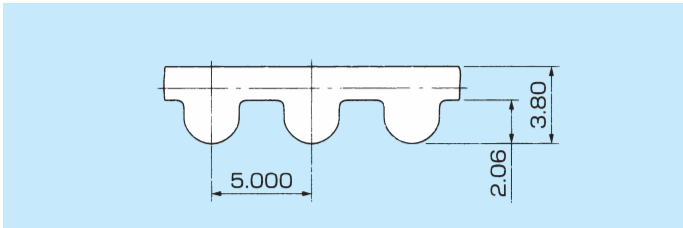
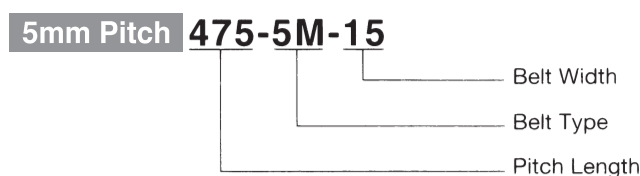


HTD 5M Pulley

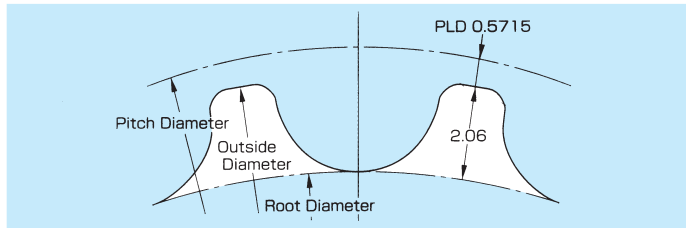
Belt Tooth Profile



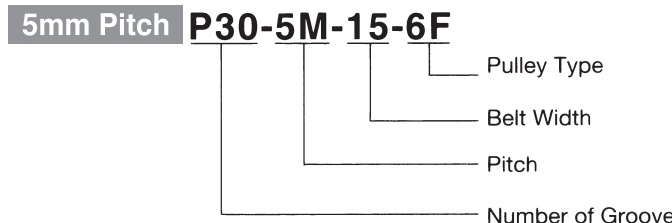
Belt Code



Pulley Groove Profile



Pully Code



HTD5M Belt Length

Description	Pitch Length(mm)	No. of Teeth
*120-5M	120	24
175-5M	175	35
*180-5M	180	36
225-5M	225	45
230-5M	230	46
245-5M	245	49
*255-5M	255	51
260-5M	260	52
*265-5M	265	53
*270-5M	270	54
*275-5M	275	55
*280-5M	280	56
295-5M	295	59
300-5M	300	60
*305-5M	305	61
320-5M	320	64
*325-5M	325	65
*330-5M	330	66
*335-5M	335	67
*340-5M	340	68
*345-5M	345	69
350-5M	350	70
*360-5M	360	72
*365-5M	365	73
*370-5M	370	74
375-5M	375	75
385-5M	385	77
400-5M	400	80
405-5M	405	81
410-5M	410	82
420-5M	420	84
*425-5M	425	85
450-5M	450	90
*460-5M	460	92
465-5M	465	93
475-5M	475	95
500-5M	500	100
*510-5M	510	102
520-5M	520	104
*525-5M	525	105
*535-5M	535	107
550-5M	550	110
560-5M	560	112
565-5M	565	113
*570-5M	570	114
575-5M	575	115
*580-5M	580	116
600-5M	600	120
*610-5M	610	122
615-5M	615	123

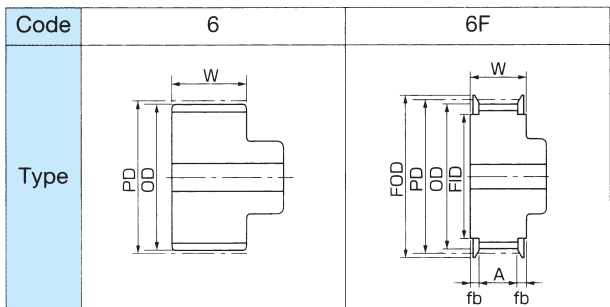
Description	Pitch Length(mm)	No. of Teeth
625-5M	625	125
635-5M	635	127
640-5M	640	128
645-5M	645	129
*665-5M	665	133
670-5M	670	134
695-5M	695	139
*700-5M	700	140
710-5M	710	142
720-5M	720	144
740-5M	740	148
*750-5M	750	150
*755-5M	755	151
770-5M	770	154
775-5M	775	155
800-5M	800	160
810-5M	810	162
*825-5M	825	165
830-5M	830	166
*835-5M	835	167
845-5M	845	169
860-5M	860	172
870-5M	870	174
890-5M	890	178
900-5M	900	180
920-5M	920	184
*925-5M	925	185
930-5M	930	186
*935-5M	935	187
940-5M	940	188
950-5M	950	190
965-5M	965	193
975-5M	975	195
*980-5M	980	196
1000-5M	1000	200
1025-5M	1025	205
*1035-5M	1035	207
1040-5M	1040	208
1050-5M	1050	210
*1100-5M	1100	220
1125-5M	1125	225
1135-5M	1135	227
1145-5M	1145	229
*1175-5M	1175	235
*1200-5M	1200	240
1225-5M	1225	245
1235-5M	1235	247
1250-5M	1250	250
1270-5M	1270	254
1295-5M	1295	259

Description	Pitch Length(mm)	No. of Teeth
1350-5M	1350	270
1380-5M	1380	276
1420-5M	1420	284
1520-5M	1520	304
1595-5M	1595	319
1685-5M	1685	337
1690-5M	1690	338
*1790-5M	1790	358
1800-5M	1800	360
1870-5M	1870	374
2000-5M	2000	400
*2100-5M	2100	420
2350-5M	2350	470
*2525-5M	2525	505

HTD 5M Standard Belt Width

Belt Width(mm)	9.0	15.0	20.0	25.0	30.0	40.0
Belt Width Code	9	15	20	25	30	40

Pulley Type



Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD
14	22.28	21.14	16	26
15	23.87	22.73	17	27
16	25.46	24.32	19	29
17	27.06	25.91	20	31
18	28.65	27.50	22	32
19	30.24	29.10	23	34
20	31.83	30.69	24	35
21	33.42	32.28	26	37
22	35.01	33.87	27	39
23	36.61	35.46	29	40
24	38.20	37.05	30	42
25	39.79	38.65	32	43
26	41.38	40.24	33	45
27	42.97	41.83	34	47
28	44.56	43.42	36	48
29	46.15	45.01	38	50
30	47.75	46.60	39	51
31	49.34	48.20	41	53
32	50.93	49.79	42	55
33	52.52	51.38	44	56
34	54.11	52.97	46	58
35	55.70	54.56	47	59
36	57.30	56.15	49	61
37	58.89	57.74	50	63
38	60.48	59.34	52	64
39	62.07	60.93	54	66
40	63.66	62.52	55	67
41	65.25	64.11	57	69
42	66.85	65.70	58	71
43	68.44	67.29	60	72
44	70.03	68.89	62	74
45	71.62	70.48	63	75
46	73.21	72.07	65	77
47	74.80	73.66	66	79
48	76.39	75.25	68	80
49	77.99	76.84	69	82
50	79.58	78.43	71	83
51	81.17	80.03	73	85
52	82.76	81.62	74	86
53	84.35	83.21	76	88
54	85.94	84.80	77	90
55	87.54	86.39	79	91
56	89.13	87.98	81	93
57	90.72	89.58	82	94
58	92.31	91.17	84	96
59	93.90	92.76	85	98
60	95.49	94.35	87	99
61	97.08	95.94	89	101
62	98.68	97.53	90	102
63	100.27	99.12	92	104
64	101.86	100.72	93	106
65	103.45	102.31	95	107
66	105.04	103.90	96	109
67	106.63	105.49	98	110
68	108.23	107.08	100	112
69	109.82	108.67	101	114
70	111.41	110.27	103	115
71	113.00	111.86	104	117
72	114.59	113.45	106	118
73	116.18	115.04	108	120
74	117.77	116.63	109	122
75	119.37	118.22	111	123
76	120.96	119.81	112	125
77	122.55	121.41	114	126
78	124.14	123.00	116	128
79	125.73	124.59	117	129
80	127.32	126.18	119	131
81	128.92	127.77	120	133
82	130.51	129.36	122	134
83	132.10	130.96	124	136
84	133.69	132.55	125	137
85	135.28	134.14	127	139
86	136.87	135.73	128	141
87	138.46	137.32	130	142
88	140.06	138.91	132	144
89	141.65	140.50	133	145
90	143.24	142.10	135	147
91	144.83	143.69	136	149
92	146.42	145.28	138	150
93	148.01	146.87	139	152
94	149.61	148.46	141	153
95	151.20	150.05	143	155
96	152.79	151.65	144	157
97	154.38	153.24	146	158
98	155.97	154.83	147	160
99	157.56	156.42	149	161
100	159.15	158.01	151	163

Pulley Pitch

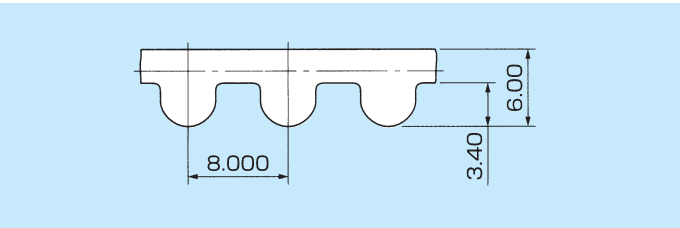
Diameter (PD)= $\frac{P \times N}{\pi}$

Outside Diameter (OD)
=PD-2×PLD

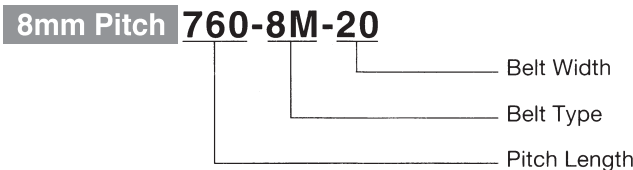
P : Belt Pitch (mm)
N : No. of Grooves
π : Ratio of Circumference
5M · PLD : 0.5715 mm

HTD 8M Pulley

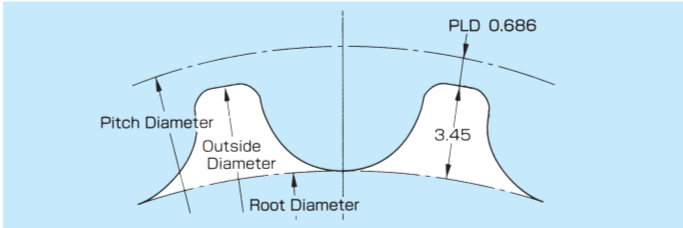
Belt Tooth Profile



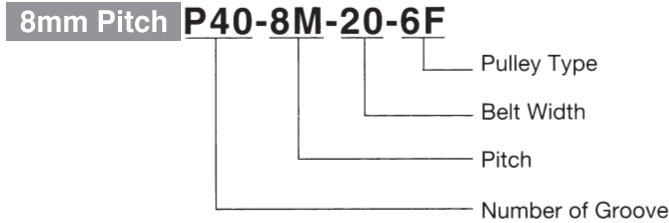
Belt Code



Pulley Groove Profile



Pully Code



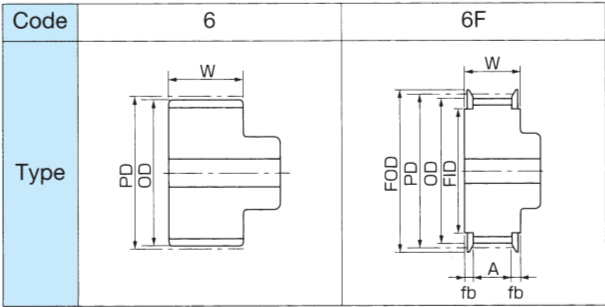
HTD 8M Belt Length

Description	Pitch Length(mm)	No. of Teeth	Description	Pitch Length(mm)	No. of Teeth
*264-8M	264	33	1280-8M	1280	160
*320-8M	320	40	1304-8M	1304	163
*376-8M	376	47	1320-8M	1320	165
*384-8M	384	48	1360-8M	1360	170
416-8M	416	52	1392-8M	1392	174
424-8M	424	53	1400-8M	1400	175
480-8M	480	60	1424-8M	1424	178
*512-8M	512	64	*1432-8M	1432	179
*520-8M	520	65	1440-8M	1440	180
560-8M	560	70	1480-8M	1480	185
*576-8M	576	72	*1512-8M	1512	189
600-8M	600	75	1520-8M	1520	190
*608-8M	608	76	*1552-8M	1552	194
*624-8M	624	78	*1584-8M	1584	198
640-8M	640	80	1600-8M	1600	200
*656-8M	656	82	1680-8M	1680	210
*672-8M	672	84	*1696-8M	1696	212
680-8M	680	85	*1728-8M	1728	216
720-8M	720	90	1760-8M	1760	220
760-8M	760	95	1800-8M	1800	225
*776-8M	776	97	*1896-8M	1896	237
800-8M	800	100	1904-8M	1904	238
840-8M	840	105	1936-8M	1936	242
856-8M	856	107	2000-8M	2000	250
880-8M	880	110	2056-8M	2056	257
896-8M	896	112	*2080-8M	2080	260
*912-8M	912	114	2104-8M	2104	263
920-8M	920	115	2160-8M	2160	270
*936-8M	936	117	*2200-8M	2200	275
960-8M	960	120	2240-8M	2240	280
*968-8M	968	121	2272-8M	2272	284
*976-8M	976	122	2400-8M	2400	300
1000-8M	1000	125	2504-8M	2504	313
1040-8M	1040	130	2600-8M	2600	325
1056-8M	1056	132	2800-8M	2800	350
*1064-8M	1064	133	3048-8M	3048	381
1080-8M	1080	135	3200-8M	3200	400
1120-8M	1120	140	3280-8M	3280	410
*1128-8M	1128	141	3360-8M	3360	420
1152-8M	1152	144	3600-8M	3600	450
*1160-8M	1160	145	3824-8M	3824	478
*1176-8M	1176	147	4400-8M	4400	550
1184-8M	1184	148	*4960-8M	4960	620
1192-8M	1192	149			
1200-8M	1200	150			
*1216-8M	1216	152			
*1224-8M	1224	153			
1248-8M	1248	156			
1256-8M	1256	157			
1264-8M	1264	158			

