Spur Gear Selection

For a required centre distance and gear ratio a suitable pair of spur gears can be selected used and assessed by the following procedure.

Select numbers of teeth in gears and module (pitch).

$$\text{Gear Ratio } i = \frac{Z_2 \text{ (Teeth driven gear)}}{Z_1 \text{ (Teeth driven gear)}}$$

$$\text{Shaft centre distance in mm} = \tfrac{1}{2} \text{ sum gear teeth} \times \text{pitch}$$
$$= \tfrac{1}{2}(Z_1 + Z_2)\,P$$

From this initial selection each gear can be assessed for strength and wear using the following formulae. The least of the four calculated powers is the capacity of the gear set. The capacity required is determined by multiplying actual power by a service factor relative to driver and driven equipment, refer page 3. If calculated power is below required capacity increase pitch or face width of gears, adjust teeth sizes accordingly, and reassess drive. If calculated power is substantially in excess of required capacity a lower Module could be considered.

$$\text{Strength capacity } Ps = \frac{X_b \times S_b \times Y_s \times F \times N \times Z \times P^2 \text{ kw}}{19{,}100 \times 10^3}$$

$$\text{Wear capacity } Pw = \frac{X_c \times S_c \times Y_z \times F \times N \times Z \times P^{1.8} \text{kw}}{10{,}000 \times 10^3}$$

Where:-
- F = Face width mm
- N = Gear shaft speed r.p.m.
- P = Gear pitch, Module No.
- S_b = Bending stress for gear material (see below)
- Sc = Surface stress for gear material (see below)
- X_b = Speed factor for strength - see table 1
- X_c = Speed factor for wear - see table 2
- Y_s = Strength factor - see table 3
- Y_z = Zone factor - see table 4
- Z = Number of teeth

Factors Sb and Sc Gears

Gear Type	Sb N/mm²	Sc N/mm²
Steel Gears and racks	130	9.65
Cast Gears	52	9.30

Table 1 Speed factor for Strength Xb (for 26000 hour rating)

Daily Hours	Gear Shaft rpm																
	0.1	1	5	10	40	100	150	200	400	500	600	1000	1500	2000	3000	5000	10000
24	0.784	0.640	0.565	0.518	0.435	0.375	0.349	0.330	0.294	0.286	0.274	0.246	0.223	0.211	0.180	0.153	0.122
12	0.865	0.700	0.623	0.568	0.475	0.420	0.384	0.362	0.321	0.310	0.300	0.268	0.245	0.231	0.198	0.167	0.134
6	0.970	0.775	0.685	0.628	0.526	0.460	0.426	0.410	0.357	0.342	0.331	0.297	0.272	0.263	0.221	0.186	0.147
3	1.060	0.864	0.750	0.690	0.580	0.512	0.474	0.448	0.401	0.380	0.368	0.328	0.301	0.286	0.245	0.207	0.164
1	1.250	1.031	0.880	0.800	0.678	0.596	0.552	0.525	0.465	0.445	0.437	0.385	0.349	0.328	0.286	0.240	0.192

Table 2 Combined Speeed Factor for Wear Xc (for 26000 hour rating)

Daily Hours	Gear Shaft rpm																
	0.1	1	5	10	40	100	150	200	400	500	600	1000	1500	2000	3000	5000	10000
24	1.149	0.780	0.564	0.488	0.377	0.320	0.297	0.282	0.250	0.240	0.233	0.209	0.192	0.180	0.157	0.132	0.106
12	1.448	0.998	0.718	0.625	0.478	0.408	0.372	0.355	0.317	0.304	0.294	0.262	0.240	0.226	0.196	0.165	0.132
6	1.830	1.258	0.901	0.790	0.607	0.514	0.474	0.455	0.404	0.382	0.370	0.334	0.307	0.287	0.250	0.211	0.167
3	2.200	1.570	1.168	0.980	0.762	0.650	0.602	0.575	0.508	0.480	0.472	0.425	0.381	0.360	0.308	0.263	0.210
1	3.320	2.280	1.653	1.440	1.218	0.928	0.862	0.825	0.728	0.700	0.675	0.610	0.551	0.520	0.425	0.390	0.304

