	11.10	11.00	10.11	0.812	0.828	0.852	0.892	21
22	11.00	7.778 2	11.60	11.50	10.61	0.812	0.828	0.852	0.892	22
23	11.50	8.131 7	12.10	12.00	11.11	0.812	0.828	0.853	0.893	23
24	12.00	8.485 3	12.60	12.50	11.61	0.812	0.829	0.853	0.894	24
25	12.50	8.838 8	13.10	13.00	12.11	0.813	0.829	0.853	0.894	25
26	13.00	9.192 4	13.60	13.50	12.61	0.813	0.829	0.854	0.895	26
27	13.50	9.545 9	14.10	14.00	13.11	0.813	0.829	0.854	0.895	27
28	14.00	9.899 5	14.60	14.50	13.61	0.813	0.830	0.854	0.896	28
29	14.50	10.253 0	15.10	15.00	14.11	0.813	0.830	0.855	0.896	29
30	15.00	10.606 6	15.60	15.50	14.61	0.813	0.830	0.855	0.897	30
31	15.50	10.960 2	16.10	16.00	15.11	0.813	0.830	0.855	0.897	31
32	16.00	11.313 7	16.60	16.50	15.61	0.814	0.830	0.856	0.898	32
33	16.50	11.667 3	17.10	17.00	16.11	0.814	0.831	0.856	0.898	33
34	17.00	12.020 8	17.60	17.50	16.61	0.814	0.831	0.856	0.899	34
35	17.50	12.374 4	18.10	18.00	17.11	0.814	0.831	0.857	0.899	35
36	18.00	12.727 9	18.60	18.50	17.61	0.814	0.831	0.857	0.900	36
37	18.50	13.081 5	19.10	19.00	18.11	0.814	0.831	0.857	0.900	37
38	19.00	13.435 0	19.60	19.50	18.61	0.814	0.832	0.857	0.901	38
39	19.50	13.788 6	20.10	20.00	19.11	0.814	0.832	0.858	0.901	39
40	20.00	14.142 1	20.60	20.50	19.61	0.814	0.832	0.858	0.902	40
41	20.50	14.495 7	21.10	21.00	20.11	0.815	0.832	0.858	0.902	41
42	21.00	14.849 2	21.60	21.50	20.61	0.815	0.832	0.859	0.902	42
43	21.50	15.202 8	22.10	22.00	21.11	0.815	0.832	0.859	0.903	43
44	22.00	15.556 3	22.60	22.50	21.61	0.815	0.833	0.859	0.903	44
45	22.50	15.909 9	23.10	23.00	22.11	0.815	0.833	0.859	0.904	45
46	23.00	16.263 5	23.60	23.50	22.61	0.815	0.833	0.860	0.904	46
47	23.50	16.617 0	24.10	24.00	23.11	0.815	0.833	0.860	0.904	47
48	24.00	16.970 6	24.60	24.50	23.61	0.815	0.833	0.860	0.905	48
49	24.50	17.324 1	25.10	25.00	24.11	0.815	0.833	0.860	0.905	49
50	25.00	17.677 7	25.60	25.50	24.61	0.815	0.833	0.860	0.906	50
51	25.50	18.031 2	26.10	26.00	25.11	0.816	0.834	0.861	0.906	51
52	26.00	18.384 8	26.60	26.50	25.60	0.816	0.834	0.861	0.906	52
53	26.50	18.738 3	27.10	27.00	26.10	0.816	0.834	0.861	0.907	53
54	27.00	19.091 9	27.60	27.50	26.60	0.816	0.834	0.861	0.907	54
55	27.50	19.445 4	28.10	28.00	27.10	0.816	0.834	0.862	0.907	55

表 2 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{a1} 圆齿根	渐开线终 止圆直径 $D_{F1\min}$	小径 D_a	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	28.00	19.799 0	28.60	28.50	27.60	0.816	0.834	0.862	0.908	56
57	28.50	20.152 5	29.10	29.00	28.10	0.816	0.834	0.862	0.908	57
58	29.00	20.506 1	29.60	29.50	28.60	0.816	0.835	0.862	0.908	58
59	29.50	20.859 6	30.10	30.00	29.10	0.816	0.835	0.862	0.909	59
60	30.00	21.213 2	30.60	30.50	29.60	0.816	0.835	0.863	0.909	60
61	30.50	21.566 8	31.10	31.00	30.10	0.816	0.835	0.863	0.909	61
62	31.00	21.920 3	31.60	31.50	30.60	0.816	0.835	0.863	0.910	62
63	31.50	22.273 9	32.10	32.00	31.10	0.817	0.835	0.863	0.910	63
64	32.00	22.627 4	32.60	32.50	31.60	0.817	0.835	0.863	0.910	64
65	32.50	22.981 0	33.10	33.00	32.10	0.817	0.835	0.864	0.911	65
66	33.00	23.334 5	33.60	33.50	32.60	0.817	0.836	0.864	0.911	66
67	33.50	23.688 1	34.10	34.00	33.10	0.817	0.836	0.864	0.911	67
68	34.00	24.041 6	34.60	34.50	33.60	0.817	0.836	0.864	0.912	68
69	34.50	24.395 2	35.10	35.00	34.10	0.817	0.836	0.864	0.912	69
70	35.00	24.748 7	35.60	35.50	34.60	0.817	0.836	0.865	0.912	70
71	35.50	25.102 3	36.10	36.00	35.10	0.817	0.836	0.865	0.912	71
72	36.00	25.455 8	36.60	36.50	35.60	0.817	0.836	0.865	0.913	72
73	36.50	25.809 4	37.10	37.00	36.10	0.817	0.836	0.865	0.913	73
74	37.00	26.162 9	37.60	37.50	36.60	0.817	0.837	0.865	0.913	74
75	37.50	26.516 5	38.10	38.00	37.10	0.817	0.837	0.866	0.914	75
76	38.00	26.870 1	38.60	38.50	37.60	0.818	0.837	0.866	0.914	76
77	38.50	27.223 6	39.10	39.00	38.10	0.818	0.837	0.866	0.914	77
78	39.00	27.577 2	39.60	39.50	38.60	0.818	0.837	0.866	0.914	78
79	39.50	27.930 7	40.10	40.00	39.10	0.818	0.837	0.866	0.915	79
80	40.00	28.284 3	40.60	40.50	39.60	0.818	0.837	0.866	0.915	80
81	40.50	28.637 8	41.10	41.00	40.10	0.818	0.837	0.867	0.915	81
82	41.00	28.991 4	41.60	41.50	40.60	0.818	0.837	0.867	0.916	82
83	41.50	29.344 9	42.10	42.00	41.10	0.818	0.838	0.867	0.916	83
84	42.00	29.698 5	42.60	42.50	41.60	0.818	0.838	0.867	0.916	84
85	42.50	30.052 0	43.10	43.00	42.10	0.818	0.838	0.867	0.916	85
86	43.00	30.405 6	43.60	43.50	42.60	0.818	0.838	0.867	0.917	86
87	43.50	30.759 1	44.10	44.00	43.10	0.818	0.838	0.868	0.917	87
88	44.00	31.112 7	44.60	44.50	43.60	0.818	0.838	0.868	0.917	88
89	44.50	31.466 3	45.10	45.00	44.10	0.818	0.838	0.868	0.917	89
90	45.00	31.819 8	45.60	45.50	44.60	0.818	0.838	0.868	0.918	90
91	45.50	32.173 4	46.10	46.00	45.10	0.819	0.838	0.868	0.918	91
92	46.00	32.526 9	46.60	46.50	45.60	0.819	0.839	0.868	0.918	92
93	46.50	32.880 5	47.10	47.00	46.10	0.819	0.839	0.869	0.918	93
94	47.00	33.234 0	47.60	47.50	46.60	0.819	0.839	0.869	0.919	94
95	47.50	33.587 6	48.10	48.00	47.10	0.819	0.839	0.869	0.919	95
96	48.00	33.941 1	48.60	48.50	47.60	0.819	0.839	0.869	0.919	96
97	48.50	34.294 7	49.10	49.00	48.10	0.819	0.839	0.869	0.919	97
98	49.00	34.648 2	49.60	49.50	48.60	0.819	0.839	0.869	0.920	98
99	49.50	35.001 8	50.10	50.00	49.10	0.819	0.839	0.869	0.920	99
100	50.00	35.355 3	50.60	50.50	49.60	0.819	0.839	0.870	0.920	100

表 3—45°内花键

模数 $m = 0.75 \text{ mm}$ 作用齿槽宽最小值 $E_{\min} = 1.178 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{F1 \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	7.50	5.303 3	8.40	8.25	6.94	1.206	1.223	1.248	1.290	10
11	8.25	5.833 6	9.15	9.00	7.69	1.206	1.223	1.249	1.291	11
12	9.00	6.364 0	9.90	9.75	8.43	1.207	1.224	1.249	1.292	12
13	9.75	6.894 3	10.65	10.50	9.18	1.207	1.224	1.250	1.293	13
14	10.50	7.424 6	11.40	11.25	9.93	1.207	1.225	1.251	1.294	14
15	11.25	7.955 0	12.15	12.00	10.68	1.207	1.225	1.251	1.295	15
16	12.00	8.485 3	12.90	12.75	11.42	1.208	1.225	1.252	1.296	16
17	12.75	9.015 6	13.65	13.50	12.17	1.208	1.226	1.252	1.297	17
18	13.50	9.545 9	14.40	14.25	12.92	1.208	1.226	1.253	1.298	18
19	14.25	10.076 3	15.15	15.00	13.67	1.208	1.226	1.253	1.298	19
20	15.00	10.606 6	15.90	15.75	14.42	1.208	1.227	1.254	1.299	20
21	15.75	11.136 9	16.65	16.50	15.17	1.209	1.227	1.254	1.300	21
22	16.50	11.667 3	17.40	17.25	15.92	1.209	1.227	1.255	1.301	22
23	17.25	12.197 6	18.15	18.00	16.67	1.209	1.227	1.255	1.301	23
24	18.00	12.727 9	18.90	18.75	17.42	1.209	1.228	1.256	1.302	24
25	18.75	13.258 3	19.65	19.50	18.17	1.209	1.228	1.256	1.303	25
26	19.50	13.788 6	20.40	20.25	18.91	1.209	1.228	1.256	1.304	26
27	20.25	14.318 9	21.15	21.00	19.66	1.210	1.229	1.257	1.304	27
28	21.00	14.849 2	21.90	21.75	20.41	1.210	1.229	1.257	1.305	28
29	21.75	15.379 6	22.65	22.50	21.16	1.210	1.229	1.258	1.305	29
30	22.50	15.909 9	23.40	23.25	21.91	1.210	1.229	1.258	1.306	30
31	23.25	16.440 2	24.15	24.00	22.66	1.210	1.229	1.258	1.307	31
32	24.00	16.970 6	24.90	24.75	23.41	1.210	1.230	1.259	1.307	32
33	24.75	17.500 9	25.65	25.50	24.16	1.211	1.230	1.259	1.308	33
34	25.50	18.031 2	26.40	26.25	24.91	1.211	1.230	1.259	1.308	34
35	26.25	18.561 6	27.15	27.00	25.66	1.211	1.230	1.260	1.309	35
36	27.00	19.091 9	27.90	27.75	26.41	1.211	1.231	1.260	1.309	36
37	27.75	19.622 2	28.65	28.50	27.16	1.211	1.231	1.260	1.310	37
38	28.50	20.152 5	29.40	29.25	27.91	1.211	1.231	1.261	1.310	38
39	29.25	20.682 9	30.15	30.00	28.66	1.211	1.231	1.261	1.311	39
40	30.00	21.213 2	30.90	30.75	29.41	1.211	1.231	1.261	1.311	40
41	30.75	21.743 5	31.65	31.50	30.16	1.212	1.232	1.262	1.312	41
42	31.50	22.273 9	32.40	32.25	30.91	1.212	1.232	1.262	1.312	42
43	32.25	22.804 2	33.15	33.00	31.66	1.212	1.232	1.262	1.313	43
44	33.00	23.334 5	33.90	33.75	32.41	1.212	1.232	1.263	1.313	44
45	33.75	23.864 9	34.65	34.50	33.16	1.212	1.232	1.263	1.314	45
46	34.50	24.395 2	35.40	35.25	33.91	1.212	1.233	1.263	1.314	46
47	35.25	24.925 5	36.15	36.00	34.66	1.212	1.233	1.263	1.315	47
48	36.00	25.455 8	36.90	36.75	35.41	1.212	1.233	1.264	1.315	48
49	36.75	25.986 2	37.65	37.50	36.16	1.212	1.233	1.264	1.316	49
50	37.50	26.516 5	38.40	38.25	36.91	1.213	1.233	1.264	1.316	50
51	38.25	27.046 8	39.15	39.00	37.66	1.213	1.233	1.265	1.316	51
52	39.00	27.577 2	39.90	39.75	38.41	1.213	1.234	1.265	1.317	52
53	39.75	28.107 5	40.65	40.50	39.16	1.213	1.234	1.265	1.317	53
54	40.50	28.637 8	41.40	41.25	39.91	1.213	1.234	1.265	1.318	54
55	41.25	29.168 2	42.15	42.00	40.66	1.213	1.234	1.266	1.318	55

表 3 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e 圆齿根	渐开线终 止圆直径 $D_{Fi\ min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{r\ min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	42.00	29.698 5	42.90	42.75	41.41	1.213	1.234	1.266	1.318	56
57	42.75	30.228 8	43.65	43.50	42.16	1.213	1.234	1.266	1.319	57
58	43.50	30.759 1	44.40	44.25	42.91	1.213	1.235	1.266	1.319	58
59	44.25	31.289 5	45.15	45.00	43.66	1.213	1.235	1.267	1.320	59
60	45.00	31.819 8	45.90	45.75	44.41	1.214	1.235	1.267	1.320	60
61	45.75	32.350 1	46.65	46.50	45.16	1.214	1.235	1.267	1.320	61
62	46.50	32.880 5	47.40	47.25	45.91	1.214	1.235	1.267	1.321	62
63	47.25	33.410 8	48.15	48.00	46.66	1.214	1.235	1.268	1.321	63
64	48.00	33.941 1	48.90	48.75	47.41	1.214	1.235	1.268	1.322	64
65	48.75	34.471 5	49.65	49.50	48.16	1.214	1.236	1.268	1.322	65
66	49.50	35.001 8	50.40	50.25	48.91	1.214	1.236	1.268	1.322	66
67	50.25	35.532 1	51.15	51.00	49.66	1.214	1.236	1.268	1.323	67
68	51.00	36.062 4	51.90	51.75	50.41	1.214	1.236	1.269	1.323	68
69	51.75	36.592 8	52.65	52.50	51.16	1.214	1.236	1.269	1.323	69
70	52.50	37.123 1	53.40	53.25	51.91	1.215	1.236	1.269	1.324	70
71	53.25	37.653 4	54.15	54.00	52.66	1.215	1.236	1.269	1.324	71
72	54.00	38.183 8	54.90	54.75	53.41	1.215	1.237	1.270	1.324	72
73	54.75	38.714 1	55.65	55.50	54.16	1.215	1.237	1.270	1.325	73
74	55.50	39.244 4	56.40	56.25	54.91	1.215	1.237	1.270	1.325	74
75	56.25	39.774 8	57.15	57.00	55.66	1.215	1.237	1.270	1.325	75
76	57.00	40.305 1	57.90	57.75	56.41	1.215	1.237	1.270	1.326	76
77	57.75	40.835 4	58.65	58.50	57.15	1.215	1.237	1.271	1.326	77
78	58.50	41.365 7	59.40	59.25	57.90	1.215	1.237	1.271	1.326	78
79	59.25	41.896 1	60.15	60.00	58.65	1.215	1.238	1.271	1.327	79
80	60.00	42.426 4	60.90	60.75	59.40	1.215	1.238	1.271	1.327	80
81	60.75	42.956 7	61.65	61.50	60.15	1.215	1.238	1.271	1.327	81
82	61.50	43.487 1	62.40	62.25	60.90	1.216	1.238	1.272	1.328	82
83	62.25	44.017 4	63.15	63.00	61.65	1.216	1.238	1.272	1.328	83
84	63.00	44.547 7	63.90	63.75	62.40	1.216	1.238	1.272	1.328	84
85	63.75	45.078 1	64.65	64.50	63.15	1.216	1.238	1.272	1.329	85
86	64.50	45.608 4	65.40	65.25	63.90	1.216	1.238	1.272	1.329	86
87	65.25	46.138 7	66.15	66.00	64.65	1.216	1.239	1.273	1.329	87
88	66.00	46.669 0	66.90	66.75	65.40	1.216	1.239	1.273	1.330	88
89	66.75	47.199 4	67.65	67.50	66.15	1.216	1.239	1.273	1.330	89
90	67.50	47.729 7	68.40	68.25	66.90	1.216	1.239	1.273	1.330	90
91	68.25	48.260 0	69.15	69.00	67.65	1.216	1.239	1.273	1.331	91
92	69.00	48.790 4	69.90	69.75	68.40	1.216	1.239	1.274	1.331	92
93	69.75	49.320 7	70.65	70.50	69.15	1.216	1.239	1.274	1.331	93
94	70.50	49.851 0	71.40	71.25	69.90	1.216	1.239	1.274	1.331	94
95	71.25	50.381 4	72.15	72.00	70.65	1.216	1.240	1.274	1.332	95
96	72.00	50.911 7	72.90	72.75	71.40	1.217	1.240	1.274	1.332	96
97	72.75	51.442 0	73.65	73.50	72.15	1.217	1.240	1.274	1.332	97
98	73.50	51.972 3	74.40	74.25	72.90	1.217	1.240	1.275	1.333	98
99	74.25	52.502 7	75.15	75.00	73.65	1.217	1.240	1.275	1.333	99
100	75.00	53.033 0	75.90	75.75	74.40	1.217	1.240	1.275	1.333	100

表 4—45°内花键

模数 $m = 1 \text{ mm}$ 作用齿槽宽最小值 $E_{r \min} = 1.571 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 $D_{\text{外}}$ 圆齿根	渐开线终 止圆直径 $D_{F1 \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{r \min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	10.00	7.071 1	11.20	11.00	9.26	1.602	1.620	1.648	1.694	10
11	11.00	7.778 2	12.20	12.00	10.25	1.602	1.621	1.649	1.695	11
12	12.00	8.485 3	13.20	13.00	11.25	1.602	1.621	1.649	1.696	12
13	13.00	9.192 4	14.20	14.00	12.24	1.602	1.621	1.650	1.698	13
14	14.00	9.899 5	15.20	15.00	13.24	1.603	1.622	1.651	1.699	14
15	15.00	10.606 6	16.20	16.00	14.24	1.603	1.622	1.651	1.700	15
16	16.00	11.313 7	17.20	17.00	15.23	1.603	1.623	1.652	1.701	16
17	17.00	12.020 8	18.20	18.00	16.23	1.604	1.623	1.653	1.702	17
18	18.00	12.727 9	19.20	19.00	17.23	1.604	1.624	1.653	1.703	18
19	19.00	13.435 0	20.20	20.00	18.23	1.604	1.624	1.654	1.703	19
20	20.00	14.142 1	21.20	21.00	19.23	1.604	1.624	1.654	1.704	20
21	21.00	14.849 2	22.20	22.00	20.22	1.604	1.625	1.655	1.705	21
22	22.00	15.556 3	23.20	23.00	21.22	1.605	1.625	1.655	1.706	22
23	23.00	16.263 5	24.20	24.00	22.22	1.605	1.625	1.656	1.707	23
24	24.00	16.970 6	25.20	25.00	23.22	1.605	1.626	1.656	1.708	24
25	25.00	17.677 7	26.20	26.00	24.22	1.605	1.626	1.657	1.708	25
26	26.00	18.384 8	27.20	27.00	25.22	1.605	1.626	1.657	1.709	26
27	27.00	19.091 9	28.20	28.00	26.22	1.606	1.626	1.658	1.710	27
28	28.00	19.799 0	29.20	29.00	27.22	1.606	1.627	1.658	1.710	28
29	29.00	20.506 1	30.20	30.00	28.22	1.606	1.627	1.659	1.711	29
30	30.00	21.213 2	31.20	31.00	29.22	1.606	1.627	1.659	1.712	30
31	31.00	21.920 3	32.20	32.00	30.22	1.606	1.627	1.659	1.712	31
32	32.00	22.627 4	33.20	33.00	31.22	1.606	1.628	1.660	1.713	32
33	33.00	23.334 5	34.20	34.00	32.22	1.607	1.628	1.660	1.714	33
34	34.00	24.041 6	35.20	35.00	33.22	1.607	1.628	1.661	1.714	34
35	35.00	24.748 7	36.20	36.00	34.21	1.607	1.628	1.661	1.715	35
36	36.00	25.455 8	37.20	37.00	35.21	1.607	1.629	1.661	1.716	36
37	37.00	26.162 9	38.20	38.00	36.21	1.607	1.629	1.662	1.716	37
38	38.00	26.870 1	39.20	39.00	37.21	1.607	1.629	1.662	1.717	38
39	39.00	27.577 2	40.20	40.00	38.21	1.607	1.629	1.662	1.717	39
40	40.00	28.284 3	41.20	41.00	39.21	1.608	1.630	1.663	1.718	40
41	41.00	28.991 4	42.20	42.00	40.21	1.608	1.630	1.663	1.718	41
42	42.00	29.698 5	43.20	43.00	41.21	1.608	1.630	1.663	1.719	42
43	43.00	30.405 6	44.20	44.00	42.21	1.608	1.630	1.664	1.719	43
44	44.00	31.112 7	45.20	45.00	43.21	1.608	1.630	1.664	1.720	44
45	45.00	31.819 8	46.20	46.00	44.21	1.608	1.631	1.664	1.720	45
46	46.00	32.526 9	47.20	47.00	45.21	1.608	1.631	1.665	1.721	46
47	47.00	33.234 0	48.20	48.00	46.21	1.608	1.631	1.665	1.721	47
48	48.00	33.941 1	49.20	49.00	47.21	1.609	1.631	1.665	1.722	48
49	49.00	34.648 2	50.20	50.00	48.21	1.609	1.631	1.666	1.722	49
50	50.00	35.355 3	51.20	51.00	49.21	1.609	1.632	1.666	1.723	50
51	51.00	36.062 4	52.20	52.00	50.21	1.609	1.632	1.666	1.723	51
52	52.00	36.769 6	53.20	53.00	51.21	1.609	1.632	1.666	1.724	52
53	53.00	37.476 7	54.20	54.00	52.21	1.609	1.632	1.667	1.724	53
54	54.00	38.183 8	55.20	55.00	53.21	1.609	1.632	1.667	1.725	54
55	55.00	38.890 9	56.20	56.00	54.21	1.609	1.633	1.667	1.725	55

