

## #35 vs #219 Ratio & Pitch Diameter

These charts were made to help you relate both #35, #219 and 8mm sprocket diameters to achieve the same gear ratio.

Direct #35 to #219 pitch diameter equivalent. Also below are more specific number relationships.

#35          #219  
 15 tooth = 18 tooth  
 16 tooth = 19, 20 tooth  
 17 tooth = 20, 21 tooth  
 18 tooth = 22 tooth  
 19 tooth = 23 tooth

### Front Sprocket Gear Ratio Comparisons

#35	#219
15-54 = 3.60	18-65 = 3.61
16-54 = 3.38	19-64 = 3.37 20-67 = 3.35
17-54 = 3.18	20-64 = 3.20 21-67 = 3.19 (closer)
18-54 = 3.00	22-66 = 3.00
19-54 = 2.84	23-65 = 2.82

### Pitch Diameter Relationships

Pitch diameters are measured approximately half way between the bottom and the top of each tooth at pin centerline.

#35	#219	
15-54 1.80" - 6.45"	= 18-65 1.77" - 6.38"	

<b>16-54</b> <b>1.92" - 6.45"</b>	<b>= 19-64</b> <b>1.87" - 6.27"</b>	<b>or 20-67</b> <b>1.97" - 6.57"</b>
<b>17-54</b> <b>2.04" - 6.45"</b>	<b>= 20-64</b> <b>1.97" - 6.27"</b>	<b>or 21-67</b> <b>2.07" - 6.57"</b>
<b>18-54</b> <b>2.16" - 6.45"</b>	<b>= 22-66</b> <b>2.16" - 6.47"</b>	

### #35 vs #219 Ratio & Pitch Diameters

#### Pitch Diameters

<b># of Teeth</b>	<b># 35</b>	<b>#219</b>	<b>8 mm</b>
10	1.2135"	0.9967"	1.0194"
11	1.3311	1.0932	1.1181
12	1.4489	1.19	1.2171
13	1.567	1.287	1.3163
14	1.6852	1.3841	1.4156
15	1.8037	1.4814	1.5151
16	1.9222	1.5788	1.6146
17	2.0408	1.6762	1.7143
18	2.1595	1.7737	1.814
19	2.2783	1.8713	1.9138
20	2.3972	1.9689	2.0136
21	2.5161	2.0665	2.1135
22	2.635	2.1642	2.2134
23	2.754	2.2619	2.3133

24	2.873	2.3597	2.4133
25	2.992	2.4575	2.5133
26	3.1111	2.5552	2.6133
27	3.2302	2.653	2.7133
53	6.3301	5.1991	5.3173
54	6.4494	5.2971	5.4175
55	6.5687	5.3951	5.5177
56	6.688	5.4931	5.6179
57	6.8073	5.5911	5.7182
58	6.9266	5.6891	5.8184
59	7.0459	5.7871	5.9186
60	7.1653	5.8851	6.0188
61	7.2846	5.9831	6.119
62	7.4039	6.0811	6.2193
63	7.5232	6.1791	6.3195
64	7.6425	6.2771	6.4197
65	7.7618	6.3751	6.5199
66	7.8812	6.4731	6.6202
67	8.0005	6.5711	6.7204
68	8.1198	6.6691	6.8206
69	8.2391	6.7671	6.9209
70	8.3584	6.8651	7.0211
71	8.4778	6.9631	7.1213
72	8.5971	7.0611	7.2216
73	8.7164	7.1591	7.3218
74	8.8358	7.2571	7.422
75	8.9551	7.3551	7.5223

76	9.0744	7.4531	7.6225
77	9.1938	7.5511	7.7228
78	9.3131	7.6492	7.823
79	9.4324	7.7472	7.9232
80	9.5518	7.8452	8.0235
81	9.6711	7.9432	8.1237
82	9.7904	8.0412	8.224
83	9.9098	8.1392	8.3242
84	10.0291	8.2372	8.4245
85	10.1484	8.3353	8.5247
86	10.2678	8.4333	8.6249
87	10.3871	8.5313	8.7252
88	10.5065	8.6293	8.8254
89	10.6258	8.7273	8.9257
90	10.7451	8.8253	9.0259

## Chart generated by TS Racing and SMC Clutches

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