HTD 8M Standard Belt Width

Belt Width(mm)	20.0	25.0	30.0	40.0	50.0	60.0	70.0	85.0
Belt Width Code	20	25	30	40	50	60	70	85

Pulley Type



Pulley Dimension Table

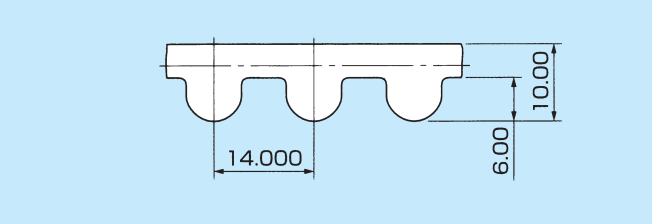
No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD
20	50.93	49.56	40	62	61	155.34	153.96	142	164	106	269.93	268.55	257	279	131	333.59	332.22	320	342
21	53.48	52.10	40	62	62	157.88	156.51	145	166	107	272.47	271.10	259	281	132	336.14	334.76	323	345
22	56.02	54.65	45	64	63	160.43	159.06	147	169	108	275.02	273.65	262	284	133	338.68	337.31	326	348
23	58.57	57.20	47	67	64	162.97	161.60	150	172	109	277.57	276.19	264	286	134	341.23	339.86	328	350
24	61.12	59.74	50	70	65	165.52	164.15	153	174	110	280.11	278.74	267	289	135	343.77	342.40	331	353
25	63.66	62.29	52	72	66	168.07	166.70	155	177	111	282.66	281.29	270	291	136	346.32	344.95	333	355
26	66.21	64.84	54	75	67	170.61	169.24	158	179	112	285.21	283.83	272	294	137	348.87	347.50	336	358
27	68.75	67.38	57	77	68	173.16	171.79	160	182	113	287.75	286.38	275	296	138	351.41	350.04	338	360
28	71.30	69.93	59	80	69	175.71	174.34	163	184	114	290.30	288.93	277	299	139	353.96	352.59	341	363
29	73.85	72.48	62	82	70	178.25	176.88	165	187	115	292.85	291.47	280	302	140	356.51	355.14	343	365
30	76.39	75.02	64	85	71	180.80	179.43	168	190	116	295.39	294.02	282	304	141	359.05	357.68	346	368
31	78.94	77.57	67	88	72	183.35	181.97	171	192	117	297.94	296.57	285	307	142	361.60	360.23	348	370
32	81.49	80.12	69	90	73	185.89	184.52	173	195	118	300.48	299.11	287	309	143	364.15	362.77	351	373
33	84.03	82.66	71	93	74	188.44	187.07	175	197	119	303.03	301.66	290	312	144	366.69	365.32	354	376
34	86.58	85.21	74	95	75	190.99	189.61	178	200	120	305.58	304.21	292	314	145	369.24	367.87	356	378
35	89.13	87.75	76	98	76	193.53	192.16	180	202	121	308.12	306.75	295	317	146	371.79	370.41	359	381
36	91.67	90.30	79	100	77	196.08	194.71	183	205	122	310.67	309.30	298	319	147	374.33	372.96	361	383
37	94.22	92.85	81	103	78	198.63	197.25	186	207	123	313.22	311.84	300	322	148	376.88	375.51	364	386
38	96.77	95.39	84	105	79	201.17	199.80	188	210	124	315.76	314.39	303	324	149	379.43	378.05	366	388
39	99.31	97.94	86	108	80	203.72	202.35	191	212	125	318.31	316.94	305	327	150	381.97	380.60	369	391
40	101.86	100.49	89	110	81	206.26	204.89	193	215	126	320.86	319.48	308	330					
41	104.41	103.03	92	113	82	208.81	207.44	196	218	127	323.40	322.03	310	332					
42	106.95	105.58	94	116	83	211.36	209.99	198	220	128	325.95	324.58	313	335					
43	109.50	108.13	97	118	84	213.90	212.53	201	223	129	328.50	327.12	315	337					
44	112.05	110.67	99	121	85	216.45	215.08	203	225	130	331.04	329.67	318	340					
45	114.59	113.22	102	123	86	219.00	217.63	206	228										
46	117.14	115.77	104	126	87	221.54	220.17	208	230										
47	119.68	118.31	107	128	88	224.09	222.72	211	233										
48	122.23	120.86	109	131	89	226.64	225.26	214	235										
49	124.78	123.41	112	133	90	229.18	227.81	216	238										
50	127.32	125.95	114	136	91	231.73	230.36	219	240										
51	129.87	128.50	117	139	92	234.28	232.90	221	243										
52	132.42	131.04	119	141	93	236.82	235.45	224	246										
53	134.96	133.59	122	143	94	239.37	238.00	226	248										
54	137.51	136.14	125	146	95	241.92	240.54	229	251										
55	140.06	138.68	127	149	96	244.46	243.09	231	253										
56	142.60	141.23	130	151	97	247.01	245.64	234	256										
57	145.15	143.78	132	154	98	249.55	248.18	236	258										
58	147.70	146.32	135	156	99	252.10	250.73	239	261										
59	150.24	148.87	137	159	100	254.65	253.28	242	263										
60	152.79	151.42	140	161	101	257.19	255.82	244	266										
					102	259.74	258.37	247	268										
					103	262.29	260.92	249	271										
					104	264.83	263.46	252	274										
					105	267.38	266.01	254	276										

Pulley Pitch Diameter = $\frac{P \times N}{\pi}$

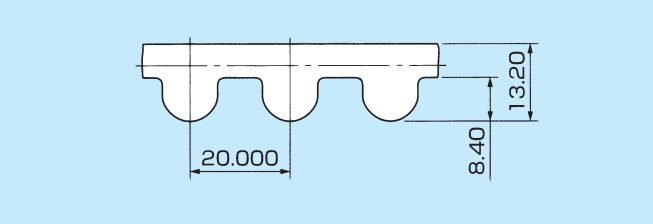
Outside Diameter (OD) = PD - 2 × PLD

P : Belt Pitch (mm)
N : No. of Grooves
π : Ratio of Circumference
8M · PLD : 0.686mm

■ Belt Tooth Profile



■ Belt Code



■ Belt Code

14mm Pitch 2100-14M-40

— Belt Width
— Belt Type
— Pitch Length

■ Belt Code

20mm Pitch 5200 - 20M - 115

— Belt Width
— Belt Type
— Pitch Length

■ HTD 14M Belt Length

Description	Pitch Length(mm)	No. of Teeth
*784-14M	784	56
*826-14M	826	59
*924-14M	924	66
966-14M	966	69
*1092-14M	1092	78
1148-14M	1148	82
1190-14M	1190	85
1344-14M	1344	96
1400-14M	1400	100
1456-14M	1456	104
1512-14M	1512	108
1540-14M	1540	110
1568-14M	1568	112
1610-14M	1610	115
1638-14M	1638	117
1652-14M	1652	118
1680-14M	1680	120
1736-14M	1736	124
1778-14M	1778	127
1890-14M	1890	135
1932-14M	1932	138
1946-14M	1946	139
2002-14M	2002	143
2100-14M	2100	150
2198-14M	2198	157
2310-14M	2310	165
2450-14M	2450	175
2590-14M	2590	185
2660-14M	2660	190
2800-14M	2800	200
2940-14M	2940	210
3150-14M	3150	225
3360-14M	3360	240
3500-14M	3500	250
3850-14M	3850	275
4004-14M	4004	286
4326-14M	4326	309
*4578-14M	4578	327
*4956-14M	4956	354
5320-14M	5320	380
*5740-14M	5740	410
*6160-14M	6160	440
*6860-14M	6860	490

■ HTD 14M Standard Belt Width

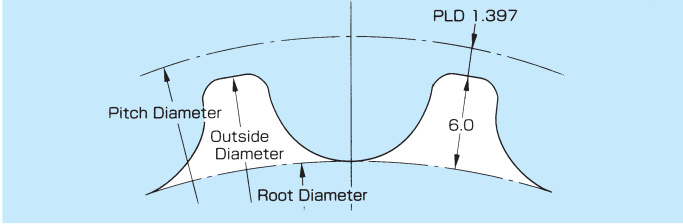
Belt Width(mm)	30.0	40.0	55.0	70.0	85.0	100.0	115.0	130.0	150.0	170.0
Belt Width Code	30	40	55	70	85	100	115	130	150	170

■ HTD 20M Belt Length

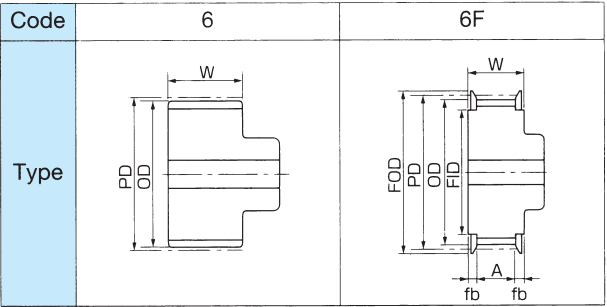
Description	Pitch Length(mm)	No. of Teeth
*2000-20M	2000	100
*2500-20M	2500	125
*3400-20M	3400	170
*3800-20M	3800	190
*4200-20M	4200	210
*4600-20M	4600	230
*5000-20M	5000	250
*5200-20M	5200	260
*5400-20M	5400	270
*5600-20M	5600	280
*5800-20M	5800	290
*6000-20M	6000	300
*6200-20M	6200	310
*6400-20M	6400	320
*6600-20M	6600	330

Available in widths of 115mm, 170mm, 230mm, 290mm and 340mm.

■ Pulley Groove Profile



■ Pulley Type



■ Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD
28	124.78	121.98	106	137
29	129.23	126.44	111	141
30	133.69	130.90	115	146
31	138.15	135.35	120	150
32	142.60	139.81	123	155
33	147.06	144.27	128	159
34	151.52	148.72	132	164
35	155.97	153.18	137	168
36	160.43	157.63	140	173
37	164.88	162.09	144	177
38	169.34	166.55	149	182
39	173.80	171.00	153	186
40	178.25	175.46	158	190
41	182.71	179.92	162	195
42	187.17	184.37	167	200
43	191.62	188.83	171	204
44	196.08	193.28	176	208
45	200.54	197.74	180	213
46	204.99	202.20	185	217
47	209.45	206.65	189	222
48	213.90	211.11	194	226
49	218.36	215.57	198	231
50	222.82	220.02	203	235
51	227.27	224.48	207	240
52	231.73	228.94	211	244
53	236.19	233.39	216	249
54	240.64	237.85	220	253
55	245.10	242.30	225	257
56	249.55	246.76	229	262
57	254.01	251.22	234	266
58	258.47	255.67	238	271
59	262.92	260.13	242	275
60	267.38	264.59	247	280
61	271.84	269.04	252	284
62	276.29	273.50	256	289
63	280.75	277.96	261	293
64	285.21	282.41	265	297
65	289.66	286.87	269	302
66	294.12	291.32	274	306
67	298.57	295.78	278	311
68	303.03	300.24	283	315
69	307.49	304.69	287	320
70	311.94	309.15	291	324

■ Pulley Code

14mm Pitch P44-14M-40-6F

— Pulley Type
— Belt Width
— Pitch
— Number of Groove

No. of Grooves	PD	OD	FID	FOD
116	516.94	514.14	496	529
117	521.39	518.60	501	534
118	525.85	523.05	505	538
119	530.30	527.51	510	543
120	534.76	531.97	514	547
121	539.22	536.42	519	552
122	543.67	540.88	523	556
123	548.13	545.34	528	560
124	552.59	549.79	532	565
125	557.04	554.25	537	569
126	561.50	558.70	541	574
127	565.95	563.16	545	578
128	570.41	567.62	550	583
129	574.87	572.07	554	587
130	579.32	576.53	559	592
131	583.78	580.99	563	596
132	588.24	585.44	568	601
133	592.69	589.90	572	605
134	597.15	594.36	577	609
135	601.61	598.81	581	614

