SECTION 24 TIMING BELT DRIVE SELECTION PROCEDURE

Step 1 Determination of design load

Drives consist of a driver and a driven pulley. In general, both pulleys are not of the same size; therefore, a speed reduction or increase occurs. Both convey the same power; however, the torque on each pulley is different. Drive designs should be based on the smaller pulley which will be subject to higher speed.

The peak design load must be taken into account, and it is obtained by multiplying the torque by a service factor. Service factors between 1.5 and 2.0 are generally recommended when designing small pitch synchronous drives. Knowledge of drive loading characteristics should influence the actual value selected. A higher service factor should be selected for applications with high peak loads, high operating speeds, unusually severe operating conditions, etc. Lower service factors can be used when the loading is smooth, well defined, etc. and the reliability is less critical. Some designs may require service factors outside the 1.5 to 2.0 range, depending upon the nature of the application.

If a stall torque of the driver is not given but the nameplate horsepower or kW power consumption is known, the torque can be obtained from:

$$T\ (\text{lb·in}) = \frac{63{,}025 \times \text{Shaft HP}}{\text{Shaft rpm}} \qquad (\textbf{24-1})$$

$$T\ (\text{lb·in}) = 8.85 \times T\ (\text{N·m}) \quad \text{or} \qquad (\textbf{24-2})$$

$$T\ (\text{oz·in}) = 16 \times T\ (\text{lb·in}) \qquad (\textbf{24-3})$$

$$T_{peak} = T \times \text{Service Factor} \qquad (\textbf{24-4})$$

$$1\ \text{kW} = 1.341\ \text{HP} \qquad (\textbf{24-5})$$

Step 2 Choice of belt pitch

As shown in **Figure 4**, (page T-6) different belt pitches can satisfy the same horsepower requirements, also taking into account the speed of the faster shaft. The choice is somewhat individual and may take into account, among others, the following factors:

- compatibility with previous designs
- superiority of GT drives as far as noise, backlash, positioning accuracy, etc. is concerned
- local availability for replacement
- size limitations; i.e. the size of pulleys and of the entire drive will be optimized if GT2 or HTD pitches are used

Step 3 Check belt pitch selection based on individual graphs

Graphs shown on **Figures 41** through **43** show the peak torque, T_{peak} computed previously, plotted against the speed of faster shaft. Since the belt pitch was chosen in **Step 2**, reference to these graphs will confirm the validity of the selection.

As an example, assume that the following data was obtained: $T_{peak} = 5$ lb·in and 1000 rpm. The potential choices are: 2 mm GT2, 3 mm HTD, or XL. The 2 mm drive will be substantially smaller than the other choices.

Step 4 Determine speed ratio

Use our Web site, www.sdp-si.com, or Drive Ratio Tables shown in **SECTION 21**, starting at page T-72, and establish the number of teeth of the small and large pulley based on the chosen speed ratio. Attempt to use available stock sizes for best economy. Use of our Web site will immediately guide you to the appropriate catalog page and part number. Make note of the Pitch Diameter (*PD*) of the small pulley.