表 4 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e 圆齿根	渐开线终 止圆直径 $D_{Fi\ min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{i\ min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	56.00	39.598 0	57.20	57.00	55.21	1.610	1.633	1.668	1.726	56
57	57.00	40.305 1	58.20	58.00	56.21	1.610	1.633	1.668	1.726	57
58	58.00	41.012 2	59.20	59.00	57.21	1.610	1.633	1.668	1.727	58
59	59.00	41.719 3	60.20	60.00	58.21	1.610	1.633	1.668	1.727	59
60	60.00	42.426 4	61.20	61.00	59.21	1.610	1.633	1.669	1.728	60
61	61.00	43.133 5	62.20	62.00	60.21	1.610	1.634	1.669	1.728	61
62	62.00	43.840 6	63.20	63.00	61.21	1.610	1.634	1.669	1.728	62
63	63.00	44.547 7	64.20	64.00	62.21	1.610	1.634	1.670	1.729	63
64	64.00	45.254 8	65.20	65.00	63.21	1.610	1.634	1.670	1.729	64
65	65.00	45.961 9	66.20	66.00	64.21	1.610	1.634	1.670	1.730	65
66	66.00	46.669 0	67.20	67.00	65.21	1.611	1.634	1.670	1.730	66
67	67.00	47.376 2	68.20	68.00	66.21	1.611	1.635	1.670	1.730	67
68	68.00	48.083 3	69.20	69.00	67.21	1.611	1.635	1.671	1.731	68
69	69.00	48.790 4	70.20	70.00	68.21	1.611	1.635	1.671	1.731	69
70	70.00	49.497 5	71.20	71.00	69.21	1.611	1.635	1.671	1.732	70
71	71.00	50.204 6	72.20	72.00	70.21	1.611	1.635	1.672	1.732	71
72	72.00	50.911 7	73.20	73.00	71.21	1.611	1.635	1.672	1.732	72
73	73.00	51.618 8	74.20	74.00	72.21	1.611	1.636	1.672	1.733	73
74	74.00	52.325 9	75.20	75.00	73.21	1.611	1.636	1.672	1.733	74
75	75.00	53.032 0	76.20	76.00	74.21	1.611	1.636	1.673	1.734	75
76	76.00	53.740 1	77.20	77.00	75.21	1.612	1.636	1.673	1.734	76
77	77.00	54.447 2	78.20	78.00	76.21	1.612	1.636	1.673	1.734	77
78	78.00	55.154 3	79.20	79.00	77.21	1.612	1.636	1.673	1.735	78
79	79.00	55.861 4	80.20	80.00	78.21	1.612	1.636	1.673	1.735	79
80	80.00	56.568 5	81.20	81.00	79.21	1.612	1.637	1.674	1.735	80
81	81.00	57.275 6	82.20	82.00	80.21	1.612	1.637	1.674	1.736	81
82	82.00	57.982 7	83.20	83.00	81.21	1.612	1.637	1.674	1.736	82
83	83.00	58.689 8	84.20	84.00	82.21	1.612	1.637	1.674	1.736	83
84	84.00	59.397 0	85.20	85.00	83.21	1.612	1.637	1.675	1.737	84
85	85.00	60.104 1	86.20	86.00	84.21	1.612	1.637	1.675	1.737	85
86	86.00	60.811 2	87.20	87.00	85.21	1.612	1.637	1.675	1.738	86
87	87.00	61.518 3	88.20	88.00	86.21	1.613	1.638	1.675	1.738	87
88	88.00	62.225 4	89.20	89.00	87.21	1.613	1.638	1.675	1.738	88
89	89.00	62.932 5	90.20	90.00	88.21	1.613	1.638	1.676	1.739	89
90	90.00	63.639 6	91.20	91.00	89.21	1.613	1.638	1.676	1.739	90
91	91.00	64.346 7	92.20	92.00	90.21	1.613	1.638	1.676	1.739	91
92	92.00	65.053 8	93.20	93.00	91.21	1.613	1.638	1.676	1.740	92
93	93.00	65.760 9	94.20	94.00	92.21	1.613	1.638	1.676	1.740	93
94	94.00	66.468 0	95.20	95.00	93.21	1.613	1.639	1.677	1.740	94
95	95.00	67.175 1	96.20	96.00	94.21	1.613	1.639	1.677	1.741	95
96	96.00	67.882 2	97.20	97.00	95.21	1.613	1.639	1.677	1.741	96
97	97.00	68.589 4	98.20	98.00	96.21	1.613	1.639	1.677	1.741	97
98	98.00	69.296 5	99.20	99.00	97.21	1.613	1.639	1.677	1.742	98
99	99.00	70.003 6	100.20	100.00	98.21	1.614	1.639	1.678	1.742	99
100	100.00	70.710 7	101.20	101.00	99.21	1.614	1.639	1.678	1.742	100

表 5—45° 内花键

模数 $m = 1.25 \text{ mm}$ 作用齿槽宽最小值 $E_{r \min} = 1.963 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e 圆齿根	渐开线终 止圆直径 $D_{F \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{r \min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	12.50	8.838 8	14.00	13.75	11.57	1.997	2.017	2.046	2.096	10
11	13.75	9.722 7	15.25	15.00	12.81	1.997	2.017	2.047	2.098	11
12	15.00	10.606 6	16.50	16.25	14.06	1.997	2.018	2.048	2.099	12
13	16.25	11.490 5	17.75	17.50	15.30	1.998	2.018	2.049	2.100	13
14	17.50	12.374 4	19.00	18.75	16.55	1.998	2.019	2.050	2.101	14
15	18.75	13.258 3	20.25	20.00	17.79	1.998	2.019	2.050	2.102	15
16	20.00	14.142 1	21.50	21.25	19.04	1.999	2.020	2.051	2.104	16
17	21.25	15.026 0	22.75	22.50	20.29	1.999	2.020	2.052	2.105	17
18	22.50	15.909 9	24.00	23.75	21.54	1.999	2.020	2.052	2.106	18
19	23.75	16.793 8	25.25	25.00	22.78	1.999	2.021	2.053	2.107	19
20	25.00	17.677 7	26.50	26.25	24.03	2.000	2.021	2.054	2.108	20
21	26.25	18.561 6	27.75	27.50	25.28	2.000	2.021	2.054	2.108	21
22	27.50	19.445 4	29.00	28.75	26.53	2.000	2.022	2.055	2.109	22
23	28.75	20.329 3	30.25	30.00	27.78	2.000	2.022	2.055	2.110	23
24	30.00	21.213 2	31.50	31.25	29.03	2.000	2.023	2.056	2.111	24
25	31.25	22.097 1	32.75	32.50	30.28	2.001	2.023	2.056	2.112	25
26	32.50	22.981 0	34.00	33.75	31.52	2.001	2.023	2.057	2.113	26
27	33.75	23.864 9	35.25	35.00	32.77	2.001	2.023	2.057	2.113	27
28	35.00	24.748 7	36.50	36.25	34.02	2.001	2.024	2.058	2.114	28
29	36.25	25.632 6	37.75	37.50	35.27	2.001	2.024	2.058	2.115	29
30	37.50	26.516 5	39.00	38.75	36.52	2.002	2.024	2.059	2.116	30
31	38.75	27.400 4	40.25	40.00	37.77	2.002	2.025	2.059	2.116	31
32	40.00	28.284 3	41.50	41.25	39.02	2.002	2.025	2.059	2.117	32
33	41.25	29.168 2	42.75	42.50	40.27	2.002	2.025	2.060	2.118	33
34	42.50	30.052 0	44.00	43.75	41.52	2.002	2.025	2.060	2.118	34
35	43.75	30.935 9	45.25	45.00	42.77	2.002	2.026	2.061	2.119	35
36	45.00	31.819 8	46.50	46.25	44.02	2.003	2.026	2.061	2.120	36
37	46.25	32.703 7	47.75	47.50	45.27	2.003	2.026	2.062	2.120	37
38	47.50	33.587 6	49.00	48.75	46.52	2.003	2.026	2.062	2.121	38
39	48.75	34.471 5	50.25	50.00	47.77	2.003	2.027	2.062	2.122	39
40	50.00	35.355 3	51.50	51.25	49.02	2.003	2.027	2.063	2.122	40
41	51.25	36.239 2	52.75	52.50	50.27	2.003	2.027	2.063	2.123	41
42	52.50	37.123 1	54.00	53.75	51.52	2.003	2.027	2.063	2.123	42
43	53.75	38.007 0	55.25	55.00	52.76	2.004	2.028	2.064	2.124	43
44	55.00	38.890 9	56.50	56.25	54.01	2.004	2.028	2.064	2.125	44
45	56.25	39.774 8	57.75	57.50	55.26	2.004	2.028	2.064	2.125	45
46	57.50	40.658 6	59.00	58.75	56.51	2.004	2.028	2.065	2.126	46
47	58.75	41.542 5	60.25	60.00	57.76	2.004	2.029	2.065	2.126	47
48	60.00	42.426 4	61.50	61.25	59.01	2.004	2.029	2.066	2.127	48
49	61.25	43.310 3	62.75	62.50	60.26	2.004	2.029	2.066	2.127	49
50	62.50	44.194 2	64.00	63.75	61.51	2.005	2.029	2.066	2.128	50
51	63.75	45.078 1	65.25	65.00	62.76	2.005	2.029	2.067	2.128	51
52	65.00	45.961 9	66.50	66.25	64.01	2.005	2.030	2.067	2.129	52
53	66.25	46.845 8	67.75	67.50	65.26	2.005	2.030	2.067	2.129	53
54	67.50	47.729 7	69.00	68.75	66.51	2.005	2.030	2.067	2.130	54
55	68.75	48.613 6	70.25	70.00	67.76	2.005	2.030	2.068	2.130	55

表 5 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{Fi\ min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	70.00	49.497 5	71.50	71.25	69.01	2.005	2.030	2.068	2.131	56
57	71.25	50.381 4	72.75	72.50	70.26	2.005	2.031	2.068	2.131	57
58	72.50	51.265 2	74.00	73.75	71.51	2.006	2.031	2.069	2.132	58
59	73.75	52.149 1	75.25	75.00	72.76	2.006	2.031	2.069	2.132	59
60	75.00	53.033 0	76.50	76.25	74.01	2.006	2.031	2.069	2.133	60
61	76.25	53.916 9	77.75	77.50	75.26	2.006	2.031	2.070	2.133	61
62	77.50	54.800 8	79.00	78.75	76.51	2.006	2.032	2.070	2.134	62
63	78.75	55.684 7	80.25	80.00	77.76	2.006	2.032	2.070	2.134	63
64	80.00	56.568 5	81.50	81.25	79.01	2.006	2.032	2.070	2.135	64
65	81.25	57.452 4	82.75	82.50	80.26	2.006	2.032	2.071	2.135	65
66	82.50	58.336 3	84.00	83.75	81.51	2.006	2.032	2.071	2.135	66
67	83.75	59.220 2	85.25	85.00	82.76	2.007	2.032	2.071	2.136	67
68	85.00	60.104 1	86.50	86.25	84.01	2.007	2.033	2.072	2.136	68
69	86.25	60.988 0	87.75	87.50	85.26	2.007	2.033	2.072	2.137	69
70	87.50	61.871 8	89.00	88.75	86.51	2.007	2.033	2.072	2.137	70
71	88.75	62.755 7	90.25	90.00	87.76	2.007	2.033	2.072	2.138	71
72	90.00	63.639 6	91.50	91.25	89.01	2.007	2.033	2.073	2.138	72
73	91.25	64.523 5	92.75	92.50	90.26	2.007	2.034	2.073	2.139	73
74	92.50	65.407 4	94.00	93.75	91.51	2.007	2.034	2.073	2.139	74
75	93.75	66.291 3	95.25	95.00	92.76	2.007	2.034	2.073	2.139	75
76	95.00	67.175 1	96.50	96.25	94.01	2.008	2.034	2.074	2.140	76
77	96.25	68.059 0	97.75	97.50	95.26	2.008	2.034	2.074	2.140	77
78	97.50	68.942 9	99.00	98.75	96.51	2.008	2.034	2.074	2.141	78
79	98.75	69.826 8	100.25	100.00	97.76	2.008	2.034	2.074	2.141	79
80	100.00	70.710 7	101.50	101.25	99.01	2.008	2.035	2.075	2.141	80
81	101.25	71.594 6	102.75	102.50	100.26	2.008	2.035	2.075	2.142	81
82	102.50	72.478 5	104.00	103.75	101.51	2.008	2.035	2.075	2.142	82
83	103.75	73.362 4	105.25	105.00	102.76	2.008	2.035	2.075	2.143	83
84	105.00	74.246 3	106.50	106.25	104.01	2.008	2.035	2.076	2.143	84
85	106.25	75.130 1	107.75	107.50	105.26	2.008	2.035	2.076	2.143	85
86	107.50	76.014 0	109.00	108.75	106.51	2.009	2.036	2.076	2.144	86
87	108.75	76.897 9	110.25	110.00	107.76	2.009	2.036	2.076	2.144	87
88	110.00	77.781 7	111.50	111.25	109.01	2.009	2.036	2.077	2.144	88
89	111.25	78.665 6	112.75	112.50	110.26	2.009	2.036	2.077	2.145	89
90	112.50	79.549 5	114.00	113.75	111.51	2.009	2.036	2.077	2.145	90
91	113.75	80.433 4	115.25	115.00	112.76	2.009	2.036	2.077	2.146	91
92	115.00	81.317 3	116.50	116.25	114.01	2.009	2.036	2.078	2.146	92
93	116.25	82.201 2	117.75	117.50	115.26	2.009	2.037	2.078	2.146	93
94	117.50	83.085 0	119.00	118.75	116.51	2.009	2.037	2.078	2.147	94
95	118.75	83.968 9	120.25	120.00	117.76	2.009	2.037	2.078	2.147	95
96	120.00	84.852 8	121.50	121.25	119.01	2.009	2.037	2.078	2.147	96
97	121.25	85.736 7	122.75	122.50	120.26	2.010	2.037	2.079	2.148	97
98	122.50	86.620 6	124.00	123.75	121.51	2.010	2.037	2.079	2.148	98
99	123.75	87.504 5	125.25	125.00	122.76	2.010	2.037	2.079	2.148	99
100	125.00	88.388 3	126.50	126.25	124.01	2.010	2.038	2.079	2.149	100

表 6 45°内花键
模数 $m = 1.5 \text{ mm}$ 作用齿槽宽最小值 $E_{r \min} = 2.356 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{f \min}$	小径 D_i	实际齿槽宽最大值 $E_{r \max} = E_{r \min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	15.00	10.606 6	16.80	16.50	13.88	2.391	2.413	2.444	2.497	10
11	16.50	11.667 3	18.30	18.00	15.37	2.392	2.413	2.445	2.499	11
12	18.00	12.727 9	19.80	19.50	16.87	2.392	2.414	2.446	2.500	12
13	19.50	13.788 6	21.30	21.00	18.36	2.393	2.414	2.447	2.502	13
14	21.00	14.849 2	22.80	22.50	19.86	2.393	2.415	2.448	2.503	14
15	22.50	15.909 9	24.30	24.00	21.35	2.393	2.415	2.449	2.504	15
16	24.00	16.970 6	25.80	25.50	22.85	2.393	2.416	2.449	2.505	16
17	25.50	18.031 2	27.30	27.00	24.35	2.394	2.416	2.450	2.506	17
18	27.00	19.091 9	28.80	28.50	25.84	2.394	2.417	2.451	2.507	18
19	28.50	20.152 5	30.30	30.00	27.34	2.394	2.417	2.451	2.508	19
20	30.00	21.213 2	31.80	31.50	28.84	2.395	2.417	2.452	2.509	20
21	31.50	22.273 9	33.30	33.00	30.34	2.395	2.418	2.453	2.510	21
22	33.00	23.334 5	34.80	34.50	31.84	2.395	2.418	2.453	2.511	22
23	34.50	24.395 2	36.30	36.00	33.33	2.395	2.419	2.454	2.512	23
24	36.00	25.455 8	37.80	37.50	34.83	2.395	2.419	2.454	2.513	24
25	37.50	26.516 5	39.30	39.00	36.33	2.396	2.419	2.455	2.514	25
26	39.00	27.577 2	40.80	40.50	37.83	2.396	2.420	2.455	2.515	26
27	40.50	28.637 8	42.30	42.00	39.33	2.396	2.420	2.456	2.516	27
28	42.00	29.698 5	43.80	43.50	40.83	2.396	2.420	2.456	2.517	28
29	43.50	30.759 1	45.30	45.00	42.33	2.396	2.421	2.457	2.517	29
30	45.00	31.819 8	46.80	46.50	43.83	2.397	2.421	2.457	2.518	30
31	46.50	32.880 5	48.30	48.00	45.32	2.397	2.421	2.458	2.519	31
32	48.00	33.941 1	49.80	49.50	46.82	2.397	2.422	2.458	2.520	32
33	49.50	35.001 8	51.30	51.00	48.32	2.397	2.422	2.459	2.520	33
34	51.00	36.062 4	52.80	52.50	49.82	2.397	2.422	2.459	2.521	34
35	52.50	37.123 1	54.30	54.00	51.32	2.398	2.422	2.460	2.522	35
36	54.00	38.183 8	55.80	55.50	52.82	2.398	2.423	2.460	2.522	36
37	55.50	39.244 4	57.30	57.00	54.32	2.398	2.423	2.461	2.523	37
38	57.00	40.305 1	58.80	58.50	55.82	2.398	2.423	2.461	2.524	38
39	58.50	41.365 7	60.30	60.00	57.32	2.398	2.424	2.461	2.524	39
40	60.00	42.426 4	61.80	61.50	58.82	2.398	2.424	2.462	2.525	40
41	61.50	43.487 1	63.30	63.00	60.32	2.399	2.424	2.462	2.526	41
42	63.00	44.547 7	64.80	64.50	61.82	2.399	2.424	2.463	2.526	42
43	64.50	45.608 4	66.30	66.00	63.32	2.399	2.425	2.463	2.527	43
44	66.00	46.669 0	67.80	67.50	64.82	2.399	2.425	2.463	2.528	44
45	67.50	47.729 7	69.30	69.00	66.32	2.399	2.425	2.464	2.528	45
46	69.00	48.790 4	70.80	70.50	67.82	2.399	2.425	2.464	2.529	46
47	70.50	49.851 0	72.30	72.00	69.32	2.400	2.425	2.464	2.529	47
48	72.00	50.911 7	73.80	73.50	70.82	2.400	2.426	2.465	2.530	48
49	73.50	51.972 3	75.30	75.00	72.32	2.400	2.426	2.465	2.531	49
50	75.00	53.033 0	76.80	76.50	73.82	2.400	2.426	2.466	2.531	50
51	76.50	54.093 7	78.30	78.00	75.32	2.400	2.426	2.466	2.532	51
52	78.00	55.154 3	79.80	79.50	76.81	2.400	2.427	2.466	2.532	52
53	79.50	56.215 0	81.30	81.00	78.31	2.400	2.427	2.467	2.533	53
54	81.00	57.275 6	82.80	82.50	79.81	2.400	2.427	2.467	2.533	54
55	82.50	58.336 3	84.30	84.00	81.31	2.401	2.427	2.467	2.534	55