Pulley Pitch

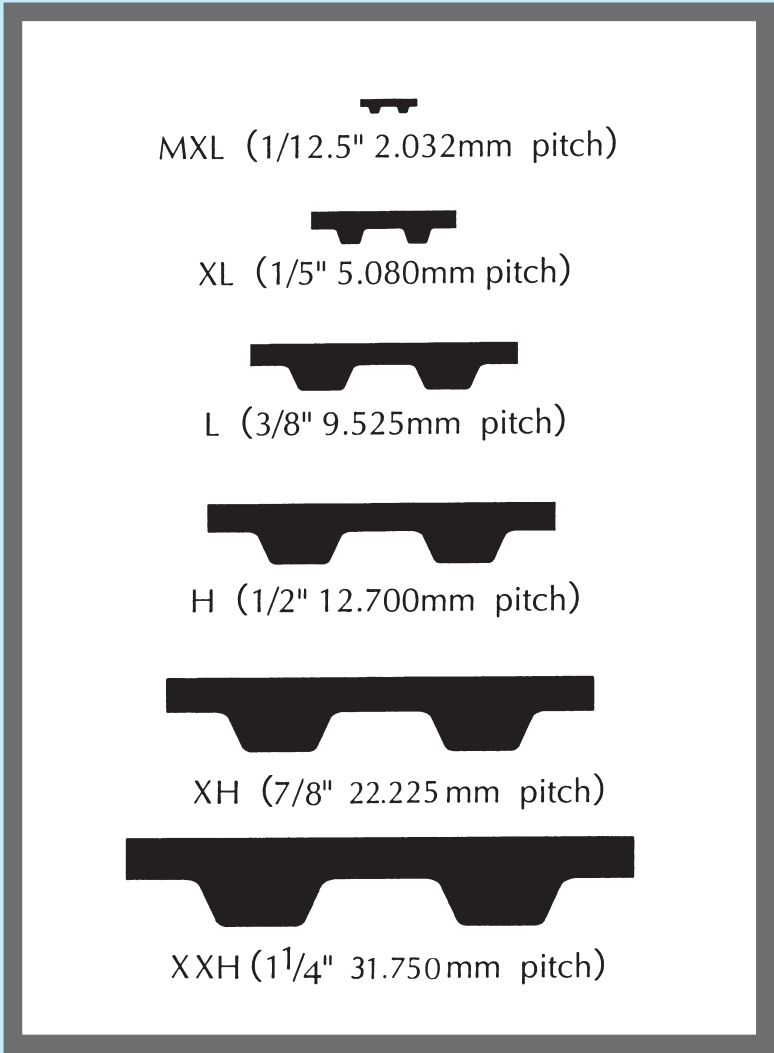
Diameter = $\frac{P \times N}{\pi}$

Outside Diameter (OD)
= PD - 2 × PLD

P : Belt Pitch (mm)
N : No. of Grooves
π : Ratio of Circumference
14M · PLD : 1.397mm

International Standard

Power Grip Timing



We have a line of 2.032mm(1/12.5"),5.080mm(1/5"),9.525 (3/8"),12.7(1/2") as PowerGrip Timing Belt.
※PowerGrip Timing Pulley is required to the transmission system with PowerGrip Timing Belt.
PowerGrip Timing Belt is not compatible with GT or HTD.

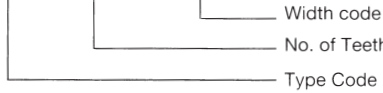
Belt Tooth Profile and Belt code

109 Series

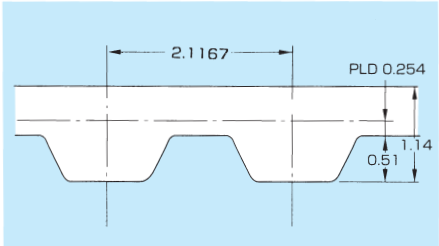
Pitch : 2.1167mm (1/12")

●Belt Code

109 455 × 018



Belit Length



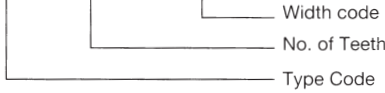
Code	Pitch Length	No. of Teeth
109312	660.400	312
109318	673.100	318
109320	677.333	320
109325	687.917	325
109327	692.150	327
109328	694.267	328
109331	700.617	331
109336	711.200	336
109341	721.783	341
109350	740.833	350
109353	747.183	353
109375	793.750	375
109392	829.733	392
109406	859.367	406
109455	963.083	455
109462	977.900	462
109464	982.133	464
109475	1005.417	475
109484	1024.467	484
109487	1030.817	487
109488	1032.933	488
109496	1049.867	496
109510	1079.500	510

181 Series

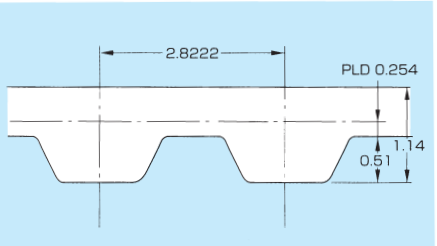
Pitch : 2.8222mm (1/9")

●Belt Code

181 303 × 025



Belit Length



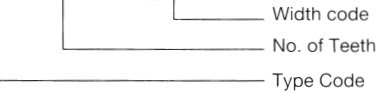
Code	Pitch Length	No. of Teeth
181050	141.111	050
181060	169.333	060
181090	254.000	090
181135	381.000	135
181196	553.156	196
181209	589.844	209
181220	620.889	220
181230	649.111	230
181238	671.689	238
181240	677.333	240
181246	694.267	246
181248	699.911	248
181250	705.556	250
181253	714.022	253
181255	719.667	255
181256	722.489	256
181263	742.244	263
181267	753.533	267
181284	801.511	284
181303	855.133	303
181317	894.644	317
181320	903.111	320
181330	931.333	330
181347	979.311	347
181352	993.422	352
181357	1007.533	357
181359	1013.178	359
181361	1018.822	361
181364	1027.289	364
181366	1032.933	366
181367	1035.756	367
181368	1038.578	368
181371	1047.044	371
181372	1049.867	372
181380	1072.444	380
181384	1083.733	384
181386	1089.378	386
181391	1103.489	391
181394	1111.956	394
181403	1137.356	403
181411	1159.933	411
181466	1315.156	466

50 Series

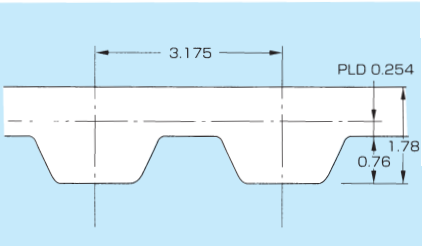
Pitch : 3.175mm (1/8")

●Belt Code

50 100 × 025



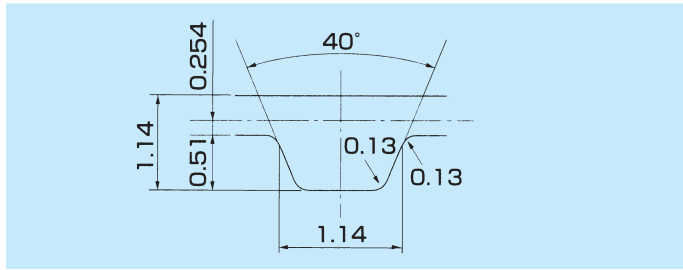
Belit Length



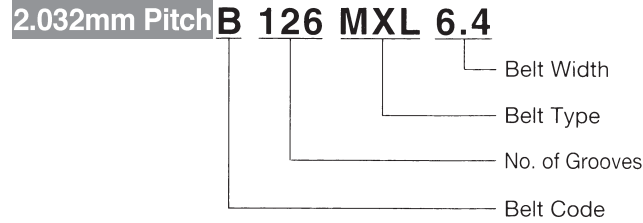
Code	Pitch Length	No. of Teeth
50031	98.425	31
50044	139.700	44
50047	149.225	47
50055	174.625	55
50057	180.975	57
50060	190.500	60
50061	193.675	61
50070	222.250	70
50072	228.600	72
50073	231.775	73
50080	254.000	80
50087	276.225	87
50088	279.400	88
50093	295.275	93
50094	298.450	94
50098	311.150	98
50100	317.500	100
50103	327.025	103
50107	339.725	107
50112	355.600	112
50114	361.950	114
50118	374.650	118
50120	381.000	120
50124	393.700	124
50150	476.250	150
50154	488.950	154
50155	492.125	155
50156	495.300	156
50160	508.000	160
50161	511.175	161
50162	514.350	162
50163	517.525	163
50165	523.875	165
50166	527.050	166
50170	539.750	170
50173	549.275	173
50180	571.500	180
50225	714.375	225
50289	917.575	289
50300	952.500	300
50320	1016.000	320
50321	1019.175	321
50326	1035.050	326
50330	1047.750	330
50391	1241.425	391

Belt Type	109	181	50
Pulley Code	SR	SO	SC
Tooth Profile	MXL	MXL	XXL
P. L. D.	0.254	0254	0.254
Pulley Diameter Calculation (mm)	Pitch Diameter (P. D.) : $\frac{\text{Pitch} \times \text{No. of Grooves}}{\pi}$, Outside Diameter (O. D.) : P.D. - P.L.D. × 2		