Table 3 Strength Factor Ys

Number of Teeth on Gear being Designed	Number Teeth Mating Gear																						
No. Teeth	Rack	127	100	80	70	60	50	40	35	30	28	26	24	22	20	19	18	17	16	15	14	13	12
12	.658	.625	.618	.614	.610	.605	.600	.597	.596	.593	.592	.591	.590	.588	.585	.584	.581	.578	.575	.573	.571	.567	.562
13	.679	.644	.638	.632	.628	.623	.616	.612	.610	.606	.605	.604	.602	.600	.597	.597	.595	.590	.587	.584	.578	.575	.570
14	.700	.662	.655	.650	.645	.640	.632	.626	.623	.620	.619	.617	.614	.611	.608	.606	.604	.600	.597	.592	.588	.583	.576
15	.714	.678	.670	.664	.659	.653	.646	.638	.635	.631	.629	.626	.624	.620	.617	.613	.609	.606	.598	.598	.593	.587	.580
16	.729	.690	.684	.676	.672	.665	.657	.650	.647	.639	.637	.634	.630	.626	.621	.617	.615	.610	.606	.601	.596	.593	.590
17	.740	.702	.696	.687	.682	.675	.665	.657	.653	.647	.643	.639	.634	.630	.624	.620	.616	.613	.609	.604	.598	.592	.584
18	.750	.710	.704	.697	.691	.683	.672	.665	.660	.650	.645	.642	.637	.632	.625	.622	.618	.614	.610	.605	.600	.593	.584
19	.760	.720	.713	.706	.700	.692	.680	.672	.664	.652	.647	.643	.638	.633	.623	.623	.619	.615	.610	.605	.600	.593	.584
20	.770	.728	.720	.713	.707	.698	.686	.677	.665	.652	.646	.642	.638	.628	.626	.622	.619	.614	610	.605	.600	.586	.579
22	.786	.740	.732	.726	.714	.709	.696	.674	.660	.647	.644	.640	.635	.630	.624	.621	.617	.613	.608	.604	.598	.590	.581
24	.800	.752	.741	.735	.728	.718	.700	.667	.648	.641	.637	.634	.629	.625	.620	.617	.613	.610	.605	.600	.593	.586	.577
26	.813	.762	.753	.742	.735	.725	.699	.671	.645	.633	.630	.627	.623	.619	.614	.612	.609	.605	.601	.595	.589	.581	.572
28	.828	.772	.763	.750	.743	.732	.711	.675	.647	.625	.622	.620	.616	.613	.609	.607	.603	.600	.594	.588	.582	.575	.566
30	.838	.782	.772	.759	.750	.738	.716	.677	.649	.623	.615	.611	.609	.605	.602	.600	.596	.591	.587	.582	.576	.569	.560
35	.862	.800	.789	.775	.765	.751	.727	.686	.654	.622	.613	.600	.592	.588	.584	.581	.578	.574	.570	.564	.560	.554	.546
40	.876	.820	.803	.788	.776	.761	.736	.693	.660	.642	.619	.607	.594	.585	.574	.569	.565	.562	.559	.555	.550	.544	.535
50	.900	.842	.822	.806	.794	.776	.752	.705	.675	.644	.633	.620	.604	.593	.582	.575	.568	.560	.552	.544	.538	.528	.517
60	.913	.850	.833	.815	.802	.783	.758	.716	.686	.654	.642	.630	.615	.600	.590	.583	.574	.567	.559	.549	.542	.533	.523
70	.923	.858	.839	.820	.806	.788	.762	.723	.695	.664	.650	.638	.624	.611	.596	.589	.582	.574	.566	.556	.547	.539	.529
80	.928	.860	.839	.821	.808	.791	.765	.728	.703	.673	.658	.645	.632	.618	.602	.596	.588	.591	.579	.562	.553	.543	.533
100	.931	.860	.840	.822	.809	.793	.767	.734	.710	.683	.669	.661	.641	.628	.613	.604	.596	.589	.580	.571	.561	.550	.541
127	.930	.860	.836	.820	.808	.789	.770	.738	.716	.693	.680	.670	.650	.638	.624	.616	.608	.598	.590	.580	.570	.560	.550
Rack	–	.839	.820	.808	.800	.780	.767	.755	.742	.728	.721	.714	.705	.696	.684	.677	.669	.661	.652	.642	.632	.620	.606

Table 4 Zone Factor Y_z (Note: factor same for both gears in gearset)

