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SDJ_c



弧齿锥齿轮计算参考资料

冠轮齿数确定表

上海第一机床厂资料室

1972年5月

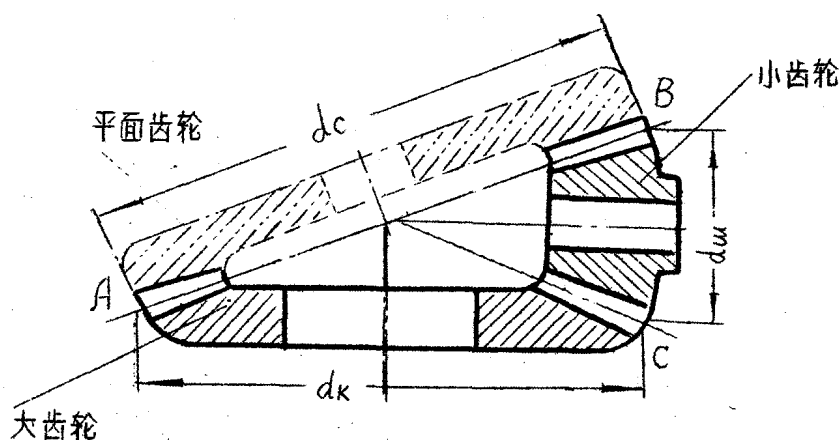
确定冠轮齿数用的表

本表中给有冠轮的数值，该数值是由直角传动（中心线成 90° 角）时两共轲的小齿轮及大齿轮齿数的配合而决定的。

本表是根据公式 $Z_c = \sqrt{Z_{\text{III}}^2 + Z_K^2}$ 而计算出来的。

式中： Z_c 冠轮齿数
 Z_{III} 小齿轮齿数
 Z_K 大齿轮齿数

要导出这一公式，只需研究直角三角形ABC就行了，这三三角形的两正边各等于两共轲小齿轮及大齿轮的节圆直径，而其斜边则等于冠轮的直径。



$$d_c = \sqrt{d_{\text{III}}^2 + d_K^2}$$

由于齿轮的齿数与其节圆直径成比，因此，结果可以写成：

$$Z_c = \sqrt{Z_{\text{III}}^2 + Z_K^2}$$

这就证明了上面的公式。

$$Z_{III}=8-9$$

冠 轮 齿 数 Z_c 表

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
8:20	21,5406592	9:20	21,9317122
8:21	22,4722051	9:21	22,8473193
8:22	23,4093998	9:22	23,7697286
8:23	24,3515913	9:23	24,6981781
8:24	25,2982213	9:24	25,6320112
8:25	26,2488095	9:25	26,5706605
8:26	27,2029410	9:26	27,5136330
8:27	28,1602557	9:27	28,4604989
8:28	29,1204396	9:28	29,4108823
8:29	30,0832179	9:29	30,3644529
8:30	31,0483494	9:30	31,3209195
8:31	32,015621	9:31	32,280025
8:32	32,984845	9:32	33,241540
8:33	33,955854	9:33	34,205263
8:34	34,928498	9:34	35,171011
8:35	35,902646	9:35	36,138622
8:36	36,878178	9:36	37,107951
8:37	37,854986	9:37	38,078866
8:38	38,832976	9:38	39,051248
8:39	39,812058	9:39	40,024992
8:40	40,792156	9:40	41,00000
		9:41	41,976184
		9:42	42,953463
		9:43	43,931765

$$Z_{III}=10$$

Z_{III} 和 Z_E	Z_C	Z_{III} 和 Z_E	Z_C
10:20	22,3606798	10:44	45,122057
10:21	23,2594067	10:45	46,097722
10:22	24,1660919	10:46	47,074409
10:23	25,0798724	10:47	48,052055
10:24	26,00000	10:48	49,030603
10:25	26,9258240	10:49	50,009999
10:26	27,8567766	10:50	50,990195
10:27	28,7923601		
10:28	29,7321375		
10:29	30,6757233		
10:30	31,622777		
10:31	32,572995		
10:32	33,526109		
10:33	34,481879		
10:34	35,440090		
10:35	36,400549		
10:36	37,363083		
10:37	38,327536		
10:38	39,293765		
10:39	40,261644		
10:40	41,231056		
10:41	42,201896		
10:42	43,174066		
10:43	44,147480		