表 6 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{Fi\ min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	84.00	59.397 0	85.80	85.50	82.81	2.401	2.427	2.468	2.534	56
57	85.50	60.457 6	87.30	87.00	84.31	2.401	2.428	2.468	2.535	57
58	87.00	61.518 3	88.80	88.50	85.81	2.401	2.428	2.468	2.535	58
59	88.50	62.578 9	90.30	90.00	87.31	2.401	2.428	2.469	2.536	59
60	90.00	63.639 6	91.80	91.50	88.81	2.401	2.428	2.469	2.536	60
61	91.50	64.700 3	93.30	93.00	90.31	2.401	2.429	2.469	2.537	61
62	93.00	65.760 9	94.80	94.50	91.81	2.402	2.429	2.470	2.538	62
63	94.50	66.821 6	96.30	96.00	93.31	2.402	2.429	2.470	2.538	63
64	96.00	67.882 2	97.80	97.50	94.81	2.402	2.429	2.470	2.538	64
65	97.50	68.942 9	99.30	99.00	96.31	2.402	2.429	2.470	2.539	65
66	99.00	70.003 6	100.80	100.50	97.81	2.402	2.429	2.471	2.539	66
67	100.50	71.064 2	102.30	102.00	99.31	2.402	2.430	2.471	2.540	67
68	102.00	72.124 9	103.80	103.50	100.81	2.402	2.430	2.471	2.540	68
69	103.50	73.185 5	105.30	105.00	102.31	2.402	2.430	2.472	2.541	69
70	105.00	74.246 2	106.80	106.50	103.81	2.402	2.430	2.472	2.541	70
71	106.50	75.306 9	108.30	108.00	105.31	2.403	2.430	2.472	2.542	71
72	108.00	76.367 5	109.80	109.50	106.81	2.403	2.431	2.472	2.542	72
73	109.50	77.428 2	111.30	111.00	108.31	2.403	2.431	2.473	2.543	73
74	111.00	78.488 8	112.80	112.50	109.81	2.403	2.431	2.473	2.543	74
75	112.50	79.549 5	114.30	114.00	111.31	2.403	2.431	2.473	2.544	75
76	114.00	80.610 2	115.80	115.50	112.81	2.403	2.431	2.474	2.544	76
77	115.50	81.670 8	117.30	117.00	114.31	2.403	2.432	2.474	2.544	77
78	117.00	82.731 5	118.80	118.50	115.81	2.403	2.432	2.474	2.545	78
79	118.50	83.792 2	120.30	120.00	117.31	2.403	2.432	2.474	2.545	79
80	120.00	84.852 8	121.80	121.50	118.81	2.404	2.432	2.475	2.546	80
81	121.50	85.913 5	123.30	123.00	120.31	2.404	2.432	2.475	2.546	81
82	123.00	86.974 1	124.80	124.50	121.81	2.404	2.432	2.475	2.547	82
83	124.50	88.034 8	126.30	126.00	123.31	2.404	2.433	2.475	2.547	83
84	126.00	89.095 5	127.80	127.50	124.81	2.404	2.433	2.476	2.547	84
85	127.50	90.156 1	129.30	129.00	126.31	2.404	2.433	2.476	2.548	85
86	129.00	91.216 8	130.80	130.50	127.81	2.404	2.433	2.476	2.548	86
87	130.50	92.277 4	132.30	132.00	129.31	2.404	2.433	2.477	2.549	87
88	132.00	93.338 1	133.80	133.50	130.81	2.404	2.433	2.477	2.549	88
89	133.50	94.398 8	135.30	135.00	132.31	2.405	2.434	2.477	2.550	89
90	135.00	95.459 4	136.80	136.50	133.81	2.405	2.434	2.477	2.550	90
91	136.50	96.520 1	138.30	138.00	135.31	2.405	2.434	2.478	2.550	91
92	138.00	97.580 7	139.80	139.50	136.81	2.405	2.434	2.478	2.551	92
93	139.50	98.641 4	141.30	141.00	138.31	2.405	2.434	2.478	2.551	93
94	141.00	99.702 1	142.80	142.50	139.81	2.405	2.434	2.478	2.552	94
95	142.50	100.762 7	144.30	144.00	141.31	2.405	2.434	2.479	2.552	95
96	144.00	101.823 4	145.80	145.50	142.81	2.405	2.435	2.479	2.552	96
97	145.50	102.884 0	147.30	147.00	144.31	2.405	2.435	2.479	2.553	97
98	147.00	103.944 7	148.80	148.50	145.81	2.405	2.435	2.479	2.553	98
99	148.50	105.005 4	150.30	150.00	147.31	2.406	2.435	2.479	2.553	99
100	150.00	106.066 0	151.80	151.50	148.81	2.406	2.435	2.480	2.554	100

表.7—45°内花键

模数 $m = 1.75 \text{ mm}$ 作用齿槽宽最小值 $E_{r \min} = 2.749 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{f \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{r \min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
10	17.50	12.374 4	19.60	19.25	16.20	2.786	2.808	2.842	2.898	10
11	19.25	13.611 8	21.35	21.00	17.94	2.786	2.809	2.843	2.899	11
12	21.00	14.849 2	23.10	22.75	19.68	2.787	2.810	2.844	2.901	12
13	22.75	16.086 7	24.85	24.50	21.42	2.787	2.810	2.845	2.902	13
14	24.50	17.324 1	26.60	26.25	23.17	2.788	2.811	2.845	2.903	14
15	26.25	18.561 6	28.35	28.00	24.91	2.788	2.811	2.846	2.905	15
16	28.00	19.799 0	30.10	29.75	26.66	2.788	2.812	2.847	2.906	16
17	29.75	21.036 4	31.85	31.50	28.40	2.788	2.812	2.848	2.907	17
18	31.50	22.273 9	33.60	33.25	30.15	2.789	2.813	2.848	2.908	18
19	33.25	23.511 3	35.35	35.00	31.90	2.789	2.813	2.849	2.909	19
20	35.00	24.748 7	37.10	36.75	33.65	2.789	2.813	2.850	2.910	20
21	36.75	25.986 2	38.85	38.50	35.39	2.790	2.814	2.850	2.911	21
22	38.50	27.223 6	40.60	40.25	37.14	2.790	2.814	2.851	2.912	22
23	40.25	28.461 0	42.35	42.00	38.89	2.790	2.815	2.852	2.913	23
24	42.00	29.698 5	44.10	43.75	40.64	2.790	2.815	2.852	2.914	24
25	43.75	30.935 9	45.85	45.50	42.39	2.790	2.815	2.853	2.915	25
26	45.50	32.173 4	47.60	47.25	44.13	2.791	2.816	2.853	2.916	26
27	47.25	33.410 8	49.35	49.00	45.88	2.791	2.816	2.854	2.917	27
28	49.00	34.648 2	51.10	50.75	47.63	2.791	2.816	2.855	2.918	28
29	50.75	35.885 7	52.85	52.50	49.38	2.791	2.817	2.855	2.919	29
30	52.50	37.123 1	54.60	54.25	51.13	2.792	2.817	2.856	2.920	30
31	54.25	38.360 5	56.35	56.00	52.88	2.792	2.817	2.856	2.920	31
32	56.00	39.598 0	58.10	57.75	54.63	2.792	2.818	2.857	2.921	32
33	57.75	40.835 4	59.85	59.50	56.38	2.792	2.818	2.857	2.922	33
34	59.50	42.072 9	61.60	61.25	58.13	2.792	2.818	2.858	2.923	34
35	61.25	43.310 3	63.35	63.00	59.88	2.793	2.819	2.858	2.923	35
36	63.00	44.547 7	65.10	64.75	61.62	2.793	2.819	2.858	2.924	36
37	64.75	45.785 2	66.85	66.50	63.37	2.793	2.819	2.859	2.925	37
38	66.50	47.022 6	68.60	68.25	65.12	2.793	2.820	2.859	2.926	38
39	68.25	48.260 0	70.35	70.00	66.87	2.793	2.820	2.860	2.926	39
40	70.00	49.497 5	72.10	71.75	68.62	2.793	2.820	2.860	2.927	40
41	71.75	50.734 9	73.85	73.50	70.37	2.794	2.820	2.861	2.928	41
42	73.50	51.972 3	75.60	75.25	72.12	2.794	2.821	2.861	2.928	42
43	75.25	53.209 8	77.35	77.00	73.87	2.794	2.821	2.861	2.929	43
44	77.00	54.447 2	79.10	78.75	75.62	2.794	2.821	2.862	2.930	44
45	78.75	55.684 7	80.85	80.50	77.37	2.794	2.821	2.862	2.930	45
46	80.50	56.922 1	82.60	82.25	79.12	2.794	2.822	2.863	2.931	46
47	82.25	58.159 5	84.35	84.00	80.87	2.795	2.822	2.863	2.932	47
48	84.00	59.397 0	86.10	85.75	82.62	2.795	2.822	2.863	2.932	48
49	85.75	60.634 4	87.85	87.50	84.37	2.795	2.822	2.864	2.933	49
50	87.50	61.871 8	89.60	89.25	86.12	2.795	2.823	2.864	2.933	50
51	89.25	63.109 3	91.35	91.00	87.87	2.795	2.823	2.865	2.934	51
52	91.00	64.346 7	93.10	92.75	89.62	2.795	2.823	2.865	2.935	52
53	92.75	65.584 2	94.85	94.50	91.37	2.795	2.823	2.865	2.935	53
54	94.50	66.821 6	96.60	96.25	93.12	2.796	2.824	2.866	2.936	54
55	96.25	68.059 0	98.35	98.00	94.87	2.796	2.824	2.866	2.936	55

表 7 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e 圆齿根	渐开线终 止圆直径 $D_{f1\min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{v\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	98.00	69.296 5	100.10	99.75	96.62	2.796	2.824	2.866	2.937	56
57	99.75	70.533 9	101.85	101.50	98.37	2.796	2.824	2.867	2.938	57
58	101.50	71.771 3	103.60	103.25	100.12	2.796	2.825	2.867	2.938	58
59	103.25	73.008 8	105.35	105.00	101.87	2.796	2.825	2.867	2.939	59
60	105.00	74.246 2	107.10	106.75	103.61	2.796	2.825	2.868	2.939	60
61	106.75	75.483 6	108.85	108.50	105.35	2.797	2.825	2.868	2.940	61
62	108.50	76.721 1	110.60	110.25	107.11	2.797	2.825	2.868	2.940	62
63	110.25	77.958 5	112.35	112.00	108.86	2.797	2.826	2.869	2.941	63
64	112.00	79.196 0	114.10	113.75	110.61	2.797	2.826	2.869	2.941	64
65	113.75	80.433 4	115.85	115.50	112.36	2.797	2.826	2.869	2.942	65
66	115.50	81.670 8	117.60	117.25	114.11	2.797	2.826	2.870	2.942	66
67	117.25	82.908 3	119.35	119.00	115.86	2.797	2.826	2.870	2.943	67
68	119.00	84.145 7	121.10	120.75	117.61	2.797	2.827	2.870	2.943	68
69	120.75	85.383 1	122.85	122.50	119.36	2.798	2.827	2.871	2.944	69
70	122.50	86.620 6	124.60	124.25	121.11	2.798	2.827	2.871	2.944	70
71	124.25	87.858 0	126.35	126.00	122.86	2.798	2.827	2.871	2.945	71
72	126.00	89.095 5	128.10	127.75	124.61	2.798	2.827	2.872	2.945	72
73	127.75	90.332 9	129.85	129.50	126.36	2.798	2.828	2.872	2.946	73
74	129.50	91.570 3	131.60	131.25	128.11	2.798	2.828	2.872	2.946	74
75	131.25	92.807 8	133.35	133.00	129.86	2.798	2.828	2.873	2.947	75
76	133.00	94.045 2	135.10	134.75	131.61	2.798	2.828	2.873	2.947	76
77	134.75	95.282 6	136.85	136.50	133.36	2.799	2.828	2.873	2.948	77
78	136.50	96.520 1	138.60	138.25	135.11	2.799	2.829	2.873	2.948	78
79	138.25	97.757 5	140.35	140.00	136.86	2.799	2.829	2.874	2.949	79
80	140.00	98.994 9	142.10	141.75	138.61	2.799	2.829	2.874	2.949	80
81	141.75	100.232 4	143.85	143.50	140.36	2.799	2.829	2.874	2.950	81
82	143.50	101.469 8	145.60	145.25	142.11	2.799	2.829	2.875	2.950	82
83	145.25	102.707 3	147.35	147.00	143.86	2.799	2.830	2.875	2.950	83
84	147.00	103.944 7	149.10	148.75	145.61	2.799	2.830	2.875	2.951	84
85	148.75	105.182 1	150.85	150.50	147.36	2.800	2.830	2.875	2.951	85
86	150.50	106.419 6	152.60	152.25	149.11	2.800	2.830	2.876	2.952	86
87	152.25	107.657 0	154.35	154.00	150.86	2.800	2.830	2.876	2.952	87
88	154.00	108.894 4	156.10	155.75	152.61	2.800	2.830	2.876	2.953	88
89	155.75	110.131 9	157.85	157.50	154.36	2.800	2.831	2.877	2.953	89
90	157.50	111.369 3	159.60	159.25	156.11	2.800	2.831	2.877	2.954	90
91	159.25	112.606 8	161.35	161.00	157.86	2.800	2.831	2.877	2.954	91
92	161.00	113.844 2	163.10	162.75	159.61	2.800	2.831	2.877	2.954	92
93	162.75	115.081 6	164.85	164.50	161.36	2.800	2.831	2.878	2.955	93
94	164.50	116.319 1	166.60	166.25	163.11	2.800	2.831	2.878	2.955	94
95	166.25	117.556 5	168.35	168.00	164.86	2.801	2.832	2.878	2.956	95
96	168.00	118.793 9	170.10	169.75	166.61	2.801	2.832	2.878	2.956	96
97	169.75	120.031 4	171.85	171.50	168.36	2.801	2.832	2.879	2.956	97
98	171.50	121.268 8	173.60	173.25	170.11	2.801	2.832	2.879	2.957	98
99	173.25	122.506 2	175.35	175.00	171.86	2.801	2.832	2.879	2.957	99
100	175.00	123.743 7	177.10	176.75	173.61	2.801	2.832	2.879	2.958	100

表 8—45°内花键

模数 $m=2\text{ mm}$ 作用齿槽宽最小值 $E_{s\min}=3.142\text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{F\min}$	小径 D_i	实际齿槽宽最大值 $E_{\max}=E_{s\min}+(T+\lambda)$				齿数 z
						4H	5H	6H	7H	
10	20.00	14.142 1	22.40	22.00	18.51	3.180	3.204	3.239	3.297	10
11	22.00	15.556 3	24.40	24.00	20.50	3.181	3.204	3.240	3.299	11
12	24.00	16.970 6	26.40	26.00	22.49	3.181	3.205	3.241	3.300	12
13	26.00	18.384 8	28.40	28.00	24.48	3.182	3.206	3.242	3.302	13
14	28.00	19.799 0	30.40	30.00	26.48	3.182	3.206	3.243	3.303	14
15	30.00	21.213 2	32.40	32.00	28.47	3.182	3.207	3.243	3.305	15
16	32.00	22.627 4	34.40	34.00	30.47	3.183	3.207	3.244	3.306	16
17	34.00	24.041 6	36.40	36.00	32.46	3.183	3.208	3.245	3.307	17
18	36.00	25.455 8	38.40	38.00	34.46	3.183	3.208	3.246	3.308	18
19	38.00	26.870 1	40.40	40.00	36.46	3.184	3.209	3.247	3.309	19
20	40.00	28.284 3	42.40	42.00	38.45	3.184	3.209	3.247	3.311	20
21	42.00	29.698 5	44.40	44.00	40.45	3.184	3.210	3.248	3.312	21
22	44.00	31.112 7	46.40	46.00	42.45	3.184	3.210	3.249	3.313	22
23	46.00	32.526 9	48.40	48.00	44.45	3.185	3.210	3.249	3.314	23
24	48.00	33.941 1	50.40	50.00	46.44	3.185	3.211	3.250	3.315	24
25	50.00	35.355 3	52.40	52.00	48.44	3.185	3.211	3.250	3.316	25
26	52.00	36.769 6	54.40	54.00	50.44	3.185	3.212	3.251	3.317	26
27	54.00	38.183 8	56.40	56.00	52.44	3.186	3.212	3.252	3.318	27
28	56.00	39.598 0	58.40	58.00	54.44	3.186	3.212	3.252	3.319	28
29	58.00	41.012 2	60.40	60.00	56.44	3.186	3.213	3.253	3.319	29
30	60.00	42.426 4	62.40	62.00	58.43	3.186	3.213	3.253	3.320	30
31	62.00	43.840 6	64.40	64.00	60.43	3.186	3.213	3.254	3.321	31
32	64.00	45.254 8	66.40	66.00	62.43	3.187	3.214	3.254	3.322	32
33	66.00	46.669 0	68.40	68.00	64.43	3.187	3.214	3.255	3.323	33
34	68.00	48.083 3	70.40	70.00	66.43	3.187	3.214	3.255	3.324	34
35	70.00	49.497 5	72.40	72.00	68.43	3.187	3.215	3.256	3.324	35
36	72.00	50.911 7	74.40	74.00	70.43	3.187	3.215	3.256	3.325	36
37	74.00	52.325 9	76.40	76.00	72.43	3.188	3.215	3.257	3.326	37
38	76.00	53.740 1	78.40	78.00	74.43	3.188	3.216	3.257	3.327	38
39	78.00	55.154 3	80.40	80.00	76.43	3.188	3.216	3.258	3.327	39
40	80.00	56.568 5	82.40	82.00	78.43	3.188	3.216	3.258	3.328	40
41	82.00	57.982 8	84.40	84.00	80.43	3.188	3.217	3.259	3.329	41
42	84.00	59.397 0	86.40	86.00	82.42	3.189	3.217	3.259	3.330	42
43	86.00	60.811 2	88.40	88.00	84.42	3.189	3.217	3.260	3.330	43
44	88.00	62.225 4	90.40	90.00	86.42	3.189	3.217	3.260	3.331	44
45	90.00	63.639 6	92.40	92.00	88.42	3.189	3.218	3.260	3.332	45
46	92.00	65.053 8	94.40	94.00	90.42	3.189	3.218	3.261	3.332	46
47	94.00	66.468 0	96.40	96.00	92.42	3.189	3.218	3.261	3.333	47
48	96.00	67.882 2	98.40	98.00	94.42	3.190	3.218	3.262	3.334	48
49	98.00	69.296 5	100.40	100.00	96.42	3.190	3.219	3.262	3.334	49
50	100.00	70.710 7	102.40	102.00	98.42	3.190	3.219	3.262	3.335	50
51	102.00	72.124 9	104.40	104.00	100.42	3.190	3.219	3.263	3.336	51
52	104.00	73.539 1	106.40	106.00	102.42	3.190	3.219	3.263	3.336	52
53	106.00	74.953 3	108.40	108.00	104.42	3.190	3.220	3.264	3.337	53
54	108.00	76.367 5	110.40	110.00	106.42	3.191	3.220	3.264	3.337	54
55	110.00	77.781 7	112.40	112.00	108.42	3.191	3.220	3.264	3.338	55