Number of Teeth on Gear being Designed	Number Teeth Mating Gear																						
No. Teeth	Rack	127	100	80	70	60	50	40	35	30	28	26	24	22	20	19	18	17	16	15	14	13	12
12	1.47	1.35	1.34	1.32	1.30	1.28	1.26	1.25	1.25	1.24	1.23	1.22	1.21	1.20	1.19	1.18	1.16	1.14	1.12	1.10	1.07	1.04	1.01
13	1.65	1.47	1.46	1.44	1.42	1.39	1.35	1.34	1.32	1.31	1.29	1.28	1.26	1.25	1.23	1.20	1.18	1.16	1.14	1.12	1.09	1.06	1.04
14	1.75	1.61	1.59	1.55	1.53	1.49	1.45	1.42	1.40	1.38	1.37	1.36	1.34	1.32	1.29	1.28	1.25	1.23	1.21	1.18	1.15	1.09	1.07
15	1.90	1.72	1.69	1.64	1.61	1.58	1.53	1.48	1.46	1.43	1.42	1.41	1.39	1.37	1.34	1.31	1.29	1.27	1.24	1.21	1.18	1.12	1.10
16	2.08	1.84	1.80	1.75	1.72	1.67	1.62	1.55	1.53	1.49	1.48	1.46	1.45	1.42	1.39	1.36	1.33	1.30	1.28	1.24	1.21	1.14	1.12
17	2.20	1.97	1.92	1.86	1.81	1.75	1.68	1.61	1.59	1.55	1.54	1.52	1.49	1.47	1.43	1.41	1.38	1.35	1.30	1.27	1.23	1.16	1.14
18	2.30	2.06	2.01	1.94	1.89	1.83	1.75	1.66	1.63	1.60	1.58	1.56	1.53	1.50	1.46	1.44	1.41	1.38	1.33	1.29	1.25	1.18	1.16
19	2.42	2.16	2.10	2.04	1.98	1.92	1.82	1.71	1.68	1.64	1.62	1.60	1.57	1.54	1.50	1.47	1.44	1.41	1.36	1.31	1.28	1.20	1.18
20	2.55	2.26	2.20	2.12	2.07	2.00	1.89	1.75	1.72	1.68	1.66	1.63	1.60	1.56	1.53	1.50	1.46	1.43	1.39	1.34	1.29	1.23	1.19
22	2.78	2.42	2.35	2.28	2.22	2.13	2.00	1.88	1.82	1.75	1.73	1.70	1.66	1.62	1.56	1.54	1.50	1.47	1.42	1.37	1.32	1.25	1.20
24	3.00	2.59	2.50	2.42	2.34	2.25	2.13	1.98	1.90	1.83	1.79	1.75	1.71	1.66	1.60	1.57	1.53	1.49	1.45	1.39	1.34	1.26	1.21
26	3.20	2.74	2.64	2.53	2.44	2.36	2.23	2.06	1.96	1.88	1.84	1.80	1.75	1.70	1.63	1.60	1.56	1.52	1.46	1.41	1.36	1.28	1.22
28	3.45	2.89	2.79	2.66	2.56	2.46	2.33	2.15	2.04	1.94	1.90	1.84	1.79	1.73	1.66	1.62	1.58	1.54	1.48	1.42	1.37	1.29	1.23
30	3.70	3.03	2.90	2.76	2.67	2.54	2.40	2.30	2.11	1.98	1.94	1.88	1.83	1.75	1.68	1.64	1.60	1.55	1.49	1.43	1.38	1.31	1.24
35	4.30	3.44	3.35	3.00	2.89	2.77	2.60	2.40	2.27	2.11	2.04	1.96	1.90	1.82	1.72	1.68	1.63	1.59	1.53	1.46	1.40	1.32	1.25
40	4.65	3.64	3.50	3.27	3.11	2.93	2.76	2.53	2.40	2.30	2.15	2.06	1.98	1.88	1.75	1.71	1.66	1.61	1.55	1.48	1.42	1.34	1.25
50	5.50	4.07	3.84	3.65	3.50	3.28	3.00	2.76	2.60	2.40	2.33	2.23	2.13	2.00	1.89	1.82	1.75	1.68	1.62	1.53	1.45	1.35	1.26
60	6.50	4.51	4.21	3.89	3.75	3.57	3.28	2.93	2.77	2.54	2.46	2.36	2.25	2.13	2.00	1.92	1.83	1.75	1.67	1.58	1.49	1.39	1.28
70	7.50	4.99	4.67	4.25	3.97	3.75	3.50	3.11	2.89	2.67	2.56	2.44	2.34	2.22	2.07	1.98	1.89	1.81	1.72	1.61	1.53	1.42	1.30
80	8.40	5.31	5.00	4.57	4.25	3.89	3.65	3.27	3.00	2.76	2.66	2.53	2.42	2.28	2.12	2.04	1.94	1.86	1.75	1.64	1.55	1.44	1.32
100	9.70	5.92	5.51	5.00	4.67	4.21	3.84	3.50	3.35	2.90	2.79	2.64	2.50	2.35	2.20	2.10	2.01	1.92	1.80	1.69	1.59	1.46	1.34
127	–	6.89	5.92	5.31	4.99	4.51	4.07	3.64	3.44	3.03	2.89	2.74	2.59	2.42	2.26	2.16	2.06	1.97	1.84	1.72	1.61	1.47	1.35
Rack	–	–	9.70	8.40	7.50	6.50	5.50	4.65	4.30	3.70	3.45	3.20	3.00	2.78	2.55	2.42	2.30	2.20	2.08	1.90	1.75	1.65	1.47

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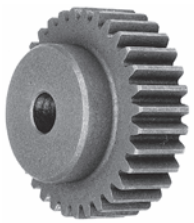
Standard Spur Gears

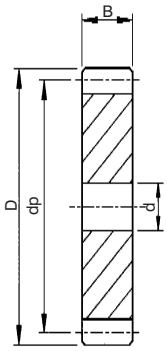
Dimensions tables for Spur Gears 1.0 and 1.5 Mod.

All gears machined from medium carbon, induction hardening steels.

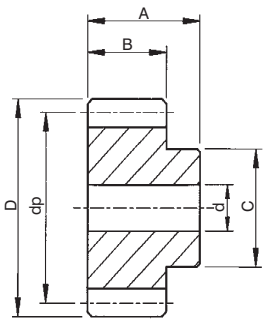


Gear Widths

Pitch	A	B
1 Mod	25	15
1.5 Mod	30	17



Gear Type 'A'



Gear Type 'B'

