



Power and Speed Data for Gear
and
Chain Drive Transmissions

F-1052 (Revised: 11/19/21)

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Medium, Heavy and Extra Heavy Duty Model K, T, TA, TK and KC Gear Drive Transmissions

Table 1. Ratio and Gear Data

GEAR CASE MODEL		RATIO	PITCH	FACE WIDTH	NUMBER OF TEETH AND HELIX		CENTER DISTANCE
					DRIVEN GEAR LH	DRIVE GEAR RH	
K, T & KC	Medium Duty	1.44	12	1-1/2	45	65	4.59 in. / 116.59 mm
		1.62			42	68	
		1.97			37	73	
		2.14			35	75	
		2.33			33	77	
		2.55			31	79	
		2.79			29	81	
		2.93			28	82	
		3.40			25	85	
		4.00			22	88	
		4.79			19	91	
K, T, KC & TK	Heavy Duty	1.16	8	1-5/8	32	37	4.59 in. / 116.59 mm
		1.30*			30	39	
		1.38			29	40	
		1.56			27	42	
		1.65			26	43	
		1.88			24	45	
		2.14			22	47	
		2.45			20	49	
2.83*	18	51					
K	Extra Heavy Duty	1.27	8	2-1/4	33	42	5.00 in. / 127.00 mm
		1.42			31	44	
		1.69			28	47	
		2.00			25	50	
		2.12			24	51	
		2.26			23	52	
		2.57			21	54	
TA		2.00	12	1-1/2	36	72	4.50 in. / 114.30 mm

*Models K & KC only.

Medium, Heavy and Extra Heavy Duty Model K, T, TA, TK and KC Gear Drive Transmissions

Table 2. Power and Speed Data for Driven Gears

PITCH	FACE WIDTH	NO. TEETH	MAX. RPM	MAX. HP (kW) 1000 RPM	PITCH DIA.	CENTER DISTANCE
12	1-1/2	19	14,000	9 (6.7)	1.5833	4.59 in. / 116.59 mm
		22	12,000	11 (8.2)	1.8333	
		25	11,000	12 (8.9)	2.0833	
		28	9950	13.5 (10.1)	2.3330	
		29	9600	14 (10.3)	2.4167	
		31	8900	15 (11.2)	2.5833	
		29	9600	14 (10.4)	2.417	
		33	8417	16 (11.9)	2.7500	
		35	7933	17 (12.7)	2.917	
		36**	7692	17 (12.7)	3.000	
		37	7450	18 (13.4)	3.0833	4.59 in. / 116.59 mm
		42	6550	21 (15.7)	3.5000	
		45	5860	22 (16.4)	3.750	
		18*	9500	36 (26.8)	2.3944	
20	8500	40 (29.8)	2.6604			
22	7800	44 (32.8)	2.9265			
24	7150	48 (35.8)	3.1925			
26	6600	52 (38.8)	3.4586			
27	6350	54 (40.3)	3.5926			
29	5950	58 (43.3)	3.8576			
30*	5750	60 (44.7)	3.9907			
32	5350	64 (47.7)	4.2567	5.00 in. / 127.00 mm		
21	8050	57 (42.5)	2.7935			
23	7450	63 (47.0)	3.0595			
24	7150	66 (49.12)	3.1925			
25	6850	69 (51.5)	3.3256			
28	6100	77 (57.4)	3.7246			
31	5500	85 (63.4)	4.1237			
33	5200	90 (67.1)	4.3897			

*Models K & KC only.

** Model TA only.

Two Gear Drive Transmissions Medium and Heavy Duty KC Gear Drive Transmissions (4-1/2 Inch Clutch)

Table 3. Clutch Ratings - 4300 RPM / Maximum

TORQUE RATING	HYDRAULIC APPLY PRESSURE
1000 Lb.Ft. / 1356 joules	500 PSI / 34.5 bar

Chain Drive Transmissions

Table 4. Ratio, Chain and Sprocket Data

MODEL	RATIO	CHAIN		NUMBER OF TEETH	
		PITCH	WIDTH	DRIVEN	DRIVE
WB, WBX WK	1.19	1/2	1-1/2	31	37
	1.29			31	40
	1.39			31	43
	1.52			31	47
	1.62			29	47
	1.74			23	40
	1.87			23	43
	2.04			23	47
	2.57			23	59
TY Series Only	.89	1/2	2-1/2	37	33
C10 Series C20 Series Y Series TC10 Series TC20 Series TY Series	1.14			29	33
	1.27			26	33
	1.41			29	41
	1.48			33	49
	1.58			26	41
	1.69			29	49
	1.79			33	59
	1.88			26	49
	1.97			30	59
	2.03			29	59
	2.27			26	59
	2.46			24	59
	2.68			22	59
	2.73*			26	71
	C21, TC21			1.77	3/4
1.95		3/4	70 mm	20	39
PA, TPA	1.00 (TPA Only)	1/2	2-1/2	24	24
	1.70			20	34
	1.90			20	38
	2.10			20	42
QA	1.00	1/2	3	32	32
QB	1.06	1/2	3 or 4	32	34
	1.37	1/2	2 1/2	30	41
QC, TQC	1.14	3/4	70 mm	29	33
	1.31			29	38
	1.46			26	
	1.58			24	
	1.61			26	42
	1.83			23	
	2.10			20	

NOTE: On "TY" series transmissions with ratios of less than 1 to 1, the power rating is based on the drive sprocket.