表 8 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{f1 \min}$	小径 D_i	实际齿槽宽最大值 $E_{\max} = E_{\min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	112.00	79.196 0	114.40	114.00	110.42	3.191	3.220	3.265	3.339	56
57	114.00	80.610 2	116.40	116.00	112.42	3.191	3.221	3.265	3.339	57
58	116.00	82.024 4	118.40	118.00	114.42	3.191	3.221	3.265	3.340	58
59	118.00	83.438 6	120.40	120.00	116.42	3.191	3.221	3.266	3.340	59
60	120.00	84.852 8	122.40	122.00	118.42	3.191	3.221	3.266	3.341	60
61	122.00	86.267 0	124.40	124.00	120.42	3.192	3.222	3.267	3.342	61
62	124.00	87.681 2	126.40	126.00	122.42	3.192	3.222	3.267	3.342	62
63	126.00	89.095 5	128.40	128.00	124.42	3.192	3.222	3.267	3.343	63
64	128.00	90.509 7	130.40	130.00	126.42	3.192	3.222	3.268	3.343	64
65	130.00	91.923 9	132.40	132.00	128.42	3.192	3.223	3.268	3.344	65
66	132.00	93.338 1	134.40	134.00	130.42	3.192	3.223	3.268	3.344	66
67	134.00	94.752 3	136.40	136.00	132.42	3.192	3.223	3.269	3.345	67
68	136.00	96.166 5	138.40	138.00	134.41	3.193	3.223	3.269	3.345	68
69	138.00	97.580 7	140.40	140.00	136.41	3.193	3.223	3.269	3.346	69
70	140.00	98.994 9	142.40	142.00	138.41	3.193	3.224	3.270	3.346	70
71	142.00	100.409 2	144.40	144.00	140.41	3.193	3.224	3.270	3.347	71
72	144.00	101.823 4	146.40	146.00	142.41	3.193	3.224	3.270	3.347	72
73	146.00	103.237 6	148.40	148.00	144.41	3.193	3.224	3.271	3.348	73
74	148.00	104.651 8	150.40	150.00	146.41	3.193	3.224	3.271	3.348	74
75	150.00	106.065 0	152.40	152.00	148.41	3.193	3.225	3.271	3.349	75
76	152.00	107.479 2	154.40	154.00	150.41	3.194	3.225	3.272	3.349	76
77	154.00	108.894 4	156.40	156.00	152.41	3.194	3.225	3.272	3.350	77
78	156.00	110.308 7	158.40	158.00	154.41	3.194	3.225	3.272	3.350	78
79	158.00	111.723 9	160.40	160.00	156.41	3.194	3.225	3.272	3.351	79
80	160.00	113.137 1	162.40	162.00	158.41	3.194	3.226	3.273	3.351	80
81	162.00	114.551 3	164.40	164.00	160.41	3.194	3.226	3.273	3.352	81
82	164.00	115.965 5	166.40	166.00	162.41	3.194	3.226	3.273	3.352	82
83	166.00	117.379 7	168.40	168.00	164.41	3.194	3.226	3.274	3.353	83
84	168.00	118.793 9	170.40	170.00	166.41	3.195	3.226	3.274	3.353	84
85	170.00	120.208 1	172.40	172.00	168.41	3.195	3.226	3.274	3.354	85
86	172.00	121.622 4	174.40	174.00	170.41	3.195	3.227	3.275	3.354	86
87	174.00	123.036 6	176.40	176.00	172.41	3.195	3.227	3.275	3.355	87
88	176.00	124.450 8	178.40	178.00	174.41	3.195	3.227	3.275	3.355	88
89	178.00	125.865 0	180.40	180.00	176.41	3.195	3.227	3.275	3.356	89
90	180.00	127.279 2	182.40	182.00	178.41	3.195	3.227	3.276	3.356	90
91	182.00	128.693 4	184.40	184.00	180.41	3.195	3.228	3.276	3.357	91
92	184.00	130.107 6	186.40	186.00	182.41	3.195	3.228	3.276	3.357	92
93	186.00	131.521 9	188.40	188.00	184.41	3.196	3.228	3.277	3.358	93
94	188.00	132.936 1	190.40	190.00	186.41	3.196	3.228	3.277	3.358	94
95	190.00	134.350 3	192.40	192.00	188.41	3.196	3.228	3.277	3.358	95
96	192.00	135.764 5	194.40	194.00	190.41	3.196	3.228	3.277	3.359	96
97	194.00	137.178 7	196.40	196.00	192.41	3.196	3.229	3.278	3.359	97
98	196.00	138.592 9	198.40	198.00	194.41	3.196	3.229	3.278	3.360	98
99	198.00	140.007 1	200.40	200.00	196.41	3.196	3.229	3.278	3.360	99
100	200.00	141.421 4	202.40	202.00	198.41	3.196	3.229	3.278	3.361	100

表 9 45°内花键

模数 $m=2.5\text{ mm}$ 作用齿槽宽最小值 $E_{r\min}=3.927\text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{f\min}$	小径 D_i	实际齿槽宽最大值 $E_{r\max}=E_{r\min}+(T+\lambda)$				齿数 z
						4H	5H	6H	7H	
10	25.00	17.677 7	28.00	27.50	23.14	3.969	3.994	4.032	4.095	10
11	27.50	19.445 4	30.50	30.00	25.62	3.969	3.995	4.033	4.097	11
12	30.00	21.213 2	33.00	32.50	28.11	3.970	3.995	4.034	4.098	12
13	32.50	22.981 0	35.50	35.00	30.60	3.976	3.996	4.035	4.100	13
14	35.00	24.748 7	38.00	37.50	33.10	3.971	3.997	4.036	4.101	14
15	37.50	26.516 5	40.50	40.00	35.59	3.971	3.997	4.037	4.103	15
16	40.00	28.284 3	43.00	42.50	38.08	3.971	3.998	4.038	4.104	16
17	42.50	30.052 0	45.50	45.00	40.58	3.972	3.998	4.039	4.106	17
18	45.00	31.819 8	48.00	47.50	43.07	3.972	3.999	4.039	4.107	18
19	47.50	33.587 6	50.50	50.00	45.57	3.972	3.999	4.040	4.108	19
20	50.00	35.355 3	53.00	52.50	48.07	3.973	4.000	4.041	4.109	20
21	52.50	37.123 1	55.50	55.00	50.56	3.973	4.000	4.042	4.111	21
22	55.00	38.890 9	58.00	57.50	53.06	3.973	4.001	4.042	4.112	22
23	57.50	40.658 6	60.50	60.00	55.56	3.973	4.001	4.043	4.113	23
24	60.00	42.426 4	63.00	62.50	58.05	3.974	4.002	4.044	4.114	24
25	62.50	44.194 2	65.50	65.00	60.55	3.974	4.002	4.044	4.115	25
26	65.00	45.961 9	68.00	67.50	63.05	3.974	4.003	4.045	4.116	26
27	67.50	47.729 7	70.50	70.00	65.55	3.975	4.003	4.046	4.117	27
28	70.00	49.497 5	73.00	72.50	68.05	3.975	4.003	4.046	4.118	28
29	72.50	51.265 2	75.50	75.00	70.54	3.975	4.004	4.047	4.119	29
30	75.00	53.033 0	78.00	77.50	73.04	3.975	4.004	4.048	4.120	30
31	77.50	54.800 8	80.50	80.00	75.54	3.975	4.005	4.048	4.121	31
32	80.00	56.568 5	83.00	82.50	78.04	3.976	4.005	4.049	4.122	32
33	82.50	58.336 3	85.50	85.00	80.54	3.976	4.005	4.049	4.123	33
34	85.00	60.104 1	88.00	87.50	83.04	3.976	4.006	4.050	4.124	34
35	87.50	61.871 9	90.50	90.00	85.54	3.976	4.006	4.050	4.124	35
36	90.00	63.639 6	93.00	92.50	88.04	3.977	4.006	4.051	4.125	36
37	92.50	65.407 4	95.50	95.00	90.53	3.977	4.007	4.051	4.126	37
38	95.00	67.175 2	98.00	97.50	93.03	3.977	4.007	4.052	4.127	38
39	97.50	68.943 0	100.50	100.00	95.53	3.977	4.007	4.052	4.128	39
40	100.00	70.710 7	103.00	102.50	98.03	3.977	4.008	4.053	4.129	40
41	102.50	72.478 4	105.50	105.00	100.53	3.978	4.008	4.053	4.129	41
42	105.00	74.246 2	108.00	107.50	103.03	3.978	4.008	4.054	4.130	42
43	107.50	76.014 0	110.50	110.00	105.53	3.978	4.009	4.054	4.131	43
44	110.00	77.781 7	113.00	112.50	108.03	3.978	4.009	4.055	4.132	44
45	112.50	79.549 5	115.50	115.00	110.53	3.978	4.009	4.055	4.132	45
46	115.00	81.317 3	118.00	117.50	113.03	3.979	4.009	4.056	4.133	46
47	117.50	83.085 0	120.50	120.00	115.53	3.979	4.010	4.056	4.134	47
48	120.00	84.852 8	123.00	122.50	118.03	3.979	4.010	4.057	4.135	48
49	122.50	86.620 6	125.50	125.00	120.53	3.979	4.010	4.057	4.135	49
50	125.00	88.388 3	128.00	127.50	123.03	3.979	4.011	4.058	4.136	50
51	127.50	90.156 1	130.50	130.00	125.53	3.979	4.011	4.058	4.137	51
52	130.00	91.923 9	133.00	132.50	128.02	3.980	4.011	4.058	4.137	52
53	132.50	93.691 6	135.50	135.00	130.52	3.980	4.011	4.059	4.138	53
54	135.00	95.459 4	138.00	137.50	133.02	3.980	4.012	4.059	4.139	54
55	137.50	97.227 2	140.50	140.00	135.52	3.980	4.012	4.060	4.139	55

表 9.(续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a 圆齿根	渐开线终 止圆直径 $D_{Fi\ min}$	小径 D_s	实际齿槽宽最大值 $E_{max} = E_{r\ min} + (T + \lambda)$				齿数 z
						4H	5H	6H	7H	
56	140.00	98.994 9	143.00	142.50	138.02	3.980	4.012	4.060	4.140	56
57	142.50	100.762 7	145.50	145.00	140.52	3.980	4.012	4.061	4.141	57
58	145.00	102.530 5	148.00	147.50	143.02	3.981	4.013	4.061	4.141	58
59	147.50	104.298 2	150.50	150.00	145.52	3.981	4.013	4.061	4.142	59
60	150.00	106.066 0	153.00	152.50	148.02	3.981	4.013	4.062	4.143	60
61	152.50	107.833 8	155.50	155.00	150.52	3.981	4.014	4.062	4.143	61
62	155.00	109.601 5	158.00	157.50	153.02	3.981	4.014	4.063	4.144	62
63	157.50	111.369 3	160.50	160.00	155.52	3.981	4.014	4.063	4.145	63
64	160.00	113.137 1	163.00	162.50	158.02	3.982	4.014	4.063	4.145	64
65	162.50	114.904 8	165.50	165.00	160.52	3.982	4.014	4.064	4.146	65
66	165.00	116.672 6	168.00	167.50	163.02	3.982	4.015	4.064	4.146	66
67	167.50	118.440 4	170.50	170.00	165.52	3.982	4.015	4.064	4.147	67
68	170.00	120.208 1	173.00	172.50	168.02	3.982	4.015	4.065	4.148	68
69	172.50	121.975 9	175.50	175.00	170.52	3.982	4.015	4.065	4.148	69
70	175.00	123.743 7	178.00	177.50	173.02	3.982	4.016	4.066	4.149	70
71	177.50	125.511 4	180.50	180.00	175.52	3.983	4.016	4.066	4.149	71
72	180.00	127.279 2	183.00	182.50	178.02	3.983	4.016	4.066	4.150	72
73	182.50	129.047 0	185.50	185.00	180.52	3.983	4.016	4.067	4.150	73
74	185.00	130.814 7	188.00	187.50	183.02	3.983	4.017	4.067	4.151	74
75	187.50	132.582 5	190.50	190.00	185.52	3.983	4.017	4.067	4.152	75
76	190.00	134.350 3	193.00	192.50	188.02	3.983	4.017	4.068	4.152	76
77	192.50	136.118 1	195.50	195.00	190.52	3.983	4.017	4.068	4.153	77
78	195.00	137.885 8	198.00	197.50	193.02	3.984	4.017	4.068	4.153	78
79	197.50	139.653 6	200.50	200.00	195.52	3.984	4.018	4.069	4.154	79
80	200.00	141.421 4	203.00	202.50	198.02	3.984	4.018	4.069	4.154	80
81	202.50	143.189 1	205.50	205.00	200.52	3.984	4.018	4.069	4.155	81
82	205.00	144.956 9	208.00	207.50	203.02	3.984	4.018	4.070	4.155	82
83	207.50	146.724 7	210.50	210.00	205.52	3.984	4.019	4.070	4.156	83
84	210.00	148.492 4	213.00	212.50	208.02	3.984	4.019	4.070	4.156	84
85	212.50	150.260 2	215.50	215.00	210.51	3.984	4.019	4.071	4.157	85
86	215.00	152.028 0	218.00	217.50	213.01	3.985	4.019	4.071	4.157	86
87	217.50	153.795 7	220.50	220.00	215.51	3.985	4.019	4.071	4.158	87
88	220.00	155.563 5	223.00	222.50	218.01	3.985	4.020	4.072	4.158	88
89	222.50	157.331 3	225.50	225.00	220.51	3.985	4.020	4.072	4.159	89
90	225.00	159.099 0	228.00	227.50	223.01	3.985	4.020	4.072	4.159	90
91	227.50	160.866 8	230.50	230.00	225.51	3.985	4.020	4.073	4.160	91
92	230.00	162.634 6	233.00	232.50	228.01	3.985	4.020	4.073	4.160	92
93	232.50	164.402 3	235.50	235.00	230.51	3.985	4.021	4.073	4.161	93
94	235.00	166.170 1	238.00	237.50	233.01	3.986	4.021	4.074	4.161	94
95	237.50	167.937 9	240.50	240.00	235.51	3.986	4.021	4.074	4.162	95
96	240.00	169.705 6	243.00	242.50	238.01	3.986	4.021	4.074	4.162	96
97	242.50	171.473 4	245.50	245.00	240.51	3.986	4.021	4.074	4.163	97
98	245.00	173.241 2	248.00	247.50	243.01	3.986	4.022	4.075	4.163	98
99	247.50	175.008 9	250.50	250.00	245.51	3.986	4.022	4.075	4.164	99
100	250.00	176.776 7	253.00	252.50	248.01	3.986	4.022	4.075	4.164	100

表 10 45°外花键
模数 $m=0.25\text{ mm}$ 作用齿厚最大值 $S_{\max}=0.393\text{ mm}$ 单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_e 圆齿根	实际齿厚最小值 $S_{\min}=S_{r\max}-(T+\lambda)$				齿数 z
						4h	5h	6h	7h	
10	2.50	1.767 8	2.70	2.26	2.20	0.373	0.362	0.344	0.315	10
11	2.75	1.944 5	2.95	2.51	2.45	0.373	0.361	0.344	0.315	11
12	3.00	2.121 3	3.20	2.76	2.70	0.373	0.361	0.343	0.314	12
13	3.25	2.298 1	3.45	3.01	2.95	0.373	0.361	0.343	0.313	13
14	3.50	2.474 9	3.70	3.26	3.20	0.373	0.361	0.343	0.312	14
15	3.75	2.651 7	3.95	3.51	3.45	0.372	0.360	0.342	0.312	15
16	4.00	2.828 4	4.20	3.76	3.70	0.372	0.360	0.342	0.311	16
17	4.25	3.005 2	4.45	4.01	3.95	0.372	0.360	0.341	0.311	17
18	4.50	3.182 0	4.70	4.26	4.20	0.372	0.360	0.341	0.310	18
19	4.75	3.358 8	4.95	4.51	4.45	0.372	0.359	0.341	0.309	19
20	5.00	3.535 5	5.20	4.76	4.70	0.372	0.359	0.340	0.309	20
21	5.25	3.712 3	5.45	5.01	4.95	0.372	0.359	0.340	0.308	21
22	5.50	3.889 1	5.70	5.26	5.20	0.372	0.359	0.340	0.308	22
23	5.75	4.065 9	5.95	5.51	5.45	0.371	0.359	0.339	0.307	23
24	6.00	4.242 6	6.20	5.76	5.70	0.371	0.358	0.339	0.307	24
25	6.25	4.419 4	6.45	6.01	5.95	0.371	0.358	0.339	0.307	25
26	6.50	4.596 2	6.70	6.26	6.20	0.371	0.358	0.339	0.306	26
27	6.75	4.773 0	6.95	6.50	6.45	0.371	0.358	0.338	0.306	27
28	7.00	4.949 7	7.20	6.75	6.70	0.371	0.358	0.338	0.305	28
29	7.25	5.126 5	7.45	7.00	6.95	0.371	0.358	0.338	0.305	29
30	7.50	5.303 3	7.70	7.25	7.20	0.371	0.357	0.338	0.304	30
31	7.75	5.480 1	7.95	7.50	7.45	0.371	0.357	0.337	0.304	31
32	8.00	5.656 9	8.20	7.75	7.70	0.370	0.357	0.337	0.304	32
33	8.25	5.833 6	8.45	8.00	7.95	0.370	0.357	0.337	0.303	33
34	8.50	6.010 4	8.70	8.25	8.20	0.370	0.357	0.337	0.303	34
35	8.75	6.187 2	8.95	8.50	8.45	0.370	0.357	0.336	0.302	35
36	9.00	6.364 0	9.20	8.75	8.70	0.370	0.356	0.336	0.302	36
37	9.25	6.540 7	9.45	9.00	8.95	0.370	0.356	0.336	0.302	37
38	9.50	6.717 5	9.70	9.25	9.20	0.370	0.356	0.336	0.301	38
39	9.75	6.894 3	9.95	9.50	9.45	0.370	0.356	0.335	0.301	39
40	10.00	7.071 1	10.20	9.75	9.70	0.370	0.356	0.335	0.301	40
41	10.25	7.247 8	10.45	10.00	9.95	0.370	0.356	0.335	0.300	41
42	10.50	7.424 6	10.70	10.25	10.20	0.370	0.356	0.335	0.300	42
43	10.75	7.601 4	10.95	10.50	10.45	0.369	0.356	0.335	0.300	43
44	11.00	7.778 2	11.20	10.75	10.70	0.369	0.355	0.334	0.299	44
45	11.25	7.955 0	11.45	11.00	10.95	0.369	0.355	0.334	0.299	45
46	11.50	8.131 7	11.70	11.25	11.20	0.369	0.355	0.334	0.299	46
47	11.75	8.308 5	11.95	11.50	11.45	0.369	0.355	0.334	0.299	47
48	12.00	8.485 3	12.20	11.75	11.70	0.369	0.355	0.334	0.298	48
49	12.25	8.662 1	12.45	12.00	11.95	0.369	0.355	0.333	0.298	49
50	12.50	8.838 8	12.70	12.25	12.20	0.369	0.355	0.333	0.298	50
51	12.75	9.015 6	12.95	12.50	12.45	0.369	0.355	0.333	0.297	51
52	13.00	9.192 4	13.20	12.75	12.70	0.369	0.354	0.333	0.297	52
53	13.25	9.369 2	13.45	13.00	12.95	0.369	0.354	0.333	0.297	53
54	13.50	9.545 9	13.70	13.25	13.20	0.369	0.354	0.333	0.297	54
55	13.75	9.722 7	13.95	13.50	13.45	0.369	0.354	0.332	0.296	55