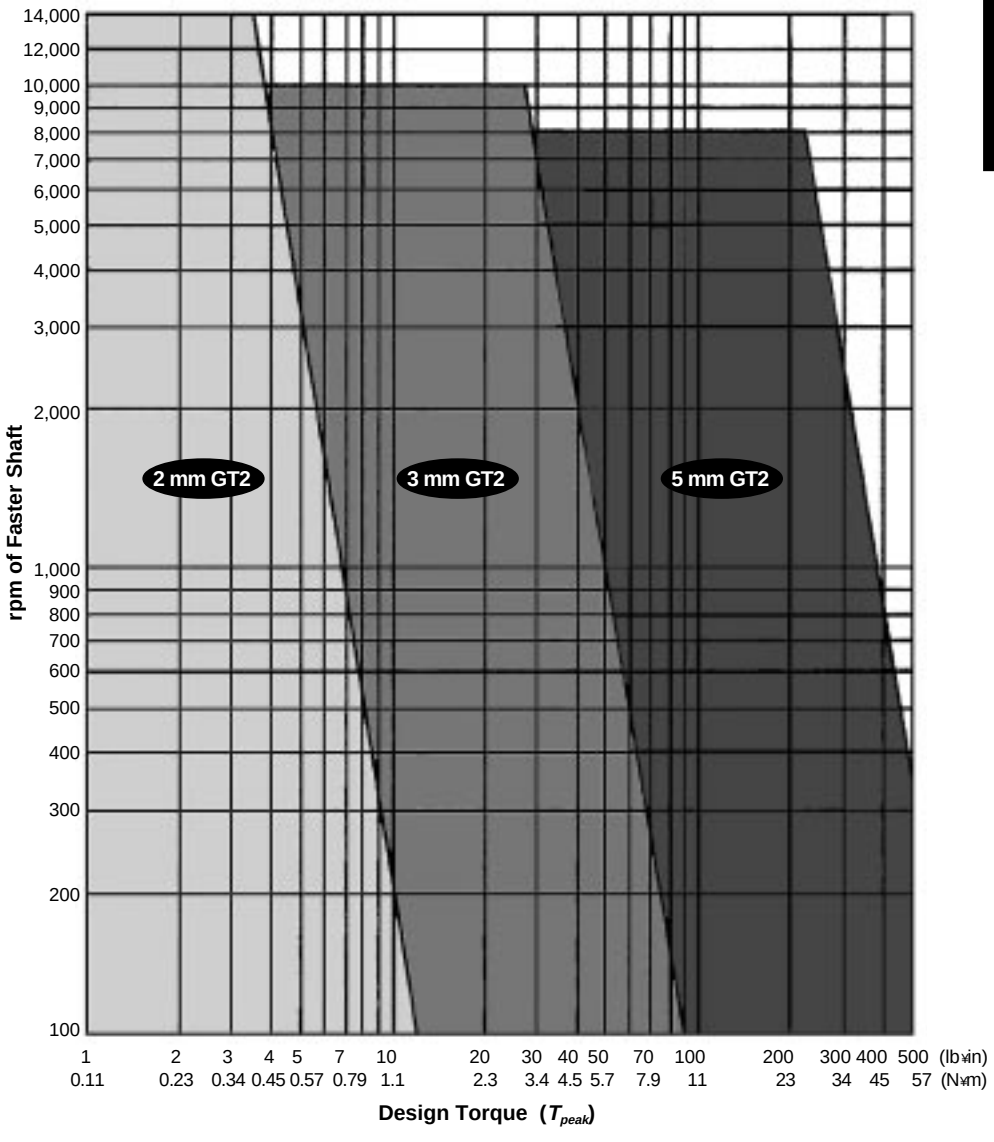

Fig. 41 GT2 Belt Selection Guide

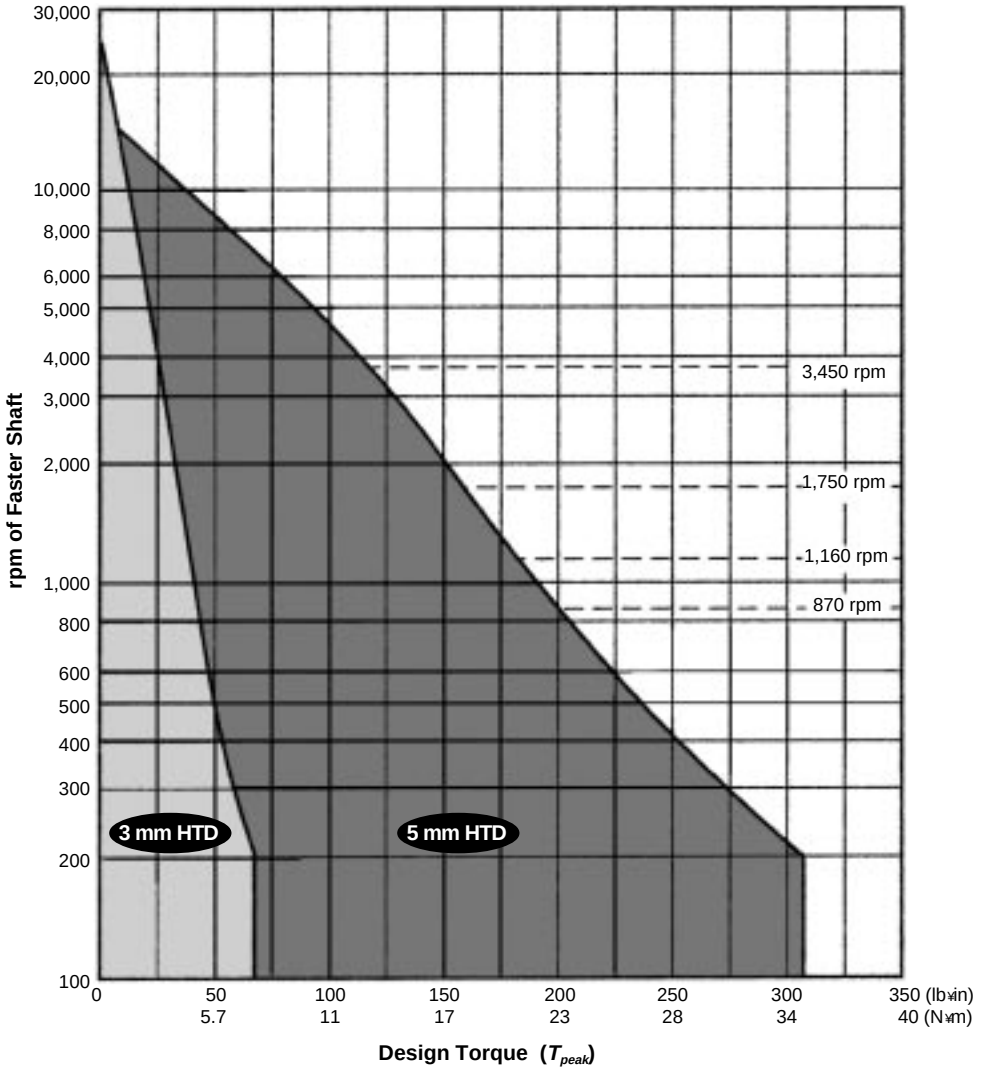

Fig. 42 HTD Belt Selection Guide

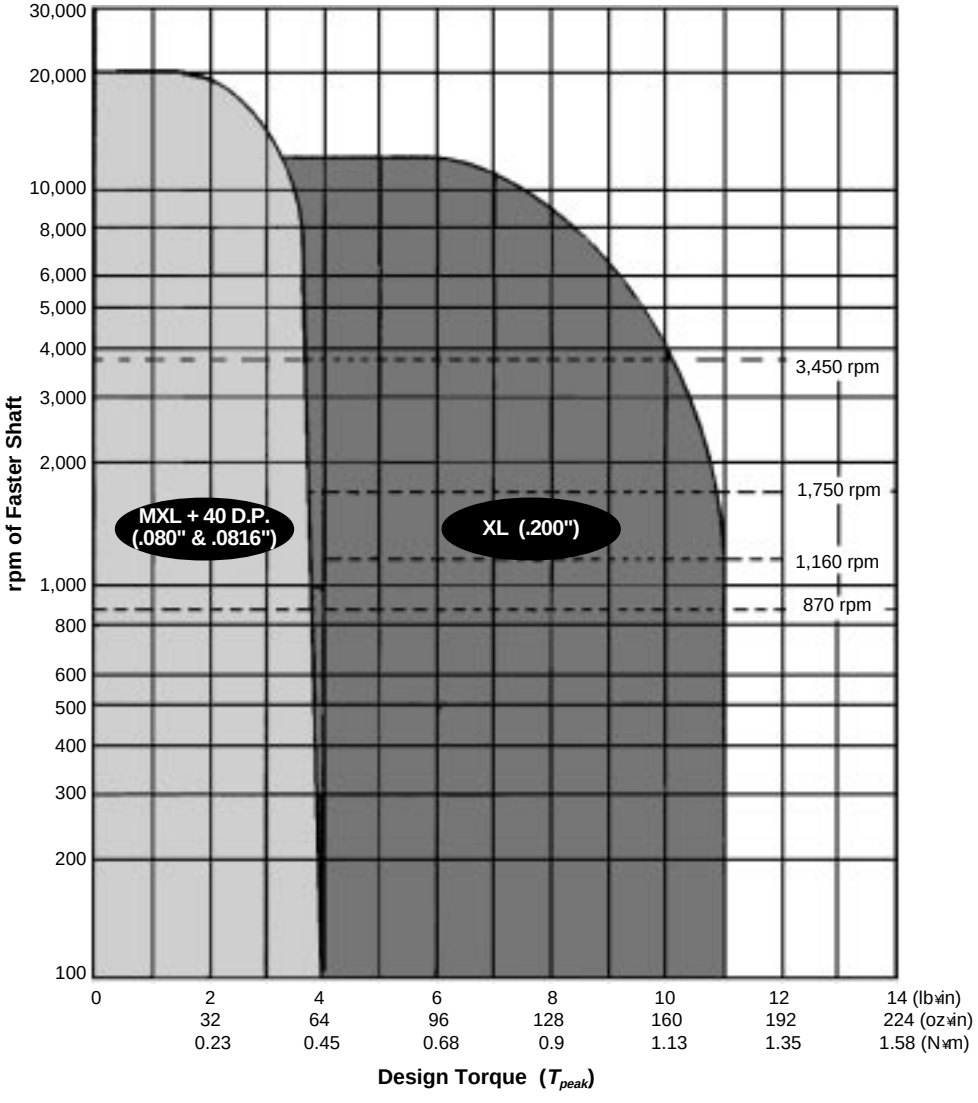

Fig. 43 Trapezoidal Belt Selection Guide

Step 5 Check belt speed

Belt speeds up to 6,500 fpm (33.02 m/s) do not require special pulleys. Speeds higher than these require special pulley materials and dynamic balancing.

Speed is computed using the following equations:

V(fpm) = 0.262 x pulley PD (in) x pulley rpm (**24-5**)

V(m/s) = 0.0000524 x pulley PD (mm) x pulley rpm (**24-6**)

where: m/s = 0.00508 x fpm (**24-7**)

Step 6 Determine belt length

The design layout may govern the determination of the belt length. Since the pulley sizes are known, use of Center Distance Factor Tables shown in **SECTION 23** (starting on page T-81) will yield NB Ð the number of teeth of the belt. If a fractional number is obtained, the closest integer number should be chosen, and the calculation must be repeated to obtain the new center distance for the design.

It is worthwhile to check if a belt with the chosen number of teeth is available in this Handbook. If it is not available, the closest fitting belt size must be chosen, and the calculation must be repeated to establish the center distance to which the layout must be corrected to accommodate the available choice of belt.

Step 7 Determine the belt width

The number of grooves of the small pulley as well as the rpm of the faster shaft on which this pulley is located are known. **Tables 43** through **52** show the torque and/or horsepower or kilowatt ratings for the base width of particular belt pitches.

For the HTD and GT2 drives, the torque ratings shown in these tables must be multiplied by the length correction factor. This factor is a number smaller than 1 for shorter length and higher for longer belts. This reflects the fact that a longer belt will be less prone to wear and tear as opposed to a shorter belt.

When the given torque from the table is multiplied by the length correction factor, this figure may be smaller or larger than the previously computed peak torque T_{peak}. If it is smaller, a belt narrower than the base width can be used. Alternatively, if T_{peak} is larger, a wider belt must be specified. In order to finalize the belt width, the width multiplier given on the particular table itself must be used. Also, consult the appropriate belt product page for availability of standard widths. We are able to supply nonstandard width belts as well as nonstandard width pulleys, if desired.

In any event, the torque ratings given in the table multiplied by the length factor and by the width multiplier must yield a torque greater than the T_{peak} computed previously.

The torque or horsepower ratings are based on 6 or more teeth in mesh for the smaller pulley.

Step 8 Check the number of teeth in mesh

The arc of contact on the smaller pulley in degrees can be found as follows:

$$\text{Arc of Contact} = 180 - \left(\frac{60\,(PD - pd)}{C}\right) \text{ (degrees)} \qquad \textbf{(24-8)}$$

where: PD = Large pitch diameter, inches
pd = Small pitch diameter, inches
C = Drive center distance, inches

The number of teeth in mesh on the smaller pulley can be found as follows:

$$\text{Teeth in Mesh} = \frac{(Arc)\,(n)}{360} \qquad \textbf{(24-9)}$$

where: *Arc* = Arc of contact; small pulley, degrees
n = number of grooves, small pulley

Drop any fractional part and use only the whole number as any tooth not fully engaged cannot be considered a working tooth.

If the teeth in mesh is less than 6, correct the belt torque rating with the following multiplication factors:

5 teeth in mesh ..... multiply by 0.8
4 teeth in mesh ..... multiply by 0.6
3 teeth in mesh ..... multiply by 0.4
2 teeth in mesh ..... suggest redesign
1 tooth in mesh ..... suggest redesign

Step 9 Determine proper belt installation tension

Procedure to calculate proper belt installation tension for specific applications are included in **SECTION 10**, on page T50.

Step 10 Check availability of all components

For the specified parts, both pulleys and belt, obtain part numbers from the Handbook or our Web site (www.sdp-si.com). In case special sizes or alterations are needed, contact SDP/SI Application Engineering Department.

Table 43 Rated Torque (lb·in) for Small Pulleys — 6 mm Belt Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	4	6	9	12
Width Multiplier	0.67	1.00	1.50	2.00

Number of Grooves		12	14	16	18	20	24	28	32	36	40	48	56	64	72	80
Pitch Diameter	mm	7.64	8.91	10.19	11.46	12.73	15.28	17.83	20.37	22.92	25.46	30.56	35.65	40.74	45.84	50.93
	inches	0.301	0.351	0.401	0.451	0.501	0.602	0.702	0.802	0.902	1.003	1.203	1.404	1.604	1.805	2.005
rpm of Fastest Shaft [Tabulated values are in lb·in]	**10**	0.90	1.09	1.27	1.45	1.63	1.99	2.35	2.71	3.07	3.43	4.13	4.84	5.55	6.25	6.95
	20	0.89	1.07	1.25	1.42	1.60	1.96	2.31	2.66	3.01	3.37	4.06	4.76	5.45	6.14	6.83
	40	0.87	1.05	1.22	1.40	1.57	1.92	2.27	2.62	2.96	3.31	3.99	4.68	5.36	6.04	6.71
	60	0.86	1.03	1.21	1.38	1.55	1.90	2.25	2.59	2.93	3.27	3.95	4.63	5.30	5.98	6.64
	100	0.85	1.02	1.19	1.36	1.53	1.88	2.22	2.55	2.89	3.23	3.90	4.57	5.23	5.90	6.56
	200	0.83	1.00	1.17	1.34	1.50	1.84	2.17	2.51	2.84	3.17	3.83	4.49	5.14	5.79	6.44
	300	0.82	0.99	1.15	1.32	1.49	1.82	2.15	2.48	2.81	3.14	3.79	4.44	5.08	5.73	6.37
	400	0.81	0.98	1.14	1.31	1.47	1.81	2.13	2.46	2.78	3.11	3.76	4.40	5.04	5.68	6.32
	500	0.80	0.97	1.14	1.30	1.46	1.79	2.12	2.44	2.77	3.09	3.73	4.38	5.01	5.65	6.28
	600	0.80	0.97	1.13	1.29	1.46	1.78	2.11	2.43	2.75	3.08	3.72	4.35	4.99	5.62	6.25
	800	0.79	0.96	1.12	1.28	1.44	1.77	2.09	2.41	2.73	3.05	3.69	4.32	4.95	5.58	6.20
	1000	0.79	0.95	1.11	1.27	1.43	1.76	2.08	2.40	2.71	3.03	3.66	4.29	4.92	5.54	6.16
	1200	0.78	0.94	1.11	1.27	1.43	1.75	2.07	2.38	2.70	3.02	3.64	4.27	4.89	5.52	6.13
	1400	0.78	0.94	1.10	1.26	1.42	1.74	2.06	2.37	2.69	3.00	3.63	4.25	4.87	5.49	6.11
	1600	0.78	0.94	1.10	1.26	1.41	1.73	2.05	2.36	2.68	2.99	3.62	4.24	4.85	5.47	6.08
	1800	0.77	0.93	1.09	1.25	1.41	1.73	2.04	2.36	2.67	2.98	3.60	4.22	4.84	5.45	6.06
	2000	0.77	0.93	1.09	1.25	1.41	1.72	2.04	2.35	2.66	2.97	3.59	4.21	4.82	5.44	6.05
	2400	0.76	0.92	1.08	1.24	1.40	1.71	2.03	2.34	2.65	2.96	3.57	4.19	4.80	5.41	6.01
	2800	0.76	0.92	1.08	1.23	1.39	1.71	2.02	2.33	2.63	2.95	3.56	4.17	4.78	5.38	5.99
	3200	0.76	0.92	1.07	1.23	1.39	1.70	2.01	2.32	2.62	2.93	3.54	4.15	4.76	5.36	5.96
	3600	0.75	0.91	1.07	1.22	1.38	1.69	2.00	2.31	2.62	2.92	3.53	4.14	4.74	5.35	5.94
	4000	0.75	0.91	1.06	1.22	1.38	1.69	2.00	2.30	2.61	2.91	3.52	4.13	4.73	5.33	5.92
	5000	0.75	0.90	1.06	1.21	1.37	1.68	1.98	2.29	2.59	2.90	3.50	4.10	4.70	5.29	5.88
	6000	0.74	0.90	1.05	1.20	1.36	1.67	1.97	2.27	2.58	2.88	3.48	4.08	4.67	5.26	5.85
	8000	0.73	0.89	1.04	1.19	1.35	1.65	1.95	2.25	2.55	2.85	3.45	4.04	4.63	5.21	5.79
	10000	0.73	0.88	1.03	1.18	1.34	1.64	1.94	2.24	2.53	2.83	3.42	4.01	4.59	5.17	5.75
	12000	0.72	0.88	1.03	1.18	1.33	1.63	1.93	2.22	2.52	2.82	3.40	3.98	4.56	5.14	5.70
	14000	0.72	0.87	1.02	1.17	1.32	1.62	1.92	2.21	2.51	2.80	3.38	3.96	4.53	—	—

For Belt Length																
	From	Length (mm)	**100**	**106**	**124**	**146**	**170**	**198**	**232**	**272**	**318**	**372**	**436**	**510**	**598**	**698**
		# of teeth	**50**	**53**	**62**	**73**	**85**	**99**	**116**	**136**	**159**	**186**	**218**	**255**	**299**	**349**
	To	Length (mm)	**104**	**122**	**144**	**168**	**196**	**230**	**270**	**316**	**370**	**434**	**508**	**596**	**696**	**800**
		# of teeth	**52**	**61**	**72**	**84**	**98**	**115**	**135**	**158**	**185**	**217**	**254**	**298**	**348**	**400**
Length Correction Factor			0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35