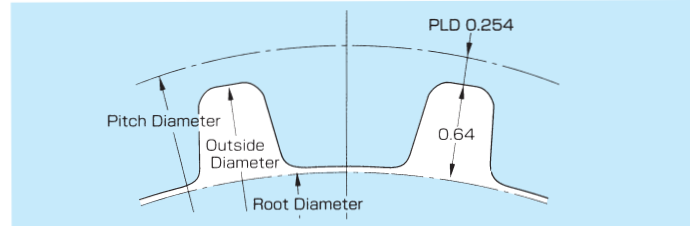
■ Belt Tooth Profile



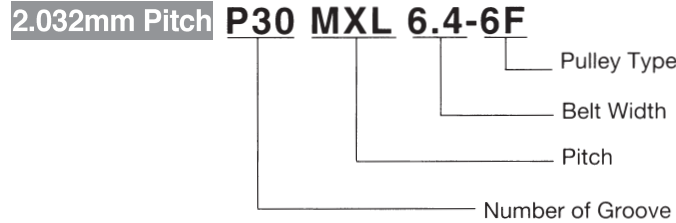
■ Belt Code



■ Pulley Groove Profile



■ Pully Code



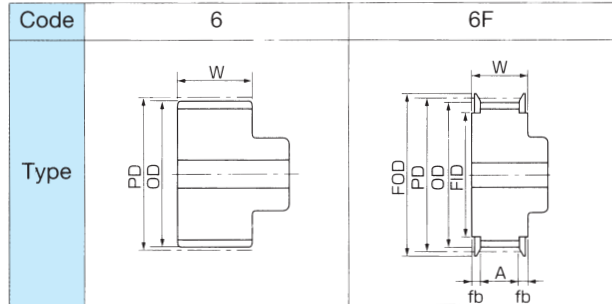
■ MXL Belt Length

Description	Pitch Length(mm)	No. of Teeth	Description	Pitch Length(mm)	No. of Teeth	Description	Pitch Length(mm)	No. of Teeth	Description	Pitch Length(mm)	No. of Teeth
*B 36 MXL	79.152	36	B 103 MXL	209.296	103	B 192 MXL	390.144	192	B 343 MXL	696.976	343
B 39 MXL	79.248	39	B 104 MXL	211.328	104	B 194 MXL	394.208	194	B 347 MXL	705.104	347
B 40 MXL	81.280	40	B 105 MXL	213.360	105	B 195 MXL	396.240	195	B 350 MXL	711.200	350
B 41 MXL	83.312	41	B 106 MXL	215.392	106	B 200 MXL	406.400	200	B 354 MXL	719.328	354
B 45 MXL	91.440	45	B 107 MXL	217.424	107	B 205 MXL	416.560	205	B 356 MXL	723.392	356
B 48 MXL	97.536	48	B 109 MXL	221.488	109	B 210 MXL	426.720	210	*B 358 MXL	727.456	358
B 49 MXL	99.568	49	B 110 MXL	223.520	110	B 212 MXL	430.784	212	B 360 MXL	731.520	360
B 50 MXL	101.600	50	B 112 MXL	227.584	112	B 216 MXL	438.912	216	B 365 MXL	741.680	365
B 52 MXL	105.644	52	B 114 MXL	231.648	114	B 220 MXL	447.040	220	B 371 MXL	753.872	371
B 53 MXL	107.696	53	B 115 MXL	233.680	115	B 221 MXL	449.072	221	*B 372 MXL	755.904	372
B 54 MXL	109.728	54	B 117 MXL	237.744	117	B 222 MXL	451.104	222	B 380 MXL	772.160	380
*B 55 MXL	111.760	55	B 118 MXL	239.776	118	B 224 MXL	455.168	224	B 388 MXL	788.416	388
B 56 MXL	113.792	56	B 120 MXL	243.840	120	*B 225 MXL	457.200	225	B 390 MXL	792.480	390
*B 57 MXL	115.824	57	B 122 MXL	247.904	122	B 228 MXL	463.296	228	B 397 MXL	806.704	397
B 58 MXL	117.856	58	B 123 MXL	249.936	123	B 229 MXL	465.328	229	B 400 MXL	812.800	400
B 59 MXL	119.888	59	B 125 MXL	254.000	125	B 230 MXL	467.360	230	B 402 MXL	816.864	402
B 60 MXL	121.920	60	B 126 MXL	256.032	126	B 232 MXL	471.424	232	B 408 MXL	829.056	408
B 61 MXL	123.952	61	B 127 MXL	258.064	127	*B 235 MXL	477.520	235	*B 412 MXL	837.184	412
B 62 MXL	125.984	62	B 128 MXL	260.096	128	B 236 MXL	479.552	236	B 419 MXL	851.408	419
B 63 MXL	128.016	63	B 129 MXL	262.128	129	B 239 MXL	485.648	239	B 420 MXL	853.440	420
B 64 MXL	130.048	64	B 130 MXL	264.160	130	B 240 MXL	487.680	240	B 421 MXL	855.472	421
B 65 MXL	132.080	65	B 131 MXL	266.192	131	B 243 MXL	493.776	243	*B 424 MXL	861.568	424
B 67 MXL	136.144	67	B 132 MXL	268.224	132	*B 245 MXL	497.840	245	B 425 MXL	863.600	425
B 68 MXL	138.176	68	B 134 MXL	272.288	134	B 248 MXL	503.936	248	B 427 MXL	867.664	427
B 69 MXL	140.208	69	B 135 MXL	274.320	135	B 249 MXL	505.968	249	*B 431 MXL	875.792	431
B 70 MXL	142.240	70	B 136 MXL	276.352	136	B 250 MXL	508.000	250	B 434 MXL	881.888	434
B 71 MXL	144.272	71	B 137 MXL	278.384	137	B 251 MXL	510.032	251	B 436 MXL	885.952	436
B 72 MXL	146.304	72	B 138 MXL	280.416	138	B 256 MXL	520.192	256	*B 440 MXL	894.080	440
B 73 MXL	148.336	73	B 139 MXL	282.448	139	B 262 MXL	532.384	262	B 442 MXL	898.144	442
B 74 MXL	150.368	74	B 140 MXL	284.480	140	B 265 MXL	538.480	265	B 447 MXL	908.304	447
B 75 MXL	152.400	75	B 142 MXL	288.544	142	B 267 MXL	542.544	267	B 448 MXL	910.336	448
B 76 MXL	154.432	76	B 144 MXL	292.608	144	B 271 MXL	550.672	271	B 453 MXL	920.496	453
B 77 MXL	156.464	77	B 145 MXL	294.640	145	B 273 MXL	554.736	273	B 458 MXL	930.656	458
B 78 MXL	158.496	78	B 148 MXL	300.736	148	B 275 MXL	558.800	275	*B 463 MXL	940.816	463
B 79 MXL	160.528	79	B 150 MXL	304.800	150	B 280 MXL	568.960	280	B 466 MXL	946.912	466
B 80 MXL	162.560	80	B 151 MXL	306.832	151	B 285 MXL	579.120	285	B 472 MXL	959.104	472
B 81 MXL	164.592	81	B 154 MXL	312.928	154	B 288 MXL	585.216	288	B 475 MXL	965.200	475
B 82 MXL	166.624	82	B 155 MXL	314.960	155	B 290 MXL	589.280	290	B 482 MXL	979.424	482
B 83 MXL	168.656	83	B 156 MXL	316.992	156	B 295 MXL	599.440	295	B 487 MXL	989.584	487
B 84 MXL	170.688	84	B 158 MXL	321.056	158	*B 298 MXL	605.536	298	B 488 MXL	991.616	488
B 85 MXL	172.720	85	B 160 MXL	325.120	160	B 300 MXL	609.600	300	B 490 MXL	995.680	490
B 86 MXL	174.752	86	B 162 MXL	329.184	162	B 310 MXL	629.920	310	B 497 MXL	1,000.904	497
B 87 MXL	176.784	87	B 163 MXL	331.216	163	B 312 MXL	633.984	312	B 498 MXL	1,011.936	498
B 88 MXL	178.816	88	B 165 MXL	335.280	165	B 315 MXL	640.080	315	B 500 MXL	1,016.000	500
B 89 MXL	180.848	89	B 166 MXL	337.312	166	B 318 MXL	646.176	318	*B 505 MXL	1,026.160	505
B 90 MXL	182.880	90	B 167 MXL	339.344	167	B 323 MXL	656.336	323	B 522 MXL	1,060.740	522
B 91 MXL	184.912	91	B 169 MXL	343.408	169	B 324 MXL	658.368	324	B 535 MXL	1,087.120	535
B 92 MXL	186.944	92	B 170 MXL	345.440	170	B 328 MXL	666.496	328	B 537 MXL	1,091.184	537
B 94 MXL	191.008	94	B 171 MXL	347.472	171	B 330 MXL	670.560	330	B 540 MXL	1,097.280	540
B 95 MXL	193.040	95	B 175 MXL	355.600	175	B 332 MXL	674.624	332	B 543 MXL	1,103.376	543
B 97 MXL	197.104	97	B 177 MXL	359.664	177	B 334 MXL	678.688	334	*B 546 MXL	1,109.472	546
B 98 MXL	199.136	98	B 180 MXL	365.760	180	B 337 MXL	684.784	337	B 548 MXL	1,113.536	548
B 100 MXL	203.200	100	B 184 MXL	373.888	184	B 339 MXL	688.848	339	B 571 MXL	1,160.272	571
*B 101 MXL	205.232	101	B 186 MXL	377.952	186	B 340 MXL	690.880	340	B 591 MXL	1,200.912	591
B 102 MXL	207.264	102	B 190 MXL	386.080	190	B 342 MXL	694.944	342	*B 592 MXL	1,202.944	592
									B 599 MXL	1,217.168	599
									B 612 MXL	1,243.584	612
									B 648 MXL	1,316.736	648
									B 694 MXL	1,410.208	694

■ MXL Standard Belt Width

Belt Width(mm)	3.2	4.8	6.4	7.9	9.5	12.7
Belt Width Code	3.2	4.8	6.4	7.9	9.5	12.7

■ Pulley Type



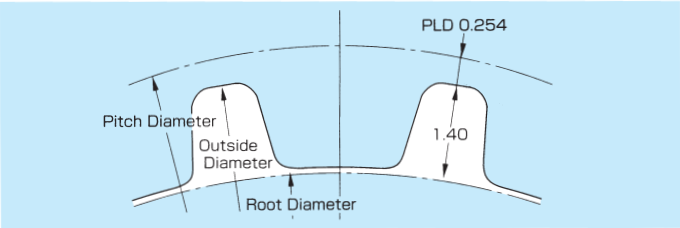
■ Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD
					51	32.99	32.48	27.5	40	96	62.09	61.59	51.0	67.0	126	81.50	80.99	74.0	86.0
					52	33.63	33.13	27.5	40	97	62.74	62.23	56.0	70.0	127	82.14	81.64	74.0	86.0
					53	34.28	33.77	27.5	40	98	63.39	62.88	56.0	70.0	128	82.79	82.28	77.0	90.0
					54	34.93	34.42	27.5	40	99	64.03	63.53	56.0	70.0	129	83.44	82.93	77.0	90.0
10	6.47	5.96			55	35.57	35.07	31.0	45	100	64.68	64.17	56.0	70.0	130	84.08	83.58	77.0	90.0
11	7.11	6.61			56	36.22	35.71	31.0	45	101	65.33	64.82	56.0	70.0	131	84.73	84.22	77.0	90.0
12	7.76	7.25	5.0	12	57	36.87	36.36	31.0	45	102	65.97	65.47	61.0	76.0	132	85.38	84.87	77.0	90.0
13	8.41	7.90	6.0	13	58	37.51	37.01	31.0	45	103	66.62	66.11	61.0	76.0	133	86.03	85.52	81.0	93.0
14	9.06	8.55	6.0	13	59	38.16	37.65	31.0	45	104	67.27	66.76	61.0	76.0	134	86.67	86.16	81.0	93.0
15	9.70	9.19	7.0	14	60	38.81	38.30	31.0	45	105	67.91	67.41	61.0	76.0	135	87.32	86.81	81.0	93.0
16	10.35	9.84	7.0	14	61	39.46	38.95	31.0	45	106	68.56	68.05	61.0	76.0	136	87.97	87.46	81.0	93.0
17	11.00	10.49	8.0	16	62	40.10	39.59	31.0	45	107	69.21	68.70	61.0	76.0	137	88.61	88.10	84.0	96.0
18	11.64	11.13	8.0	16	63	40.75	40.24	36.0	48	108	69.86	69.35	65.0	77.0	138	89.26	88.75	84.0	96.0
19	12.29	11.78	8.0	16	64	41.40	40.89	36.0	48	109	70.50	69.99	65.0	77.0	139	89.91	89.40	84.0	96.0
20	12.94	12.43	9.0	17	65	42.04	41.53	36.0	48	110	71.15	70.64	65.0	77.0	140	90.55	90.04	84.0	96.0
21	13.58	13.07	9.0	17	66	42.69	42.18	36.0	48	111	71.80	71.29	65.0	77.0	141	91.20	90.69	84.0	96.0
22	14.23	13.72	12.0	21	67	43.34	42.83	36.0	48	112	72.44	71.93	65.0	77.0	142	91.85	91.34	84.0	96.0
23	14.88	14.37	12.5	21	68	43.98	43.47	36.0	52	113	73.09	72.58	66.0	83.0	143	92.49	91.99	87.0	99.0
24	15.52	15.02	12.5	21	69	44.63	44.12	36.0	52	114	73.74	73.23	66.0	83.0	144	93.14	92.63	87.0	99.0
25	16.17	15.66	12.5	24	70	45.28	44.77	36.0	52	115	74.38	73.87	66.0	83.0	145	93.79	93.28	87.0	99.0
26	16.82	16.31	12.5	24	71	45.92	45.42	36.0	52	116	75.03	74.52	66.0	83.0	146	94.43	93.93	87.0	99.0
27	17.46	16.96	12.5	24	72	46.57	46.06	36.0	52	117	75.68	75.17	66.0	83.0	147	95.08	94.57	87.0	99.0
28	18.11	17.60	12.5	24	73	47.22	46.71	41.0	55	118	76.32	75.82	66.0	83.0	148	95.73	95.22	90.0	102.0
29	18.76	18.25	12.5	24	74	47.86	47.36	41.0	55	119	76.97	76.46	66.0	83.0	149	96.37	95.87	90.0	102.0
30	19.40	18.90	15.0	25	75	48.51	48.00	41.0	55	120	77.62	77.11	66.0	83.0	150	97.02	96.51	90.0	102.0
31	20.05	19.54	15.0	25	76	49.16	48.65	41.0	55	121	78.26	77.76	74.0	86.0					
32	20.70	20.19	15.0	25	77	49.80	49.30	41.0	55	122	78.91	78.40	74.0	86.0					
33	21.34	20.84	17.5	28	78	50.45	49.94	46.0	58	123	79.56	79.05	74.0	86.0					
34	21.99	21.48	17.5	28	79	51.10	50.59	46.0	58	124	80.20	79.70	74.0	86.0					
35	22.64	22.13	17.5	28	80	51.74	51.24	46.0	58	125	80.85	80.34	74.0	86.0					
36	23.29	22.78	17.5	28	81	52.39	51.88	46.0	58										
37	23.93	23.42	20.0	30	82	53.04	52.53	46.0	58										
38	24.58	24.07	20.0	30	83	53.68	53.18	46.0	61										
39	25.23	24.72	20.0	30	84	54.33	53.82	46.0	61										
40	25.87	25.36	20.0	32	85	54.98	54.47	46.0	61										
41	26.52	26.01	20.0	32	86	55.63	55.12	46.0	61										
42	27.17	26.66	22.5	33	87	56.27	55.76	51.0	67										
43	27.81	27.30	22.5	33	88	56.92	56.41	51.0	67										
44	28.46	27.95	25.0	35	89	57.57	57.06	51.0	67										
45	29.11	28.60	25.0	35	90	58.21	57.70	51.0	67										
46	29.75	29.25	25.0	35	91	58.86	58.35	51.0	67										
47	30.40	29.89	25.0	35	92	59.51	59.00	51.0	67										
48	31.05	30.54	27.5	40	93	60.15	59.64	51.0	67										
49	31.69	31.19	27.5	40	94	60.80	60.29	51.0	67										
50	32.34	31.83	27.5	40	95	61.45	60.94	51.0	67										

