

# HELICAL GEARS

## APPROXIMATE HORSEPOWER AND TORQUE\* RATINGS FOR CLASS I SERVICE (Service Factor = 1.0)

No.	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM		3600 RPM				
	Teeth	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque		
<b>24 DIAMETRAL PITCH – 33.94 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.250-.375" FACE</b>			
8	.01	13.5	.01	13.5	.02	13.4	.04	13.2	.06	13.0	.12	12.5	.17	12.0	.22	11.6	.31	10.8	.51	8.9			
10	.01	18.0	.01	17.9	.03	17.8	.06	17.4	.08	17.1	.16	16.3	.22	15.5	.28	14.8	.39	13.6	.62	10.9			
12	.01	22.5	.02	22.3	.04	22.1	.07	21.6	.10	21.1	.19	20.0	.27	18.9	.34	17.9	.46	16.2	.72	12.6			
15	.01	29.1	.02	28.9	.05	28.5	.09	27.8	.13	27.1	.24	25.2	.34	23.5	.42	22.0	.56	19.6	.84	14.8			
18	.01	23.6	.02	23.4	.04	23.1	.07	22.4	.10	21.7	.19	19.9	.26	18.4	.33	17.1	.43	15.0	.62	10.9			
20	.01	26.8	.02	26.5	.04	26.1	.08	25.2	.12	24.3	.21	22.2	.29	20.4	.36	18.8	.47	16.3	.67	11.7			
24	.01	32.6	.03	32.3	.05	31.6	.10	30.3	.14	29.2	.25	26.1	.34	23.7	.41	21.6	.53	18.5	.73	12.8			
30	.02	41.3	.03	40.8	.06	39.7	.12	37.8	.17	36.0	.30	31.6	.40	28.1	.48	25.3	.60	21.1	.81	14.1			
36	.02	49.9	.04	49.1	.08	47.6	.14	44.9	.20	42.4	.35	36.4	.46	31.9	.54	28.4	.66	23.3	.86	15.1			
48	.03	67.0	.05	65.6	.10	63.0	.19	58.3	.26	54.3	.43	45.0	.55	38.4	.64	33.5	.76	26.6	.94	16.5			
60	.03	83.8	.06	81.6	.12	77.6	.22	70.7	.31	64.9	.50	52.0	.62	43.4	.71	37.3	.83	29.0	1.00	17.5			
72	.04	101	.08	97.7	.15	92.1	.26	82.5	.36	74.8	.56	58.3	.68	47.8	.77	40.5	.89	31.0	1.00	18.2			
<b>20 DIAMETRAL PITCH – 28.28 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.375-.563" FACE</b>			
8	.01	29.2	.02	29.1	.05	28.8	.09	28.4	.13	27.9	.25	26.6	.36	25.4	.46	24.3	.64	22.3	1.00	18.0			
10	.01	37.7	.03	37.5	.06	37.1	.12	36.3	.17	35.6	.32	33.5	.45	31.7	.57	30.1	.78	27.2	1.20	21.2			
12	.02	48.5	.04	48.2	.08	47.5	.15	46.4	.22	45.2	.40	42.2	.56	39.5	.71	37.1	.95	33.2	1.44	25.1			
15	.02	62.7	.05	62.2	.10	61.2	.19	59.3	.27	51.6	.50	52.8	.70	48.8	.86	45.4	1.14	39.8	1.66	29.0			
20	.02	57.7	.05	57.1	.09	55.9	.17	53.7	.25	51.6	.44	46.2	.60	41.9	.73	38.3	.93	32.7	1.30	22.7			
25	.03	73.8	.06	72.8	.11	70.9	.21	67.4	.31	64.3	.54	56.4	.72	50.2	.86	45.2	1.08	37.7	1.44	25.2			
30	.04	89.1	.07	87.6	.13	85.0	.25	80.0	.36	75.7	.62	65.0	.81	56.9	.96	50.7	1.19	41.5	1.54	27.0			
40	.05	120	.09	118	.18	113	.33	104	.46	97.2	.77	80.5	.98	68.7	1.14	59.9	1.36	47.7	1.69	29.6			
50	.06	151	.12	147	.22	139	.40	127	.55	117	.89	93.4	1.11	78.0	1.27	66.9	1.49	52.1	1.79	31.4			
60	.07	180	.14	175	.26	165	.47	147	.64	134	.99	104	1.22	85.4	1.38	72.3	1.58	55.4	1.86	32.5			
<b>16 DIAMETRAL PITCH – 22.63 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.500" FACE</b>			
12	.03	67.2	.05	66.6	.10	65.6	.20	63.6	.29	61.7	.54	56.6	.75	52.3	.93	48.6	1.20	42.6	1.80	31.1			
16	.04	93.4	.07	92.4	.14	90.5	.28	86.9	.40	83.5	.71	74.8	.97	67.8	1.18	62.0	1.51	52.9	2.10	36.7			