Continued on the next page

Table 43 (Cont.) **Rated Torque (N·m) for Small Pulleys — 6 mm Belt Width**

2 mm Pitch PowerGrip® GT®2 Belts

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	4	6	9	12
Width Multiplier	0.67	1.00	1.50	2.00

Number of Grooves		12	14	16	18	20	24	28	32	36	40	48	56	64	72	80
Pitch Diameter	mm	7.64	8.91	10.19	11.46	12.73	15.28	17.83	20.37	22.92	25.46	30.56	35.65	40.74	45.84	50.93
	inches	0.301	0.351	0.401	0.451	0.501	0.602	0.702	0.802	0.902	1.003	1.203	1.404	1.604	1.805	2.005
rpm of Fastest Shaft [Tabulated values are in N·m]	10	0.10	0.12	0.14	0.16	0.18	0.23	0.27	0.31	0.35	0.39	0.47	0.55	0.63	0.71	0.79
	20	0.10	0.12	0.14	0.16	0.18	0.22	0.26	0.30	0.34	0.38	0.46	0.54	0.62	0.69	0.77
	40	0.10	0.12	0.14	0.16	0.18	0.22	0.26	0.30	0.33	0.37	0.45	0.53	0.61	0.68	0.76
	60	0.10	0.12	0.14	0.16	0.18	0.21	0.25	0.29	0.33	0.37	0.45	0.52	0.60	0.68	0.75
	100	0.10	0.12	0.13	0.15	0.17	0.21	0.25	0.29	0.33	0.36	0.44	0.52	0.59	0.67	0.74
	200	0.09	0.11	0.13	0.15	0.17	0.21	0.25	0.28	0.32	0.36	0.43	0.51	0.58	0.65	0.73
	300	0.09	0.11	0.13	0.15	0.17	0.21	0.24	0.28	0.32	0.35	0.43	0.50	0.57	0.65	0.72
	400	0.09	0.11	0.13	0.15	0.17	0.20	0.24	0.28	0.31	0.35	0.42	0.50	0.57	0.64	0.71
	500	0.09	0.11	0.13	0.15	0.17	0.20	0.24	0.28	0.31	0.35	0.42	0.49	0.57	0.64	0.71
	600	0.09	0.11	0.13	0.15	0.16	0.20	0.24	0.27	0.31	0.35	0.42	0.49	0.56	0.64	0.71
	800	0.09	0.11	0.13	0.14	0.16	0.20	0.24	0.27	0.31	0.34	0.42	0.49	0.56	0.63	0.70
	1000	0.09	0.11	0.13	0.14	0.16	0.20	0.23	0.27	0.31	0.34	0.41	0.49	0.56	0.63	0.70
	1200	0.09	0.11	0.12	0.14	0.16	0.20	0.23	0.27	0.31	0.34	0.41	0.48	0.55	0.62	0.69
	1400	0.09	0.11	0.12	0.14	0.16	0.20	0.23	0.27	0.30	0.34	0.41	0.48	0.55	0.62	0.69
	1600	0.09	0.11	0.12	0.14	0.16	0.20	0.23	0.27	0.30	0.34	0.41	0.48	0.55	0.62	0.69
	1800	0.09	0.11	0.12	0.14	0.16	0.20	0.23	0.27	0.30	0.34	0.41	0.48	0.55	0.62	0.69
	2000	0.09	0.10	0.12	0.14	0.16	0.19	0.23	0.27	0.30	0.34	0.41	0.48	0.54	0.61	0.68
	2400	0.09	0.10	0.12	0.14	0.16	0.19	0.23	0.26	0.30	0.33	0.40	0.47	0.54	0.61	0.68
	2800	0.09	0.10	0.12	0.14	0.16	0.19	0.23	0.26	0.30	0.33	0.40	0.47	0.54	0.61	0.68
	3200	0.09	0.10	0.12	0.14	0.16	0.19	0.23	0.26	0.30	0.33	0.40	0.47	0.54	0.61	0.67
	3600	0.09	0.10	0.12	0.14	0.16	0.19	0.23	0.26	0.30	0.33	0.40	0.47	0.54	0.60	0.67
	4000	0.08	0.10	0.12	0.14	0.16	0.19	0.23	0.26	0.29	0.33	0.40	0.47	0.53	0.60	0.67
	5000	0.08	0.10	0.12	0.14	0.15	0.19	0.22	0.26	0.29	0.33	0.40	0.46	0.53	0.60	0.66
	6000	0.08	0.10	0.12	0.14	0.15	0.19	0.22	0.26	0.29	0.33	0.39	0.46	0.53	0.59	0.66
	8000	0.08	0.10	0.12	0.13	0.15	0.19	0.22	0.25	0.29	0.32	0.39	0.46	0.52	0.59	0.66
	10000	0.08	0.10	0.12	0.13	0.15	0.19	0.22	0.25	0.29	0.32	0.39	0.45	0.52	0.58	0.65
	12000	0.08	0.10	0.12	0.13	0.15	0.18	0.22	0.25	0.28	0.32	0.38	0.45	0.52	0.58	0.64
	14000	0.08	0.10	0.12	0.13	0.15	0.18	0.22	0.25	0.28	0.32	0.38	0.45	0.51	—	—

For Belt Length																
	From	Length (mm)	100	106	124	146	170	198	232	272	318	372	436	510	598	698
		# of teeth	50	53	62	73	85	99	116	136	159	186	218	255	299	349
	To	Length (mm)	104	122	144	168	196	230	270	316	370	434	508	596	696	800
		# of teeth	52	61	72	84	98	115	135	158	185	217	254	298	348	400
Length Correction Factor			0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35

Table 44 Rated Torque (lb·in) for Small Pulleys — 6 mm Belt Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	6	9	12	15
Width Multiplier	1.00	1.50	2.00	2.50

Number of Grooves		16	18	20	22	24	26	30	34	38	44	50	56	64	72	80
Pitch Diameter	mm	15.28	17.19	19.10	21.01	22.92	24.83	28.65	32.47	36.29	42.02	47.75	53.48	61.12	68.75	76.39
	inches	0.602	0.677	0.752	0.827	0.902	0.977	1.128	1.278	1.429	1.654	1.880	2.105	2.406	2.707	3.008
rpm of Fastest Shaft [Tabulated values are in lb·in]	10	14.02	16.27	18.50	20.70	22.89	25.06	29.38	33.61	37.82	44.00	50.13	56.15	64.10	71.93	79.67
	20	12.82	14.92	17.00	19.05	21.09	23.11	27.13	31.06	34.97	40.70	46.38	51.95	59.30	66.53	73.68
	40	11.62	13.57	15.50	17.40	19.29	21.16	24.88	28.51	32.12	37.41	42.63	47.75	54.50	61.13	67.68
	60	10.91	12.78	14.62	16.44	18.24	20.02	23.56	27.02	30.45	35.48	40.44	45.30	51.69	57.98	64.17
	100	10.03	11.78	13.51	15.22	16.91	18.59	21.90	25.14	28.35	33.04	37.67	42.20	48.15	54.00	59.74
	200	8.83	10.43	12.01	13.57	15.11	16.64	19.65	22.59	25.50	29.74	33.92	38.00	43.35	48.60	53.74
	300	8.12	9.64	11.14	12.61	14.06	15.50	18.34	21.10	23.83	27.81	31.73	35.54	40.54	45.43	50.23
	400	7.63	9.08	10.51	11.92	13.32	14.69	17.40	20.04	22.65	26.44	30.17	33.80	38.55	43.19	47.73
	500	7.24	8.65	10.03	11.39	12.74	14.06	16.68	19.22	21.73	25.38	28.96	32.45	37.00	41.45	45.79
	600	6.92	8.29	9.64	10.96	12.26	13.55	16.09	18.55	20.98	24.51	27.97	31.34	35.73	40.02	44.21
	800	6.43	7.73	9.01	10.27	11.52	12.74	15.15	17.49	19.79	23.14	26.41	29.59	33.73	37.76	41.69
	1000	6.04	7.30	8.53	9.74	10.94	12.11	14.43	16.67	18.87	22.07	25.20	28.23	32.17	36.00	39.73
	1200	5.72	6.94	8.14	9.31	10.46	11.60	13.83	15.99	18.12	21.20	24.20	27.11	30.89	34.56	38.12
	1400	5.46	6.64	7.80	8.94	10.06	11.16	13.33	15.42	17.48	20.46	23.36	26.16	29.80	33.32	36.74
	1600	5.22	6.38	7.51	8.62	9.71	10.78	12.89	14.93	16.93	19.81	22.62	25.34	28.85	32.25	35.54
	1800	5.02	6.15	7.26	8.34	9.40	10.45	12.51	14.49	16.44	19.24	21.97	24.60	28.01	31.29	34.46
	2000	4.84	5.94	7.03	8.09	9.13	10.15	12.16	14.10	16.00	18.73	21.39	23.94	27.25	30.43	33.49
	2400	4.52	5.59	6.63	7.65	8.65	9.64	11.56	13.42	15.23	17.84	20.37	22.79	25.91	28.90	31.77
	2800	4.25	5.28	6.29	7.28	8.25	9.20	11.05	12.84	14.58	17.08	19.49	21.80	24.76	27.58	30.27
	3200	4.02	5.02	6.00	6.96	7.90	8.81	10.61	12.33	14.01	16.41	18.72	20.93	23.74	26.40	28.92
	3600	3.81	4.79	5.74	6.67	7.58	8.48	10.22	11.88	13.50	15.81	18.03	20.14	22.81	25.32	27.68
	4000	3.63	4.58	5.51	6.42	7.30	8.17	9.86	11.48	13.04	15.27	17.40	19.41	21.95	24.32	26.52
	5000	3.24	4.14	5.02	5.87	6.71	7.52	9.10	10.60	12.05	14.09	16.02	17.81	20.04	22.05	23.86
	6000	2.91	3.77	4.61	5.42	6.21	6.98	8.46	9.86	11.20	13.07	14.81	16.40	18.32	19.98	21.39
	8000	2.40	3.19	3.95	4.69	5.40	6.09	7.41	8.63	9.77	11.33	12.70	13.89	15.17	16.09	16.64
	10000	1.99	2.72	3.42	4.10	4.74	5.36	6.53	7.59	8.55	9.78	10.79	11.54	12.13	—	—
	12000	1.64	2.32	2.97	3.59	4.17	4.73	5.75	6.64	7.41	8.32	8.93	—	—	—	—
	14000	1.34	1.98	2.57	3.13	3.66	4.15	5.03	5.75	6.33	6.89	—	—	—	—	—

For Belt Length																
	From	Length (mm)	120	129	153	180	213	252	294	348	408	480	567	666	786	924	1092
		# of teeth	40	43	51	60	71	84	98	116	136	160	189	222	262	308	364
	To	Length (mm)	126	150	177	210	249	291	345	405	477	564	663	783	921	1089	1200
		# of teeth	42	50	59	70	83	97	115	135	159	188	221	261	307	363	400
Length Correction Factor			0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40

Shaded area indicates drive conditions where reduced service life can be expected.