1.0 Mod Spur Gears

Suffix of Cat. No. indicates gear type

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub∅ C	Outside Dia. D	Weight kg
S1012B	12	12	6	6	9	14	.012
S1013B	13	13	6	7	10	15	.016
S1014B	14	14	6	7	11	16	.020
S1015B	15	15	6	8	12	17	.025
S1016B	16	16	6	8	13	18	.030
S1017B	17	17	6	9	14	19	.033
S1018B	18	18	8	10	15	20	.038
S1019B	19	19	8	10	15	21	.045
S1020B	20	20	8	11	16	22	.055
S1021B	21	21	8	11	16	23	.058
S1022B	22	22	8	12	18	24	.060
S1023B	23	23	8	12	18	25	.065
S1024B	24	24	8	13	20	26	.070
S1025B	25	25	8	13	20	27	.075
S1026B	26	26	8	13	20	28	.085
S1027B	27	27	8	13	20	29	.090
S1028B	28	28	8	13	20	30	.095
S1029B	29	29	8	13	20	31	.100
S1030B	30	30	8	13	20	32	.105
S1031B	31	31	10	16	25	33	.110
S1032B	32	32	10	16	25	34	.120
S1033B	33	33	10	16	25	35	.130
S1034B	34	34	10	16	25	36	.135
S1035B	35	35	10	16	25	37	.140
S1036B	36	36	10	16	25	38	.150
S1037B	37	37	10	16	25	39	.155
S1038B	38	38	10	16	25	40	.160
S1039B	39	39	10	16	25	41	.170
S1040B	40	40	10	16	25	42	.180
S1041B	41	41	10	20	30	43	.190
S1042B	42	42	10	20	30	44	.200
S1043B	43	43	10	20	30	45	.210
S1044B	44	44	10	20	30	46	.220
S1045B	45	45	10	20	30	47	.230
S1046B	46	46	10	20	30	48	.240
S1047B	47	47	10	20	30	49	.250
S1048B	48	48	10	20	30	50	0.26
S1049B	49	49	10	20	30	51	0.27
S1050B	50	50	12	20	30	52	0.28
S1051B	51	51	12	27	40	53	0.31

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S1052B	52	52	12	27	40	54	0.32
S1053B	53	53	12	27	40	55	0.34
S1054B	54	54	12	27	40	56	0.35
S1055B	55	55	12	27	40	57	0.36
S1056B	56	56	12	27	40	58	0.37
S1057B	57	57	12	27	40	59	0.38
S1058B	58	58	12	27	40	60	0.39
S1059B	59	59	12	27	40	61	0.40
S1060B	60	60	12	27	40	62	0.41
S1060A	60	60	12	38	–	62	0.20
S1061B	61	61	12	34	50	63	0.47
S1062B	62	62	12	34	50	64	0.48
S1063B	63	63	12	34	50	65	0.49
S1064B	64	64	12	34	50	66	0.50
S1065B	65	65	12	34	50	67	0.51
S1066B	66	66	12	34	50	68	0.52
S1067B	67	67	12	34	50	69	0.53
S1068B	68	68	12	34	50	70	0.54
S1069B	69	69	12	34	50	71	0.55
S1070B	70	70	12	34	50	72	0.56
S1070A	70	70	12	43	–	72	0.40
S1072B	72	72	12	34	50	74	0.65
S1072A	72	72	12	45	–	74	0.43
S1075B	75	75	12	34	50	77	0.70
S1075A	75	75	12	46	–	77	0.46
S1076B	76	76	12	34	50	78	0.80
S1076A	76	76	12	46	–	78	0.52
S1080B	80	80	12	34	50	82	1.00
S1080A	80	80	12	50	–	82	0.55
S1085A	85	85	12	54	–	87	0.62
S1090B	90	90	12	34	50	92	1.00
S1090A	90	90	12	57	–	92	0.70
S1095A	95	95	12	60	–	97	0.80
S10100B	100	100	12	40	60	102	1.00
S10100A	100	100	12	62	–	102	0.90
S10110A	110	110	12	68	–	112	1.12
S10114A	114	114	12	70	–	116	1.20
S10120A	120	120	12	74	–	122	1.25
S10127A	127	127	12	80	–	129	1.49

1.5 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S1512B	12	18.0	8	9	14	21.0	.03
S1513B	13	19.5	8	9	14	22.5	.04
S1514B	14	21.0	8	12	18	24.0	.06
S1515B	15	22.5	8	12	18	25.5	.07
S1516B	16	24.0	8	13	20	27.0	.08
S1517B	17	25.5	8	13	20	28.5	.09
S1518B	18	27.0	8	13	20	30.0	.10
S1519B	19	28.5	8	13	20	31.5	.11
S1520B	20	30.0	8	16	25	33.0	.13
S1521B	21	31.5	10	16	25	34.5	.14
S1522B	22	33.0	10	16	25	36.0	.15
S1523B	23	34.5	10	16	25	37.5	.17
S1524B	24	36.0	10	16	25	39.0	.18
S1525B	25	37.5	10	16	25	40.5	.19
S1526B	26	39.0	12	20	30	42.0	.20
S1527B	27	40.5	12	20	30	43.5	.21
S1528B	28	42.0	12	20	30	45.0	.22
S1529B	29	43.5	12	20	30	46.5	.23
S1530B	30	45.0	12	20	30	48.0	.25
S1531B	31	46.5	12	24	35	49.5	.27
S1532B	32	48.0	12	24	35	51.0	.28
S1533B	33	49.5	12	24	35	52.5	.30
S1534B	34	51.0	12	24	35	54.0	.32
S1535B	35	52.5	12	24	35	55.5	.34
S1536B	36	54.0	12	24	35	57.0	.36
S1537B	37	55.5	12	27	40	58.5	.38
S1538B	38	57.0	12	27	40	60.0	.40
S1539B	39	58.5	12	27	40	61.5	.42
S1540B	40	60.0	12	27	40	63.0	.45
S1541B	41	61.5	14	34	50	64.5	.52
S1542B	42	63.0	14	34	50	66.0	.55
S1543B	43	64.5	14	34	50	67.5	.57
S1544B	44	66.0	14	34	50	69.0	.60
S1545B	45	67.5	14	34	50	70.5	.62
S1546B	46	69.0	14	34	50	72.0	.65
S1547B	47	70.5	14	34	50	73.5	.68