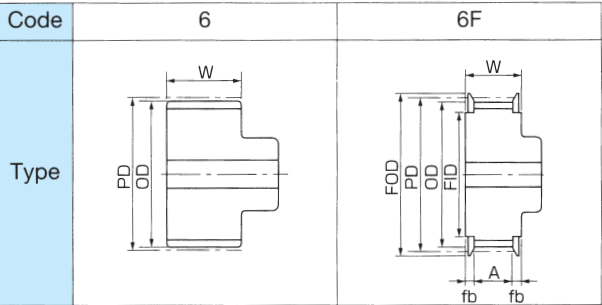
</

XL Pulley

Pulley Groove Profile



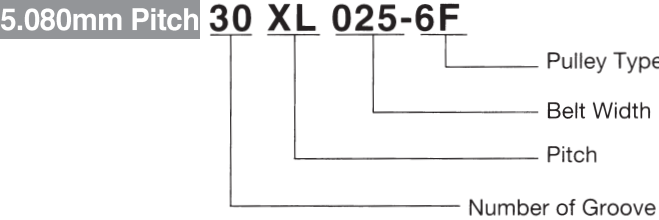
Pulley Type



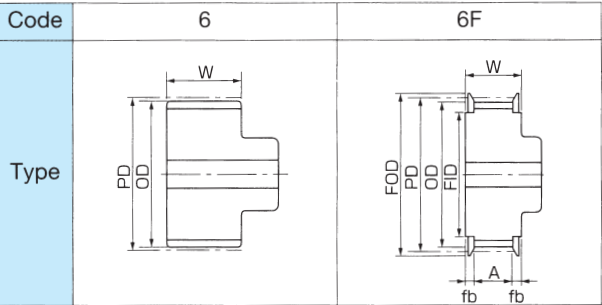
Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD
10	16.17	15.66	12.5	24.0
11	17.79	17.28	12.5	24.0
12	19.40	18.90	15.0	25.0
13	21.02	20.51	17.5	28.0
14	22.64	22.13	17.5	28.0
15	24.26	23.75	20.0	30.0
16	25.87	25.36	20.0	32.0
17	27.49	26.98	22.5	33.0
18	29.11	28.60	25.0	35.0
19	30.72	30.22	25.0	35.0
20	32.34	31.83	27.5	40.0
21	33.96	33.45	27.5	40.0
22	35.57	35.07	31.0	45.0
23	37.19	36.68	31.0	45.0
24	38.81	38.30	31.0	45.0
25	40.43	39.92	36.0	48.0
26	42.04	41.53	36.0	48.0
27	43.66	43.15	36.0	52.0
28	45.28	44.77	41.0	55.0
29	46.89	46.39	41.0	55.0
30	48.51	48.00	41.0	55.0
31	50.13	49.62	46.0	58.0
32	51.74	51.24	46.0	58.0
33	53.36	52.85	46.0	61.0
34	54.98	54.47	46.0	61.0
35	56.60	56.09	51.0	67.0
36	58.21	57.70	51.0	67.0
37	59.83	59.32	51.0	67.0
38	61.45	60.94	56.0	70.0
39	63.06	62.56	56.0	70.0
40	64.68	64.17	56.0	70.0
41	66.30	65.79	61.0	76.0
42	67.91	67.41	61.0	76.0
43	69.53	69.02	61.0	76.0
44	71.15	70.64	61.0	76.0
45	72.77	72.26	66.0	83.0
46	74.38	73.87	66.0	83.0
47	76.00	75.49	66.0	83.0
48	77.62	77.11	71.0	83.0
49	79.23	78.73	71.0	88.0
50	80.85	80.34	71.0	88.0
51	82.47	81.96	75.0	95.0
52	84.08	83.58	75.0	95.0
53	85.70	85.19	75.0	95.0
54	87.32	86.81	80.0	99.0
55	88.94	88.43	80.0	99.0
56	90.55	90.04	80.0	99.0
57	92.17	91.66	80.0	99.0
58	93.79	93.28	85.0	103.0
59	95.40	94.90	85.0	103.0
60	97.02	96.51	90.0	111.0
61	98.64	98.13	90.0	111.0
62	100.25	99.75	90.0	111.0
63	101.87	101.36	90.0	111.0
64	103.49	102.98	95.0	115.0
65	105.11	104.60	95.0	115.0
66	106.72	106.21	95.0	115.0
67	108.34	107.83	100.0	119.0
68	109.96	109.45	100.0	119.0
69	111.57	111.07	100.0	119.0
70	113.19	112.68	100.0	119.0
71	114.81	114.30	105.0	123.0
72	116.43	115.92	105.0	123.0
73	118.04	117.53	105.0	127.0
74	119.66	119.15	110.0	131.0
75	121.28	120.77	110.0	131.0
76	122.89	122.39	110.0	131.0
77	124.51	124.00	115.0	135.0
78	126.13	125.62	115.0	135.0
79	127.74	127.24	115.0	135.0
80	129.36	128.85	120.0	140.0
81	130.98	130.47	120.0	140.0
82	132.60	132.09	120.0	140.0
83	134.21	133.70	125.0	144.0
84	135.83	135.32	125.0	144.0
85	137.45	136.94	125.0	144.0
86	139.06	138.56	125.0	148.0
87	140.68	140.17	125.0	148.0
88	142.30	141.79	125.0	148.0
89	143.91	143.41	130.0	152.0
90	145.53	145.02	130.0	152.0
91	147.15	146.64	135.0	156.0
92	148.77	148.26	135.0	156.0
93	150.38	149.87	135.0	156.0
94	152.00	151.49	140.0	160.0
95	153.62	153.11	140.0	160.0

Pully Code



Pulley Type



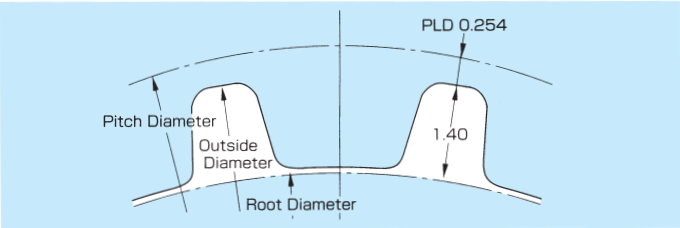
Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD
10	16.17	15.66	12.5	24.0
11	17.79	17.28	12.5	24.0
12	19.40	18.90	15.0	25.0
13	21.02	20.51	17.5	28.0
14	22.64	22.13	17.5	28.0
15	24.26	23.75	20.0	30.0
16	25.87	25.36	20.0	32.0
17	27.49	26.98	22.5	33.0
18	29.11	28.60	25.0	35.0
19	30.72	30.22	25.0	35.0
20	32.34	31.83	27.5	40.0
21	33.96	33.45	27.5	40.0
22	35.57	35.07	31.0	45.0
23	37.19	36.68	31.0	45.0
24	38.81	38.30	31.0	45.0
25	40.43	39.92	36.0	48.0
26	42.04	41.53	36.0	48.0
27	43.66	43.15	36.0	52.0
28	45.28	44.77	41.0	55.0
29	46.89	46.39	41.0	55.0
30	48.51	48.00	41.0	55.0
31	50.13	49.62	46.0	58.0
32	51.74	51.24	46.0	58.0
33	53.36	52.85	46.0	61.0
34	54.98	54.47	46.0	61.0
35	56.60	56.09	51.0	67.0
36	58.21	57.70	51.0	67.0
37	59.83	59.32	51.0	67.0
38	61.45	60.94	56.0	70.0
39	63.06	62.56	56.0	70.0
40	64.68	64.17	56.0	70.0
41	66.30	65.79	61.0	76.0
42	67.91	67.41	61.0	76.0
43	69.53	69.02	61.0	76.0
44	71.15	70.64	61.0	76.0
45	72.77	72.26	66.0	83.0
46	74.38	73.87	66.0	83.0
47	76.00	75.49	66.0	83.0
48	77.62	77.11	71.0	83.0
49	79.23	78.73	71.0	88.0
50	80.85	80.34	71.0	88.0
51	82.47	81.96	75.0	95.0
52	84.08	83.58	75.0	95.0
53	85.70	85.19	75.0	95.0
54	87.32	86.81	80.0	99.0
55	88.94	88.43	80.0	99.0
56	90.55	90.04	80.0	99.0
57	92.17	91.66	80.0	99.0
58	93.79	93.28	85.0	103.0
59	95.40	94.90	85.0	103.0
60	97.02	96.51	90.0	111.0
61	98.64	98.13	90.0	111.0
62	100.25	99.75	90.0	111.0
63	101.87	101.36	90.0	111.0
64	103.49	102.98	95.0	115.0
65	105.11	104.60	95.0	115.0
66	106.72	106.21	95.0	115.0
67	108.34	107.83	100.0	119.0
68	109.96	109.45	100.0	119.0
69	111.57	111.07	100.0	119.0
70	113.19	112.68	100.0	119.0
71	114.81	114.30	105.0	123.0
72	116.43	115.92	105.0	123.0
73	118.04	117.53	105.0	127.0
74	119.66	119.15	110.0	131.0
75	121.28	120.77	110.0	131.0
76	122.89	122.39	110.0	131.0
77	124.51	124.00	115.0	135.0
78	126.13	125.62	115.0	135.0
79	127.74	127.24	115.0	135.0
80	129.36	128.85	120.0	140.0
81	130.98	130.47	120.0	140.0
82	132.60	132.09	120.0	140.0
83	134.21	133.70	125.0	144.0
84	135.83	135.32	125.0	144.0
85	137.45	136.94	125.0	144.0
86	139.06	138.56	125.0	148.0
87	140.68	140.17	125.0	148.0
88	142.30	141.79	125.0	148.0
89	143.91	143.41	130.0	152.0
90	145.53	145.02	130.0	152.0
91	147.15	146.64	135.0	156.0
92	148.77	148.26	135.0	156.0
93	150.38	149.87	135.0	156.0
94	152.00	151.49	140.0	160.0
95	153.62	153.11	140.0	160.0

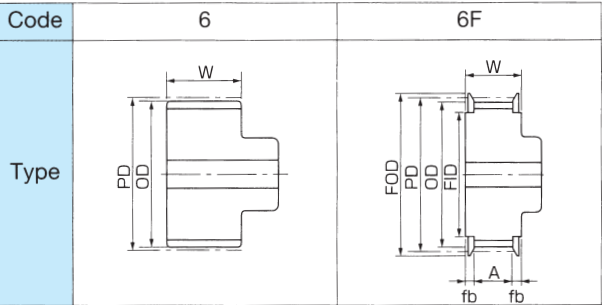
Pulley Pitch
Diameter = $\frac{P \times N}{\pi}$
Outside Diameter (OD)
= PD - 2 × PLD

P : Belt Pitch (mm)
N : No. of Grooves
 π : Ratio of
Circumference
XL · PLD : 0.254mm

Pulley Groove Profile



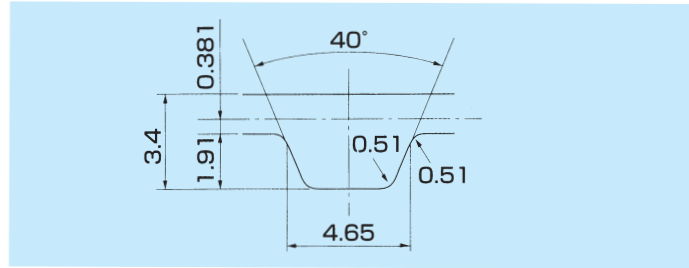
Pulley Type



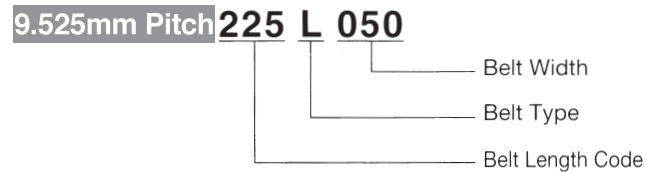
Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD
10	16.17	15.66	12.5	24.0	51	82.47	81.96	75.0	95.0
					52	84.08	83.58	75.0	95.0
					53	85.70	85.19	75.0	95.0
					54	87.32	86.81	80.0	99.0
					55	88.94	88.43	80.0	99.0
11	17.79	17.28	12.5	24.0	56	90.55	90.04	80.0	99.0
12	19.40	18.90	15.0	25.0	57	92.17	91.66	80.0	99.0
13	21.02	20.51	17.5	28.0	58	93.79	93.28	85.0	103.0
14	22.64	22.13	17.5	28.0	59	95.40	94.90	85.0	103.0
15	24.26	23.75	20.0	30.0	60	97.02	96.51	90.0	111.0
16	25.87	25.36	20.0	32.0	61	98.64	98.13	90.0	111.0
17	27.49	26.98	22.5	33.0	62	100.25	99.75	90.0	111.0
18	29.11	28.60	25.0	35.0	63	101.87	101.36	90.0	111.0
19	30.72	30.22	25.0	35.0	64	103.49	102.98	95.0	115.0
20	32.34	31.83	27.5	40.0	65	105.11	104.60	95.0	115.0
21	33.96	33.45	27.5	40.0	66	106.72	106.21	95.0	115.0
22	35.57	35.07	31.0	45.0	67	108.34	107.83	100.0	119.0
23	37.19	36.68	31.0	45.0	68	109.96	109.45	100.0	119.0
24	38.81	38.30	31.0	45.0	69	111.57	111.07	100.0	119.0
25	40.43	39.92	36.0	48.0	70	113.19	112.68	100.0	119.0
26	42.04	41.53	36.0	48.0	71	114.81	114.30	105.0	123.0
27	43.66	43.15	36.0	52.0	72	116.43	115.92	105.0	123.0
28	45.28	44.77	41.0	55.0	73	118.04	117.53	105.0	127.0
29	46.89	46.39	41.0	55.0	74	119.66	119.15	110.0	131.0
30	48.51	48.00	41.0	55.0	75	121.28	120.77	110.0	131.0
31	50.13	49.62	46.0	58.0	76	122.89	122.39	110.0	131.0
32	51.74	51.24	46.0	58.0	77	124.51	124.00	115.0	135.0
33	53.36	52.85	46.0	61.0	78	126.13	125.62	115.0	135.0
34	54.98	54.47	46.0	61.0	79	127.74	127.24	115.0	135.0
35	56.60	56.09	51.0	67.0	80	129.36	128.85	120.0	140.0
36	58.21	57.70	51.0	67.0	81	130.98	130.47	120.0	140.0
37	59.83	59.32	51.0	67.0	82	132.60	132.09	120.0	140.0
38	61.45	60.94	56.0	70.0	83	134.21	133.70	125.0	144.0
39	63.06	62.56	56.0	70.0	84	135.83	135.32	125.0	144.0
40	64.68	64.17	56.0	70.0	85	137.45	136.94	125.0	144.0
41	66.30	65.79	61.0	76.0	86	139.06	138.56	125.0	148.0
42	67.91	67.41	61.0	76.0	87	140.68	140.17	125.0	148.0
43	69.53	69.02	61.0	76.0	88	142.30	141.79	125.0	148.0
44	71.15	70.64	61.0	76.0	89	143.91	143.41	130.0	152.0
45	72.77	72.26	66.0	83.0	90	145.53	145.02	130.0	152.0
46	74.38	73.87	66.0	83.0	91	147.15	146.64	135.0	156.0
47	76.00	75.49	66.0	83.0	92	148.77	148.26	135.0	156.0
48	77.62	77.11	71.0	83.0	93	150.38	149.87	135.0	156.0
49	79.23	78.73	71.0	88.0	94	152.00	151.49	140.0	160.0
50	80.85	80.34	71.0	88.0	95	153.62	153.11	140.0	160.0