表.10.(续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{a1}	渐开线起 始圆直径 $D_{Fz\max}$	小径 D_{f1} 圆齿根	实际齿厚最小值 $S_{a10} = S_{v\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	14.00	9.899 5	14.20	13.75	13.70	0.369	0.354	0.332	0.296	56
57	14.25	10.076 3	14.45	14.00	13.95	0.368	0.354	0.332	0.296	57
58	14.50	10.253 0	14.70	14.25	14.20	0.368	0.354	0.332	0.295	58
59	14.75	10.429 8	14.95	14.50	14.45	0.368	0.354	0.332	0.295	59
60	15.00	10.606 6	15.20	14.75	14.70	0.368	0.354	0.332	0.295	60
61	15.25	10.783 4	15.45	15.00	14.95	0.368	0.353	0.331	0.295	61
62	15.50	10.960 2	15.70	15.25	15.20	0.368	0.353	0.331	0.294	62
63	15.75	11.136 9	15.95	15.50	15.45	0.368	0.353	0.331	0.294	63
64	16.00	11.313 7	16.20	15.75	15.70	0.368	0.353	0.331	0.294	64
65	16.25	11.490 5	16.45	16.00	15.95	0.368	0.353	0.331	0.294	65
66	16.50	11.667 3	16.70	16.25	16.20	0.368	0.353	0.331	0.293	66
67	16.75	11.844 0	16.95	16.50	16.45	0.368	0.353	0.331	0.293	67
68	17.00	12.020 8	17.20	16.75	16.70	0.368	0.353	0.330	0.293	68
69	17.25	12.197 6	17.45	17.00	16.95	0.368	0.353	0.330	0.293	69
70	17.50	12.374 4	17.70	17.25	17.20	0.368	0.353	0.330	0.293	70
71	17.75	12.551 1	17.95	17.50	17.45	0.368	0.353	0.330	0.292	71
72	18.00	12.727 9	18.20	17.75	17.70	0.368	0.352	0.330	0.292	72
73	18.25	12.904 7	18.45	18.00	17.95	0.367	0.352	0.330	0.292	73
74	18.50	13.081 5	18.70	18.25	18.20	0.367	0.352	0.330	0.292	74
75	18.75	13.258 3	18.95	18.50	18.45	0.367	0.352	0.329	0.291	75
76	19.00	13.435 0	19.20	18.75	18.70	0.367	0.352	0.329	0.291	76
77	19.25	13.611 8	19.45	19.00	18.95	0.367	0.352	0.329	0.291	77
78	19.50	13.788 6	19.70	19.25	19.20	0.367	0.352	0.329	0.291	78
79	19.75	13.965 4	19.95	19.50	19.45	0.367	0.352	0.329	0.290	79
80	20.00	14.142 1	20.20	19.75	19.70	0.367	0.352	0.329	0.290	80
81	20.25	14.318 9	20.45	20.00	19.95	0.367	0.352	0.329	0.290	81
82	20.50	14.495 7	20.70	20.25	20.20	0.367	0.352	0.328	0.290	82
83	20.75	14.672 5	20.95	20.50	20.45	0.367	0.351	0.328	0.290	83
84	21.00	14.849 2	21.20	20.75	20.70	0.367	0.351	0.328	0.289	84
85	21.25	15.026 0	21.45	21.00	20.95	0.367	0.351	0.328	0.289	85
86	21.50	15.202 8	21.70	21.25	21.20	0.367	0.351	0.328	0.289	86
87	21.75	15.379 6	21.95	21.50	21.45	0.367	0.351	0.328	0.289	87
88	22.00	15.556 3	22.20	21.75	21.70	0.367	0.351	0.328	0.289	88
89	22.25	15.733 1	22.45	22.00	21.95	0.367	0.351	0.328	0.288	89
90	22.50	15.909 9	22.70	22.25	22.20	0.367	0.351	0.327	0.288	90
91	22.75	16.086 7	22.95	22.50	22.45	0.367	0.351	0.327	0.288	91
92	23.00	16.263 5	23.20	22.75	22.70	0.366	0.351	0.327	0.288	92
93	23.25	16.440 2	23.45	23.00	22.95	0.366	0.351	0.327	0.288	93
94	23.50	16.617 0	23.70	23.25	23.20	0.366	0.351	0.327	0.287	94
95	23.75	16.793 8	23.95	23.50	23.45	0.366	0.351	0.327	0.287	95
96	24.00	16.970 6	24.20	23.75	23.70	0.366	0.350	0.327	0.287	96
97	24.25	17.147 3	24.45	24.00	23.95	0.366	0.350	0.327	0.287	97
98	24.50	17.324 1	24.70	24.25	24.20	0.366	0.350	0.326	0.287	98
99	24.75	17.500 9	24.95	24.50	24.45	0.366	0.350	0.326	0.287	99
100	25.00	17.677 7	25.20	24.75	24.70	0.366	0.350	0.326	0.286	100

表 11 45°外花键
模数 $m=0.5\text{ mm}$ 作用齿厚最大值 $S_{\max}=0.785\text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_e 圆齿根	实际齿厚最小值 $S_{\min}=S_{\max}-(T+\lambda)$				齿数 z
						4h	5h	6h	7h	
10	5.00	3.535 5	5.40	4.53	4.40	0.761	0.746	0.724	0.688	10
11	5.50	3.889 1	5.90	5.02	4.90	0.761	0.746	0.724	0.687	11
12	6.00	4.242 6	6.40	5.52	5.40	0.761	0.746	0.723	0.686	12
13	6.50	4.596 2	6.90	6.02	5.90	0.760	0.745	0.723	0.685	13
14	7.00	4.949 7	7.40	6.52	6.40	0.760	0.745	0.722	0.684	14
15	7.50	5.303 3	7.90	7.02	6.90	0.760	0.745	0.722	0.683	15
16	8.00	5.656 9	8.40	7.52	7.40	0.760	0.744	0.721	0.683	16
17	8.50	6.010 4	8.90	8.02	7.90	0.759	0.744	0.721	0.682	17
18	9.00	6.364 0	9.40	8.51	8.40	0.759	0.744	0.720	0.681	18
19	9.50	6.717 5	9.90	9.01	8.90	0.759	0.743	0.720	0.680	19
20	10.00	7.071 1	10.40	9.51	9.40	0.759	0.743	0.719	0.680	20
21	10.50	7.424 6	10.90	10.01	9.90	0.759	0.743	0.719	0.679	21
22	11.00	7.778 2	11.40	10.51	10.40	0.759	0.743	0.719	0.678	22
23	11.50	8.131 7	11.90	11.01	10.90	0.758	0.742	0.718	0.678	23
24	12.00	8.485 3	12.40	11.51	11.40	0.758	0.742	0.718	0.677	24
25	12.50	8.838 8	12.90	12.01	11.90	0.758	0.742	0.717	0.677	25
26	13.00	9.192 4	13.40	12.51	12.40	0.758	0.742	0.717	0.676	26
27	13.50	9.545 9	13.90	13.01	12.90	0.758	0.741	0.717	0.675	27
28	14.00	9.899 5	14.40	13.51	13.40	0.758	0.741	0.716	0.675	28
29	14.50	10.253 0	14.90	14.01	13.90	0.758	0.741	0.716	0.674	29
30	15.00	10.606 6	15.40	14.51	14.40	0.758	0.741	0.716	0.674	30
31	15.50	10.960 2	15.90	15.01	14.90	0.757	0.741	0.715	0.673	31
32	16.00	11.313 7	16.40	15.51	15.40	0.757	0.740	0.715	0.673	32
33	16.50	11.667 3	16.90	16.01	15.90	0.757	0.740	0.715	0.672	33
34	17.00	12.020 8	17.40	16.51	16.40	0.757	0.740	0.714	0.672	34
35	17.50	12.374 4	17.90	17.01	16.90	0.757	0.740	0.714	0.671	35
36	18.00	12.727 9	18.40	17.51	17.40	0.757	0.740	0.714	0.671	36
37	18.50	13.081 5	18.90	18.01	17.90	0.757	0.739	0.714	0.671	37
38	19.00	13.435 0	19.40	18.51	18.40	0.757	0.739	0.713	0.670	38
39	19.50	13.788 6	19.90	19.01	18.90	0.756	0.739	0.713	0.670	39
40	20.00	14.142 1	20.40	19.51	19.40	0.756	0.739	0.713	0.669	40
41	20.50	14.495 7	20.90	20.01	19.90	0.756	0.739	0.713	0.669	41
42	21.00	14.849 2	21.40	20.51	20.40	0.756	0.739	0.712	0.668	42
43	21.50	15.202 8	21.90	21.01	20.90	0.756	0.738	0.712	0.668	43
44	22.00	15.556 3	22.40	21.51	21.40	0.756	0.738	0.712	0.668	44
45	22.50	15.909 9	22.90	22.01	21.90	0.756	0.738	0.712	0.667	45
46	23.00	16.263 5	23.40	22.51	22.40	0.756	0.738	0.711	0.667	46
47	23.50	16.617 0	23.90	23.01	22.90	0.756	0.738	0.711	0.666	47
48	24.00	16.970 6	24.40	23.51	23.40	0.756	0.738	0.711	0.666	48
49	24.50	17.324 1	24.90	24.01	23.90	0.755	0.737	0.711	0.666	49
50	25.00	17.677 7	25.40	24.51	24.40	0.755	0.737	0.710	0.665	50
51	25.50	18.031 2	25.90	25.01	24.90	0.755	0.737	0.710	0.665	51
52	26.00	18.384 8	26.40	25.50	25.40	0.755	0.737	0.710	0.665	52
53	26.50	18.738 3	26.90	26.00	25.90	0.755	0.737	0.710	0.664	53
54	27.00	19.091 9	27.40	26.50	26.40	0.755	0.737	0.709	0.664	54
55	27.50	19.445 4	27.90	27.00	26.90	0.755	0.737	0.709	0.663	55

表 11 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{e1}	渐开线起 始圆直径 $D_{Fa\max}$	小径 D_{e2} 圆齿根	实际齿厚最小值 $S_{\min} = S_{v\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	28.00	19.799 0	28.40	27.50	27.40	0.755	0.736	0.709	0.663	56
57	28.50	20.152 5	28.90	28.00	27.90	0.755	0.736	0.709	0.663	57
58	29.00	20.506 1	29.40	28.50	28.40	0.755	0.736	0.709	0.662	58
59	29.50	20.859 6	29.90	29.00	28.90	0.755	0.736	0.708	0.662	59
60	30.00	21.213 2	30.40	29.50	29.40	0.754	0.736	0.708	0.662	60
61	30.50	21.566 8	30.90	30.00	29.90	0.754	0.736	0.708	0.661	61
62	31.00	21.920 3	31.40	30.50	30.40	0.754	0.736	0.708	0.661	62
63	31.50	22.273 9	31.90	31.00	30.90	0.754	0.736	0.708	0.661	63
64	32.00	22.627 4	32.40	31.50	31.40	0.754	0.735	0.707	0.660	64
65	32.50	22.981 0	32.90	32.00	31.90	0.754	0.735	0.707	0.660	65
66	33.00	23.334 5	33.40	32.50	32.40	0.754	0.735	0.707	0.660	66
67	33.50	23.688 1	33.90	33.00	32.90	0.754	0.735	0.707	0.660	67
68	34.00	24.041 6	34.40	33.50	33.40	0.754	0.735	0.707	0.659	68
69	34.50	24.395 2	34.90	34.00	33.90	0.754	0.735	0.706	0.659	69
70	35.00	24.748 7	35.40	34.50	34.40	0.754	0.735	0.706	0.659	70
71	35.50	25.102 3	35.90	35.00	34.90	0.754	0.735	0.706	0.658	71
72	36.00	25.455 8	36.40	35.50	35.40	0.754	0.734	0.706	0.658	72
73	36.50	25.809 4	36.90	36.00	35.90	0.753	0.734	0.706	0.658	73
74	37.00	26.162 9	37.40	36.50	36.40	0.753	0.734	0.705	0.657	74
75	37.50	26.516 5	37.90	37.00	36.90	0.753	0.734	0.705	0.657	75
76	38.00	26.870 1	38.40	37.50	37.40	0.753	0.734	0.705	0.657	76
77	38.50	27.223 6	38.90	38.00	37.90	0.753	0.734	0.705	0.657	77
78	39.00	27.577 2	39.40	38.50	38.40	0.753	0.734	0.705	0.656	78
79	39.50	27.930 7	39.90	39.00	38.90	0.753	0.734	0.705	0.656	79
80	40.00	28.284 3	40.40	39.50	39.40	0.753	0.734	0.704	0.656	80
81	40.50	28.637 8	40.90	40.00	39.90	0.753	0.733	0.704	0.655	81
82	41.00	28.991 4	41.40	40.50	40.40	0.753	0.733	0.704	0.655	82
83	41.50	29.344 9	41.90	41.00	40.90	0.753	0.733	0.704	0.655	83
84	42.00	29.698 5	42.40	41.50	41.40	0.753	0.733	0.704	0.655	84
85	42.50	30.052 0	42.90	42.00	41.90	0.753	0.733	0.704	0.654	85
86	43.00	30.405 6	43.40	42.50	42.40	0.753	0.733	0.703	0.654	86
87	43.50	30.759 1	43.90	43.00	42.90	0.753	0.733	0.703	0.654	87
88	44.00	31.112 7	44.40	43.50	43.40	0.752	0.733	0.703	0.654	88
89	44.50	31.466 3	44.90	44.00	43.90	0.752	0.733	0.703	0.653	89
90	45.00	31.819 8	45.40	44.50	44.40	0.752	0.732	0.703	0.653	90
91	45.50	32.173 4	45.90	45.00	44.90	0.752	0.732	0.703	0.653	91
92	46.00	32.526 9	46.40	45.50	45.40	0.752	0.732	0.702	0.653	92
93	46.50	32.880 5	46.90	46.00	45.90	0.752	0.732	0.702	0.652	93
94	47.00	33.234 0	47.40	46.50	46.40	0.752	0.732	0.702	0.652	94
95	47.50	33.587 6	47.90	47.00	46.90	0.752	0.732	0.702	0.652	95
96	48.00	33.941 1	48.40	47.50	47.40	0.752	0.732	0.702	0.652	96
97	48.50	34.294 7	48.90	48.00	47.90	0.752	0.732	0.702	0.651	97
98	49.00	34.648 2	49.40	48.50	48.40	0.752	0.732	0.701	0.651	98
99	49.50	35.001 8	49.90	49.00	48.90	0.752	0.732	0.701	0.651	99
100	50.00	35.355 3	50.40	49.50	49.40	0.752	0.731	0.701	0.651	100

表 12 45°外花键

模数 $m=0.75\text{ mm}$ 作用齿厚最大值 $S_{\text{max}}=1.178\text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{f\text{max}}$	小径 D_i 圆齿根	实际齿厚最小值 $S_{\text{min}}=S_{\text{max}}-(T+\lambda)$				齿数 z
						4h	5h	6h	7h	
10	7.50	5.303 3	8.10	6.79	6.60	1.150	1.133	1.108	1.066	10
11	8.25	5.833 6	8.85	7.54	7.35	1.150	1.133	1.108	1.065	11
12	9.00	6.364 0	9.60	8.28	8.10	1.150	1.132	1.107	1.064	12
13	9.75	6.894 3	10.35	9.03	8.85	1.149	1.132	1.106	1.063	13
14	10.50	7.424 6	11.10	9.78	9.60	1.149	1.132	1.106	1.062	14
15	11.25	7.955 0	11.85	10.53	10.35	1.149	1.131	1.105	1.061	15
16	12.00	8.485 3	12.60	11.27	11.10	1.149	1.131	1.104	1.060	16
17	12.75	9.015 6	13.35	12.02	11.85	1.148	1.131	1.104	1.059	17
18	13.50	9.545 9	14.10	12.77	12.60	1.148	1.130	1.103	1.059	18
19	14.25	10.076 3	14.85	13.52	13.35	1.148	1.130	1.103	1.058	19
20	15.00	10.606 6	15.60	14.27	14.10	1.148	1.130	1.102	1.057	20
21	15.75	11.136 9	16.35	15.02	14.85	1.148	1.129	1.102	1.056	21
22	16.50	11.667 3	17.10	15.77	15.60	1.147	1.129	1.101	1.055	22
23	17.25	12.197 6	17.85	16.52	16.35	1.147	1.129	1.101	1.055	23
24	18.00	12.727 9	18.60	17.27	17.10	1.147	1.128	1.100	1.054	24
25	18.75	13.258 3	19.35	18.02	17.85	1.147	1.128	1.100	1.053	25
26	19.50	13.788 6	20.10	18.76	18.60	1.147	1.128	1.100	1.053	26
27	20.25	14.318 9	20.85	19.51	19.35	1.147	1.128	1.099	1.052	27
28	21.00	14.849 2	21.60	20.26	20.10	1.146	1.127	1.099	1.051	28
29	21.75	15.379 6	22.35	21.01	20.85	1.146	1.127	1.099	1.051	29
30	22.50	15.909 9	23.10	21.76	21.60	1.146	1.127	1.098	1.050	30
31	23.25	16.440 2	23.85	22.51	22.35	1.146	1.127	1.098	1.050	31
32	24.00	16.970 6	24.60	23.26	23.10	1.146	1.126	1.097	1.049	32
33	24.75	17.500 9	25.35	24.01	23.85	1.146	1.126	1.097	1.048	33
34	25.50	18.031 2	26.10	24.76	24.60	1.146	1.126	1.097	1.048	34
35	26.25	18.561 6	26.85	25.51	25.35	1.145	1.126	1.096	1.047	35
36	27.00	19.091 9	27.60	26.26	26.10	1.145	1.125	1.096	1.047	36
37	27.75	19.622 3	28.35	27.01	26.85	1.145	1.125	1.096	1.046	37
38	28.50	20.152 6	29.10	27.76	27.60	1.145	1.125	1.095	1.046	38
39	29.25	20.682 9	29.85	28.51	28.35	1.145	1.125	1.095	1.045	39
40	30.00	21.213 2	30.60	29.26	29.10	1.145	1.125	1.095	1.045	40
41	30.75	21.743 5	31.35	30.01	29.85	1.145	1.125	1.094	1.044	41
42	31.50	22.273 9	32.10	30.76	30.60	1.145	1.124	1.094	1.044	42
43	32.25	22.804 2	32.85	31.51	31.35	1.144	1.124	1.094	1.043	43
44	33.00	23.334 5	33.60	32.26	32.10	1.144	1.124	1.094	1.043	44
45	33.75	23.864 9	34.35	33.01	32.85	1.144	1.124	1.093	1.042	45
46	34.50	24.395 2	35.10	33.76	33.60	1.144	1.124	1.093	1.042	46
47	35.25	24.925 5	35.85	34.51	34.35	1.144	1.123	1.093	1.042	47
48	36.00	25.455 8	36.60	35.26	35.10	1.144	1.123	1.092	1.041	48
49	36.75	25.986 2	37.35	36.01	35.85	1.144	1.123	1.092	1.041	49
50	37.50	26.516 5	38.10	36.76	36.60	1.144	1.123	1.092	1.040	50
51	38.25	27.046 8	38.85	37.51	37.35	1.144	1.123	1.092	1.040	51
52	39.00	27.577 2	39.60	38.26	38.10	1.143	1.123	1.091	1.039	52
53	39.75	28.107 5	40.35	39.01	38.85	1.143	1.122	1.091	1.039	53
54	40.50	28.637 8	41.10	39.76	39.60	1.143	1.122	1.091	1.039	54
55	41.25	29.168 2	41.85	40.51	40.35	1.143	1.122	1.091	1.038	55