20	.05	120	.09	118	.18	115	.35	110	.50	104	.87	91.5	1.16	81.5	1.40	73.4	1.75	61.3	2.34	41.0			
24	.06	146	.11	144	.22	139	.42	131	.59	124	1.00	107	1.33	93.3	1.58	83.0	1.94	68.1	2.52	44.2			
32	.08	197	.15	193	.29	185	.54	172	.76	160	1.26	132	1.61	113	1.87	98.4	2.24	78.4	2.78	48.7			
40	.10	249	.19	242	.37	230	.67	210	.92	193	1.47	154	1.84	129	2.11	111	2.46	86.2	3.00	51.8			
48	.12	298	.23	289	.43	273	.77	244	1.05	221	1.64	173	2.02	141	2.28	120	2.62	91.8	3.08	53.9			
<b>12 DIAMETRAL PITCH – 16.97 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.750" FACE</b>			
12	.07	179	.14	177	.27	173	.53	166	.76	160	1.36	143.2	1.85	130	2.26	119	2.89	101	4.01	70.2			
15	.09	231	.18	228	.35	222	.67	211	.96	201	1.68	176	2.24	157	2.69	142	3.37	118	4.51	79.0			
18	.11	281	.22	277	.43	268	.80	253	1.14	239	1.95	205	2.57	180	3.05	160	3.75	131	4.86	85.1			
24	.15	387	.30	379	.58	364	1.07	337	1.49	313	2.47	260	3.16	222	3.68	193	4.39	154	5.45	95.5			
30	.19	489	.38	477	.72	453	1.31	413	1.80	379	2.89	304	3.62	254	4.14	218	4.84	170	5.82	102			
36	.23	589	.45	571	.85	538	1.53	482	2.08	437	3.24	341	3.99	279	4.50	237	5.17	181	6.08	106			
<b>10 DIAMETRAL PITCH – 14.14 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.875" FACE</b>			
8	.07	181	.14	179	.28	176	.54	171	.79	165	1.44	151	1.78	139	2.45	129	3.20	112	4.62	80.9			
10	.10	240	.19	238	.37	233	.71	223	1.02	215	1.83	193	2.49	174	3.03	159	3.88	136	5.39	94.4			
12	.12	300	.23	296	.46	288	.87	275	1.25	262	2.20	231	2.95	206	3.55	186	4.46	156	6.01	105			
15	.15	387	.30	381	.59	369	1.10	348	1.56	329	2.69	282	3.53	247	4.19	220	5.16	181	6.69	117			
20	.21	533	.41	522	.79	501	1.47	464	2.05	432	3.40	357	4.35	305	5.06	266	6.05	212	7.51	131			
25	.27	680	.53	662	1.00	630	1.82	573	2.50	526	4.01	422	5.03	352	5.75	302	6.72	235	8.09	142			
30	.32	818	.63	793	1.19	747	2.12	669	2.89	606	4.50	473	5.54	388	6.25	328	7.18	252	8.44	148			
40	.44	1097	.84	1053	1.55	975	2.69	849	3.58	751	5.32	559	6.36	445	7.04	370	7.89	276	8.97	157			
<b>8 DIAMETRAL PITCH – 11.31 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																				<b>.750" FACE</b>			
8	.10	242	.19	239	.37	234	.71	225	1.03	216	1.85	194	2.51	176	3.06	160	3.91	137	5.43	95			
10	.13	321	.25	317	.49	309	.93	293	1.33	280	2.53	245	3.12	218	3.74	197	4.69	164	6.27	110			
12	.16	400	.31	394	.61	382	1.14	360	1.62	340	2.78	292	3.65	256	4.34	228	5.33	187	6.92	121			
16	.22	555	.43	543	.83	521	1.53	483	2.14	447	3.54	372	4.53	318	5.27	277	6.30	221	7.82	137			
20	.28	710	.55	692	1.04	658	1.90	599	2.62	550	4.20	441	5.26	368	6.01	316	7.03	246	8.45	148			
24	.34	862	.66	836	1.25	787	2.24	706	3.04	639	4.75	499	5.84	409	6.59	346	7.57	265	8.90	156			
32	.46	1160	.88	1113	1.64	1031	2.85	897	3.78	794	5.63	591	6.72	471	7.44	391	8.34	292					
40	.58	1454	1.10	1383	2.00	1259	3.39	1068	4.41	927	6.32	664	7.39	517	8.07	424	8.88	311					
48	.69	1137	1.30	1636	2.33	1466	3.85	1214	4.93	1036	6.85	719	7.87	551	8.50	447							