$$Z_{III}=11$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
11:20	22,8254244	11:44	45,354162
11:21	23,7065392	11:45	46,234939
11:22	24,5967478	11:46	47,296934
11:23	25,4950976	11:47	48,270074
11:24	26,4007576	11:48	49,244289
11:25	27,3130006	11:49	50,219518
11:26	28,2311884	11:50	51,195703
11:27	29,1547595	11:51	52,172790
11:28	30,0832179	11:52	53,150729
11:29	31,0161248	11:53	54,129474
11:30	31,953091	11:54	55,108983
11:31	32,893768	11:55	56,089215
11:32	33,837849		
11:33	34,785054		
11:34	35,735137		
11:35	36,687873		
11:36	37,643060		
11:37	38,600518		
11:38	39,560081		
11:39	40,521599		
11:40	41,484937		
11:41	42,449971		
11:42	43,416587		
11:43	44,384682		

$$Z_{III}=12$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
12:20	23,3238076	12:44	45,607017
12:21	24,1867732	12:45	46,572524
12:22	25,0599282	12:46	47,539457
12:23	25,9422435	12:47	48,507731
12:24	26,8328157	12:48	49,477268
12:25	27,7308492	12:49	50,447993
12:26	28,6356421	12:50	51,419841
12:27	29,5465734	12:51	52,392748
12:28	30,4630924	12:52	53,366656
12:29	31,3847097	12:53	54,341513
12:30	32,310989	12:54	55,317267
12:31	33,241940	12:55	56,293872
12:32	34,176015	12:56	57,271284
12:33	35,114100	12:57	58,249464
12:34	36,055513	12:58	59,228372
12:35	37,00000	12:59	60,207973
12:36	37,947332	12:60	61,188234
12:37	38,987301		
12:38	39,849718		
12:39	40,804412		
12:40	41,761226		
12:41	42,720019		
12:42	43,680659		
12:43	44,643029		

$$Z_{III}=13$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
13:20	23,8537209	13:44	45,880279
13:21	24,6981781	13:45	46,840154
13:22	25,5538647	13:46	47,801674
13:23	26,4196896	13:47	48,764741
13:24	27,2946881	13:48	49,729267
13:25	28,1780056	13:49	50,695167
13:26	29,0688837	13:50	51,662365
13:27	29,9666481	13:51	52,630789
13:28	30,8706981	13:52	53,600373
13:29	31,780497	13:53	54,571055
13:30	32,695565	13:54	55,542776
13:31	33,615473	13:55	56,515485
13:32	34,539832	13:56	57,489129
13:33	35,468296	13:57	58,463664
13:34	36,400549	13:58	59,439044
13:35	37,336309	13:59	60,415230
13:36	38,275318	13:60	61,392182
13:37	39,217343	13:61	62,369865
13:38	40,162171	13:62	63,348244
13:39	41,109610	13:63	64,327288
13:40	42,059482	13:64	65,306967
13:41	43,011626	13:65	66,287254
13:42	43,965896		
13:43	44,922155		

$$Z_{III}=14$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
14:14	19,7989899	14:39	41,436699
14:15	20,5182845	14:40	42,379240
14:16	21,2602916	14:41	43,324358
14:17	22,0227155	14:42	44,271887
14:18	22,8035085	14:43	45,221676
14:19	23,6008474	14:44	46,173586
14:20	24,4131112	14:45	47,127487
14:21	25,2388589	14:46	48,083261
14:22	26,0768096	14:47	49,040799
14:23	26,9258240	14:48	50,009999
14:24	27,7848880	14:49	50,960769
14:25	28,6530976	14:50	51,923020
14:26	29,5296461	14:51	52,886671
14:27	30,4138127	14:52	53,851648
14:28	31,3049517	14:53	54,817880
14:29	32,202484	14:54	55,785303
14:30	33,105891	14:55	56,753854
14:31	34,014703	14:56	57,723479
14:32	34,928498	14:57	58,694122
14:33	35,846897	14:58	59,665736
14:34	36,769553	14:59	60,638272
14:35	37,696154	14:60	61,611687
14:36	38,626416	14:61	62,585941
14:37	39,560081	14:62	63,560994
14:38	40,496913	14:63	64,536811