表.12 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_f 圆齿根	实际齿厚最小值 $S_{\min} = S_{r\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	42.00	29.698 5	42.60	41.26	41.10	1.143	1.122	1.090	1.038	56
57	42.75	30.228 8	43.35	42.01	41.85	1.143	1.122	1.090	1.037	57
58	43.50	30.759 1	44.10	42.76	42.60	1.143	1.122	1.090	1.037	58
59	44.25	31.289 5	44.85	43.51	43.35	1.143	1.121	1.090	1.037	59
60	45.00	31.819 8	45.60	44.26	44.10	1.143	1.121	1.089	1.036	60
61	45.75	32.350 1	46.35	45.01	44.85	1.143	1.121	1.089	1.036	61
62	46.50	32.880 5	47.10	45.76	45.60	1.142	1.121	1.089	1.035	62
63	47.25	33.410 8	47.85	46.51	46.35	1.142	1.121	1.089	1.035	63
64	48.00	33.941 1	48.60	47.26	47.10	1.142	1.121	1.088	1.035	64
65	48.75	34.471 5	49.35	48.01	47.85	1.142	1.121	1.088	1.034	65
66	49.50	35.001 8	50.10	48.76	48.60	1.142	1.120	1.088	1.034	66
67	50.25	35.532 1	50.85	49.51	49.35	1.142	1.120	1.088	1.034	67
68	51.00	36.062 4	51.60	50.26	50.10	1.142	1.120	1.088	1.033	68
69	51.75	36.592 8	52.35	51.01	50.85	1.142	1.120	1.087	1.033	69
70	52.50	37.123 1	53.10	51.76	51.60	1.142	1.120	1.087	1.032	70
71	53.25	37.653 4	53.85	52.51	52.35	1.142	1.120	1.087	1.032	71
72	54.00	38.183 8	54.60	53.26	53.10	1.142	1.120	1.087	1.032	72
73	54.75	38.714 1	55.35	54.01	53.85	1.141	1.119	1.086	1.031	73
74	55.50	39.244 4	56.10	54.76	54.60	1.141	1.119	1.086	1.031	74
75	56.25	39.774 8	56.85	55.51	55.35	1.141	1.119	1.086	1.031	75
76	57.00	40.305 1	57.60	56.26	56.10	1.141	1.119	1.086	1.030	76
77	57.75	40.835 4	58.35	57.00	56.85	1.141	1.119	1.086	1.030	77
78	58.50	41.365 7	59.10	57.75	57.60	1.141	1.119	1.085	1.030	78
79	59.25	41.896 1	59.85	58.50	58.35	1.141	1.119	1.085	1.029	79
80	60.00	42.426 4	60.60	59.25	59.10	1.141	1.118	1.085	1.029	80
81	60.75	42.956 7	61.35	60.00	59.85	1.141	1.118	1.085	1.029	81
82	61.50	43.487 1	62.10	60.75	60.60	1.141	1.118	1.085	1.028	82
83	62.25	44.017 4	62.85	61.50	61.35	1.141	1.118	1.084	1.028	83
84	63.00	44.547 7	63.60	62.25	62.10	1.141	1.118	1.084	1.028	84
85	63.75	45.078 1	64.35	63.00	62.85	1.140	1.118	1.084	1.028	85
86	64.50	45.608 4	65.10	63.75	63.60	1.140	1.118	1.084	1.027	86
87	65.25	46.138 7	65.85	64.50	64.35	1.140	1.118	1.084	1.027	87
88	66.00	46.669 0	66.60	65.25	65.10	1.140	1.117	1.083	1.027	88
89	66.75	47.199 4	67.35	66.00	65.85	1.140	1.117	1.083	1.026	89
90	67.50	47.729 7	68.10	66.75	66.60	1.140	1.117	1.083	1.026	90
91	68.25	48.260 0	68.85	67.50	67.35	1.140	1.117	1.083	1.026	91
92	69.00	48.790 4	69.60	68.25	68.10	1.140	1.117	1.083	1.025	92
93	69.75	49.320 7	70.35	69.00	68.85	1.140	1.117	1.082	1.025	93
94	70.50	49.851 0	71.10	69.75	69.60	1.140	1.117	1.082	1.025	94
95	71.25	50.381 4	71.85	70.50	70.35	1.140	1.117	1.082	1.025	95
96	72.00	50.911 7	72.60	71.25	71.10	1.140	1.117	1.082	1.024	96
97	72.75	51.442 0	73.35	72.00	71.85	1.140	1.116	1.082	1.024	97
98	73.50	51.972 3	74.10	72.75	72.60	1.139	1.116	1.082	1.024	98
99	74.25	52.502 7	74.85	73.50	73.35	1.139	1.116	1.081	1.023	99
100	75.00	53.033 0	75.60	74.25	74.10	1.139	1.116	1.081	1.023	100

表 13 45°外花键
模数 $m = 1 \text{ mm}$ 作用齿厚最大值 $S_{\max} = 1.571 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 $D_{\text{外}}$	渐开线起 始圆直径 $D_{F\text{e max}}$	小径 $D_{\text{内}}$ 圆齿根	实际齿厚最小值 $S_{\min} = S_{\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
10	10.00	7.071 1	10.80	9.06	8.80	1.540	1.522	1.494	1.448	10
11	11.00	7.778 2	11.80	10.05	9.80	1.540	1.521	1.493	1.446	11
12	12.00	8.485 3	12.80	11.05	10.80	1.539	1.521	1.492	1.445	12
13	13.00	9.192 4	13.80	12.04	11.80	1.539	1.520	1.492	1.444	13
14	14.00	9.899 5	14.80	13.04	12.80	1.539	1.520	1.491	1.443	14
15	15.00	10.606 6	15.80	14.04	13.80	1.539	1.519	1.490	1.442	15
16	16.00	11.313 7	16.80	15.03	14.80	1.538	1.519	1.490	1.441	16
17	17.00	12.020 8	17.80	16.03	15.80	1.538	1.518	1.489	1.440	17
18	18.00	12.727 9	18.80	17.03	16.80	1.538	1.518	1.488	1.439	18
19	19.00	13.435 0	19.80	18.03	17.80	1.538	1.518	1.488	1.438	19
20	20.00	14.142 1	20.80	19.03	18.80	1.537	1.517	1.487	1.437	20
21	21.00	14.849 2	21.80	20.02	19.80	1.537	1.517	1.487	1.436	21
22	22.00	15.556 3	22.80	21.02	20.80	1.537	1.517	1.486	1.436	22
23	23.00	16.263 5	23.80	22.02	21.80	1.537	1.516	1.485	1.435	23
24	24.00	16.970 6	24.80	23.02	22.80	1.537	1.516	1.485	1.434	24
25	25.00	17.677 7	25.80	24.02	23.80	1.536	1.516	1.485	1.433	25
26	26.00	18.384 8	26.80	25.02	24.80	1.536	1.516	1.484	1.433	26
27	27.00	19.091 9	27.80	26.02	25.80	1.536	1.515	1.484	1.432	27
28	28.00	19.799 0	28.80	27.02	26.80	1.536	1.515	1.484	1.431	28
29	29.00	20.506 1	29.80	28.02	27.80	1.536	1.515	1.483	1.430	29
30	30.00	21.213 2	30.80	29.02	28.80	1.536	1.514	1.483	1.430	30
31	31.00	21.920 3	31.80	30.02	29.80	1.535	1.514	1.482	1.429	31
32	32.00	22.627 4	32.80	31.02	30.80	1.535	1.514	1.482	1.429	32
33	33.00	23.334 5	33.80	32.02	31.80	1.535	1.514	1.481	1.428	33
34	34.00	24.041 6	34.80	33.02	32.80	1.535	1.513	1.481	1.427	34
35	35.00	24.748 7	35.80	34.01	33.80	1.535	1.513	1.481	1.427	35
36	36.00	25.455 8	36.80	35.01	34.80	1.535	1.513	1.480	1.426	36
37	37.00	26.162 9	37.80	36.01	35.80	1.534	1.513	1.480	1.425	37
38	38.00	26.870 0	38.80	37.01	36.80	1.534	1.512	1.480	1.425	38
39	39.00	27.577 1	39.80	38.01	37.80	1.534	1.512	1.479	1.424	39
40	40.00	28.284 2	40.80	39.01	38.80	1.534	1.512	1.479	1.424	40
41	41.00	28.991 4	41.80	40.01	39.80	1.534	1.512	1.479	1.423	41
42	42.00	29.698 5	42.80	41.01	40.80	1.534	1.512	1.478	1.423	42
43	43.00	30.405 6	43.80	42.01	41.80	1.534	1.511	1.478	1.422	43
44	44.00	31.112 7	44.80	43.01	42.80	1.534	1.511	1.478	1.422	44
45	45.00	31.819 8	45.80	44.01	43.80	1.533	1.511	1.477	1.421	45
46	46.00	32.526 9	46.80	45.01	44.80	1.533	1.511	1.477	1.421	46
47	47.00	33.234 0	47.80	46.01	45.80	1.533	1.511	1.477	1.420	47
48	48.00	33.941 1	48.80	47.01	46.80	1.533	1.510	1.476	1.420	48
49	49.00	34.648 2	49.80	48.01	47.80	1.533	1.510	1.476	1.419	49
50	50.00	35.355 3	50.80	49.01	48.80	1.533	1.510	1.476	1.419	50
51	51.00	36.062 4	51.80	50.01	49.80	1.533	1.510	1.475	1.418	51
52	52.00	36.769 6	52.80	51.01	50.80	1.533	1.510	1.475	1.418	52
53	53.00	37.476 7	53.80	52.01	51.80	1.532	1.509	1.475	1.417	53
54	54.00	38.183 8	54.80	53.01	52.80	1.532	1.509	1.475	1.417	54
55	55.00	38.890 9	55.80	54.01	53.80	1.532	1.509	1.474	1.416	55

表.13 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_a 圆齿根	实际齿厚最小值 $S_{\min} = S_{r\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	56.00	39.598 0	56.80	55.01	54.80	1.532	1.509	1.474	1.416	56
57	57.00	40.305 1	57.80	56.01	55.80	1.532	1.509	1.474	1.415	57
58	58.00	41.012 2	58.80	57.01	56.80	1.532	1.508	1.473	1.415	58
59	59.00	41.719 3	59.80	58.01	57.80	1.532	1.508	1.473	1.415	59
60	60.00	42.426 4	60.80	59.01	58.80	1.532	1.508	1.473	1.414	60
61	61.00	43.133 5	61.80	60.01	59.80	1.532	1.508	1.473	1.414	61
62	62.00	43.840 6	62.80	61.01	60.80	1.531	1.508	1.472	1.413	62
63	63.00	44.547 7	63.80	62.01	61.80	1.531	1.508	1.472	1.413	63
64	64.00	45.254 8	64.80	63.01	62.80	1.531	1.507	1.472	1.412	64
65	65.00	45.961 9	65.80	64.01	63.80	1.531	1.507	1.472	1.412	65
66	66.00	46.669 0	66.80	65.01	64.80	1.531	1.507	1.471	1.412	66
67	67.00	47.376 2	67.80	66.01	65.80	1.531	1.507	1.471	1.411	67
68	68.00	48.083 3	68.80	67.01	66.80	1.531	1.507	1.471	1.411	68
69	69.00	48.790 4	69.80	68.01	67.80	1.531	1.507	1.471	1.410	69
70	70.00	49.497 5	70.80	69.01	68.80	1.531	1.506	1.470	1.410	70
71	71.00	50.204 6	71.80	70.01	69.80	1.530	1.506	1.470	1.410	71
72	72.00	50.911 7	72.80	71.01	70.80	1.530	1.506	1.470	1.409	72
73	73.00	51.618 8	73.80	72.01	71.80	1.530	1.506	1.470	1.409	73
74	74.00	52.325 9	74.80	73.01	72.80	1.530	1.506	1.469	1.408	74
75	75.00	53.033 0	75.80	74.01	73.80	1.530	1.506	1.469	1.408	75
76	76.00	53.740 1	76.80	75.01	74.80	1.530	1.506	1.469	1.408	76
77	77.00	54.447 2	77.80	76.01	75.80	1.530	1.505	1.469	1.407	77
78	78.00	55.154 3	78.80	77.01	76.80	1.530	1.505	1.468	1.407	78
79	79.00	55.861 4	79.80	78.01	77.80	1.530	1.505	1.468	1.407	79
80	80.00	56.568 5	80.80	79.01	78.80	1.530	1.505	1.468	1.406	80
81	81.00	57.275 6	81.80	80.01	79.80	1.530	1.505	1.468	1.406	81
82	82.00	57.982 8	82.80	81.01	80.80	1.529	1.505	1.467	1.405	82
83	83.00	58.689 9	83.80	82.01	81.80	1.529	1.505	1.467	1.405	83
84	84.00	59.397 0	84.80	83.01	82.80	1.529	1.504	1.467	1.405	84
85	85.00	60.104 1	85.80	84.01	83.80	1.529	1.504	1.467	1.404	85
86	86.00	60.811 2	86.80	85.01	84.80	1.529	1.504	1.467	1.404	86
87	87.00	61.518 3	87.80	86.01	85.80	1.529	1.504	1.466	1.404	87
88	88.00	62.225 4	88.80	87.01	86.80	1.529	1.504	1.466	1.403	88
89	89.00	62.932 5	89.80	88.01	87.80	1.529	1.504	1.466	1.403	89
90	90.00	63.639 6	90.80	89.01	88.80	1.529	1.504	1.466	1.403	90
91	91.00	64.346 7	91.80	90.01	89.80	1.529	1.503	1.466	1.402	91
92	92.00	65.053 8	92.80	91.01	90.80	1.529	1.503	1.465	1.402	92
93	93.00	65.760 9	93.80	92.01	91.80	1.529	1.503	1.465	1.402	93
94	94.00	66.468 0	94.80	93.01	92.80	1.528	1.503	1.465	1.401	94
95	95.00	67.175 1	95.80	94.01	93.80	1.528	1.503	1.465	1.401	95
96	96.00	67.882 2	96.80	95.01	94.80	1.528	1.503	1.465	1.401	96
97	97.00	68.589 4	97.80	96.01	95.80	1.528	1.503	1.464	1.400	97
98	98.00	69.296 5	98.80	97.01	96.80	1.528	1.503	1.464	1.400	98
99	99.00	70.003 6	99.80	98.01	97.80	1.528	1.502	1.464	1.400	99
100	100.00	70.710 7	100.80	99.01	98.80	1.528	1.502	1.464	1.399	100

表 14 45°外花键

模数 $m = 1.25 \text{ mm}$ 作用齿厚最大值 $S_{\max} = 1.963 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 $D_{\text{外}}$	渐开线起 始圆直径 $D_{F_{\text{e max}}}$	小径 $D_{\text{内}}$ 圆齿根	实际齿厚最小值 $S_{\min} = S_{\text{e max}} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
10	12.50	8.838 8	13.50	11.32	11.00	1.930	1.910	1.881	1.831	10
11	13.75	9.722 7	14.75	12.56	12.25	1.930	1.910	1.880	1.829	11
12	15.00	10.606 6	16.00	13.81	13.50	1.930	1.909	1.879	1.828	12
13	16.25	11.490 5	17.25	15.05	14.75	1.929	1.909	1.878	1.827	13
14	17.50	12.374 4	18.50	16.30	16.00	1.929	1.908	1.877	1.826	14
15	18.75	13.258 3	19.75	17.54	17.25	1.929	1.908	1.877	1.825	15
16	20.00	14.142 1	21.00	18.79	18.50	1.928	1.907	1.876	1.823	16
17	21.25	15.026 0	22.25	20.04	19.75	1.928	1.907	1.875	1.822	17
18	22.50	15.909 9	23.50	21.29	21.00	1.928	1.907	1.875	1.821	18
19	23.75	16.793 8	24.75	22.53	22.25	1.928	1.906	1.874	1.820	19
20	25.00	17.677 7	26.00	23.78	23.50	1.927	1.906	1.873	1.819	20
21	26.25	18.561 6	27.25	25.03	24.75	1.927	1.906	1.873	1.819	21
22	27.50	19.445 4	28.50	26.28	26.00	1.927	1.905	1.872	1.818	22
23	28.75	20.329 3	29.75	27.53	27.25	1.927	1.905	1.872	1.817	23
24	30.00	21.213 2	31.00	28.78	28.50	1.927	1.904	1.871	1.816	24
25	31.25	22.097 1	32.25	30.03	29.75	1.926	1.904	1.871	1.815	25
26	32.50	22.981 0	33.50	31.27	31.00	1.926	1.904	1.870	1.814	26
27	33.75	23.864 9	34.75	32.52	32.25	1.926	1.904	1.870	1.814	27
28	35.00	24.748 7	36.00	33.77	33.50	1.926	1.903	1.869	1.813	28
29	36.25	25.632 6	37.25	35.02	34.75	1.926	1.903	1.869	1.812	29
30	37.50	26.516 5	38.50	36.27	36.00	1.925	1.903	1.868	1.811	30
31	38.75	27.400 4	39.75	37.52	37.25	1.925	1.902	1.868	1.811	31
32	40.00	28.284 3	41.00	38.77	38.50	1.925	1.902	1.868	1.810	32
33	41.25	29.168 2	42.25	40.02	39.75	1.925	1.902	1.867	1.809	33
34	42.50	30.052 0	43.50	41.27	41.00	1.925	1.902	1.867	1.809	34
35	43.75	30.935 9	44.75	42.52	42.25	1.925	1.901	1.866	1.808	35
36	45.00	31.819 8	46.00	43.77	43.50	1.924	1.901	1.866	1.807	36
37	46.25	32.703 7	47.25	45.02	44.75	1.924	1.901	1.865	1.807	37
38	47.50	33.587 6	48.50	46.27	46.00	1.924	1.901	1.865	1.806	38
39	48.75	34.471 5	49.75	47.52	47.25	1.924	1.900	1.865	1.805	39
40	50.00	35.355 3	51.00	48.77	48.50	1.924	1.900	1.864	1.805	40
41	51.25	36.239 2	52.25	50.02	49.75	1.924	1.900	1.864	1.804	41
42	52.50	37.123 1	53.50	51.27	51.00	1.924	1.900	1.864	1.804	42
43	53.75	38.007 0	54.75	52.51	52.25	1.923	1.899	1.863	1.803	43
44	55.00	38.890 9	56.00	53.76	53.50	1.923	1.899	1.863	1.802	44
45	56.25	39.774 8	57.25	55.01	54.75	1.923	1.899	1.863	1.802	45
46	57.50	40.658 6	58.50	56.26	56.00	1.923	1.899	1.862	1.801	46
47	58.75	41.542 5	59.75	57.51	57.25	1.923	1.898	1.862	1.801	47
48	60.00	42.426 4	61.00	58.76	58.50	1.923	1.898	1.861	1.800	48
49	61.25	43.310 3	62.25	60.01	59.75	1.923	1.898	1.861	1.800	49
50	62.50	44.194 2	63.50	61.26	61.00	1.922	1.898	1.861	1.799	50
51	63.75	45.078 1	64.75	62.51	62.25	1.922	1.898	1.860	1.799	51
52	65.00	45.961 9	66.00	63.76	63.50	1.922	1.897	1.860	1.798	52
53	66.25	46.845 8	67.25	65.01	64.75	1.922	1.897	1.860	1.798	53
54	67.50	47.729 7	68.50	66.26	66.00	1.922	1.897	1.860	1.797	54
55	68.75	48.613 6	69.75	67.51	67.25	1.922	1.897	1.859	1.797	55

表 14.(续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_d	渐开线起 始圆直径 $D_{Fa \max}$	小径 D_a 圆齿根	实际齿厚最小值 $S_{\min} = S_{v \max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	70.00	49.497 5	71.00	68.76	68.50	1.922	1.897	1.859	1.796	56
57	71.25	50.381 4	72.25	70.01	69.75	1.922	1.896	1.859	1.796	57
58	72.50	51.265 2	73.50	71.26	71.00	1.921	1.896	1.858	1.795	58
59	73.75	52.149 1	74.75	72.51	72.25	1.921	1.896	1.858	1.795	59
60	75.00	53.033 0	76.00	73.76	73.50	1.921	1.896	1.858	1.794	60
61	76.25	53.916 9	77.25	75.01	74.75	1.921	1.896	1.857	1.794	61
62	77.50	54.800 8	78.50	76.26	76.00	1.921	1.895	1.857	1.793	62
63	78.75	55.684 7	79.75	77.51	77.25	1.921	1.895	1.857	1.793	63
64	80.00	56.568 5	81.00	78.76	78.50	1.921	1.895	1.857	1.792	64
65	81.25	57.452 4	82.25	80.01	79.75	1.921	1.895	1.856	1.792	65
66	82.50	58.336 3	83.50	81.26	81.00	1.920	1.895	1.856	1.791	66
67	83.75	59.220 2	84.75	82.51	82.25	1.920	1.895	1.856	1.791	67
68	85.00	60.104 1	86.00	83.76	83.50	1.920	1.894	1.855	1.791	68
69	86.25	60.988 0	87.25	85.01	84.75	1.920	1.894	1.855	1.790	69
70	87.50	61.871 8	88.50	86.26	86.00	1.920	1.894	1.855	1.790	70
71	88.75	62.755 7	89.75	87.51	87.25	1.920	1.894	1.855	1.789	71
72	90.00	63.639 6	91.00	88.76	88.50	1.920	1.894	1.854	1.789	72
73	91.25	64.523 5	92.25	90.01	89.75	1.920	1.893	1.854	1.788	73
74	92.50	65.407 4	93.50	91.26	91.00	1.920	1.893	1.854	1.788	74
75	93.75	66.291 3	94.75	92.51	92.25	1.920	1.893	1.854	1.788	75
76	95.00	67.175 1	96.00	93.76	93.50	1.919	1.893	1.853	1.787	76
77	96.25	68.059 0	97.25	95.01	94.75	1.919	1.893	1.853	1.787	77
78	97.50	68.942 9	98.50	96.26	96.00	1.919	1.893	1.853	1.786	78
79	98.75	69.826 8	99.75	97.51	97.25	1.919	1.893	1.853	1.786	79
80	100.00	70.710 7	101.00	98.76	98.50	1.919	1.892	1.852	1.786	80
81	101.25	71.594 6	102.25	100.01	99.75	1.919	1.892	1.852	1.785	81
82	102.50	72.478 4	103.50	101.26	101.00	1.919	1.892	1.852	1.785	82
83	103.75	73.362 3	104.75	102.51	102.25	1.919	1.892	1.852	1.784	83
84	105.00	74.246 2	106.00	103.76	103.50	1.919	1.892	1.851	1.784	84
85	106.25	75.130 1	107.25	105.01	104.75	1.919	1.892	1.851	1.784	85
86	107.50	76.014 0	108.50	106.26	106.00	1.918	1.891	1.851	1.783	86
87	108.75	76.897 9	109.75	107.51	107.25	1.918	1.891	1.851	1.783	87
88	110.00	77.781 7	111.00	108.76	108.50	1.918	1.891	1.850	1.783	88
89	111.25	78.665 6	112.25	110.01	109.75	1.918	1.891	1.850	1.782	89
90	112.50	79.549 5	113.50	111.26	111.00	1.918	1.891	1.850	1.782	90
91	113.75	80.433 4	114.75	112.51	112.25	1.918	1.891	1.850	1.781	91
92	115.00	81.317 3	116.00	113.76	113.50	1.918	1.891	1.849	1.781	92
93	116.25	82.201 2	117.25	115.01	114.75	1.918	1.890	1.849	1.781	93
94	117.50	83.085 0	118.50	116.26	116.00	1.918	1.890	1.849	1.780	94
95	118.75	83.968 9	119.75	117.51	117.25	1.918	1.890	1.849	1.780	95
96	120.00	84.852 8	121.00	118.76	118.50	1.918	1.890	1.849	1.780	96
97	121.25	85.736 7	122.25	120.01	119.75	1.917	1.890	1.848	1.779	97
98	122.50	86.620 6	123.50	121.26	121.00	1.917	1.890	1.848	1.779	98
99	123.75	87.504 5	124.75	122.51	122.25	1.917	1.890	1.848	1.779	99
100	125.00	88.388 3	126.00	123.76	123.50	1.917	1.889	1.848	1.778	100