■ Belt Tooth Profile



■ Belt Code



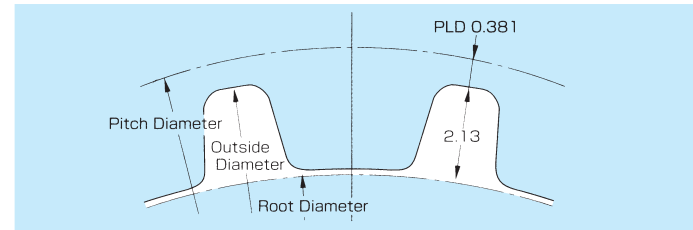
■ L Belt Length

Description	Pitch Length(mm)	No. of Teeth
98 L	247.650	26
109 L	276.225	29
124 L	314.325	33
131 L	333.375	35
135 L	342.900	36
150 L	381.000	40
165 L	419.100	44
*169 L	428.630	45
172 L	438.150	46
187 L	476.250	50
*202 L	514.350	54
206 L	523.875	55
210 L	533.400	56
225 L	571.500	60
*236 L	600.080	63
240 L	609.600	64
*244 L	619.130	65
248 L	628.600	66
*251 L	638.180	67
255 L	647.700	68
259 L	657.225	69
263 L	666.750	70
270 L	685.800	72
277 L	704.850	74
285 L	723.900	76
300 L	762.000	80
304 L	771.525	81
315 L	800.100	84
319 L	809.625	85
322 L	819.150	86

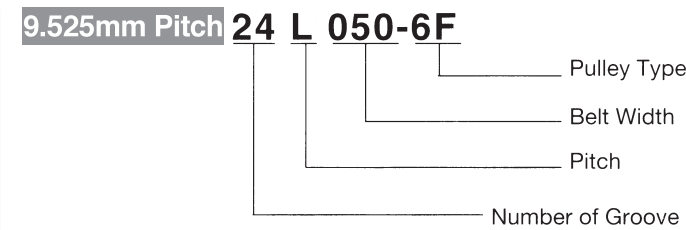
■ L Standard Belt Width

Belt Width(mm)	9.5	12.7	19.1	25.4	38.1	50.8
Belt Width Code	037	050	075	100	150	200

■ Pulley Groove Profile



■ Pulley Code



■ Pulley Type

Code	6	6F
Type		

■ Pulley Dimension Table

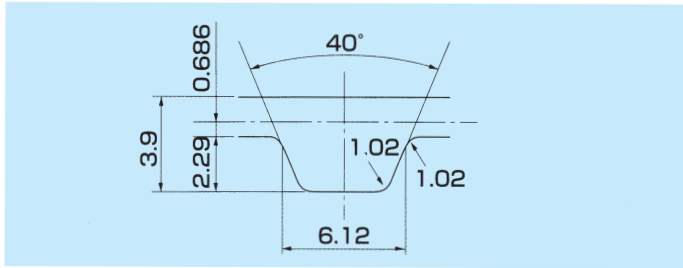
No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD
					46	139.47	138.71	125.0	148.0	76	230.42	229.66		
					47	142.50	141.74	130.0	152.0	77	233.46	232.69		
					48	145.53	144.77	130.0	152.0	78	236.49	235.73		
					49	148.56	147.80	135.0	156.0	79	239.52	238.76		
					50	151.60	150.83	140.0	160.0	80	242.55	241.79		
10	30.32	29.56	25.0	35.0	51	154.63	153.86	140.0	160.0	81	245.58	244.82		
11	33.35	32.59	27.5	40.0	52	157.66	156.90	145.0	168.0	82	248.62	247.85		
12	36.38	35.62	31.0	45.0	53	160.69	159.93	145.0	168.0	83	251.65	250.89		
13	39.41	38.65	31.0	45.0	54	163.72	162.96	150.0	172.0	84	254.68	253.92		
14	42.45	41.68	36.0	48.0	55	166.75	165.99	150.0	172.0	85	257.71	256.95		
15	45.48	44.72	36.0	52.0	56	169.79	169.02	155.0	176.0	86	260.74	259.98		
16	48.51	47.75	41.0	55.0	57	172.82	172.06	155.0	180.0	87	263.78	263.01		
17	51.54	50.78	46.0	58.0	58	175.85	175.09	160.0	184.0	88	266.81	266.05		
18	54.57	53.81	46.0	61.0	59	178.88	178.12	165.0	188.0	89	269.84	269.08		
19	57.61	56.84	51.0	67.0	60	181.91	181.15	165.0	188.0	90	272.87	272.11		
20	60.64	59.88	51.0	67.0	61	184.95	184.18	170.0	192.0	91	275.90	275.14		
21	63.67	62.91	56.0	70.0	62	187.98	187.22	170.0	196.0	92	278.93	278.17		
22	66.70	65.94	61.0	76.0	63	191.01	190.25	170.0	196.0	93	281.97	281.20		
23	69.73	68.97	61.0	76.0	64	194.04	193.28	175.0	200.0	94	285.00	284.24		
24	72.77	72.00	66.0	83.0	65	197.07	196.31	181.0	203.0	95	288.03	287.27		
25	75.80	75.04	66.0	83.0	66	200.11	199.34			96	291.06	290.30		
26	78.83	78.07	71.0	88.0	67	203.14	202.38			97	294.09	293.33		
27	81.86	81.10	71.0	88.0	68	206.17	205.41			98	297.13	296.36		
28	84.89	84.13	75.0	95.0	69	209.20	208.44			99	300.16	299.40		
29	87.93	87.16	75.0	95.0	70	212.23	211.47			100	303.19	302.43		
30	90.96	90.20	80.0	99.0	71	215.27	214.50			101	306.22	305.46		
31	93.99	93.23	85.0	103.0	72	218.30	217.53			102	309.25	308.49		
32	97.02	96.26	85.0	103.0	73	221.33	220.57			103	312.29	311.52		
33	100.05	99.29	90.0	111.0	74	224.36	223.60			104	315.32	314.56		
34	103.08	102.32	95.0	115.0	75	227.39	226.63			105	318.35	317.59		
35	106.12	105.35	95.0	115.0										
36	109.15	108.39	100.0	119.0										
37	112.18	111.42	100.0	119.0										
38	115.21	114.45	105.0	123.0										
39	118.24	117.48	105.0	127.0										
40	121.28	120.51	110.0	131.0										
41	124.31	123.55	115.0	135.0										
42	127.34	126.58	115.0	135.0										
43	130.37	129.61	120.0	140.0										
44	133.40	132.64	120.0	140.0										
45	136.44	135.67	125.0	144.0										

Pulley Pitch Diameter = $\frac{P \times N}{\pi}$

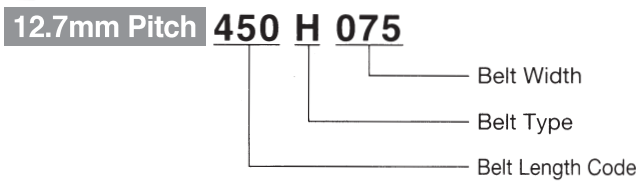
Outside Diameter (OD) = PD - 2 × PLD

P : Belt Pitch(mm)
N : No. of Grooves
π : Ratio of Circumference
L · PLD : 0.381mm

■ Belt Tooth Profile



■ Belt Code



■ H Belt Length

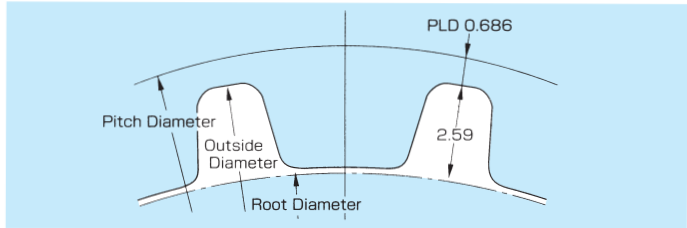
Description	Pitch Length(mm)	No. of Teeth
225 H	571.500	45
230 H	584.200	46
240 H	609.600	48
255 H	647.700	51
270 H	685.800	54
280 H	711.200	56
300 H	762.000	60
*310 H	787.400	62
315 H	800.100	63
320 H	812.800	64
330 H	838.200	66
360 H	914.400	72
370 H	939.800	74
*375 H	952.500	75
390 H	990.600	78
400 H	1,016.000	80
410 H	1,041.400	82
420 H	1,066.800	84
430 H	1,092.200	86
*440 H	1,117.600	88
450 H	1,143.000	90
465 H	1,181.100	93
480 H	1,219.200	96
*485 H	1,231.900	97
490 H	1,244.600	98
510 H	1,295.400	102
*520 H	1,320.800	104
540 H	1,371.600	108
560 H	1,422.400	112
570 H	1,447.800	114

Description	Pitch Length(mm)	No. of Teeth
580 H	1,473.200	116
600 H	1,524.000	120
*615 H	1,562.100	123
630 H	1,600.200	126
640 H	1,625.600	128
660 H	1,676.400	132
680 H	1,727.200	136
700 H	1,788.000	140
750 H	1,905.000	150
800 H	2,032.000	160
850 H	2,159.000	170
*885 H	2,247.900	177
900 H	2,286.000	180
950 H	2,413.000	190
1000 H	2,540.000	200
1100 H	2,794.000	220
1120 H	2,844.000	224
1130 H	2,870.200	226
1250 H	3,175.000	250
*1325 H	3,365.500	265
1345 H	3,416.300	269
1400 H	3,556.000	280
*1460 H	3,708.400	292
1700 H	4,318.000	340

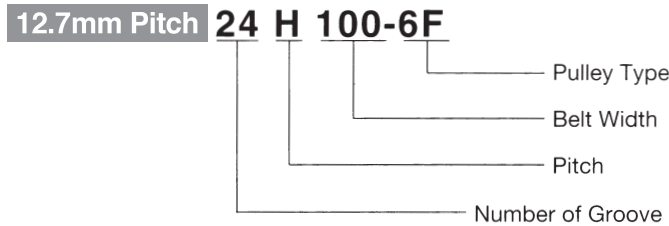
■ H Standard Belt Width

Belt Width(mm)	19.1	25.4	38.1	50.8	63.5	76.2	101.6
Belt Width Code	075	100	150	200	250	300	400