$$Z_{\text{III}}=14$$

Z_{III} 和 Z_{K}	Z_{C}	Z_{III} 和 Z_{K}	Z_{C}
14:64	65,513357		
14:65	66,490601		
14:66	67,468511		
14:67	68,447060		
14:68	69,426220		
14:69	70,405966		
14:70	71,386273		

$$Z_{III}=15$$

Z_{III} 和 Z_K	Z_C	Z_{III} 和 Z_K	Z_C
15:15	21,2132034	15:39	41,785165
15:16	21,9317122	15:40	42,720019
15:17	22,6715681	15:41	43,657760
15:18	23,4307490	15:42	44,598206
15:19	24,2074369	15:43	45,541190
15:20	25,00000	15:44	46,486557
15:21	25,8069758	15:45	47,434165
15:22	26,6270539	15:46	48,383882
15:23	27,4590604	15:47	49,335586
15:24	28,3019434	15:48	50,289164
15:25	29,1547595	15:49	51,244512
15:26	30,0166620	15:50	52,201533
15:27	30,8868904	15:51	53,160135
15:28	31,764760	15:52	54,120237
15:29	32,649655	15:53	55,081757
15:30	33,541020	15:54	56,044625
15:31	34,438351	15:55	57,008771
15:32	35,341194	15:56	57,974132
15:33	36,249138	15:57	58,940648
15:34	37,161808	15:58	59,908263
15:35	38,078866	15:59	60,876925
15:36	39,00000	15:60	61,846584
15:37	39,924930	15:61	62,817185
15:38	40,853396	15:62	63,788714

$$Z_{III}=15$$

Z_{III} 和 Z_K	Z_c		
15:63	64,761099		
15:64	65,734314		
15:65	66,708320		
15:66	67,683085		
15:67	68,658576		
15:68	69,634761		
15:69	70,611614		
15:70	71,589105		
15:71	72,567210		
15:72	73,545904		
15:73	74,525164		
15:74	75,504967		
15:75	76,485293		

$$Z_{III}=16$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
16:16	22,6274170	16:40	43,081318
16:17	23,3452351	16:41	44,011362
16:18	24,0831892	16:42	44,944410
16:19	24,8394847	16:43	45,880279
16:20	25,6124969	16:44	46,818800
16:21	26,4007576	16:45	47,759816
16:22	27,2029410	16:46	48,703183
16:23	28,0178515	16:47	49,648766
16:24	28,8444102	16:48	50,596443
16:25	29,6816442	16:49	51,546096
16:26	30,5286750	16:50	52,497619
16:27	31,3847097	16:51	53,450912
16:28	32,249031	16:52	54,405882
16:29	33,120990	16:53	55,362442
16:30	34,00000	16:54	56,320511
16:31	34,885527	16:55	57,280014
16:32	35,777088	16:56	58,240879
16:33	36,674242	16:57	59,203040
16:34	37,576588	16:58	60,166436
16:35	38,483763	16:59	61,131007
16:36	39,395431	16:60	62,096699
16:37	40,311289	16:61	63,063460
16:38	41,231056	16:62	64,031242
16:39	42,154478	16:63	65,00000