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S1548B	48	72.0	14	34	50	75.0	0.70
S1549B	49	73.5	14	34	50	76.5	0.72
S1550B	50	75.0	14	34	50	78.0	0.75
S1551B	51	76.5	15	40	60	79.5	0.86
S1552B	52	78.0	15	40	60	81.0	0.87
S1553B	53	79.5	15	40	60	82.5	0.89
S1554B	54	81.0	15	40	60	84.0	0.91
S1555B	55	82.5	15	40	60	85.5	0.93
S1556B	56	84.0	15	40	60	87.0	0.95
S1557B	57	85.5	15	40	60	88.5	0.97
S1558B	58	87.0	15	40	60	90.0	1.00
S1559B	59	88.5	15	40	60	91.5	1.05
S1560B	60	90.0	15	40	60	93.0	1.10
S1561B	61	91.5	20	46	70	94.5	1.20
S1562B	62	93.0	20	46	70	96.0	1.23
S1563B	63	94.5	20	46	70	97.5	1.25
S1564B	64	96.0	20	46	70	99.0	1.27
S1565B	65	97.5	20	46	70	100.5	1.30
S1566B	66	99.0	20	46	70	102.0	1.35
S1567B	67	100.5	20	46	70	103.5	1.38
S1568B	68	102.0	20	46	70	105.0	1.42
S1569B	69	103.5	20	46	70	106.5	1.45
S1570B	70	105.0	20	46	70	108.0	1.48
S1572A	72	108.0	20	65	–	111.0	1.18
S1575A	75	112.5	20	68	–	115.5	1.28
S1576A	76	114.0	20	68	–	117.0	1.32
S1580A	80	120.0	20	72	–	123.0	1.45
S1585A	85	127.5	20	80	–	130.5	1.60
S1590A	90	135.0	20	85	–	138.0	1.85
S1595A	95	142.5	20	90	–	145.5	2.04
S15100A	100	150.0	20	95	–	153.0	2.30
S15110A	110	165.0	20	105	–	168.0	2.81
S15114A	114	171.0	20	107	–	174.0	3.30
S15120A	120	180.0	20	115	–	183.0	3.39
S15127A	127	190.5	20	120	–	193.5	3.78

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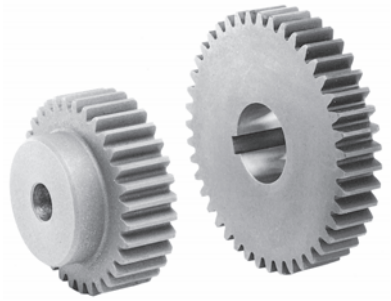
Standard Spur Gears

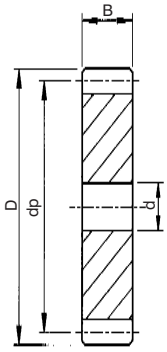
Dimensions tables for Spur Gears 2.0 to 6.0 Mod.

All gears machined from medium carbon steels.

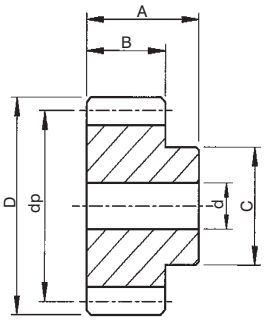


Gear Widths mm

Pitch	A	B
2 Mod	35	20
2.5 Mod	40	25
3 Mod	50	30
4 Mod	60	40
5 Mod	75	50
6 Mod	80	60



Gear Type 'A'



Gear Type 'B'

2.0 Mod Spur Gears

Suffix of Cat. No. indicates gear type

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S2012B	12	24	10	12	18	28	.08
S2013B	13	26	10	12	19	30	.10
S2014B	14	28	10	13	20	32	.12
S2015B	15	30	10	14	22	34	.14
S2016B	16	32	10	15	24	36	.15
S2017B	17	34	10	16	25	38	.16
S2018B	18	36	10	16	25	40	.17
S2019B	19	38	10	16	25	42	.19
S2020B	20	40	10	20	30	44	.24
S2021B	21	42	12	20	30	46	.25
S2022B	22	44	12	20	30	48	.27
S2023B	23	46	12	20	30	50	.29
S2024B	24	48	12	24	35	52	.33
S2025B	25	50	12	24	35	54	.36
S2026B	26	52	12	27	40	56	.41
S2027B	27	54	12	27	40	58	.45
S2028B	28	56	12	27	40	60	.48
S2029B	29	58	14	27	40	62	.51
S2030B	30	60	14	27	40	64	.54
S2031B	31	62	14	30	45	66	.60
S2032B	32	64	14	30	45	68	.63
S2033B	33	66	14	30	45	70	.66
S2034B	34	68	14	30	45	72	.69
S2035B	35	70	14	30	45	74	.72
S2036B	36	72	14	30	45	76	.76
S2037B	37	74	14	34	50	78	.85
S2038B	38	76	14	34	50	80	.87
S2039B	39	78	14	34	50	82	.89
S2040B	40	80	14	34	50	84	.91
S2041B	41	82	16	40	60	86	1.05
S2042B	42	84	16	40	60	88	1.10
S2043B	43	86	16	40	60	90	1.15
S2044B	44	88	16	40	60	92	1.20
S2045B	45	90	16	40	60	94	1.25
S2046B	46	92	16	40	60	96	1.30
S2047B	47	94	16	40	60	98	1.35