表 15 45°外花键
模数 $m = 1.5 \text{ mm}$ 作用齿厚最大值 $S_{\max} = 2.356 \text{ mm}$ 单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{f_{\max}}$	小径 D_e 圆齿根	实际齿厚最小值 $S_{\min} = S_{\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
10	15.00	10.606 6	16.20	13.58	13.20	2.321	2.300	2.268	2.215	10
11	16.50	11.667 3	17.70	15.07	14.70	2.321	2.299	2.267	2.214	11
12	18.00	12.727 9	19.20	16.57	16.20	2.320	2.299	2.266	2.212	12
13	19.50	13.788 6	20.70	18.06	17.70	2.320	2.298	2.265	2.211	13
14	21.00	14.849 2	22.20	19.56	19.20	2.320	2.298	2.265	2.210	14
15	22.50	15.909 9	23.70	21.05	20.70	2.319	2.297	2.264	2.208	15
16	24.00	16.970 6	25.20	22.55	22.20	2.319	2.297	2.263	2.207	16
17	25.50	18.031 2	26.70	24.05	23.70	2.319	2.296	2.262	2.206	17
18	27.00	19.091 9	28.20	25.54	25.20	2.318	2.296	2.262	2.205	18
19	28.50	20.152 5	29.70	27.04	26.70	2.318	2.295	2.261	2.204	19
20	30.00	21.213 2	31.20	28.54	28.20	2.318	2.295	2.260	2.203	20
21	31.50	22.273 9	32.70	30.04	29.70	2.318	2.295	2.260	2.202	21
22	33.00	23.334 5	34.20	31.54	31.20	2.317	2.294	2.259	2.201	22
23	34.50	24.395 2	35.70	33.03	32.70	2.317	2.294	2.259	2.200	23
24	36.00	25.455 8	37.20	34.53	34.20	2.317	2.293	2.258	2.199	24
25	37.50	26.516 5	38.70	36.03	35.70	2.317	2.293	2.258	2.198	25
26	39.00	27.577 2	40.20	37.53	37.20	2.317	2.293	2.257	2.198	26
27	40.50	28.637 8	41.70	39.03	38.70	2.316	2.292	2.256	2.197	27
28	42.00	29.698 5	43.20	40.53	40.20	2.316	2.292	2.256	2.196	28
29	43.50	30.759 1	44.70	42.03	41.70	2.316	2.292	2.255	2.195	29
30	45.00	31.819 8	46.20	43.53	43.20	2.316	2.291	2.255	2.194	30
31	46.50	32.880 5	47.70	45.02	44.70	2.316	2.291	2.255	2.194	31
32	48.00	33.941 1	49.20	46.52	46.20	2.315	2.291	2.254	2.193	32
33	49.50	35.001 8	50.70	48.02	47.70	2.315	2.291	2.254	2.192	33
34	51.00	36.062 4	52.20	49.52	49.20	2.315	2.290	2.253	2.191	34
35	52.50	37.123 1	53.70	51.02	50.70	2.315	2.290	2.253	2.191	35
36	54.00	38.183 8	55.20	52.52	52.20	2.315	2.290	2.252	2.190	36
37	55.50	39.244 4	56.70	54.02	53.70	2.314	2.289	2.252	2.189	37
38	57.00	40.305 1	58.20	55.52	55.20	2.314	2.289	2.251	2.189	38
39	58.50	41.365 7	59.70	57.02	56.70	2.314	2.289	2.251	2.188	39
40	60.00	42.426 4	61.20	58.52	58.20	2.314	2.289	2.251	2.187	40
41	61.50	43.487 1	62.70	60.02	59.70	2.314	2.288	2.250	2.187	41
42	63.00	44.547 7	64.20	61.52	61.20	2.314	2.288	2.250	2.186	42
43	64.50	45.608 4	65.70	63.02	62.70	2.313	2.288	2.249	2.185	43
44	66.00	46.669 0	67.20	64.52	64.20	2.313	2.288	2.249	2.185	44
45	67.50	47.729 7	68.70	66.02	65.70	2.313	2.287	2.249	2.184	45
46	69.00	48.790 4	70.20	67.52	67.20	2.313	2.287	2.248	2.184	46
47	70.50	49.851 0	71.70	69.02	68.70	2.313	2.287	2.248	2.183	47
48	72.00	50.911 7	73.20	70.52	70.20	2.313	2.287	2.248	2.182	48
49	73.50	51.972 3	74.70	72.02	71.70	2.313	2.286	2.247	2.182	49
50	75.00	53.033 0	76.20	73.52	73.20	2.312	2.286	2.247	2.181	50
51	76.50	54.093 7	77.70	75.02	74.70	2.312	2.286	2.246	2.181	51
52	78.00	55.154 3	79.20	76.51	76.20	2.312	2.286	2.246	2.180	52
53	79.50	56.215 0	80.70	78.01	77.70	2.312	2.286	2.246	2.180	53
54	81.00	57.275 6	82.20	79.51	79.20	2.312	2.285	2.245	2.179	54
55	82.50	58.336 3	83.70	81.01	80.70	2.312	2.285	2.245	2.178	55

表 15 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{Fa \max}$	小径 D_f 圆齿根	实际齿厚最小值 $S_{\min} = S_{r \max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	84.00	59.397 0	85.20	82.51	82.20	2.312	2.285	2.245	2.178	56
57	85.50	60.457 6	86.70	84.01	83.70	2.312	2.285	2.244	2.177	57
58	87.00	61.518 3	88.20	85.51	85.20	2.311	2.284	2.244	2.177	58
59	88.50	62.578 9	89.70	87.01	86.70	2.311	2.284	2.244	2.176	59
60	90.00	63.639 6	91.20	88.51	88.20	2.311	2.284	2.244	2.176	60
61	91.50	64.700 3	92.70	90.01	89.70	2.311	2.284	2.243	2.175	61
62	93.00	65.760 9	94.20	91.51	91.20	2.311	2.284	2.243	2.175	62
63	94.50	66.821 6	95.70	93.01	92.70	2.311	2.283	2.243	2.174	63
64	96.00	67.882 2	97.20	94.51	94.20	2.311	2.283	2.242	2.174	64
65	97.50	68.942 9	98.70	96.01	95.70	2.311	2.283	2.242	2.173	65
66	99.00	70.003 6	100.20	97.51	97.20	2.310	2.283	2.242	2.173	66
67	100.50	71.064 2	101.70	99.01	98.70	2.310	2.283	2.241	2.172	67
68	102.00	72.124 9	103.20	100.51	100.20	2.310	2.283	2.241	2.172	68
69	103.50	73.185 5	104.70	102.01	101.70	2.310	2.282	2.241	2.172	69
70	105.00	74.246 2	106.20	103.51	103.20	2.310	2.282	2.240	2.171	70
71	106.50	75.306 9	107.70	105.01	104.70	2.310	2.282	2.240	2.171	71
72	108.00	76.367 5	109.20	106.51	106.20	2.310	2.282	2.240	2.170	72
73	109.50	77.428 2	110.70	108.01	107.70	2.310	2.282	2.240	2.170	73
74	111.00	78.488 8	112.20	109.51	109.20	2.309	2.281	2.239	2.169	74
75	112.50	79.549 5	113.70	111.01	110.70	2.309	2.281	2.239	2.169	75
76	114.00	80.610 2	115.20	112.51	112.20	2.309	2.281	2.239	2.168	76
77	115.50	81.670 8	116.70	114.01	113.70	2.309	2.281	2.239	2.168	77
78	117.00	82.731 5	118.20	115.51	115.20	2.309	2.281	2.238	2.167	78
79	118.50	83.792 2	119.70	117.01	116.70	2.309	2.281	2.238	2.167	79
80	120.00	84.852 8	121.20	118.51	118.20	2.309	2.280	2.238	2.167	80
81	121.50	85.913 5	122.70	120.01	119.70	2.309	2.280	2.237	2.166	81
82	123.00	86.974 1	124.20	121.51	121.20	2.309	2.280	2.237	2.166	82
83	124.50	88.034 8	125.70	123.01	122.70	2.308	2.280	2.237	2.165	83
84	126.00	89.095 5	127.20	124.51	124.20	2.308	2.280	2.237	2.165	84
85	127.50	90.156 1	128.70	126.01	125.70	2.308	2.280	2.236	2.164	85
86	129.00	91.216 8	130.20	127.51	127.20	2.308	2.279	2.236	2.164	86
87	130.50	92.277 4	131.70	129.01	128.70	2.308	2.279	2.236	2.164	87
88	132.00	93.338 1	133.20	130.51	130.20	2.308	2.279	2.236	2.163	88
89	133.50	94.398 8	134.70	132.01	131.70	2.308	2.279	2.235	2.163	89
90	135.00	95.459 4	136.20	133.51	133.20	2.308	2.279	2.235	2.162	90
91	136.50	96.520 1	137.70	135.01	134.70	2.308	2.279	2.235	2.162	91
92	138.00	97.580 7	139.20	136.51	136.20	2.308	2.278	2.235	2.162	92
93	139.50	98.641 4	140.70	138.01	137.70	2.307	2.278	2.234	2.161	93
94	141.00	99.702 1	142.20	139.51	139.20	2.307	2.278	2.234	2.161	94
95	142.50	100.762 7	143.70	141.01	140.70	2.307	2.278	2.234	2.160	95
96	144.00	101.823 4	145.20	142.51	142.20	2.307	2.278	2.234	2.160	96
97	145.50	102.884 0	146.70	144.01	143.70	2.307	2.278	2.233	2.160	97
98	147.00	103.944 7	148.20	145.51	145.20	2.307	2.277	2.233	2.159	98
99	148.50	105.005 4	149.70	147.01	146.70	2.307	2.277	2.233	2.159	99
100	150.00	106.066 0	151.20	148.51	148.20	2.307	2.277	2.233	2.159	100

表 16 45°外花键

模数 $m = 1.75 \text{ mm}$ 作用齿厚最大值 $S_{\max} = 2.749 \text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_e	渐开线起 始圆直径 $D_{Fa \max}$	小径 D_a 圆齿根	实际齿厚最小值 $S_{\min} = S_{\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
10	17.50	12.374 4	18.90	15.85	15.40	2.712	2.689	2.656	2.600	10
11	19.25	13.611 8	20.65	17.59	17.15	2.711	2.689	2.655	2.599	11
12	21.00	14.849 2	22.40	19.33	18.90	2.711	2.688	2.654	2.597	12
13	22.75	16.086 7	24.15	21.07	20.65	2.711	2.688	2.653	2.596	13
14	24.50	17.324 1	25.90	22.82	22.40	2.710	2.687	2.652	2.594	14
15	26.25	18.561 6	27.65	24.56	24.15	2.710	2.687	2.652	2.593	15
16	28.00	19.799 0	29.40	26.31	25.90	2.710	2.686	2.651	2.592	16
17	29.75	21.036 4	31.15	28.05	27.65	2.709	2.686	2.650	2.591	17
18	31.50	22.273 9	32.90	29.80	29.40	2.709	2.685	2.649	2.590	18
19	33.25	23.511 3	34.65	31.55	31.15	2.709	2.685	2.649	2.589	19
20	35.00	24.748 7	36.40	33.30	32.90	2.709	2.684	2.648	2.588	20
21	36.75	25.986 2	38.15	35.04	34.65	2.708	2.684	2.647	2.586	21
22	38.50	27.223 6	39.90	36.79	36.40	2.708	2.683	2.647	2.585	22
23	40.25	28.461 0	41.65	38.54	38.15	2.708	2.683	2.646	2.584	23
24	42.00	29.698 5	43.40	40.29	39.90	2.708	2.683	2.645	2.583	24
25	43.75	30.935 9	45.15	42.04	41.65	2.707	2.682	2.644	2.583	25
26	45.50	32.173 4	46.90	43.78	43.40	2.707	2.682	2.644	2.582	26
27	47.25	33.410 8	48.65	45.53	45.15	2.707	2.682	2.644	2.581	27
28	49.00	34.648 2	50.40	47.28	46.90	2.707	2.681	2.643	2.580	28
29	50.75	35.885 7	52.15	49.03	48.65	2.706	2.681	2.643	2.579	29
30	52.50	37.123 1	53.90	50.78	50.40	2.706	2.681	2.642	2.578	30
31	54.25	38.360 5	55.65	52.53	52.15	2.706	2.680	2.642	2.577	31
32	56.00	39.598 0	57.40	54.28	53.90	2.706	2.680	2.641	2.577	32
33	57.75	40.835 4	59.15	56.03	55.65	2.706	2.680	2.641	2.576	33
34	59.50	42.072 9	60.90	57.78	57.40	2.705	2.679	2.640	2.575	34
35	61.25	43.310 3	62.65	59.53	59.15	2.705	2.679	2.640	2.574	35
36	63.00	44.547 8	64.40	61.27	60.90	2.705	2.679	2.639	2.574	36
37	64.75	45.785 2	66.15	63.02	62.65	2.705	2.678	2.639	2.573	37
38	66.50	47.022 6	67.90	64.77	64.40	2.705	2.678	2.638	2.572	38
39	68.25	48.260 1	69.65	66.52	66.15	2.705	2.678	2.638	2.571	39
40	70.00	49.497 5	71.40	68.27	67.90	2.704	2.678	2.638	2.571	40
41	71.75	50.734 9	73.15	69.02	69.65	2.704	2.677	2.637	2.570	41
42	73.50	51.972 3	74.90	71.77	71.40	2.704	2.677	2.637	2.569	42
43	75.25	53.209 8	76.65	73.52	73.15	2.704	2.677	2.636	2.569	43
44	77.00	54.447 2	78.40	75.27	74.90	2.704	2.677	2.636	2.568	44
45	78.75	55.684 7	80.15	77.02	76.65	2.704	2.676	2.635	2.567	45
46	80.50	56.922 1	81.90	78.77	78.40	2.703	2.676	2.635	2.567	46
47	82.25	58.159 5	83.65	80.52	80.15	2.703	2.676	2.635	2.566	47
48	84.00	59.397 0	85.40	82.27	81.90	2.703	2.676	2.634	2.566	48
49	85.75	60.634 4	87.15	84.02	83.65	2.703	2.675	2.634	2.565	49
50	87.50	61.871 8	88.90	85.77	85.40	2.703	2.675	2.634	2.564	50
51	89.25	63.109 3	90.65	87.52	87.15	2.703	2.675	2.633	2.564	51
52	91.00	64.346 7	92.40	89.27	88.90	2.702	2.675	2.633	2.563	52
53	92.75	65.584 2	94.15	91.02	90.65	2.702	2.674	2.632	2.563	53
54	94.50	66.821 6	95.90	92.77	92.40	2.702	2.674	2.632	2.562	54
55	96.25	68.059 0	97.65	94.52	94.15	2.702	2.674	2.632	2.561	55

表 16.(续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{d1}	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_a 圆齿根	实际齿厚最小值 $S_{\min} = S_{r\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	98.00	69.296 5	99.40	96.27	95.90	2.702	2.674	2.631	2.561	56
57	99.75	70.533 9	101.15	98.02	97.65	2.702	2.673	2.631	2.560	57
58	101.50	71.771 3	102.90	99.77	99.40	2.702	2.673	2.631	2.560	58
59	103.25	73.008 8	104.65	101.52	101.15	2.701	2.673	2.630	2.559	59
60	105.00	74.246 2	106.40	103.26	102.90	2.701	2.673	2.630	2.559	60
61	106.75	75.483 6	108.15	105.01	104.65	2.701	2.673	2.630	2.558	61
62	108.50	76.721 1	109.90	106.76	106.40	2.701	2.672	2.629	2.558	62
63	110.25	77.958 5	111.65	108.51	108.15	2.701	2.672	2.629	2.557	63
64	112.00	79.196 0	113.40	110.26	109.90	2.701	2.672	2.629	2.557	64
65	113.75	80.433 4	115.15	112.01	111.65	2.701	2.672	2.628	2.556	65
66	115.50	81.670 8	116.90	113.76	113.40	2.701	2.672	2.628	2.555	66
67	117.25	82.908 3	118.65	115.51	115.15	2.700	2.671	2.628	2.555	67
68	119.00	84.145 7	120.40	117.26	116.90	2.700	2.671	2.627	2.554	68
69	120.75	85.383 1	122.15	119.01	118.65	2.700	2.671	2.627	2.554	69
70	122.50	86.620 6	123.90	120.76	120.40	2.700	2.671	2.627	2.553	70
71	124.25	87.858 0	125.65	122.51	122.15	2.700	2.671	2.626	2.553	71
72	126.00	89.095 5	127.40	124.26	123.90	2.700	2.670	2.626	2.552	72
73	127.75	90.332 9	129.15	126.01	125.65	2.700	2.670	2.626	2.552	73
74	129.50	91.570 3	130.90	127.76	127.40	2.700	2.670	2.626	2.552	74
75	131.25	92.807 8	132.65	129.51	129.15	2.699	2.670	2.625	2.551	75
76	133.00	94.045 2	134.40	131.26	130.90	2.699	2.670	2.625	2.551	76
77	134.75	95.282 6	136.15	133.01	132.65	2.699	2.669	2.625	2.550	77
78	136.50	96.520 1	137.90	134.76	134.40	2.699	2.669	2.624	2.550	78
79	138.25	97.757 5	139.65	136.51	136.15	2.699	2.669	2.624	2.549	79
80	140.00	98.994 9	141.40	138.26	137.90	2.699	2.669	2.624	2.549	80
81	141.75	100.232 4	143.15	140.01	139.65	2.699	2.669	2.623	2.548	81
82	143.50	101.469 8	144.90	141.76	141.40	2.699	2.668	2.623	2.548	82
83	145.25	102.707 3	146.65	143.51	143.15	2.699	2.668	2.623	2.547	83
84	147.00	103.944 7	148.40	145.26	144.90	2.698	2.668	2.623	2.547	84
85	148.75	105.182 1	150.15	147.01	146.65	2.698	2.668	2.622	2.546	85
86	150.50	106.419 6	151.90	148.76	148.40	2.698	2.668	2.622	2.546	86
87	152.25	107.657 0	153.65	150.51	150.15	2.698	2.668	2.622	2.546	87
88	154.00	108.894 4	155.40	152.26	151.90	2.698	2.667	2.622	2.545	88
89	155.75	110.131 9	157.15	154.01	153.65	2.698	2.667	2.621	2.545	89
90	157.50	111.369 3	158.90	155.76	155.40	2.698	2.667	2.621	2.544	90
91	159.25	112.606 8	160.65	157.51	157.15	2.698	2.667	2.621	2.544	91
92	161.00	113.844 2	162.40	159.26	158.90	2.698	2.667	2.620	2.543	92
93	162.75	115.081 6	164.15	161.01	160.65	2.697	2.667	2.620	2.543	93
94	164.50	116.319 1	165.90	162.76	162.40	2.697	2.666	2.620	2.543	94
95	166.25	117.556 5	167.65	164.51	164.15	2.697	2.666	2.620	2.542	95
96	168.00	118.793 9	169.40	166.26	165.90	2.697	2.666	2.619	2.542	96
97	169.75	120.031 4	171.15	168.01	167.65	2.697	2.666	2.619	2.541	97
98	171.50	121.268 8	172.90	169.76	169.40	2.697	2.666	2.619	2.541	98
99	173.25	122.506 2	174.65	171.51	171.15	2.697	2.666	2.619	2.541	99
100	175.00	123.743 7	176.40	173.26	172.90	2.697	2.665	2.618	2.540	100