Continued on the next page

Table 44 (Cont.) **Rated Torque (N·m) for Small Pulleys — 6 mm Belt Width**

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	6	9	12	15
Width Multiplier	1.00	1.50	2.00	2.50

Number of Grooves		16	18	20	22	24	26	30	34	38	44	50	56	64	72	80
Pitch Diameter	mm	15.28	17.19	19.10	21.01	22.92	24.83	28.65	32.47	36.29	42.02	47.75	53.48	61.12	68.75	76.39
	inches	0.602	0.677	0.752	0.827	0.902	0.977	1.128	1.278	1.429	1.654	1.880	2.105	2.406	2.707	3.008
rpm of Fastest Shaft [Tabulated values are in N·m]	10	1.58	1.84	2.09	2.34	2.59	2.83	3.32	3.80	4.27	4.97	5.66	6.34	7.24	8.13	9.00
	20	1.45	1.69	1.92	2.15	2.38	2.61	3.06	3.51	3.95	4.60	5.24	5.87	6.70	7.52	8.32
	40	1.31	1.53	1.75	1.97	2.18	2.39	2.81	3.22	3.63	4.23	4.82	5.40	6.16	6.91	7.35
	60	1.23	1.44	1.65	1.86	2.06	2.26	2.66	3.05	3.44	4.01	4.57	5.12	5.84	6.55	7.25
	100	1.13	1.33	1.53	1.72	1.91	2.10	2.47	2.84	3.20	3.73	4.26	4.77	5.44	6.10	6.75
	200	1.00	1.18	1.36	1.53	1.71	1.88	2.22	2.55	2.88	3.36	3.83	4.29	4.90	5.49	6.07
	300	0.92	1.09	1.26	1.42	1.59	1.75	2.07	2.38	2.69	3.14	3.58	4.02	4.58	5.13	5.68
	400	0.86	1.03	1.19	1.35	1.50	1.66	1.97	2.26	2.56	2.99	3.41	3.82	4.36	4.88	5.39
	500	0.82	0.98	1.13	1.29	1.44	1.59	1.88	2.17	2.45	2.87	3.27	3.67	4.18	4.68	5.17
	600	0.78	0.94	1.09	1.24	1.39	1.53	1.82	2.10	2.37	2.77	3.16	3.54	4.04	4.52	4.99
	800	0.73	0.87	1.02	1.16	1.30	1.44	1.71	1.98	2.24	2.61	2.98	3.34	3.81	4.27	4.71
	1000	0.68	0.82	0.96	1.10	1.24	1.37	1.63	1.88	2.13	2.49	2.85	3.19	3.63	4.07	4.49
	1200	0.65	0.78	0.92	1.05	1.18	1.31	1.56	1.81	2.05	2.40	2.73	3.06	3.49	3.90	4.31
	1400	0.62	0.75	0.88	1.01	1.14	1.26	1.51	1.74	1.97	2.31	2.64	2.96	3.37	3.77	4.15
	1600	0.59	0.72	0.85	0.97	1.10	1.22	1.46	1.69	1.91	2.24	2.56	2.86	3.26	3.64	4.02
	1800	0.57	0.69	0.82	0.94	1.06	1.18	1.41	1.64	1.86	2.17	2.48	2.78	3.16	3.54	3.89
	2000	0.55	0.67	0.79	0.91	1.03	1.15	1.37	1.59	1.81	2.12	2.42	2.71	3.08	3.44	3.78
	2400	0.51	0.63	0.75	0.86	0.98	1.09	1.31	1.52	1.72	2.02	2.30	2.58	2.93	3.27	3.59
	2800	0.48	0.60	0.71	0.82	0.93	1.04	1.25	1.45	1.65	1.93	2.20	2.46	2.80	3.12	3.42
	3200	0.45	0.57	0.68	0.79	0.89	1.00	1.20	1.39	1.58	1.85	2.12	2.36	2.68	2.98	3.27
	3600	0.43	0.54	0.65	0.75	0.86	0.96	1.15	1.34	1.53	1.79	2.04	2.28	2.58	2.86	3.13
	4000	0.41	0.52	0.62	0.73	0.83	0.92	1.11	1.30	1.47	1.73	1.97	2.19	2.48	2.75	3.00
	5000	0.37	0.47	0.57	0.66	0.76	0.85	1.03	1.20	1.36	1.59	1.81	2.01	2.26	2.49	2.70
	6000	0.33	0.43	0.52	0.61	0.70	0.79	0.96	1.11	1.27	1.48	1.67	1.85	2.07	2.26	2.42
	8000	0.27	0.36	0.45	0.53	0.61	0.69	0.84	0.97	1.10	1.28	1.44	1.57	1.71	1.82	1.88
	10000	0.22	0.31	0.39	0.46	0.54	0.61	0.74	0.86	0.97	1.11	1.22	1.30	1.37	—	—
	12000	0.19	0.26	0.34	0.41	0.47	0.53	0.65	0.75	0.84	0.94	1.01	—	—	—	—
	14000	0.15	0.22	0.29	0.35	0.41	0.47	0.57	0.65	0.72	0.78	—	—	—	—	—

For Belt Length																	
	From	Length (mm)	120	129	153	180	213	252	294	348	408	480	567	666	786	924	1092
		# of teeth	40	43	51	60	71	84	98	116	136	160	189	222	262	308	364
	To	Length (mm)	126	150	177	210	249	291	345	405	477	564	663	783	921	1089	1200
		# of teeth	42	50	59	70	83	97	115	135	159	188	221	261	307	363	400
Length Correction Factor			0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40

Shaded area indicates drive conditions where reduced service life can be expected.

Table 45 Rated Torque (lb·in) for Small Pulleys — 15 mm Belt Width
(See **Table 46** for hp or kW ratings)

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

5 mm Pitch PowerGrip® GT®2 Belts

Belt Width (mm)	9	15	20	25
Width Multiplier	0.60	1.00	1.33	1.67

Number of Grooves		18	20	22	24	26	28	32	36	40	44	48	56	64	72	80
Pitch Diameter	mm	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
	inches	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511	5.013
rpm of Fastest Shaft [Tabulated values are in lb·in]	10	78.24	93.61	109.00	124.20	139.30	154.30	184.30	214.10	243.60	272.90	302.10	359.90	417.20	474.10	530.60
	20	72.38	87.11	101.80	116.40	130.90	145.20	173.90	202.40	230.60	258.60	286.50	341.70	396.40	450.60	504.60
	40	66.53	80.60	94.69	108.60	122.40	136.10	163.50	190.70	217.60	244.30	270.90	323.50	375.60	427.20	478.50
	60	63.11	76.80	90.51	104.00	117.50	130.80	157.50	183.90	209.90	235.90	261.80	312.90	363.40	413.50	463.30
	100	58.80	72.01	85.23	98.27	111.20	124.10	149.80	175.20	200.40	225.40	250.30	299.50	348.10	396.30	444.10
	200	52.94	65.51	78.08	90.46	102.80	115.00	139.40	163.50	187.40	211.10	234.70	281.20	327.30	372.80	418.10
	300	49.52	61.70	73.89	85.90	97.83	109.70	133.30	156.70	179.70	202.70	225.50	270.60	315.10	359.10	402.80
	400	47.09	59.00	70.92	82.65	94.31	105.90	129.00	151.80	174.30	196.70	219.00	263.00	306.40	349.30	391.80
	500	45.20	56.91	68.61	80.14	91.59	103.00	125.60	148.00	170.10	192.10	213.90	257.00	299.60	341.60	383.30
	600	43.66	55.19	66.73	78.08	89.36	100.60	122.90	144.90	166.70	188.30	209.80	252.20	294.00	335.30	376.20
	800	41.22	52.49	63.74	74.83	85.83	96.76	118.50	140.00	161.20	182.30	203.20	244.40	285.10	325.20	364.90
	1000	39.33	50.38	61.43	72.30	83.09	93.80	115.10	136.20	156.90	177.60	198.00	238.30	278.00	317.20	355.90
	1200	37.78	48.66	59.53	70.22	80.83	91.37	112.30	133.00	153.40	173.70	193.70	233.30	272.10	310.40	348.20
	1400	36.47	47.20	57.92	68.46	78.92	89.31	109.90	130.30	150.40	170.30	190.10	228.90	267.00	304.50	341.40
	1600	35.33	45.93	56.51	66.93	77.25	87.50	107.90	128.00	147.80	167.40	186.80	225.00	262.40	299.20	335.30
	1800	34.32	44.80	55.27	65.57	75.77	85.90	106.00	125.90	145.40	164.70	183.90	221.50	258.20	294.30	329.60
	2000	33.41	43.79	54.16	64.34	74.44	84.46	104.30	124.00	143.20	162.30	181.20	218.20	254.40	289.70	324.20
	2400	31.84	42.03	52.20	62.20	72.10	81.92	101.40	120.60	139.40	158.00	176.40	212.30	247.20	281.10	314.10
	2800	30.49	40.53	50.53	60.36	70.09	79.73	98.84	117.60	136.00	154.20	172.10	206.90	240.60	273.10	304.40
	3200	29.31	39.20	49.06	58.73	68.31	77.79	96.54	115.00	132.90	150.70	168.10	201.80	234.20	265.30	294.90
	3600	28.26	38.02	47.74	57.27	66.70	76.02	94.45	112.50	130.10	147.40	164.30	197.00	228.10	257.60	285.30
	4000	27.31	36.94	46.53	55.93	65.21	74.39	92.50	110.20	127.40	144.30	160.70	192.30	222.00	249.80	275.70
	5000	25.23	34.58	43.88	52.96	61.91	70.74	88.07	104.90	121.10	136.90	152.10	180.60	206.70	230.00	—
	6000	23.45	32.55	41.56	50.35	58.98	67.46	84.01	99.93	115.10	129.70	143.50	168.70	190.60	—	—
	8000	20.43	29.03	37.50	45.69	53.67	61.43	76.33	90.27	103.10	115.00	125.60	—	—	—	—
	10000	17.77	25.88	33.79	41.35	48.63	55.06	68.66	80.34	—	—	—	—	—	—	—
	12000	15.29	22.88	30.19	37.07	43.57	49.67	60.63	—	—	—	—	—	—	—	—
	14000	12.88	19.91	26.56	32.69	38.34	43.46	—	—	—	—	—	—	—	—	—

For Belt Length																
	From	Length (mm)	200	215	260	315	375	450	540	650	780	935	1130	1355	1625	1960
		# of teeth	40	43	52	63	75	90	108	130	156	187	226	271	325	392
	To	Length (mm)	210	255	310	370	445	535	645	775	930	1125	1350	1620	1955	2000
		# of teeth	42	51	62	74	89	107	129	155	186	225	270	324	391	400
Length Correction Factor			0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30

Shaded area indicates drive conditions where reduced service life can be expected.