Ratings are based on strength calculation. Basic static strength rating, or for hand operation of above gears is approximately 3 times the 100 RPM rating.

NOTE: Ratings to right of heavy line exceed 1500 Feet per Minute and should be used for interpolation purposes only.

\*Torque Rating (Lb. Ins.)

# HELICAL GEARS

## APPROXIMATE HORSEPOWER AND TORQUE\* RATINGS FOR CLASS I SERVICE (Service Factor = 1.0)

No.	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM		3600 RPM		
	Teeth	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque
<b>8 DIAMETRAL PITCH – 11.31 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																			<b>1.000" FACE</b>		
8	.13	323	.25	319	.50	313	.95	300	1.4	288	2.5	258	3.3	234	4.1	214	5.2	183	7.2	127	
10	.17	428	.34	422	.65	412	1.20	391	1.8	373	3.1	327	4.2	291	5.0	262	6.3	219	8.4	146	
12	.21	534	.42	525	.81	509	1.50	480	2.2	453	3.7	389	4.9	341	5.8	304	7.1	249	9.2	162	
16	.29	740	.57	725	1.1	696	2.00	644	2.9	599	4.7	496	6.1	423	7.0	370	8.4	294	10.4	182	
20	.38	947	.73	923	1.4	877	2.50	799	3.5	733	5.6	588	7.0	491	8.0	421	9.3	328	11.1	197	
24	.46	1150	.88	1114	1.7	1050	3.00	941	4.1	852	6.3	665	7.7	545	8.8	462	10.1	352	11.9	208	
32	.61	1547	1.20	1485	2.2	1374	3.80	1196	5.0	1059	7.5	788	9.0	628	9.9	521	11.1	389	12.7	221	
<b>8 DIAMETRAL PITCH – 11.31 NORMAL DIAMETRAL PITCH BRONZE</b>																			<b>.750" FACE</b>		
8	.04	97	.08	95.8	.15	93.8	.29	90.0	.41	86.5	.74	77.5	1.00	70.2	1.22	64.2	1.56	54.8	2.17	38.0	
10	.05	128	.10	127	.20	123	.37	117	.53	112	.93	98.1	1.25	87.3	1.50	78.7	1.88	65.7	2.51	43.9	
12	.06	160	.12	158	.24	153	.46	144	.65	136	1.11	117	1.46	102	1.73	91.1	2.13	74.7	2.77	48.4	
16	.09	222	.17	217	.33	209	.61	193	.86	180	1.42	149	1.81	127	2.11	111	2.52	88.2	3.13	54.7	
20	.11	284	.22	277	.42	263	.76	240	1.05	220	1.68	176	2.10	147	2.41	126	2.81	98.4	3.38	59.2	
24	.14	345	.27	334	.50	315	.90	282	1.22	256	1.90	199	2.33	163	2.64	138	3.03	106	3.56	62.3	
32	.18	464	.35	445	.65	412	1.14	359	1.51	318	2.75	236	2.69	188	2.98	156	3.34	117			
40	.23	582	.44	553	.80	504	1.36	427	1.76	371	2.53	266	2.95	207	3.23	169	3.55	124			
48	.28	695	.52	655	.93	587	1.54	486	1.97	414	2.74	288	3.15	220	3.40	179					
<b>6 DIAMETRAL PITCH – 8.48 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																			<b>1.000" FACE</b>		
8	.01	572	.45	564	.87	548	1.65	520	2.35	494	4.09	430	5.44	381	6.50	342	8.09	283	10.70	187	
9	.26	664	.52	653	1.00	633	1.89	597	2.68	564	4.61	484	6.06	424	7.19	378	8.84	310	11.47	201	