***2.73 Ratio not available on C20 and TC20 Models.**

Chain Drive Transmissions

Table 5. Power and Speed Data for Driven Sprockets

CHAIN		NO. OF TEETH DRIVEN SPROCKET	SPEED OF OUTPUT SHAFT, RPM										
PITCH	WIDTH		1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000
			HP / kW										
1/2	1-1/2	23	48 / 36	71 / 53	94 / 70	116 / 87	135 / 100.7	154 / 114.8	171 / 127.5	186 / 138.7	198 / 147.6	209 / 155.9	218 / 162.6
		29	60 / 45	89 / 66	115 / 86	141 / 105	164 / 122.3	184 / 137.2	200 / 149.1	212 / 158.1			
		31	64 / 48	95 / 71	123 / 92	149 / 111	173 / 129.0	191 / 142.4	207 / 154.4	217 / 161.8			
1/2	2-1/2	20	69 / 51	103 / 77	136 / 101	169 / 126	199 / 148	228 / 170	260 / 194	289 / 216	302 / 225	324 / 241	340 / 254
		24	83 / 62	124 / 92	162 / 122	200 / 149	233 / 173.7	266 / 198.4	294 / 219.2	318 / 237.1	337 / 249.1	355 / 264.7	367 / 273.7
		26	89 / 66	133 / 99	174 / 130	214 / 160	250 / 186.4	283 / 211.0	311 / 231.9	334 / 249.1	351 / 266.7		
		29	99 / 74	148 / 110	192 / 143	236 / 176	273 / 203.6	306 / 228.2	333 / 248.3	353 / 263.2			
		30	103 / 77	153 / 114	199 / 148	242 / 180	280 / 208.8	312 / 232.7	339 / 252.8	357 / 266.2			
		33	113 / 84	167 / 125	217 / 162	262 / 195	302 / 225.2	332 / 247.6	354 / 264.0				
1/2	3	32	132 / 98	195 / 145	253 / 189	306 / 228	354 / 264.0	390 / 290.8	419 / 312.4				
	4	32	152 / 114	222 / 166	290 / 216	351 / 262	404 / 301	446 / 333	479 / 357				
3/4	70 mm	20	142,4 / 106,2	210,4 / 156,9	274,5 / 204,7	333,4 / 248,6	385,8 / 287,7	430,3 / 320,9	465,6 / 347,2				
		22	156 / 116	230 / 171	298 / 222	360 / 268	413 / 308	456 / 340	486 / 362				
		23	163 / 121	240 / 179	310 / 231	372 / 277	425 / 317	466 / 347	493 / 367				
		24	170 / 126.8	249,4 / 186	322,1 / 240,2	385,8 / 287,7	438,1 / 326,7	477 / 355,7	500,1 / 372,9				
		29	203 / 152	295 / 220	375 / 280	440 / 328	484 / 361	504 / 376	497 / 370*				
		26	184 / 137	268 / 200	345 / 260	409 / 305	459 / 343	492 / 367	506 / 377				

Power ratings for the 4 inch wide chain have a 1.4 service factor.

Power Conversion: 1 kW = 1.341 HP

The following notes apply to 3/4 pitch chain only.

- Maximum ratings with shock factor 1.5 and minimum safety 8
- Design breaking load for 16 load-bearing linkplates in each link
- Usable for HPC 3/4" Renold chain type only
- Power ratings should only be decreased, not increased by rounding
- *Power rating decrease due to dynamic load increase

Table 6. Propeller Shaft Data, Split Shaft Drive Only

MODEL	SPLINE SIZE	TORQUE RATING
WB	1-3/4-10	4100 Ft-Lb / 5560 N.m
WBX YB, YC, YD, YE, YF TYB, TYC, TYD, TYE, TYF	2"-10	6100 Ft-Lb / 8272 N.m
	2"-38T Involute	9100 Ft-Lb / 12340 N.m
C10B, C10C, C10D, C10E, C10F C20B, C20C, C20D, C20E, C20F, C21 YBX, YCX, YDX, YEX, YFX, TC10B, TC10C, TC10D, TC10E, TC10F TC20B, TC20C, TC20D, TC20E, TC20F, TC21 TYBX TYCX, TYDX, TYEX, TYFX	2.35" 46T Involute	16,000 Ft-Lb / 21760 N.m