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S2048B	48	96	16	46	70	100	1.40
S2049B	49	98	16	46	70	102	1.47
S2050B	50	100	16	46	70	104	1.55
S2051B	51	102	20	46	70	106	1.60
S2052B	52	104	20	46	70	108	1.65
S2053B	53	106	20	46	70	110	1.70
S2054B	54	108	20	46	70	112	1.75
S2055B	55	110	20	46	70	114	1.80
S2056B	56	112	20	46	70	116	1.87
S2057B	57	114	20	46	70	118	1.94
S2058B	58	116	20	46	70	120	2.00
S2059B	59	118	20	46	70	122	2.07
S2060B	60	120	20	46	70	124	2.15
S2061B	61	122	20	54	80	126	2.25
S2062B	62	124	20	54	80	128	2.30
S2063B	63	126	20	54	80	130	2.35
S2064B	64	128	20	54	80	132	2.40
S2065B	65	130	20	54	80	134	2.45
S2066B	66	132	20	54	80	136	2.60
S2067B	67	134	20	54	80	138	2.67
S2068B	68	136	20	54	80	140	2.74
S2069B	69	138	20	54	80	142	2.82
S2070B	70	140	20	54	80	144	2.90
S2072B	72	144	20	54	80	148	3.00
S2072A	72	144	20	90	–	148	2.53
S2075A	75	150	20	94	–	154	2.72
S2076A	76	152	20	95	–	156	2.80
S2080A	80	160	20	98	–	164	3.04
S2085A	85	170	20	104	–	174	3.40
S2090A	90	180	20	110	–	184	3.85
S2095A	95	190	20	116	–	194	4.34
S20100A	100	200	20	122	–	204	4.85
S20110A	110	220	20	134	–	224	5.80
S20114A	114	228	20	140	–	232	6.30
S20120A	120	240	20	148	–	244	6.95
S20127A	127	254	20	157	–	258	7.90

2.5 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S2512B	12	30.0	10	14	22	35.0	.16
S2513B	13	32.5	10	16	25	37.5	.20
S2514B	14	35.0	10	19	28	40.0	.28
S2515B	15	37.5	10	20	30	42.5	.36
S2516B	16	40.0	12	21	32	45.0	.37
S2517B	17	42.5	12	24	35	47.5	.38
S2518B	18	45.0	12	24	35	50.0	.40
S2519B	19	47.5	12	24	35	52.5	.42
S2520B	20	50.0	14	27	40	55.0	.50
S2521B	21	52.5	14	27	40	57.5	.53
S2522B	22	55.0	14	30	45	60.0	.57
S2523B	23	57.5	14	30	45	62.5	.60
S2524B	24	60.0	14	30	45	65.0	.68
S2525B	25	62.5	14	34	50	67.5	.78
S2526B	26	65.0	14	34	50	70.0	.82
S2527B	27	67.5	14	34	50	72.5	.87
S2528B	28	70.0	14	34	50	75.0	.90
S2529B	29	72.5	14	34	50	77.5	.95
S2530B	30	75.0	16	36	55	80.0	1.10
S2531B	31	77.5	16	36	55	82.5	1.15
S2532B	32	80.0	16	36	55	85.0	1.21
S2533B	33	82.5	16	36	55	87.5	1.27
S2534B	34	85.0	16	36	55	90.0	1.30
S2535B	35	87.5	16	40	60	92.5	1.43
S2536B	36	90.0	16	40	60	95.0	1.51
S2537B	37	92.5	16	40	60	97.5	1.58
S2538B	38	95.0	16	40	60	100.0	1.68
S2539B	39	97.5	16	40	60	102.5	1.73
S2540B	40	100.0	20	46	70	105.0	1.80
S2541B	41	102.5	20	46	70	107.5	1.97
S2542B	42	105.0	20	46	70	110.0	2.05
S2543B	43	107.5	20	46	70	112.5	2.14
S2544B	44	110.0	20	46	70	115.0	2.22
S2545B	45	112.5	20	46	70	117.5	2.31

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S2546B	46	115.0	20	46	70	120.0	2.39
S2547B	47	117.5	20	54	80	122.5	2.62
S2548B	48	120.0	20	54	80	125.0	2.71
S2549B	49	122.5	20	54	80	127.5	2.81
S2550B	50	125.0	20	54	80	130.0	2.90
S2551B	51	127.5	20	54	80	132.5	3.00
S2552B	52	130.0	20	60	90	135.0	3.25
S2553B	53	132.5	20	60	90	137.5	3.35
S2554B	54	135.0	20	60	90	140.0	3.46
S2555B	55	137.5	20	60	90	142.5	3.57
S2556B	56	140.0	20	67	100	145.0	3.84
S2557B	57	142.5	20	67	100	147.5	3.90
S2558B	58	145.0	20	67	100	150.0	4.07
S2559B	59	147.5	20	67	100	152.5	4.18
S2560B	60	150.0	20	67	100	155.0	4.39
S2562B	62	155.0	20	67	100	160.0	4.50
S2565B	65	162.5	20	67	100	167.5	4.70
S2565A	65	162.5	20	100	–	167.5	4.00
S2567B	67	167.5	20	67	100	172.5	5.15
S2570B	70	175.0	20	67	100	180.0	5.00
S2570A	70	175.0	20	108	–	180.0	4.85
S2572A	72	180.0	20	110	–	185.0	5.05
S2575A	75	187.5	20	115	–	192.5	5.33
S2576A	76	190.0	20	117	–	195.0	5.50
S2580A	80	200.0	25	123	–	205.0	6.02
S2585A	85	212.5	25	131	–	217.5	6.90
S2590A	90	225.0	25	140	–	230.0	7.71
S2595A	95	237.5	25	148	–	242.5	8.60
S25100A	100	250.0	25	156	–	255.0	9.50
S25110A	110	275.0	25	172	–	280.0	11.56
S25114A	114	285.0	25	178	–	290.0	12.40
S25120A	120	300.0	25	188	–	305.0	13.87
S25127A	127	317.5	25	200	–	322.5	15.40