Continued on the next page

Table 45 (Cont.) **Rated Torque (N·m) for Small Pulleys — 15 mm Belt Width**
(See **Table 46** for hp or kW ratings)

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

5 mm Pitch PowerGrip® GT®2 Belts

Belt Width (mm)	9	15	20	25
Width Multiplier	0.60	1.00	1.33	1.67

Number of Grooves		18	20	22	24	26	28	32	36	40	44	48	56	64	72	80
Pitch Diameter	mm	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
	inches	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511	5.013
rpm of Fastest Shaft [Tabulated values are in N·m]	10	8.84	10.58	12.32	14.03	15.74	17.44	20.83	24.19	27.52	30.84	34.14	40.67	47.14	53.56	59.95
	20	8.18	9.84	11.51	13.15	14.78	16.41	19.65	22.87	26.05	29.22	32.37	38.61	44.79	50.92	57.01
	40	7.52	9.11	10.70	12.27	13.83	15.38	18.48	21.55	24.58	27.60	30.61	36.55	42.44	48.27	54.07
	60	7.13	8.68	10.23	11.75	13.27	14.78	17.79	20.77	23.72	26.66	29.58	35.35	41.06	46.72	52.35
	100	6.64	8.14	9.63	11.10	12.57	14.02	16.92	19.80	22.64	25.47	28.28	33.83	39.33	44.77	50.18
	200	5.98	7.40	8.82	10.22	11.61	12.99	15.75	18.48	21.17	23.85	26.51	31.78	36.98	42.13	47.24
	300	5.59	6.97	8.38	9.71	11.05	12.39	15.06	17.70	20.31	22.90	25.48	30.57	35.60	40.57	45.51
	400	5.32	6.67	8.01	9.34	10.66	11.96	14.57	17.15	19.70	22.23	24.74	29.71	34.61	39.46	44.27
	500	5.11	6.43	7.75	9.05	10.35	11.63	14.19	16.72	19.22	21.71	24.17	29.04	33.85	38.60	43.31
	600	4.93	6.24	7.54	8.82	10.10	11.36	13.88	16.37	18.83	21.28	23.70	28.49	33.22	37.88	42.51
	800	4.66	5.93	7.20	8.45	9.70	10.93	13.39	15.82	18.21	20.60	22.96	27.62	32.21	36.74	41.23
	1000	4.44	5.69	6.94	8.17	9.39	10.60	13.01	15.39	17.73	20.06	22.37	26.93	31.41	35.84	40.21
	1200	4.27	5.50	6.73	7.93	9.13	10.32	12.69	15.03	17.33	19.62	21.89	26.36	30.75	35.07	39.34
	1400	4.12	5.33	6.54	7.73	8.92	10.09	12.42	14.73	16.99	19.24	21.47	25.86	30.17	34.40	38.58
	1600	3.99	5.19	6.39	7.56	8.73	9.89	12.19	14.46	16.69	18.91	21.11	25.42	29.65	33.80	37.89
	1800	3.88	5.06	6.24	7.41	8.56	9.71	11.98	14.22	16.43	18.61	20.78	25.02	29.18	33.25	37.24
	2000	3.78	4.95	6.12	7.27	8.41	9.54	11.79	14.01	16.18	18.34	20.47	24.65	28.74	32.73	36.63
	2400	3.60	4.75	5.90	7.03	8.15	9.26	11.46	13.62	15.75	17.85	19.93	23.98	27.93	31.76	35.49
	2800	3.45	4.58	5.71	6.82	7.92	9.01	11.17	13.29	15.37	17.42	19.44	23.38	27.18	30.85	34.39
	3200	3.31	4.43	5.54	6.64	7.72	8.79	10.91	12.99	15.02	17.02	18.99	22.80	26.47	29.97	33.32
	3600	3.19	4.30	5.39	6.47	7.54	8.59	10.67	12.71	14.70	16.65	18.57	22.26	25.77	29.10	32.24
	4000	3.09	4.17	5.26	6.32	7.37	8.41	10.45	12.45	14.40	16.30	18.16	21.72	25.08	28.23	31.15
	5000	2.85	3.91	4.96	5.98	7.00	7.99	9.95	11.85	13.68	15.46	17.18	20.41	23.35	25.99	—
	6000	2.65	3.68	4.70	5.69	6.66	7.62	9.49	11.29	13.01	14.65	16.21	19.06	21.54	—	—
	8000	2.31	3.28	4.24	5.16	6.06	6.94	8.62	10.20	11.65	12.99	14.20	—	—	—	—
	10000	2.01	2.92	3.82	4.67	5.49	6.28	7.76	9.08	—	—	—	—	—	—	—
	12000	1.73	2.59	3.41	4.19	4.92	5.61	6.85	—	—	—	—	—	—	—	—
	14000	1.45	2.25	3.00	3.69	4.33	4.91	—	—	—	—	—	—	—	—	—

For Belt Length																
From	Length (mm)	200	215	260	315	375	450	540	650	780	935	1130	1355	1625	1960
	# of teeth	40	43	52	63	75	90	108	130	156	187	226	271	325	392
To	Length (mm)	210	255	310	370	445	535	645	775	930	1125	1350	1620	1955	2000
	# of teeth	42	51	62	74	89	107	129	155	186	225	270	324	391	400
Length Correction Factor		0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30

Shaded area indicates drive conditions where reduced service life can be expected.

Table 46 Rated Horsepower for Small Pulleys — 15 mm Belt Width

*The following table represents the horsepower ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected horsepower rating (see **Step 7** of **SECTION 24**, on page T-150). See* **Table 45** *for torque ratings.*

5 mm Pitch PowerGrip® GT®2 Belts

Belt Width (mm)	9	15	20	25
Width Multiplier	0.60	1.00	1.33	1.67

Number of Grooves		18	20	22	24	26	28	32	36	40	44	48	56	64	72	80
Pitch Diameter	mm	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
	inches	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511	5.013
rpm of Fastest Shaft [Tabulated values are in hp]	10	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.08
	20	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11	0.13	0.14	0.16
	40	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.14	0.16	0.17	0.21	0.24	0.27	0.30
	60	0.06	0.07	0.09	0.10	0.11	0.12	0.15	0.18	0.20	0.22	0.25	0.30	0.35	0.39	0.44
	100	0.09	0.11	0.14	0.16	0.18	0.20	0.24	0.28	0.32	0.36	0.40	0.48	0.55	0.63	0.70
	200	0.17	0.21	0.25	0.29	0.33	0.36	0.44	0.52	0.59	0.67	0.74	0.89	1.04	1.18	1.33
	300	0.24	0.29	0.35	0.41	0.47	0.52	0.63	0.75	0.86	0.96	1.07	1.29	1.50	1.71	1.92
	400	0.30	0.37	0.45	0.52	0.60	0.67	0.82	0.96	1.11	1.25	1.39	1.67	1.94	2.22	2.49
	500	0.36	0.45	0.54	0.64	0.73	0.82	1.00	1.17	1.35	1.52	1.70	2.04	2.38	2.71	3.04
	600	0.42	0.53	0.64	0.74	0.85	0.96	1.17	1.38	1.59	1.79	2.00	2.40	2.80	3.19	3.58
	800	0.52	0.67	0.81	0.95	1.09	1.23	1.50	1.78	2.05	2.31	2.58	3.10	3.62	4.13	4.63
	1000	0.62	0.80	0.97	1.15	1.32	1.49	1.83	2.16	2.49	2.82	3.14	3.78	4.41	5.03	5.65
	1200	0.72	0.93	1.13	1.34	1.54	1.74	2.14	2.53	2.92	3.31	3.69	4.44	5.18	5.91	6.63
	1400	0.81	1.05	1.29	1.52	1.75	1.98	2.44	2.90	3.34	3.78	4.22	5.08	5.93	6.76	7.58
	1600	0.90	1.17	1.43	1.70	1.96	2.22	2.74	3.25	3.75	4.25	4.74	5.71	6.66	7.60	8.51
	1800	0.98	1.28	1.58	1.87	2.16	2.45	3.03	3.59	4.15	4.71	5.25	6.32	7.38	8.40	9.41
	2000	1.06	1.39	1.72	2.04	2.36	2.68	3.31	3.93	4.55	5.15	5.75	6.92	8.07	9.19	10.29
	2400	1.21	1.60	1.99	2.37	2.75	3.12	3.86	4.59	5.31	6.02	6.72	8.08	9.41	10.70	11.96
	2800	1.35	1.80	2.24	2.68	3.11	3.54	4.39	5.23	6.04	6.85	7.64	9.19	10.69	12.13	13.52
	3200	1.49	1.99	2.49	2.98	3.47	3.95	4.90	5.84	6.75	7.65	8.53	10.25	11.89	13.47	14.97
	3600	1.61	2.17	2.73	3.27	3.81	4.34	5.40	6.43	7.43	8.42	9.39	11.25	13.03	14.71	16.30
	4000	1.73	2.34	2.95	3.55	4.14	4.72	5.87	6.99	8.09	9.16	10.20	12.20	14.09	15.86	17.50
	5000	2.00	2.74	3.48	4.20	4.91	5.61	6.99	8.32	9.61	10.86	12.06	14.33	16.40	18.25	—
	6000	2.23	3.10	3.96	4.79	5.62	6.42	8.00	9.51	10.96	12.34	13.66	16.06	18.15	—	—
	8000	2.59	3.69	4.76	5.80	6.81	7.80	9.69	11.46	13.09	14.59	15.95	—	—	—	—
	10000	2.82	4.11	5.36	6.56	7.72	8.82	10.89	12.75	—	—	—	—	—	—	—
	12000	2.91	4.36	5.75	7.06	8.30	9.46	11.54	—	—	—	—	—	—	—	—
	14000	2.86	4.42	5.90	7.26	8.52	9.65	—	—	—	—	—	—	—	—	—

For Belt Length																
From	Length (mm)	200	215	260	315	375	450	540	650	780	935	1130	1355	1625	1960
	# of teeth	40	43	52	63	75	90	108	130	156	187	226	271	325	392
To	Length (mm)	210	255	310	370	445	535	645	775	930	1125	1350	1620	1955	2000
	# of teeth	42	51	62	74	89	107	129	155	186	225	270	324	391	400
Length Correction Factor		0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30

Shaded area indicates drive conditions where reduced service life can be expected.

Continued on the next page

Table 46 (Cont.) **Rated Kilowatts for Small Pulleys — 15 mm Belt Width**

*The following table represents the horsepower ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected horsepower rating (see **Step 7** of **SECTION 24**, on page T-150). See* **Table 45** *for torque ratings.*

5 mm Pitch PowerGrip® GT®2 Belts

Belt Width (mm)	9	15	20	25
Width Multiplier	0.60	1.00	1.33	1.67

Number of Grooves		18	20	22	24	26	28	32	36	40	44	48	56	64	72	80
Pitch Diameter	mm	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59	127.32
	inches	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511	5.013
rpm of Fastest Shaft [Tabulated values are in kW]	10	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.06
	20	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.09	0.11	0.12
	40	0.03	0.04	0.04	0.05	0.06	0.06	0.08	0.09	0.10	0.12	0.13	0.15	0.18	0.20	0.23
	60	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.15	0.17	0.19	0.22	0.26	0.29	0.33
	100	0.07	0.09	0.10	0.12	0.13	0.15	0.18	0.21	0.24	0.27	0.30	0.35	0.41	0.47	0.53
	200	0.13	0.16	0.18	0.21	0.24	0.27	0.33	0.39	0.44	0.50	0.56	0.67	0.77	0.88	0.99
	300	0.18	0.22	0.26	0.30	0.35	0.39	0.47	0.56	0.64	0.72	0.80	0.96	1.12	1.27	1.43
	400	0.22	0.28	0.34	0.39	0.45	0.50	0.61	0.72	0.83	0.93	1.04	1.24	1.45	1.65	1.85
	500	0.27	0.34	0.41	0.47	0.54	0.61	0.74	0.88	1.01	1.14	1.27	1.52	1.77	2.02	2.27
	600	0.31	0.39	0.47	0.55	0.63	0.71	0.87	1.03	1.18	1.34	1.49	1.79	2.09	2.38	2.67
	800	0.39	0.50	0.60	0.71	0.81	0.92	1.12	1.33	1.53	1.73	1.92	2.31	2.70	3.08	3.45
	1000	0.47	0.60	0.73	0.86	0.98	1.11	1.36	1.61	1.86	2.10	2.34	2.82	3.29	3.75	4.21
	1200	0.54	0.69	0.85	1.00	1.15	1.30	1.59	1.89	2.18	2.47	2.75	3.31	3.86	4.41	4.94
	1400	0.60	0.78	0.96	1.13	1.31	1.48	1.82	2.16	2.49	2.82	3.15	3.79	4.42	5.04	5.66
	1600	0.67	0.87	1.07	1.27	1.46	1.66	2.04	2.42	2.80	3.17	3.54	4.26	4.97	5.66	6.35
	1800	0.73	0.95	1.18	1.40	1.61	1.83	2.26	2.68	3.10	3.51	3.92	4.72	5.50	6.27	7.02
	2000	0.79	1.04	1.28	1.52	1.76	2.00	2.47	2.93	3.39	3.84	4.29	5.16	6.02	6.85	7.67
	2400	0.90	1.19	1.48	1.77	2.05	2.33	2.88	3.42	3.96	4.49	5.01	6.03	7.02	7.98	8.92
	2800	1.01	1.34	1.67	2.00	2.32	2.64	3.27	3.90	4.51	5.11	5.70	6.85	7.97	9.05	10.08
	3200	1.11	1.48	1.86	2.22	2.59	2.95	3.66	4.35	5.03	5.71	6.36	7.64	8.87	10.04	11.16
	3600	1.20	1.62	2.03	2.44	2.84	3.24	4.02	4.79	5.54	6.28	7.00	8.39	9.72	10.97	12.15
	4000	1.29	1.75	2.20	2.65	3.09	3.52	4.38	5.22	6.03	6.83	7.61	9.10	10.51	11.82	13.05
	5000	1.49	2.05	2.60	3.13	3.66	4.18	5.21	6.21	7.16	8.10	9.00	10.68	12.23	13.61	—
	6000	1.67	2.31	2.95	3.57	4.19	4.79	5.96	7.09	8.17	9.20	10.19	11.98	13.53	—	—
	8000	1.93	2.75	3.55	4.32	5.08	5.81	7.23	8.54	9.76	10.88	11.89	—	—	—	—
	10000	2.10	3.06	4.00	4.89	5.75	6.58	8.12	9.51	—	—	—	—	—	—	—
	12000	2.17	3.25	4.29	5.26	6.19	7.05	8.61	—	—	—	—	—	—	—	—
	14000	2.13	3.30	4.40	5.42	6.35	7.20	—	—	—	—	—	—	—	—	—