■ Pulley Groove Profile



■ Pulley Code



■ Pulley Type

Code	6	6F
Type		

■ Pulley Dimension Table

No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD	No. of Grooves	PD	OD	FID	FOD
14	56.60	55.22	46.0	61.0	51	206.17	204.80	187.0	212.0	81	327.45	326.07	304.0	334.0
15	60.64	59.27	51.0	67.0	52	210.21	208.84	191.0	216.0	82	331.49	330.12	308.0	338.0
16	64.68	63.31	56.0	70.0	53	214.25	212.88	195.0	220.0	83	335.53	334.16	311.0	342.0
17	68.72	67.35	56.0	75.0	54	218.30	216.92	199.0	224.0	84	339.57	338.20	315.0	346.0
18	72.77	71.39	61.0	78.0	55	222.34	220.97	203.0	228.0	85	343.62	342.24	319.0	350.0
19	76.81	75.44	66.0	83.0	56	226.38	225.01	206.0	233.0	86	347.66	346.29	323.0	354.0
20	80.85	79.48	71.0	88.0	57	230.42	229.05	210.0	237.0	87	351.70	350.33	327.0	358.0
21	84.89	83.52	75.0	95.0	58	234.47	233.10	214.0	241.0	88	355.74	354.37	331.0	362.0
22	88.94	87.56	75.0	95.0	59	238.51	237.14	218.0	245.0	89	359.79	358.41	335.0	366.0
23	92.98	91.61	80.0	99.0	60	242.55	241.18	221.7	249.0	90	363.83	362.46	339.0	370.0
24	97.02	95.65	85.0	103.0	61	246.59	245.22	226.0	253.0	91	367.87	366.50	—	—
25	101.06	99.69	90.0	111.0	62	250.64	249.27	229.0	257.0	92	371.91	370.54	—	—
26	105.11	103.73	90.0	111.0	63	254.68	253.31	233.0	261.0	93	375.96	374.58	—	—
27	109.15	107.78	95.0	115.0	64	258.72	257.35	237.0	265.0	94	380.00	378.63	—	—
28	113.19	111.82	100.0	119.0	65	262.76	261.39	241.0	269.0	95	384.04	382.67	—	—
29	117.23	115.86	105.0	123.0	66	266.81	265.44	245.0	273.0	96	388.08	386.71	—	—
30	121.28	119.90	105.0	127.0	67	270.85	269.48	247.0	277.0	97	392.13	390.75	—	—
31	125.32	123.95	110.0	131.0	68	274.89	273.52	253.0	281.0	98	396.17	394.80	—	—
32	129.36	127.99	115.0	135.0	69	278.93	277.56	257.0	285.0	99	400.21	398.84	—	—
33	133.40	132.03	120.0	140.0	70	282.98	281.61	261.0	289.0	100	404.25	402.88	—	—
34	137.45	136.07	125.0	144.0	71	287.02	285.65	265.0	293.0	101	408.30	406.92	—	—
35	141.49	140.12	125.0	148.0	72	291.06	289.69	268.4	297.0	102	412.34	410.97	—	—
36	145.53	144.16	130.0	152.0	73	295.11	293.73	272.0	301.0	103	416.38	415.01	—	—
37	149.57	148.20	135.0	156.0	74	299.15	297.78	276.0	305.0	104	420.42	419.05	—	—
38	153.62	152.24	140.0	160.0	75	303.19	301.82	280.0	309.0	105	424.47	423.09	—	—
39	157.66	156.29	140.0	164.0	76	307.23	305.86	284.0	313.0	106	428.51	427.14	—	—
40	161.70	160.33	145.0	168.0	77	311.28	309.90	288.0	317.0	107	432.55	431.18	—	—
41	165.74	164.37	150.0	172.0	78	315.32	313.95	291.0	321.0	108	436.59	435.22	—	—
42	169.79	168.41	155.0	176.0	79	319.36	317.99	296.0	325.0	109	440.64	439.26	—	—
43	173.83	172.46	155.0	180.0	80	323.40	322.03	300.0	330.0	110	444.68	443.31	—	—
44	177.87	176.50	160.0	184.0										
45	181.91	180.54	165.0	188.0										
46	185.96	184.58	170.0	192.0										
47	190.00	188.63	170.0	196.0										
48	194.04	192.67	175.0	200.0										
49	198.08	196.71	179.0	204.0										
50	202.13	200.75	183.0	208.0										

Pulley Pitch Diameter = $\frac{P \times N}{\pi}$

Outside Diameter (OD) = PD - 2 × PLD

P : Belt Pitch (mm)
N : No. of Grooves
π : Ratio of circumference
H · PLD : 0.686mm

XH Belt Pitch: 22.225mm(7/8")

Description	Pitch Length(mm)	No. of Teeth
507 XH	1,289.050	58
560 XH	1,422.400	64
630 XH	1,600.200	72
700 XH	1,778.000	80
735 XH	1,866.900	84
770 XH	1,955.800	88
*787 XH	2,000.250	90
*831 XH	2,111.380	95
840 XH	2,133.600	96
875 XH	2,222.500	100
910 XH	2,311.400	104
927 XH	2,355.850	106
980 XH	2,489.200	112
1120 XH	2,844.800	128
1260 XH	3,200.400	144
1400 XH	3,556.000	160
1540 XH	3,911.600	176
1680 XH	4,267.200	192
1750 XH	4,445.000	200

Stand Belt Width (XH)

Width Code	200	300	400
Belt Width(mm)	50.8	76.2	101.6

XXH Belt Pitch: 31.750mm(1-1/4")

Description	Pitch Length(mm)	No. of Teeth
700 XXH	1,778.000	56
800 XXH	2,032.000	64
900 XXH	2,286.000	72
1000 XXH	2,540.000	80
1200 XXH	3,048.000	96
1400 XXH	3,556.000	112
1600 XXH	4,064.000	128
1800 XXH	4,572.000	144

Stand Belt Width (XXH)

Width Code	200	300	400	500
Belt Width(mm) n	50.8	76.2	101.6	127.0

Belt Code

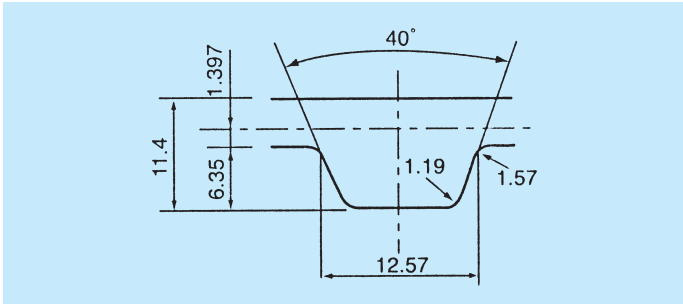
22.225mm Pitch

927 - XH - 200

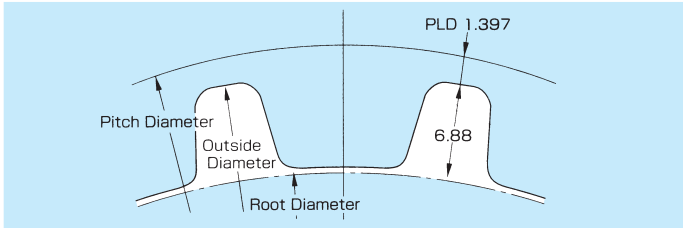
Belt Width

Belt Type

Pitch Length Code



Pulley Groove Profile



Belt Code

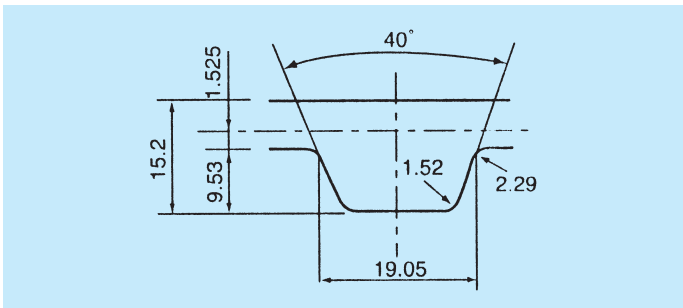
31.750mm Pitch

1200 - XXH - 300

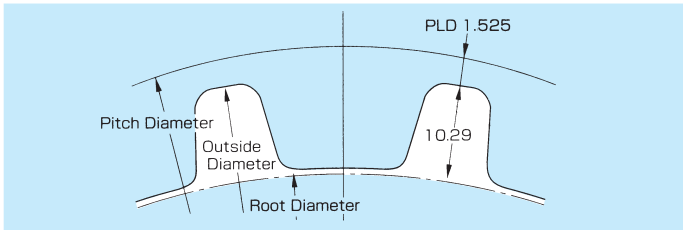
Belt Width

Belt Type

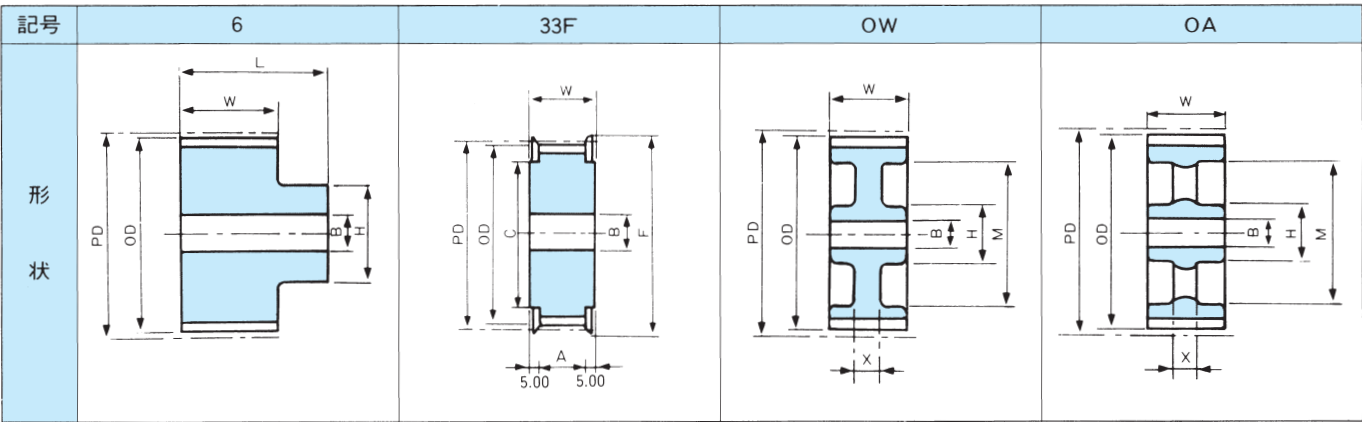
Pitch Length Code



Pulley Groove Profile



プーリ形状及び記号



プーリ幅とフランジ内距

ベルト呼び幅	200	300	400	500	600
W	67.0	94.0	121.0	148.0	174.0
A	57.0	84.0	111.0	138.0	164.0

参考プーリ寸法表

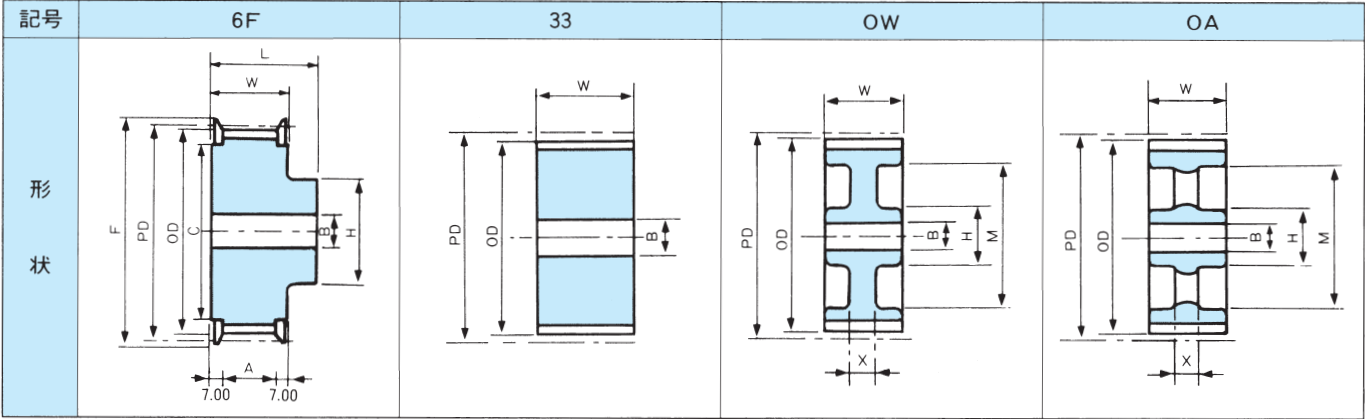
歯数	OD	H	B		L			X			M	プーリ形状 (参考)
			max.	min.	200	300	400	200	300	400		
18	124.55	96	64	30	92	120	146					6
19	131.62	96	64	30	92	120	146					6
20	138.69	98	64	30	96	122	150					6
21	145.77	98	64	30	96	122	150					6
22	152.84	98	64	30								33F
24	166.99	101	67	30								33F
26	181.14	101	67	30								33F
28	195.29	105	70	30								33F
30	209.44	105	70	30				16	25	30	167	OW
32	223.59	105	70	30				16	25	30	179	OW
34	237.74	110	73	30				16	25	30	192	OW
36	251.89	110	73	30				16	25	30	205	OW
40	280.18	115	77	30				16	25	30	230	OW
42	294.33	115	77	30				16	25	30	243	OW
44	308.48	115	77	30				16	25	30	257	OW
48	336.78	120	80	40				16	25	30	283	OW
60	421.67	130	87	40							364	OA
72	506.57	135	90	40							445	OA
80	563.16	140	93	40							500	OA
84	591.46	145	97	40							527	OA
90	633.91	150	100	50							568	OA
96	676.35	150	100	50							608	OA
120	846.14	165	110	50							770	OA