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Standard Spur Gears

3.0 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S3012B	12	36	12	16	25	42	.27
S3013B	13	39	12	16	25	45	.30
S3014B	14	42	12	20	30	48	.35
S3015B	15	45	12	24	35	51	.45
S3016B	16	48	15	26	38	54	.55
S3017B	17	51	15	28	42	57	.65
S3018B	18	54	15	30	45	60	.75
S3019B	19	57	15	30	45	63	.82
S3020B	20	60	15	30	45	66	.90
S3021B	21	63	15	30	45	69	.96
S3022B	22	66	15	34	50	72	1.08
S3023B	23	69	15	34	50	75	1.16
S3024B	24	72	16	34	50	78	1.22
S3025B	25	75	16	40	60	81	1.30
S3026B	26	78	16	40	60	84	1.40
S3027B	27	81	16	40	60	87	1.50
S3028B	28	84	16	40	60	90	1.63
S3029B	29	87	16	40	60	93	1.76
S3030B	30	90	16	40	60	96	1.90
S3031B	31	93	20	46	70	99	2.00
S3032B	32	96	20	46	70	102	2.12
S3033B	33	99	20	46	70	105	2.25
S3034B	34	102	20	46	70	108	2.37
S3035B	35	105	20	46	70	111	2.50
S3036B	36	108	20	46	70	114	2.63
S3037B	37	111	20	54	80	117	2.86
S3038B	38	114	20	54	80	120	2.98
S3039B	39	117	20	54	80	123	3.10
S3040B	40	120	20	54	80	126	3.23
S3041B	41	123	20	60	90	129	3.67
S3042B	42	126	20	60	90	132	3.81
S3043B	43	129	20	60	90	135	3.95
S3044B	44	132	20	60	90	138	4.02

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S3045B	45	135	20	60	90	141	4.15
S3046B	46	138	20	60	90	144	4.30
S3047B	47	141	20	60	90	147	4.45
S3048B	48	144	20	65	100	150	4.85
S3048A	48	144	25	88	–	150	3.80
S3049B	49	147	20	67	100	153	5.15
S3050B	50	150	20	67	100	156	5.20
S3050A	50	150	25	92	–	156	4.00
S3052A	52	156	25	96	–	162	4.30
S3054B	54	162	20	67	100	168	6.00
S3055B	55	165	20	67	100	171	6.10
S3055A	55	165	25	102	–	171	4.85
S3056B	56	168	20	67	100	174	6.25
S3057B	57	171	20	67	100	177	6.40
S3057A	57	171	25	106	–	177	5.20
S3060B	60	180	20	67	100	186	7.05
S3060A	60	180	25	112	–	186	5.80
S3062B	62	186	20	67	100	192	7.50
S3065B	65	195	20	67	100	201	8.00
S3065A	65	195	25	125	–	201	6.80
S3070A	70	210	25	128	–	216	7.90
S3072A	72	216	25	132	–	222	8.40
S3075A	75	225	25	138	–	231	9.10
S3076A	76	228	25	140	–	234	9.40
S3080A	80	240	25	148	–	246	10.40
S3085A	85	255	25	153	–	261	11.90
S3090A	90	270	25	163	–	276	13.20
S3095A	95	285	25	174	–	291	14.95
S30100A	100	300	25	185	–	306	16.45
S30110A	110	330	25	195	–	336	20.00
S30114A	114	342	25	205	–	346	21.50
S30120A	120	360	25	215	–	366	23.70
S30127A	127	381	25	230	–	387	26.74

4.0 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S4012B	12	48	14	24	35	56	0.60
S4013B	13	52	14	27	40	60	0.75
S4014B	14	56	14	30	45	64	0.90
S4015B	15	60	14	30	45	68	1.05
S4016B	16	64	15	34	50	72	1.18
S4017B	17	68	15	34	50	76	1.25
S4018B	18	72	15	34	50	80	1.40
S4019B	19	76	15	40	60	84	1.60
S4020B	20	80	15	40	60	88	1.80
S4021B	21	84	20	46	70	92	2.20
S4022B	22	88	20	46	70	96	2.30
S4023B	23	92	20	50	75	100	2.50
S4024B	24	96	20	50	75	104	2.70
S4025B	25	100	20	50	75	108	2.90
S4026B	26	104	20	50	75	112	3.10
S4027B	27	108	20	50	75	116	3.35
S4028B	28	112	20	50	75	120	3.50
S4029B	29	116	20	50	75	124	3.75
S4030B	30	120	20	50	75	128	3.95
S4031B	31	124	20	54	80	132	4.30
S4032B	32	128	20	54	80	136	4.50
S4033B	33	132	20	54	80	140	4.70
S4034B	34	136	20	54	80	144	5.20
S4035B	35	140	20	54	80	148	5.40
S4036B	36	144	20	54	80	152	5.70
S4037B	37	148	20	54	80	156	6.10
S4038B	38	152	20	54	80	160	6.25