10	.30	758	.59	745	1.14	720	2.14	674	3.02	634	5.11	537	6.66	466	7.84	412	9.54	334	12.17	213	
12	.37	944	.73	924	1.41	887	2.61	821	3.64	764	6.02	633	7.71	540	8.97	471	10.71	375	13.29	233	
15	.48	1217	.94	1185	1.79	1127	3.26	1026	4.48	942	7.19	755	9.00	630	10.30	541	12.04	421	14.48	253	
18	.59	1478	1.14	1433	2.14	1350	3.84	1210	5.22	1096	8.14	855	10.00	700	11.30	593	12.98	454	15.25	267	
20	.66	1670	1.28	1613	2.40	1511	4.25	1340	5.73	1204	8.79	924	10.69	749	11.99	630	13.65	478			
24	.80	2024	1.54	1942	2.85	1798	4.97	1565	6.60	1386	9.82	1031	11.72	821	12.98	682	14.55	510			
30	1.01	2546	1.92	2420	3.50	2203	5.93	1868	7.72	1622	11.06	1162	12.92	905	14.11	741	15.54	544			
36	1.21	3048	2.28	2872	4.08	2573	6.76	2131	8.65	1818	12.02	1262	13.81	967	14.92	783					
<b>6 DIAMETRAL PITCH – 8.48 NORMAL DIAMETRAL PITCH HARDENED STEEL</b>																			<b>1.250" FACE</b>		
8	.28	715	.56	705	1.09	685	2.06	650	2.94	617	5.12	537	6.79	476	8.13	427	10.11	354	13.37	234	
10	.38	948	.74	931	1.43	899	2.67	842	3.77	792	6.39	672	8.32	583	9.80	515	11.93	418	15.22	266	
12	.47	1180	.92	1155	1.76	1109	3.26	1026	4.55	955	7.53	791	9.64	675	11.21	589	13.38	469	16.61	291	
15	.60	1521	1.18	1482	2.24	1409	4.07	1282	5.60	1177	8.99	944	11.25	788	12.87	676	15.04	527	18.10	317	
18	.73	1848	1.42	1791	2.68	1687	4.80	1512	6.52	1370	10.17	1068	12.50	876	14.12	742	16.22	568	19.06	334	
24	1.00	2529	1.93	2428	3.57	2247	6.21	1956	8.24	1732	12.27	1289	14.65	1026	16.23	852	18.19	637			
<b>6 DIAMETRAL PITCH – 8.48 NORMAL DIAMETRAL PITCH BRONZE</b>																			<b>1.000" FACE</b>		
12	.15	378	.29	370	.56	355	1.04	328	1.46	306	2.41	253	3.08	216	3.59	188	4.28	150	5.32	93.1	
15	.19	487	.38	474	.72	451	1.30	410	1.79	377	2.88	302	3.60	252	4.12	216	4.81	169	5.79	101	
18	.23	591	.45	513	.86	540	1.54	484	2.09	439	3.25	342	4.00	280	4.52	237	5.19	182	6.10	107	
20	.26	668	.51	645	.96	604	1.70	536	2.29	482	3.52	369	4.28	300	4.80	252	5.46	191			
24	.32	810	.62	777	1.14	719	1.99	626	2.64	554	3.93	412	4.69	328	5.19	273	5.82	204			
30	.40	1018	.77	968	1.40	881	2.37	747	3.09	649	4.42	465	5.17	362	5.65	296	6.22	218			
36	.48	1219	.91	1149	1.63	1029	2.70	852	3.46	727	4.81	505	5.52	387	5.97	313					

Ratings are based on strength calculation. Basic static strength rating, or for hand operation of above gears is approximately 3 times the 100 RPM rating.

NOTE: Ratings to right of heavy line exceed 1500 Feet per Minute and should be used for interpolation purposes only.

\*Torque Rating (Lb. Ins.)