For Belt Length																
From	Length (mm)	200	215	260	315	375	450	540	650	780	935	1130	1355	1625	1960
	# of teeth	40	43	52	63	75	90	108	130	156	187	226	271	325	392
To	Length (mm)	210	255	310	370	445	535	645	775	930	1125	1350	1620	1955	2000
	# of teeth	42	51	62	74	89	107	129	155	186	225	270	324	391	400
Length Correction Factor		0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30

Shaded area indicates drive conditions where reduced service life can be expected.

Table 47 Rated Torque (lb·in) for Small Pulleys — 6 mm Belt Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	6	9	15
Width Multiplier	1.00	1.66	2.97

Number of Grooves		10	12	14	16	18	22	26	30	34	38	44	50	56	62	72	80
Pitch Diameter	mm	9.55	11.46	13.37	15.28	17.19	21.01	24.83	28.65	32.47	36.29	42.02	47.75	53.48	59.21	68.75	76.39
	inches	.376	.451	.526	.602	.677	.827	.977	1.128	1.278	1.429	1.654	1.880	2.105	2.331	2.707	3.008
rpm of Fastest Shaft [Tabulated values are in lb·in]	10	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	20	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	40	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	60	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	100	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	200	3.3	4.0	4.8	5.6	6.5	8.3	10.2	12.3	14.5	16.8	20.5	24.6	27.7	30.7	35.7	39.6
	300	3.0	3.7	4.4	5.1	5.9	7.5	9.2	11.1	13.0	15.0	18.3	21.8	24.6	27.3	31.6	35.2
	400	2.8	3.4	4.1	4.8	5.5	7.0	8.6	10.3	12.0	13.9	16.9	20.0	22.6	25.0	29.1	32.3
	500	2.7	3.3	3.9	4.5	5.2	6.6	8.1	9.7	11.3	13.1	15.8	18.8	21.2	23.4	27.2	30.2
	600	2.6	3.1	3.7	4.3	5.0	6.3	7.7	9.2	10.8	12.4	15.0	17.8	20.1	22.2	25.8	28.6
	700	2.5	3.0	3.6	4.2	4.8	6.1	7.4	8.9	10.4	11.9	14.4	17.0	19.2	21.2	24.6	27.4
	800	2.4	2.9	3.5	4.1	4.7	5.9	7.2	8.6	10.0	11.5	13.9	16.3	18.4	20.4	23.7	26.3
	870	2.4	2.9	3.4	4.0	4.6	5.8	7.0	8.4	9.8	11.2	13.5	15.9	18.0	19.9	23.1	25.6
	1000	2.3	2.8	3.3	3.9	4.4	5.6	6.8	8.1	9.4	10.8	13.0	15.3	17.2	19.1	22.1	24.6
	1160	2.2	2.7	3.2	3.7	4.3	5.4	6.5	7.8	9.1	10.4	12.5	14.6	16.5	18.2	21.2	23.5
	1450	2.1	2.6	3.0	3.5	4.0	5.1	6.2	7.3	8.5	9.8	11.7	13.7	15.4	17.1	19.8	22.0
	1600	2.0	2.5	3.0	3.4	3.9	5.0	6.0	7.2	8.3	9.5	11.4	13.3	15.0	16.5	19.2	21.3
	1750	2.0	2.5	2.9	3.4	3.9	4.9	5.9	7.0	8.1	9.3	11.1	12.9	14.6	16.1	18.7	20.7
	2000	1.9	2.4	2.8	3.3	3.7	4.7	5.7	6.7	7.8	8.9	10.7	12.4	14.0	15.4	17.9	19.8
	2500	1.9	2.3	2.7	3.1	3.5	4.4	5.4	6.4	7.4	8.4	10.0	11.6	13.0	14.4	16.6	18.4
	3000	1.8	2.2	2.6	3.0	3.4	4.2	5.1	6.1	7.0	8.0	9.4	11.0	12.3	13.5	15.6	17.3
	3500	1.7	2.1	2.5	2.9	3.3	4.1	4.9	5.8	6.7	7.6	9.0	10.4	11.7	12.8	14.8	16.3
	5000	1.6	1.9	2.3	2.6	3.0	3.7	4.5	5.2	6.0	6.8	8.0	9.2	10.2	11.1	12.7	13.8
	8000	1.4	1.7	2.0	2.3	2.6	3.3	3.9	4.5	5.1	5.7	6.6	7.3	8.0	8.5	9.1	9.3
	10000	1.3	1.6	1.9	2.2	2.5	3.0	3.6	4.1	4.6	5.1	5.7	6.3	6.6	6.8	—	—

For Belt Length							
From	Length (mm)	144	198	264	408	600
	# of teeth	48	66	88	136	200
To	Length (mm)	195	261	405	597	603 & up
	# of teeth	65	87	135	199	201 & up
Length Correction Factor		0.80	0.90	1.00	1.10	1.20

Continued on the next page

Shaded area indicates drive conditions where reduced service life can be expected.

Table 47 (Cont.) **Rated Torque (N·m) for Small Pulleys — 6 mm Belt Width**

3 mm Pitch PowerGrip® HTD® Belts

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	6	9	15
Width Multiplier	1.00	1.66	2.97

Number of Grooves		10	12	14	16	18	22	26	30	34	38	44	50	56	62	72	80
Pitch Diameter	mm	9.55	11.46	13.37	15.28	17.19	21.01	24.83	28.65	32.47	36.29	42.02	47.75	53.48	59.21	68.75	76.39
	inches	.376	.451	.526	.602	.677	.827	.977	1.128	1.278	1.429	1.654	1.880	2.105	2.331	2.707	3.008
rpm of Fastest Shaft [Tabulated values are in N·m]	10	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	20	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	40	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	60	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	100	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	200	0.4	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.5	4.0	4.5
	300	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.2	1.5	1.7	2.1	2.5	2.8	3.1	3.6	4.0
	400	0.3	0.4	0.5	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.9	2.3	2.6	2.8	3.3	3.6
	500	0.3	0.4	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.5	1.8	2.1	2.4	2.6	3.1	3.4
	600	0.3	0.4	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.4	1.7	2.0	2.3	2.5	2.9	3.2
	700	0.3	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.2	1.3	1.6	1.9	2.2	2.4	2.8	3.1
	800	0.3	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.1	1.3	1.6	1.8	2.1	2.3	2.7	3.0
	870	0.3	0.3	0.4	0.4	0.5	0.7	0.8	0.9	1.1	1.3	1.5	1.8	2.0	2.2	2.6	2.9
	1000	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.1	1.2	1.5	1.7	1.9	2.2	2.5	2.8
	1160	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.4	1.7	1.9	2.1	2.4	2.7
	1450	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5
	1600	0.2	0.3	0.3	0.4	0.4	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.4
	1750	0.2	0.3	0.3	0.4	0.4	0.5	0.7	0.8	0.9	1.0	1.3	1.5	1.6	1.8	2.1	2.3
	2000	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.4	1.6	1.7	2.0	2.2
	2500	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.6	1.9	2.1
	3000	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.5	1.8	1.9
	3500	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.5	1.7	1.8
	5000	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.4	1.6
	8000	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1
	10000	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	—	—

For Belt Length							
From	Length (mm)	144	198	264	408	600
	# of teeth	48	66	88	136	200
To	Length (mm)	195	261	405	597	603 & up
	# of teeth	65	87	135	199	201 & up
Length Correction Factor		0.80	0.90	1.00	1.10	1.20

Shaded area indicates drive conditions where reduced service life can be expected.

Table 48 Rated Torque (lb·in) for Small Pulleys — 9 mm Belt Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

5 mm Pitch PowerGrip® HTD® Belts

Belt Width (mm)	9	15	25
Width Multiplier	1.00	1.89	3.38

Number of Grooves		14	16	18	20	22	24	26	28	32	36	40	44	48	56	64	72
Pitch Diameter	mm	22.28	25.46	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59
	inches	.877	1.003	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511
rpm of Fastest Shaft [Tabulated values are in lb·in]	10	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	20	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	40	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	60	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	100	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	200	19.0	22.3	25.7	29.3	33.0	36.9	40.9	45.1	53.8	63.1	73.0	83.5	94.5	113.3	129.5	145.7
	300	17.3	20.2	23.3	26.5	29.9	33.3	36.9	40.6	48.3	56.5	65.2	74.4	84.0	100.4	114.8	129.1
	400	16.2	18.9	21.8	24.7	27.8	31.0	34.3	37.7	44.8	52.3	60.2	68.5	77.2	92.2	105.3	118.5
	500	15.3	17.9	20.6	23.4	26.3	29.3	32.4	35.6	42.2	49.2	56.5	64.3	72.3	86.2	98.5	110.8
	600	14.7	17.2	19.7	22.4	25.1	28.0	30.9	33.9	40.2	46.8	53.7	61.0	68.5	81.7	93.3	104.9
	700	14.2	16.5	19.0	21.6	24.2	26.9	29.7	32.6	38.6	44.9	51.5	58.3	65.5	78.0	89.1	100.1
	800	13.7	16.0	18.4	20.9	23.4	26.0	28.7	31.5	37.2	43.3	49.6	56.1	63.0	74.9	85.5	96.2
	870	13.5	15.7	18.0	20.4	22.9	25.5	28.1	30.8	36.4	42.3	48.4	54.8	61.4	73.0	83.4	93.7
	1000	13.0	15.2	17.4	19.8	22.1	24.6	27.1	29.7	35.1	40.7	46.5	52.6	58.9	70.0	79.9	89.8
	1160	12.6	14.7	16.8	19.1	21.3	23.7	26.1	28.6	33.7	39.1	44.6	50.4	56.4	66.9	76.3	85.7
	1400	12.0	14.0	16.1	18.2	20.4	22.6	24.9	27.2	32.0	37.1	42.3	47.7	53.2	63.1	71.9	80.7
	1450	11.9	13.9	15.9	18.0	20.2	22.4	24.6	27.0	31.7	36.7	41.9	47.2	52.7	62.4	71.1	79.8
	1600	11.7	13.6	15.6	17.6	19.7	21.8	24.0	26.3	30.9	35.7	40.7	45.8	51.1	60.4	68.9	77.2
	1750	11.4	13.3	15.2	17.2	19.2	21.3	23.5	25.6	30.1	34.8	39.6	44.6	49.7	58.7	66.8	74.9
	1800	11.3	13.2	15.1	17.1	19.1	21.2	23.3	25.5	29.9	34.5	39.3	44.2	49.2	58.2	66.2	74.1
	2000	11.1	12.9	14.7	16.6	18.6	20.6	22.7	24.7	29.0	33.5	38.1	42.8	47.6	56.2	63.9	71.4
	2500	10.5	12.2	13.9	15.7	17.6	19.4	21.3	23.3	27.3	31.4	35.6	39.9	44.2	51.9	58.8	65.5
	3000	10.0	11.7	13.3	15.0	16.7	18.5	20.3	22.1	25.8	29.7	33.5	37.5	41.5	48.5	54.6	60.5
	3600	9.6	11.1	12.7	14.3	15.9	17.6	19.3	21.0	24.4	27.9	31.5	35.1	38.6	44.8	50.1	55.0
	5000	8.8	10.2	11.6	13.1	14.5	15.9	17.4	18.9	21.8	24.7	27.6	30.4	33.1	37.4	40.6	43.0
	8000	7.8	8.9	10.1	11.2	12.3	13.4	14.4	15.4	17.3	19.0	20.4	21.5	22.3	—	—	—
	10000	7.2	8.2	9.2	10.1	11.0	11.9	12.7	13.4	14.5	15.3	—	—	—	—	—	—