$$Z_{III}=16$$

Z_{III} 和 Z_{IC}	Z_c	Z_{III} 和 Z_{IC}	Z_c
16:64	65,969690		
16:65	66,940272		
16:66	67,911707		
16:67	68,883960		
16:68	69,856997		
16:69	70,830784		
16:70	71,805292		
16:71	72,780492		
16:72	73,756356		
16:73	74,732858		
16:74	75,709973		
16:75	76,687678		
16:76	77,66595		
16:77	78,644771		
16:78	79,624117		
16:79	80,603970		

$$Z_{III}=17$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
17:17	24,0416306	17:44	47,169906
17:18	24,7588368	17:45	48,104054
17:19	25,4950976	17:46	49,040799
17:20	26,2488095	17:47	49,979996
17:21	27,0185122	17:48	50,921508
17:22	27,8028775	17:49	51,865210
17:23	28,6006993	17:50	52,810984
17:24	29,4108823	17:51	53,758720
17:25	30,2324329	17:52	54,708317
17:26	31,0644491	17:53	55,659680
17:27	31,906112	17:54	56,612719
17:28	32,756679	17:55	57,567352
17:29	33,615473	17:56	58,523500
17:30	34,481879	17:57	59,481089
17:31	35,355339	17:58	60,440053
17:32	36,235342	17:59	61,400326
17:33	37,121422	17:60	62,361847
17:34	38,013156	17:61	63,324561
17:35	38,910153	17:62	64,188413
17:36	39,812058	17:63	65,253352
17:37	40,718546	17:64	66,219333
17:38	41,629317	17:65	67,186308
17:39	42,544095	17:66	68,154237
17:40	43,462628	17:67	69,123079
17:41	44,384682	17:68	70,092796
17:42	45,310043	17:69	71,063352
17:43	46,238512	17:70	72,034714

$$Z_{III}=17$$

Z_{III} 和 Z_K	Z_C		
17:71	73,006849		
17:72	73,979727		
17:73	74,953319		
17:74	75,927597		
17:75	76,902536		
17:76	77,878110		
17:77	78,854296		
17:78	79,831072		
17:79	80,808415		
17:80	81,786307		
17:81	82,764727		
17:82	83,743656		
17:83	84,723078		
17:84	85,702975		
17:85	86,683332		

$$Z_{III}=18$$

Z_{III} 和 Z_K	Z_c	Z_{III} 和 Z_K	Z_c
18:18	25,4555441	18:42	45,694639
18:19	26,1725047	18:43	46,615448
18:20	26,9072481	18:44	47,539457
18:21	27,6586334	18:45	48,466483
18:22	28,4253408	18:46	49,396356
18:23	29,2061637	18:47	50,328918
18:24	30,00000	18:48	51,264022
18:25	30,8058436	18:49	52,201533
18:26	31,622777	18:50	53,141321
18:27	32,449961	18:51	54,083269
18:28	33,286634	18:52	55,027266
18:29	34,132096	18:53	55,973208
18:30	34,985711	18:54	56,920998
18:31	35,846897	18:55	57,870545
18:32	36,715120	18:56	58,821765
18:33	37,589892	18:57	59,774577
18:34	38,470768	18:58	60,728906
18:35	39,357337	18:59	61,684682
18:36	40,249224	18:60	62,641839
18:37	41,146081	18:61	63,600314
18:38	42,047592	18:62	64,560050
18:39	42,953463	18:63	65,520989
18:40	43,863424	18:64	66,483081
18:41	44,777226	18:65	67,446275

$$Z_{\text{III}}=18$$

Z_{III} 和 Z_{K}	Z_{C}	Z_{III} 和 Z_{K}	Z_{C}
18:66	68,410526	18:78	80,049984
18:67	69,375788	18:79	81,024688
18:68	70,342022	18:80	82,000000
18:69	71,309186	18:81	82,975900
18:70	72,277244	18:82	83,952367
18:71	73,246160	18:83	84,929382
18:72	74,215901	18:84	85,906926
18:73	75,186435	18:85	86,884981
18:74	76,157731	18:86	87,863531
18:75	77,129761	18:87	88,842557
18:76	78,102497	18:88	89,822046
18:77	79,075913	18:89	90,801982