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S4038A	38	152	25	90	–	160	5.45
S4039B	39	156	25	54	80	164	6.40
S4040B	40	160	25	54	80	168	6.72
S4040A	40	160	25	95	–	168	6.00
S4045B	45	180	25	54	80	188	4.00
S4045A	45	180	25	108	–	188	7.70
S4048B	48	192	25	54	80	200	9.50
S4048A	48	192	25	116	–	200	8.70
S4050B	50	200	25	54	80	208	10.00
S4050A	50	200	25	122	–	208	9.71
S4052A	52	208	25	127	–	216	10.51
S4055A	55	220	25	135	–	228	11.60
S4057A	57	228	25	140	–	236	12.70
S4060B	60	240	25	67	100	248	15.50
S4060A	60	240	25	148	–	248	13.80
S4065B	65	260	25	67	100	268	17.50
S4065A	65	260	25	161	–	268	16.50
S4070A	70	280	25	175	–	288	18.25
S4075A	75	300	25	188	–	308	22.80
S4076A	76	304	25	190	–	312	22.95
S4080A	80	320	25	200	–	328	25.10
S4085A	85	340	25	214	–	348	28.00
S4090A	90	360	25	227	–	368	31.25
S4095A	95	380	25	240	–	388	35.20
S40100A	100	400	25	254	–	408	39.00
S40110A	110	440	25	280	–	448	47.60
S40114A	114	456	25	290	–	464	51.00

5.0 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S5012B	12	60	16	30	45	70	1.40
S5013B	13	65	16	34	50	75	1.57
S5014B	14	70	20	36	55	80	1.90
S5015B	15	75	20	40	60	85	2.10
S5016B	16	80	20	43	65	90	2.44
S5017B	17	85	20	46	70	95	2.80
S5018B	18	90	20	46	70	100	3.07
S5019B	19	95	20	46	70	105	3.35
S5020B	20	100	20	54	80	110	3.88
S5021B	21	105	20	54	80	115	4.20
S5022B	22	110	25	54	80	120	4.60
S5023B	23	115	25	60	90	125	5.04
S5024B	24	120	25	60	90	130	5.40
S5025B	25	125	25	60	90	135	5.78
S5026B	26	130	25	67	100	140	6.69
S5027B	27	135	25	67	100	145	6.88
S5028B	28	140	25	67	100	150	7.30
S5029B	29	145	25	67	100	155	7.90
S5030B	30	150	25	67	100	160	8.38
S5032B	32	160	25	74	110	170	9.30
S5032A	32	160	25	90	–	170	8.00
S5035A	35	175	25	100	–	185	9.40
S5036B	36	180	25	74	110	190	11.40
S5038B	38	190	30	74	110	200	13.00

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S5038A	38	190	30	110	–	200	10.85
S5040B	40	200	30	74	110	210	14.00
S5040A	40	200	30	116	–	210	12.05
S5042B	42	210	25	80	120	220	12.20
S5045A	45	225	30	126	–	235	15.32
S5048A	48	240	30	141	–	250	17.50
S5050A	50	250	30	147	–	260	19.00
S5052A	52	260	30	154	–	270	20.50
S5055B	55	275	30	80	120	285	24.50
S5055A	55	275	30	164	–	285	23.04
S5057A	57	285	30	170	–	295	24.76
S5060B	60	300	30	80	120	310	28.50
S5060A	60	300	30	180	–	310	27.40
S5065A	65	325	30	196	–	335	32.28
S5070A	70	350	30	212	–	360	37.48
S5075A	75	375	30	228	–	385	43.07
S5076A	76	380	30	230	–	390	44.23
S5080A	80	400	30	243	–	410	49.30
S5085A	85	425	30	260	–	435	55.50
S5090A	90	450	30	275	–	460	62.20
S5095A	95	475	30	290	–	485	69.35
S50100A	100	500	30	305	–	510	76.90
S50110A	110	550	30	340	–	560	96.50
S50114A	114	570	30	350	–	580	103.55

6.0 Mod Spur Gears

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S6012B	12	72	20	36	54	84	2.05
S6013B	13	78	20	40	60	90	2.50
S6014B	14	84	20	43	65	96	1.60
S6015B	15	90	20	46	70	102	3.40
S6016B	16	96	20	50	75	108	3.90
S6018B	18	108	20	54	80	120	4.90
S6020B	20	120	20	60	90	132	6.15
S6021B	24	144	20	74	110	156	8.85
S6023B	23	138	25	74	110	150	8.00

Cat. No.	No. Teeth	Pitch Dia. dp	Min Bore d	Max. Bore	Hub ∅ C	Outside Dia. D	Weight kg
S6025B	25	150	25	74	110	162	9.50
S6028A	28	168	25	100	–	180	10.20
S6030B	30	180	25	74	110	192	11.40
S6030A	30	180	25	108	–	192	11.75
S6032A	32	192	25	116	–	204	13.40
S6035A	35	210	25	128	–	222	16.10
S6038A	38	228	25	138	–	240	19.02
S6040B	40	240	25	80	120	252	16.00
S6040A	40	240	25	145	–	252	21.10

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