For Belt Length						
From	Length (mm)	350	440	555	845	1095
	# of teeth	70	88	111	169	219
To	Length (mm)	435	550	840	1090	1100 & up
	# of teeth	87	110	168	218	220 & up
Length Correction Factor		0.80	0.90	1.00	1.10	1.20

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Shaded area indicates drive conditions where reduced service life can be expected.

Table 48 Rated Torque (N·m) for Small Pulleys — 9 mm Belt Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor and applicable belt length factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

5 mm Pitch PowerGrip® HTD® Belts

Belt Width (mm)	9	15	25
Width Multiplier	1.00	1.89	3.38

Number of Grooves		14	16	18	20	22	24	26	28	32	36	40	44	48	56	64	72
Pitch Diameter	mm	22.28	25.46	28.65	31.83	35.01	38.20	41.38	44.56	50.93	57.30	63.66	70.03	76.39	89.13	101.86	114.59
	inches	.877	1.003	1.128	1.253	1.379	1.504	1.629	1.754	2.005	2.256	2.506	2.757	3.008	3.509	4.010	4.511
rpm of Fastest Shaft [Tabulated values are in N·m]	**10**	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	20	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	40	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	60	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	100	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	200	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.1	6.1	7.1	8.3	9.4	10.7	12.8	14.6	16.5
	300	2.0	2.3	2.6	3.0	3.4	3.8	4.2	4.6	5.5	6.4	7.4	8.4	9.5	11.3	13.0	14.6
	400	1.8	2.1	2.5	2.8	3.1	3.5	3.9	4.3	5.1	5.9	6.8	7.7	8.7	10.4	11.9	13.4
	500	1.7	2.0	2.3	2.6	3.0	3.3	3.7	4.0	4.8	5.6	6.4	7.3	8.2	9.7	11.1	12.5
	600	1.7	1.9	2.2	2.5	2.8	3.2	3.5	3.8	4.5	5.3	6.1	6.9	7.7	9.2	10.5	11.9
	700	1.6	1.9	2.1	2.4	2.7	3.0	3.4	3.7	4.4	5.1	5.8	6.6	7.4	8.8	10.1	11.3
	800	1.6	1.8	2.1	2.4	2.6	2.9	3.2	3.6	4.2	4.9	5.6	6.3	7.1	8.5	9.7	10.9
	870	1.5	1.8	2.0	2.3	2.6	2.9	3.2	3.5	4.1	4.8	5.5	6.2	6.9	8.2	9.4	10.6
	1000	1.5	1.7	2.0	2.2	2.5	2.8	3.1	3.4	4.0	4.6	5.3	5.9	6.7	7.9	9.0	10.1
	1160	1.4	1.7	1.9	2.2	2.4	2.7	3.0	3.2	3.8	4.4	5.0	5.7	6.4	7.6	8.6	9.7
	1400	1.4	1.6	1.8	2.1	2.3	2.6	2.8	3.1	3.6	4.2	4.8	5.4	6.0	7.1	8.1	9.1
	1450	1.3	1.6	1.8	2.0	2.3	2.5	2.8	3.0	3.6	4.1	4.7	5.3	6.0	7.0	8.0	9.0
	1600	1.3	1.5	1.8	2.0	2.2	2.5	2.7	3.0	3.5	4.0	4.6	5.2	5.8	6.8	7.8	8.7
	1750	1.3	1.5	1.7	1.9	2.2	2.4	2.7	2.9	3.4	3.9	4.5	5.0	5.6	6.6	7.6	8.5
	1800	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.9	3.4	3.9	4.4	5.0	5.6	6.6	7.5	8.4
	2000	1.3	1.5	1.7	1.9	2.1	2.3	2.6	2.8	3.3	3.8	4.3	4.8	5.4	6.3	7.2	8.1
	2500	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	3.1	3.5	4.0	4.5	5.0	5.9	6.6	7.4
	3000	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.9	3.4	3.8	4.2	4.7	5.5	6.2	6.8
	3600	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.8	3.2	3.6	4.0	4.4	5.1	5.7	6.2
	5000	1.0	1.2	1.3	1.5	1.6	1.8	2.0	2.1	2.5	2.8	3.1	3.4	3.7	4.2	4.6	4.9
	8000	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	2.0	2.1	2.3	2.4	2.5	—	—	—
	10000	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	—	—	—	—	—	—

For Belt Length						
From	Length (mm)	350	440	555	845	1095
	# of teeth	70	88	111	169	219
To	Length (mm)	435	550	840	1090	1100 & up
	# of teeth	87	110	168	218	220 & up
Length Correction Factor		0.80	0.90	1.00	1.10	1.20

Shaded area indicates drive conditions where reduced service life can be expected.

Table 49 Rated Torque (oz·in) for Small Pulleys — 1/8" Top Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (in)	1/8	3/16	1/4	5/16	3/8	7/16	1/2
Width Multiplier	1.00	1.66	2.33	2.84	3.50	4.18	4.86

No. of Grooves		10	11	12	14	15	16	18	20	21	22	24	28	30	32	36	40	42	44	48	60
Pitch Diameter	mm	6.48	7.11	7.77	9.07	9.70	10.34	11.63	12.93	13.59	14.22	15.52	18.11	19.41	20.70	23.29	25.88	27.18	28.45	31.04	38.81
	in	.255	.280	.306	.357	.382	.407	.458	.509	.535	.560	.611	.713	.764	.815	.917	1.019	1.070	1.120	1.222	1.528
rpm of Fastest Shaft	**10**	4.61	5.06	5.53	6.45	6.91	7.36	8.28	9.20	9.67	10.10	11.0	12.9	13.8	14.7	16.6	18.4	19.3	20.2	22.1	27.6
	100	4.61	5.06	5.53	6.45	6.91	7.36	8.28	9.20	9.67	10.10	11.0	12.9	13.8	14.7	16.6	18.4	19.3	20.2	22.1	27.6
	1000	4.61	5.06	5.53	6.45	6.91	7.36	8.28	9.20	9.67	10.10	11.0	12.9	13.8	14.7	16.6	18.4	19.3	20.2	22.1	27.6
	2000	4.61	5.06	5.53	6.45	6.90	7.36	8.28	9.20	9.67	10.10	11.0	12.9	13.8	14.7	16.6	18.4	19.3	20.2	22.0	27.5
	2500	4.61	5.06	5.53	6.45	6.90	7.35	8.28	9.20	9.66	10.10	11.0	12.9	13.8	14.7	16.5	18.4	19.3	20.2	22.0	27.4
	3000	4.61	5.06	5.53	6.45	6.90	7.35	8.27	9.19	9.66	10.10	11.0	12.9	13.8	14.7	16.5	18.3	19.2	20.1	21.9	27.3
	3500	4.61	5.06	5.53	6.45	6.90	7.35	8.27	9.19	9.66	10.10	11.0	12.8	13.8	14.7	16.5	18.3	19.2	20.1	21.9	27.2
	5000	4.61	5.06	5.53	6.44	6.89	7.34	8.26	9.17	9.64	10.10	11.0	12.8	13.7	14.6	16.4	18.2	19.1	19.9	21.7	26.8
	8000	4.60	5.05	5.52	6.43	6.87	7.32	8.22	9.12	9.58	10.00	10.9	12.7	13.5	14.4	16.1	17.8	18.6	19.4	21.0	25.5
	10000	4.59	5.04	5.51	6.41	6.85	7.30	8.19	9.08	9.53	9.96	10.8	12.6	13.4	14.2	15.9	17.4	18.2	18.9	20.4	24.3
	12000	4.59	5.03	5.49	6.39	6.83	7.27	8.15	9.03	9.47	9.98	10.7	12.4	13.2	14.0	15.5	17.0	17.7	18.4	19.6	22.8

NOTE: Tabulated values are in oz·in.

Table 50 Rated Torque (lb·in) for Small Pulleys — 1/4" Top Width

*The following table represents the torque ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (in)	1/4	5/16	3/8	7/16	1/2
Width Multiplier	1.00	1.29	1.59	1.89	2.20

Number of Grooves		10	11	12	14	15	16	18	20	21	22	24	28	30
Pitch Diameter	mm	16.18	17.78	19.41	22.63	24.26	25.88	29.11	32.33	33.96	35.59	38.81	45.29	48.51
	inches	.637	.700	.764	.891	.955	1.019	1.146	1.273	1.337	1.401	1.528	1.783	1.910
rpm of Fastest Shaft	10	2.32	2.55	2.78	3.24	3.47	3.71	4.17	4.63	4.86	5.09	5.56	6.48	6.95
	100	2.32	2.55	2.78	3.24	3.47	3.71	4.17	4.63	4.86	5.09	5.56	6.48	6.95
	500	2.32	2.55	2.78	3.24	3.47	3.70	4.17	4.63	4.86	5.09	5.55	6.48	6.94
	1000	2.32	2.54	2.78	3.24	3.47	3.70	4.16	4.62	4.86	5.09	5.55	6.47	6.93
	1160	2.32	2.54	2.78	3.24	3.47	3.70	4.16	4.62	4.85	5.08	5.54	6.46	6.92
	1450	2.31	2.54	2.78	3.24	3.47	3.70	4.16	4.62	4.85	5.08	5.54	6.45	6.90
	1600	2.31	2.54	2.78	3.24	3.47	3.70	4.16	4.61	4.84	5.07	5.53	6.44	6.90
	1750	2.31	2.54	2.77	3.23	3.47	3.70	4.15	4.61	4.84	5.07	5.53	6.44	6.89
	2000	2.31	2.54	2.77	3.23	3.46	3.69	4.15	4.61	4.84	5.06	5.52	6.42	6.87
	2500	2.31	2.54	2.77	3.23	3.46	3.69	4.14	4.59	4.82	5.05	5.49	6.38	6.82
	3000	2.31	2.54	2.77	3.22	3.45	3.68	4.13	4.58	4.80	5.03	5.47	6.34	6.77
	3500	2.31	2.53	2.76	3.22	3.44	3.67	4.12	4.56	4.78	5.00	5.43	6.29	6.71
	5000	2.30	2.52	2.75	3.19	3.41	3.63	4.06	4.48	4.69	4.90	5.31	6.09	6.46
	8000	2.27	2.48	2.70	3.11	3.32	3.52	3.90	4.26	4.43	4.60	4.92	5.47	5.70
	10000	2.24	2.45	2.65	3.04	3.23	3.41	3.75	4.05	4.19	4.32	4.56	4.89	4.99

NOTE: Tabulated values are in lb·in.