表 17 45°外花键

模数 $m=2\text{ mm}$ 作用齿厚最大值 $S_{\max}=3.142\text{ mm}$

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_a	渐开线起 始圆直径 $D_{f\alpha\max}$	小径 D_i 圆齿根	实际齿厚最小值 $S_{\min}=S_{\max}-(T+\lambda)$				齿数 z
						4h	5h	6h	7h	
10	20.00	14.142 1	21.60	18.11	17.60	3.103	3.079	3.044	2.986	10
11	22.00	15.556 3	23.60	20.10	19.60	3.102	3.079	3.043	2.984	11
12	24.00	16.970 6	25.60	22.09	21.60	3.102	3.078	3.042	2.983	12
13	26.00	18.384 8	27.60	24.08	23.60	3.102	3.078	3.041	2.981	13
14	28.00	19.799 0	29.60	26.08	25.60	3.101	3.077	3.041	2.980	14
15	30.00	21.213 2	31.60	28.07	27.60	3.101	3.076	3.040	2.979	15
16	32.00	22.627 4	33.60	30.07	29.60	3.101	3.075	3.039	2.977	16
17	34.00	24.041 6	35.60	32.06	31.60	3.100	3.075	3.038	2.976	17
18	36.00	25.455 8	37.60	34.06	33.60	3.100	3.075	3.037	2.975	18
19	38.00	26.870 1	39.60	36.06	35.60	3.100	3.074	3.037	2.974	19
20	40.00	28.284 3	41.60	38.05	37.60	3.099	3.074	3.036	2.973	20
21	42.00	29.698 5	43.60	40.05	39.60	3.099	3.074	3.035	2.972	21
22	44.00	31.112 7	45.60	42.05	41.60	3.099	3.073	3.035	2.970	22
23	46.00	32.526 9	47.60	44.05	43.60	3.099	3.073	3.034	2.969	23
24	48.00	33.941 1	49.60	46.04	45.60	3.098	3.072	3.033	2.968	24
25	50.00	35.355 3	51.60	48.04	47.60	3.098	3.072	3.033	2.967	25
26	52.00	36.769 6	53.60	50.04	49.60	3.098	3.072	3.032	2.967	26
27	54.00	38.183 8	55.60	52.04	51.60	3.098	3.071	3.032	2.966	27
28	56.00	39.598 0	57.60	54.04	53.60	3.097	3.071	3.031	2.965	28
29	58.00	41.012 2	59.60	56.04	55.60	3.097	3.070	3.030	2.964	29
30	60.00	42.426 4	61.60	58.03	57.60	3.097	3.070	3.030	2.963	30
31	62.00	43.840 6	63.60	60.03	59.60	3.097	3.070	3.029	2.962	31
32	64.00	45.254 8	65.60	62.03	61.60	3.096	3.069	3.029	2.961	32
33	66.00	46.669 0	67.60	64.03	63.60	3.096	3.069	3.028	2.960	33
34	68.00	48.083 3	69.60	66.03	65.60	3.096	3.069	3.028	2.960	34
35	70.00	49.497 5	71.60	68.03	67.60	3.096	3.068	3.027	2.959	35
36	72.00	50.911 7	73.60	70.03	69.60	3.096	3.068	3.027	2.958	36
37	74.00	52.325 9	75.60	72.03	71.60	3.096	3.068	3.026	2.957	37
38	76.00	53.740 1	77.60	74.03	73.60	3.095	3.068	3.026	2.957	38
39	78.00	55.154 3	79.60	76.03	75.60	3.095	3.067	3.025	2.956	39
40	80.00	56.568 5	81.60	78.03	77.60	3.095	3.067	3.025	2.955	40
41	82.00	57.982 8	83.60	80.03	79.60	3.095	3.067	3.025	2.954	41
42	84.00	59.397 0	85.60	82.02	81.60	3.095	3.066	3.024	2.954	42
43	86.00	60.811 2	87.60	84.02	83.60	3.094	3.066	3.024	2.953	43
44	88.00	62.225 4	89.60	86.02	85.60	3.094	3.066	3.023	2.952	44
45	90.00	63.639 6	91.60	88.02	87.60	3.094	3.066	3.023	2.952	45
46	92.00	65.053 8	93.60	90.02	89.60	3.094	3.065	3.022	2.951	46
47	94.00	66.468 0	95.60	92.02	91.60	3.094	3.065	3.022	2.950	47
48	96.00	67.882 2	97.60	94.02	93.60	3.094	3.065	3.022	2.950	48
49	98.00	69.296 5	99.60	96.02	95.60	3.093	3.065	3.021	2.949	49
50	100.00	70.710 7	101.60	98.02	97.60	3.093	3.064	3.021	2.948	50
51	102.00	72.124 9	103.60	100.02	99.60	3.093	3.064	3.020	2.948	51
52	104.00	73.539 1	105.60	102.02	101.60	3.093	3.064	3.020	2.947	52
53	106.00	74.953 3	107.60	104.02	103.60	3.093	3.064	3.020	2.946	53
54	108.00	76.367 5	109.60	106.02	105.60	3.093	3.063	3.019	2.946	54
55	110.00	77.781 7	111.60	108.02	107.60	3.092	3.063	3.019	2.945	55

表.17.(续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_d	渐开线起 始圆直径 $D_{Fe\max}$	小径 D_a 圆齿根	实际齿厚最小值 $S_{\min} = S_{r\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	112.00	79.196 0	113.60	110.02	109.60	3.092	3.063	3.018	2.945	56
57	114.00	80.610 2	115.60	112.02	111.60	3.092	3.063	3.018	2.944	57
58	116.00	82.024 4	117.60	114.02	113.60	3.092	3.062	3.018	2.943	58
59	118.00	83.438 6	119.60	116.02	115.60	3.092	3.062	3.017	2.943	59
60	120.00	84.852 8	121.60	118.02	117.60	3.092	3.062	3.017	2.942	60
61	122.00	86.267 0	123.60	120.02	119.60	3.092	3.062	3.017	2.942	61
62	124.00	87.681 2	125.60	122.02	121.60	3.091	3.061	3.016	2.941	62
63	126.00	89.095 5	127.60	124.02	123.60	3.091	3.061	3.016	2.941	63
64	128.00	90.509 7	129.60	126.02	125.60	3.091	3.061	3.016	2.940	64
65	130.00	91.923 9	131.60	128.02	127.60	3.091	3.061	3.015	2.939	65
66	132.00	93.338 1	133.60	130.02	129.60	3.091	3.061	3.015	2.939	66
67	134.00	94.752 3	135.60	132.02	131.60	3.091	3.060	3.015	2.938	67
68	136.00	96.166 5	137.60	134.01	133.60	3.091	3.060	3.014	2.938	68
69	138.00	97.580 7	139.60	136.01	135.60	3.091	3.060	3.014	2.937	69
70	140.00	98.994 9	141.60	138.01	137.60	3.090	3.060	3.014	2.937	70
71	142.00	100.409 2	143.60	140.01	139.60	3.090	3.059	3.013	2.936	71
72	144.00	101.823 4	145.60	142.01	141.60	3.090	3.059	3.013	2.936	72
73	146.00	103.237 6	147.60	144.01	143.60	3.090	3.059	3.013	2.935	73
74	148.00	104.651 8	149.60	146.01	145.60	3.090	3.059	3.012	2.935	74
75	150.00	106.066 0	151.60	148.01	147.60	3.090	3.059	3.012	2.934	75
76	152.00	107.480 2	153.60	150.01	149.60	3.090	3.058	3.012	2.934	76
77	154.00	108.894 4	155.60	152.01	151.60	3.089	3.058	3.011	2.933	77
78	156.00	110.308 7	157.60	154.01	153.60	3.089	3.058	3.011	2.933	78
79	158.00	111.722 9	159.60	156.01	155.60	3.089	3.058	3.011	2.932	79
80	160.00	113.137 1	161.60	158.01	157.60	3.089	3.058	3.010	2.932	80
81	162.00	114.551 3	163.60	160.01	159.60	3.089	3.057	3.010	2.931	81
82	164.00	115.965 5	165.60	162.01	161.60	3.089	3.057	3.010	2.931	82
83	166.00	117.379 7	167.60	164.01	163.60	3.089	3.057	3.010	2.930	83
84	168.00	118.793 9	169.60	166.01	165.60	3.089	3.057	3.009	2.930	84
85	170.00	120.208 1	171.60	168.01	167.60	3.089	3.057	3.009	2.929	85
86	172.00	121.622 4	173.60	170.01	169.60	3.088	3.057	3.009	2.929	86
87	174.00	123.036 6	175.60	172.01	171.60	3.088	3.056	3.008	2.928	87
88	176.00	124.450 8	177.60	174.01	173.60	3.088	3.056	3.008	2.928	88
89	178.00	125.865 0	179.60	176.01	175.60	3.088	3.056	3.008	2.927	89
90	180.00	127.279 2	181.60	178.01	177.60	3.088	3.056	3.007	2.927	90
91	182.00	128.693 4	183.60	180.01	179.60	3.088	3.056	3.007	2.927	91
92	184.00	130.107 6	185.60	182.01	181.60	3.088	3.055	3.007	2.926	92
93	186.00	131.521 9	187.60	184.01	183.60	3.088	3.055	3.007	2.926	93
94	188.00	132.936 1	189.60	186.01	185.60	3.088	3.055	3.006	2.925	94
95	190.00	134.350 3	191.60	188.01	187.60	3.087	3.055	3.006	2.925	95
96	192.00	135.764 5	193.60	190.01	189.60	3.087	3.055	3.006	2.924	96
97	194.00	137.178 7	195.60	192.01	191.60	3.087	3.055	3.006	2.924	97
98	196.00	138.592 9	197.60	194.01	193.60	3.087	3.054	3.005	2.923	98
99	198.00	140.007 1	199.60	196.01	195.60	3.087	3.054	3.005	2.923	99
100	200.00	141.421 4	201.60	198.01	197.60	3.087	3.054	3.005	2.923	100

表 18 45°外花键

模数 $m=2.5$ mm 作用齿厚最大值 $S_{r\max}=3.927$ mm

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{a1}	渐开线起 始圆直径 $D_{F\max}$	小径 D_e 圆齿根	实际齿厚最小值 $S_{\min}=S_{r\max}-(T+\lambda)$				齿数 z
						4h	5h	6h	7h	
10	25.00	17.677 7	27.00	22.64	22.00	3.885	3.860	3.822	3.759	10
11	27.50	19.445 4	29.50	25.12	24.50	3.885	3.859	3.821	3.757	11
12	30.00	21.213 2	32.00	27.61	27.00	3.884	3.858	3.820	3.756	12
13	32.50	22.981 0	34.50	30.10	29.50	3.884	3.858	3.819	3.754	13
14	35.00	24.748 7	37.00	32.60	32.00	3.883	3.857	3.818	3.753	14
15	37.50	26.516 5	39.50	35.09	34.50	3.883	3.857	3.817	3.751	15
16	40.00	28.284 3	42.00	37.58	37.00	3.883	3.856	3.816	3.750	16
17	42.50	30.052 0	44.50	40.08	39.50	3.882	3.856	3.815	3.748	17
18	45.00	31.819 8	47.00	42.57	42.00	3.882	3.855	3.815	3.747	18
19	47.50	33.587 6	49.50	45.07	44.50	3.882	3.855	3.814	3.746	19
20	50.00	35.355 3	52.00	47.57	47.00	3.881	3.854	3.813	3.745	20
21	52.50	37.123 1	54.50	50.06	49.50	3.881	3.854	3.812	3.743	21
22	55.00	38.890 9	57.00	52.56	52.00	3.881	3.853	3.812	3.742	22
23	57.50	40.658 6	59.50	55.06	54.50	3.881	3.853	3.811	3.741	23
24	60.00	42.426 4	62.00	57.55	57.00	3.880	3.852	3.810	3.740	24
25	62.50	44.194 2	64.50	60.05	59.50	3.880	3.852	3.809	3.739	25
26	65.00	45.961 9	67.00	62.55	62.00	3.880	3.851	3.809	3.738	26
27	67.50	47.729 7	69.50	65.05	64.50	3.879	3.851	3.808	3.737	27
28	70.00	49.497 5	72.00	67.55	67.00	3.879	3.851	3.808	3.736	28
29	72.50	51.265 2	74.50	70.04	69.50	3.879	3.850	3.807	3.735	29
30	75.00	53.033 0	77.00	72.54	72.00	3.879	3.850	3.806	3.734	30
31	77.50	54.800 8	79.50	75.04	74.50	3.879	3.849	3.806	3.733	31
32	80.00	56.568 5	82.00	77.54	77.00	3.878	3.849	3.805	3.732	32
33	82.50	58.336 3	84.50	80.04	79.50	3.878	3.849	3.805	3.731	33
34	85.00	60.104 1	87.00	82.54	82.00	3.878	3.848	3.804	3.730	34
35	87.50	61.871 8	89.50	85.04	84.50	3.878	3.848	3.804	3.730	35
36	90.00	63.639 6	92.00	87.54	87.00	3.877	3.848	3.803	3.729	36
37	92.50	65.407 4	94.50	90.03	89.50	3.877	3.847	3.803	3.728	37
38	95.00	67.175 1	97.00	92.53	92.00	3.877	3.847	3.802	3.727	38
39	97.50	68.942 9	99.50	95.03	94.50	3.877	3.847	3.801	3.726	39
40	100.00	70.710 7	102.00	97.53	97.00	3.877	3.846	3.801	3.725	40
41	102.50	72.478 4	104.50	100.03	99.50	3.876	3.846	3.801	3.725	41
42	105.00	74.246 2	107.00	102.53	102.00	3.876	3.846	3.800	3.724	42
43	107.50	76.014 0	109.50	105.03	104.50	3.876	3.845	3.800	3.723	43
44	110.00	77.781 7	112.00	107.53	107.00	3.876	3.845	3.799	3.722	44
45	112.50	79.549 5	114.50	110.03	109.50	3.876	3.845	3.799	3.722	45
46	115.00	81.317 3	117.00	112.53	112.00	3.875	3.845	3.798	3.721	46
47	117.50	83.085 0	119.50	115.03	114.50	3.875	3.844	3.798	3.720	47
48	120.00	84.852 8	122.00	117.53	117.00	3.875	3.844	3.797	3.719	48
49	122.50	86.620 6	124.50	120.03	119.50	3.875	3.844	3.797	3.719	49
50	125.00	88.388 3	127.00	122.53	122.00	3.875	3.843	3.796	3.718	50
51	127.50	90.156 1	129.50	125.03	124.50	3.875	3.843	3.796	3.717	51
52	130.00	91.923 9	132.00	127.52	127.00	3.874	3.843	3.795	3.717	52
53	132.50	93.691 6	134.50	130.02	129.50	3.874	3.843	3.795	3.716	53
54	135.00	95.459 4	137.00	132.52	132.00	3.874	3.842	3.795	3.715	54
55	137.50	97.227 2	139.50	135.02	134.50	3.874	3.842	3.794	3.715	55

表 18 (续)

单位为毫米

齿数 z	分度圆 直径 D	基圆 直径 D_b	大径 D_{ei}	渐开线起 始圆直径 $D_{F_{i\max}}$	小径 D_{ai} 圆齿根	实际齿厚最小值 $S_{\min} = S_{v\max} - (T + \lambda)$				齿数 z
						4h	5h	6h	7h	
56	140.00	98.994 9	142.00	137.52	137.00	3.874	3.842	3.794	3.714	56
57	142.50	100.762 7	144.50	140.02	139.50	3.874	3.841	3.793	3.713	57
58	145.00	102.530 5	147.00	142.52	142.00	3.873	3.841	3.793	3.713	58
59	147.50	104.298 2	149.50	145.02	144.50	3.873	3.841	3.793	3.712	59
60	150.00	106.066 0	152.00	147.52	147.00	3.873	3.841	3.792	3.711	60
61	152.50	107.833 8	154.50	150.02	149.50	3.873	3.840	3.792	3.711	61
62	155.00	109.601 5	157.00	152.52	152.00	3.873	3.840	3.791	3.710	62
63	157.50	111.369 3	159.50	155.02	154.50	3.873	3.840	3.791	3.709	63
64	160.00	113.137 1	162.00	157.52	157.00	3.872	3.840	3.791	3.709	64
65	162.50	114.904 8	164.50	160.02	159.50	3.872	3.839	3.790	3.708	65
66	165.00	116.672 6	167.00	162.52	162.00	3.872	3.839	3.790	3.708	66
67	167.50	118.440 4	169.50	165.02	164.50	3.872	3.839	3.790	3.707	67
68	170.00	120.208 1	172.00	167.52	167.00	3.872	3.839	3.789	3.706	68
69	172.50	121.975 9	174.50	170.02	169.50	3.872	3.839	3.789	3.706	69
70	175.00	123.743 7	177.00	172.52	172.00	3.872	3.838	3.788	3.705	70
71	177.50	125.511 4	179.50	175.02	174.50	3.871	3.838	3.788	3.705	71
72	180.00	127.279 2	182.00	177.52	177.00	3.871	3.838	3.788	3.704	72
73	182.50	129.047 0	184.50	180.02	179.50	3.871	3.838	3.787	3.704	73
74	185.00	130.814 7	187.00	182.52	182.00	3.871	3.837	3.787	3.703	74
75	187.50	132.582 5	189.50	185.02	184.50	3.871	3.837	3.787	3.702	75
76	190.00	134.350 3	192.00	187.52	187.00	3.871	3.837	3.786	3.702	76
77	192.50	136.118 1	194.50	190.02	189.50	3.871	3.837	3.786	3.701	77
78	195.00	137.885 8	197.00	192.52	192.00	3.870	3.837	3.786	3.701	78
79	197.50	139.653 6	199.50	195.02	194.50	3.870	3.836	3.785	3.700	79
80	200.00	141.421 4	202.00	197.52	197.00	3.870	3.836	3.785	3.700	80
81	202.50	143.189 1	204.50	200.02	199.50	3.870	3.836	3.785	3.699	81
82	205.00	144.956 9	207.00	202.52	202.00	3.870	3.836	3.784	3.699	82
83	207.50	146.724 7	209.50	205.02	204.50	3.870	3.835	3.784	3.698	83
84	210.00	148.492 4	212.00	207.52	207.00	3.870	3.835	3.784	3.698	84
85	212.50	150.260 2	214.50	210.01	209.50	3.870	3.835	3.783	3.697	85
86	215.00	152.028 0	217.00	212.51	212.00	3.869	3.835	3.783	3.697	86
87	217.50	153.795 7	219.50	215.01	214.50	3.869	3.835	3.783	3.696	87
88	220.00	155.563 5	222.00	217.51	217.00	3.869	3.834	3.782	3.696	88
89	222.50	157.331 3	224.50	220.01	219.50	3.869	3.834	3.782	3.695	89
90	225.00	159.099 0	227.00	222.51	222.00	3.869	3.834	3.782	3.695	90
91	227.50	160.866 8	229.50	225.01	224.50	3.869	3.834	3.781	3.694	91
92	230.00	162.634 6	232.00	227.51	227.00	3.869	3.834	3.781	3.694	92
93	232.50	164.402 3	234.50	230.01	229.50	3.869	3.833	3.781	3.693	93
94	235.00	166.170 1	237.00	232.51	232.00	3.868	3.833	3.780	3.693	94
95	237.50	167.937 9	239.50	235.01	234.50	3.868	3.833	3.780	3.692	95
96	240.00	169.705 6	242.00	237.51	237.00	3.868	3.833	3.780	3.692	96
97	242.50	171.473 4	244.50	240.01	239.50	3.868	3.833	3.780	3.691	97
98	245.00	173.241 2	247.00	242.51	242.00	3.868	3.832	3.779	3.691	98
99	247.50	175.008 9	249.50	245.01	244.50	3.868	3.832	3.779	3.690	99
100	250.00	176.776 7	252.00	247.51	247.00	3.868	3.832	3.779	3.690	100

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