Table 51 Rated Horsepower for Small Pulleys — 10 mm Width

*The following table represents the horsepower ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	4	6	10	16	25
Width Multiplier	0.4	0.6	1.0	1.6	2.5

Number of Teeth		12	14	15	16	18	19	20	22	24	26	28	30	32	40	60
Pitch Diameter	mm	19.25	22.45	24.05	25.6	28.8	30.4	32	35.15	38.35	41.55	44.75	47.9	51.1	63.85	95.65
	inches	0.758	0.884	0.947	1.008	1.134	1.197	1.26	1.384	1.51	1.636	1.762	1.886	2.012	2.514	3.766
rpm of Fastest Shaft [Tabulated values are in hp]	**100**	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.07	0.09
	300	0.04	0.04	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.11	0.13	0.20
	500	0.07	0.08	0.08	0.08	0.09	0.11	0.11	0.12	0.13	0.13	0.15	0.16	0.17	0.21	0.32
	700	0.08	0.11	0.11	0.12	0.13	0.13	0.15	0.16	0.17	0.19	0.20	0.21	0.23	0.30	0.43
	1000	0.12	0.13	0.15	0.16	0.17	0.19	0.20	0.21	0.24	0.25	0.27	0.30	0.31	0.39	0.59
	1200	0.13	0.16	0.17	0.19	0.20	0.21	0.23	0.25	0.27	0.30	0.32	0.35	0.36	0.46	0.68
	1300	0.15	0.17	0.19	0.20	0.21	0.23	0.24	0.27	0.30	0.32	0.34	0.36	0.39	0.48	0.72
	1500	0.16	0.19	0.20	0.21	0.24	0.25	0.27	0.30	0.32	0.35	0.38	0.40	0.43	0.55	0.82
	1600	0.17	0.20	0.21	0.23	0.25	0.27	0.28	0.31	0.35	0.38	0.40	0.43	0.46	0.58	0.86
	1800	0.19	0.21	0.23	0.25	0.28	0.30	0.31	0.35	0.38	0.40	0.44	0.47	0.50	0.63	0.94
	2000	0.20	0.24	0.25	0.27	0.31	0.32	0.34	0.38	0.40	0.44	0.47	0.51	0.54	0.67	1.02
	2200	0.21	0.25	0.27	0.30	0.32	0.35	0.36	0.40	0.43	0.47	0.51	0.55	0.58	0.72	1.09
	2300	0.23	0.27	0.28	0.30	0.34	0.36	0.38	0.42	0.44	0.48	0.52	0.56	0.60	0.75	1.13
	2500	0.24	0.28	0.30	0.32	0.36	0.38	0.40	0.44	0.48	0.51	0.55	0.59	0.63	0.79	1.19
	2700	0.25	0.30	0.31	0.34	0.38	0.40	0.42	0.46	0.50	0.55	0.59	0.63	0.67	0.83	1.26
	2800	0.25	0.30	0.32	0.35	0.39	0.40	0.43	0.47	0.51	0.56	0.60	0.64	0.68	0.86	1.29
	3000	0.27	0.31	0.34	0.36	0.40	0.43	0.46	0.50	0.54	0.59	0.63	0.67	0.72	0.90	1.35
	3200	0.28	0.34	0.35	0.38	0.43	0.44	0.47	0.52	0.56	0.62	0.66	0.71	0.75	0.94	1.41
	3600	0.31	0.36	0.38	0.40	0.46	0.48	0.51	0.56	0.60	0.66	0.71	0.76	0.82	1.02	1.53
	4000	0.32	0.38	0.40	0.43	0.50	0.52	0.55	0.60	0.66	0.71	0.76	0.82	0.87	1.09	1.64
	4200	0.34	0.39	0.42	0.44	0.51	0.54	0.56	0.62	0.67	0.72	0.79	0.84	0.90	1.13	1.69
	4600	0.36	0.42	0.44	0.47	0.54	0.56	0.59	0.66	0.71	0.78	0.83	0.90	0.95	1.19	1.78
	4800	0.36	0.43	0.46	0.48	0.55	0.58	0.62	0.67	0.74	0.79	0.86	0.91	0.98	1.22	1.84
	5000	0.38	0.44	0.47	0.50	0.56	0.59	0.63	0.68	0.75	0.82	0.87	0.94	1.01	1.25	1.88
	5500	—	—	—	0.54	0.60	0.63	0.67	0.72	0.79	0.86	0.93	0.99	1.06	1.33	2.00
	6000	—	—	—	0.56	0.63	0.67	0.70	0.76	0.84	0.91	0.98	1.05	1.11	1.39	2.09
	7000	—	—	—	0.62	0.68	0.72	0.76	0.84	0.93	0.99	1.07	1.15	1.22	1.53	—
	8000	—	—	—	—	0.74	0.79	0.83	0.91	0.99	1.07	1.15	1.23	1.33	1.65	—
	9000	—	—	—	—	0.79	0.84	0.89	0.97	1.06	1.15	1.23	1.33	1.41	1.77	—
	10000	—	—	—	—	0.84	0.89	0.94	1.03	1.13	1.22	1.31	1.41	1.50	—	—

Shaded area indicates drive conditions where reduced service life can be expected.

Table 52 Rated Horsepower for Small Pulleys — 10 mm Width

*The following table represents the horsepower ratings for each belt, in its base width, at the predetermined number of grooves, pitch diameters and rpm's. These ratings must be multiplied by the appropriate width factor to obtain the corrected torque rating (see **Step 7** of **SECTION 24**, on page T-150).*

Belt Width (mm)	4	6	10	16	25
Width Multiplier	0.4	0.6	1.0	1.6	2.5

Number of Teeth		12	14	15	16	18	20	21	24	25	26	27	30	40	48	50	72
Pitch Diameter	mm	38.35	44.7	47.9	51.1	57.45	63.8	67	76.55	79.75	82.9	86.1	95.65	127.5	152.95	159.3	229.35
	inches	1.51	1.76	1.886	2.012	2.262	2.512	2.638	3.014	3.14	3.264	3.39	3.766	5.018	6.022	6.272	9.03
rpm of Fastest Shaft [Tabulated values are in hp]	**100**	0.05	0.07	0.07	0.08	0.08	0.09	0.09	0.11	0.12	0.12	0.12	0.13	0.19	0.23	0.23	0.34
	200	0.09	0.11	0.12	0.13	0.15	0.16	0.17	0.20	0.20	0.21	0.21	0.24	0.32	0.39	0.40	0.59
	500	0.21	0.25	0.27	0.28	0.32	0.35	0.38	0.43	0.44	0.46	0.48	0.54	0.71	0.86	0.89	1.27
	600	0.25	0.30	0.31	0.34	0.38	0.42	0.44	0.50	0.52	0.54	0.56	0.63	0.83	0.99	1.05	1.50
	800	0.32	0.38	0.40	0.43	0.48	0.54	0.56	0.64	0.67	0.70	0.72	0.79	1.06	1.27	1.33	1.92
	1000	0.39	0.44	0.48	0.51	0.58	0.64	0.67	0.76	0.80	0.83	0.86	0.97	1.27	1.54	1.60	2.31
	1200	0.44	0.52	0.56	0.59	0.67	0.74	0.78	0.89	0.93	0.97	1.01	1.11	1.49	1.78	1.85	2.67
	1400	0.51	0.59	0.63	0.67	0.75	0.84	0.89	1.01	1.05	1.09	1.13	1.26	1.68	2.01	2.09	3.02
	1500	0.54	0.62	0.67	0.71	0.79	0.89	0.93	1.06	1.11	1.15	1.19	1.33	1.77	2.12	2.21	3.19
	1600	0.56	0.66	0.70	0.75	0.83	0.93	0.98	1.11	1.17	1.21	1.26	1.39	1.86	2.24	2.32	3.35
	1800	0.62	0.71	0.76	0.82	0.91	1.02	1.07	1.22	1.27	1.33	1.37	1.53	2.04	2.44	2.55	3.66
	2000	0.66	0.76	0.83	0.89	0.99	1.10	1.15	1.33	1.38	1.43	1.49	1.65	2.20	2.64	2.75	3.97
	2200	0.71	0.83	0.89	0.94	1.05	1.18	1.23	1.42	1.48	1.53	1.60	1.77	2.36	2.83	2.95	4.25
	2400	0.75	0.89	0.94	1.01	1.13	1.26	1.31	1.52	1.57	1.64	1.70	1.89	2.52	3.02	3.14	4.53
	2500	0.78	0.91	0.97	1.03	1.17	1.30	1.35	1.56	1.62	1.69	1.74	1.94	2.59	3.11	3.23	4.67
	2600	0.80	0.94	0.99	1.06	1.19	1.33	1.39	1.60	1.66	1.73	1.80	2.00	2.67	3.19	3.33	—
	2800	0.84	0.98	1.05	1.13	1.26	1.41	1.48	1.69	1.76	1.82	1.89	2.11	2.80	3.37	3.51	—
	3000	—	1.03	1.10	1.18	1.33	1.48	1.54	1.77	1.84	1.92	1.98	2.21	2.95	3.53	3.67	—
	3200	—	1.07	1.15	1.23	1.38	1.54	1.61	1.85	1.92	2.00	2.08	2.31	3.08	3.69	3.85	—
	3400	—	1.13	1.21	1.29	1.45	1.61	1.69	1.93	2.00	2.08	2.16	2.40	3.20	3.85	4.01	—
	3600	—	1.17	1.25	1.33	1.50	1.66	1.76	2.00	2.08	2.17	2.25	2.49	3.34	3.97	4.17	—
	3800	—	1.21	1.30	1.38	1.56	1.73	1.81	2.08	2.16	2.25	2.33	2.59	3.46	—	—	—
	4000	—	—	—	1.43	1.61	1.78	1.88	2.15	2.24	2.32	2.41	2.68	3.58	—	—	—
	4200	—	—	—	1.48	1.66	1.85	1.94	2.21	2.31	2.40	2.49	2.76	3.69	—	—	—
	4400	—	—	—	1.52	1.72	1.90	2.00	2.28	2.37	2.47	2.57	2.86	3.81	—	—	—
	4600	—	—	—	1.57	1.76	1.96	2.05	2.35	2.44	2.55	2.64	2.94	—	—	—	—
	4800	—	—	—	1.61	1.81	2.01	2.12	2.41	2.52	2.61	2.72	3.02	—	—	—	—
	5000	—	—	—	1.65	1.86	2.07	2.17	2.48	2.57	2.68	2.79	3.10	—	—	—	—
	5500	—	—	—	1.76	1.97	2.19	2.31	2.63	2.74	2.86	2.96	3.29	—	—	—	—
	6000	—	—	—	1.85	2.08	2.32	2.43	2.78	2.90	3.00	3.12	3.47	—	—	—	—

Shaded area indicates drive conditions where reduced service life can be expected.