■ Pulley Dimension Table

歯数	P D	O D	C	F
18	127.34	124.55 ^{+0.13} ₀	109.26 ⁰ _{-0.05}	141
19	134.41	131.62 ^{+0.13} ₀	116.76 ⁰ _{-0.05}	148
20	141.49	138.69 ^{+0.13} ₀	123.88 ⁰ _{-0.06}	155
21	148.56	145.77 ^{+0.13} ₀	130.78 ⁰ _{-0.06}	162
22	155.64	152.84 ^{+0.13} ₀	137.68 ⁰ _{-0.06}	169
23	162.71	159.92 ^{+0.13} ₀	144.58 ⁰ _{-0.06}	176
24	169.79	166.99 ^{+0.13} ₀	151.48 ⁰ _{-0.06}	184
25	176.86	174.07 ^{+0.13} ₀	158.48 ⁰ _{-0.06}	191
26	183.94	181.14 ^{+0.15} ₀	165.28 ⁰ _{-0.06}	198
27	191.01	188.22 ^{+0.15} ₀	172.28 ⁰ _{-0.06}	205
28	198.08	195.29 ^{+0.15} ₀	179.38 ⁰ _{-0.06}	212
29	205.16	202.36 ^{+0.15} ₀	186.37 ⁰ _{-0.07}	219
30	212.23	209.44 ^{+0.15} ₀	193.27 ⁰ _{-0.07}	226
31	219.31	216.51 ^{+0.15} ₀	200.17 ⁰ _{-0.07}	233
32	226.38	223.59 ^{+0.15} ₀	207.07 ⁰ _{-0.07}	240
33	233.46	230.66 ^{+0.15} ₀	214.07 ⁰ _{-0.07}	247
34	240.53	237.74 ^{+0.15} ₀	220.97 ⁰ _{-0.07}	254
35	247.61	224.81 ^{+0.15} ₀	227.87 ⁰ _{-0.07}	261
36	254.68	251.89 ^{+0.15} ₀	234.77 ⁰ _{-0.07}	268
37	261.75	258.96 ^{+0.15} ₀	241.77 ⁰ _{-0.07}	275
38	268.83	266.03 ^{+0.15} ₀	248.57 ⁰ _{-0.07}	283
39	275.90	273.11 ^{+0.15} ₀	255.78 ⁰ _{-0.08}	290
40	282.98	280.18 ^{+0.15} ₀	262.68 ⁰ _{-0.08}	297
41	290.05	287.26 ^{+0.15} ₀	269.58 ⁰ _{-0.08}	304
42	297.13	294.33 ^{+0.15} ₀	276.48 ⁰ _{-0.08}	311
43	304.20	301.41 ^{+0.15} ₀	283.48 ⁰ _{-0.08}	318
44	311.28	308.48 ^{+0.18} ₀	290.38 ⁰ _{-0.08}	325
45	318.35	315.56 ^{+0.18} ₀	297.28 ⁰ _{-0.08}	332
46	325.42	322.63 ^{+0.18} ₀	304.08 ⁰ _{-0.08}	339
47	332.50	329.70 ^{+0.18} ₀	311.08 ⁰ _{-0.08}	346
48	339.57	336.78 ^{+0.18} ₀	318.38 ⁰ _{-0.09}	353
49	346.65	343.85 ^{+0.18} ₀	324.98 ⁰ _{-0.09}	360
50	353.72	350.93 ^{+0.18} ₀	331.98 ⁰ _{-0.09}	367
51	360.80	358.00 ^{+0.18} ₀	338.98 ⁰ _{-0.09}	375
52	367.87	365.08 ^{+0.18} ₀	345.98 ⁰ _{-0.09}	382

歯数	P D	O D	C	F
53	374.95	372.15 ^{+0.18} ₀	352.98 ⁰ _{-0.09}	389
54	382.02	379.23 ^{+0.18} ₀	359.98 ⁰ _{-0.09}	396
55	389.09	386.30 ^{+0.18} ₀	366.98 ⁰ _{-0.09}	403

■プーリ形状及び記号



■プーリ幅とフランジ内距

ベルト呼び幅	200	300	400	500	600
W	71.0	98.0	125.0	152.0	178.0
A	57.0	84.0	111.0	138.0	164.0

■参考プーリ寸法表

歯数	O D	H	B		L			X			M	プーリ形状(参考)
			max.	min.	200	300	400	200	300	400		
18	178.87	140	93	40	100	126	154					6F
19	188.97	145	97	40	100	126	154					6F
20	199.08	150	100	50	103	130	157					6F
21	209.19	150	100	50	103	130	157					6F
22	219.29	150	103	50	103	130	157					6F
24	239.50	154	107	50								33
26	259.72	154	107	50								33
28	279.93	165	110	50								33
30	300.14	165	110	50				25	30	45	245	OW
32	320.35	170	113	50				25	30	45	265	OW
34	340.57	170	113	50				25	30	45	284	OW
36	360.78	175	117	50				25	30	45	304	OW
40	401.21	180	120	60				25	30	45	342	OW
42	421.42	180	120	60							361	OA
44	441.63	185	123	60							381	OA
48	482.06	185	123	60							419	OA
60	603.33	200	133	60							535	OA
72	724.61	210	140	70							651	OA
80	805.46	215	143	70							727	OA
84	845.88	220	147	70							766	OA
90	906.52	225	150	70							824	OA

■ Pulley Dimension Table

歯数	P D	O D	C	F
18	181.91	178.87 ^{+0.15} ₀	156.88 ⁰ _{-0.06}	200
19	192.02	188.97 ^{+0.15} ₀	166.88 ⁰ _{-0.06}	211
20	202.13	199.08 ^{+0.15} ₀	176.78 ⁰ _{-0.06}	221
21	212.23	209.19 ^{+0.15} ₀	186.97 ⁰ _{-0.07}	231
22	222.34	219.29 ^{+0.15} ₀	196.87 ⁰ _{-0.07}	241
23	232.45	229.40 ^{+0.15} ₀	206.87 ⁰ _{-0.07}	251
24	242.55	239.50 ^{+0.15} ₀	216.77 ⁰ _{-0.07}	261
25	252.66	249.61 ^{+0.15} ₀	226.77 ⁰ _{-0.07}	271
26	262.77	259.72 ^{+0.15} ₀	236.77 ⁰ _{-0.07}	281
27	272.87	269.82 ^{+0.15} ₀	246.67 ⁰ _{-0.07}	291
28	282.98	279.93 ^{+0.15} ₀	256.88 ⁰ _{-0.08}	302
29	293.08	290.04 ^{+0.15} ₀	266.78 ⁰ _{-0.08}	312
30	303.19	300.14 ^{+0.15} ₀	276.88 ⁰ _{-0.08}	322
31	313.30	310.25 ^{+0.18} ₀	286.78 ⁰ _{-0.08}	332
32	323.40	320.35 ^{+0.18} ₀	296.68 ⁰ _{-0.08}	342
33	333.51	330.46 ^{+0.18} ₀	306.78 ⁰ _{-0.08}	352
34	343.62	340.57 ^{+0.18} ₀	316.88 ⁰ _{-0.09}	362
35	353.72	350.67 ^{+0.18} ₀	326.88 ⁰ _{-0.09}	372
36	363.83	360.78 ^{+0.18} ₀	336.78 ⁰ _{-0.09}	382
37	373.93	370.89 ^{+0.18} ₀	346.78 ⁰ _{-0.09}	392
38	384.04	380.99 ^{+0.18} ₀	356.68 ⁰ _{-0.09}	403
39	394.15	391.10 ^{+0.18} ₀	366.68 ⁰ _{-0.09}	413
40	404.25	401.21 ^{+0.18} ₀	376.68 ⁰ _{-0.09}	423
41	414.36	411.31 ^{+0.18} ₀	386.58 ⁰ _{-0.09}	433
42	424.47	421.42 ^{+0.18} ₀	396.58 ⁰ _{-0.09}	443
43	434.57	431.52 ^{+0.18} ₀	406.73 ⁰ _{-0.10}	453
44	444.68	441.63 ^{+0.18} ₀	416.73 ⁰ _{-0.10}	463
45	454.79	451.74 ^{+0.18} ₀	426.73 ⁰ _{-0.10}	473
46	465.89	461.84 ^{+0.18} ₀	436.73 ⁰ _{-0.10}	483
47	475.00	471.95 ^{+0.18} ₀	445.73 ⁰ _{-0.10}	494
48	485.10	482.06 ^{+0.18} ₀	456.63 ⁰ _{-0.10}	504
49	495.21	492.16 ^{+0.18} ₀	466.23 ⁰ _{-0.10}	514
50	505.32	502.27 ^{+0.18} ₀	476.23 ⁰ _{-0.10}	524
51	515.42	512.38 ^{+0.20} ₀	486.23 ⁰ _{-0.10}	534
52	525.53	522.48 ^{+0.20} ₀	496.23 ⁰ _{-0.10}	544

歯数	P D	O D	C	F
53	535.64	532.59 ^{+0.20} ₀	506.44 ⁰ _{-0.10}	554
54	545.74	542.69 ^{+0.20} ₀	516.44 ⁰ _{-0.10}	564
55	555.85	552.80 ^{+0.20} ₀	526.44 ⁰ _{-0.10}	574

Belt Pitch Length Tolerance (1.5GT · 2GT · 3GT · 5GT · 8YU · 3M · 5M · 8M · 14M · 20M)

Unit mm			Unit mm		
Belt Pitch Length	Center Distance Tolerances	Belt Pitch Length Tolerance	Belt Pitch Length	Center Distance Tolerances	Belt Pitch Length Tolerance
up to 254	± 0.20	± 0.40	over 3556 to 3810	± 0.64	± 1.28
over 254 to 381	± 0.23	± 0.46	over 3810 to 4064	± 0.66	± 1.32
over 381 to 508	± 0.25	± 0.50	over 4064 to 4318	± 0.69	± 1.38
over 508 to 762	± 0.30	± 0.60	over 4318 to 4572	± 0.71	± 1.42
over 762 to 1016	± 0.33	± 0.66	over 4572 to 4826	± 0.73	± 1.46
over 1016 to 1270	± 0.38	± 0.76	over 4826 to 5080	± 0.76	± 1.52
over 1270 to 1524	± 0.41	± 0.82	over 5080 to 5334	± 0.79	± 1.58
over 1524 to 1778	± 0.43	± 0.86	over 5334 to 5588	± 0.82	± 1.64
over 1778 to 2032	± 0.46	± 0.92	over 5588 to 5842	± 0.85	± 1.70
over 2032 to 2286	± 0.48	± 0.96	over 5842 to 6096	± 0.88	± 1.76
over 2286 to 2540	± 0.51	± 1.02	over 6096 to 6350	± 0.91	± 1.82
over 2540 to 2794	± 0.53	± 1.06	over 6350 to 6604	± 0.94	± 1.88
over 2794 to 3048	± 0.56	± 1.12	over 6604 to 6858	± 0.97	± 1.94
over 3048 to 3302	± 0.58	± 1.16	over 6858 to 7112	± 1.00	± 2.00
over 3302 to 3556	± 0.61	± 1.22			

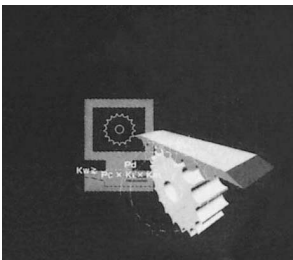
Belt Width Tolerance

Unit mm				
Belt Type	Belt Width	Pitch Length		
		under 800	over 800 under 1650	over 1650
1.5GT 2GT	under 2.5	±0.30	±0.30	±0.30
	over 2.5 to 4.0	±0.40	±0.40	±0.40
	over 4.0 to 9.0	±0.60	±0.60	±0.60
	over 9.0 to 15.0	±0.80	±0.80	±0.80
3GT 5GT 8GT	over 5.0	±0.40	±0.40	±0.40
	over 5.0 to 10.0	±0.60	±0.60	±0.60
	over 10.0 to 35.0	±0.80	±0.80	±0.80
	over 35.0 to 50.0	±0.80	±1.20	±1.20
	over 50.0 to 65.0	±1.20	±1.20	±1.60
	over 65.0 to 75.0	±1.20	±1.60	±1.60
	over 75.0 to 100.0	±1.60	±1.60	±2.00
	over 100.0 to 180.0	±2.40	±2.40	±2.40
	over 180.0	±2.40	±4.80	±4.80

Belt Thickness Tolerance

Unit mm			
Belt Type		Standard Thickness	Over all Belt Thickness Tolerance
1.5GT		1.00	±0.13
2GT		1.38	±0.25
3GT	3M	2.40	±0.25
5GT	5M	3.80	±0.25
8YU		5.20	±0.25
	8M	6.00	±0.25
	14M	10.00	±0.5
	20M		

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Power Grip Timing Belt Tolerance

Belt Pitch Length Tolerance (MXL • XL • L • H • XH • XXH)

Unit mm		Unit mm	
Belt Pitch Length	Belt Pitch Length Tolerances	Belt Pitch Length	Belt Pitch Length Tolerances
up to 254	±0.41	over 2286 to 2540	±1.02
over 254 to 381	±0.46	over 2540 to 2794	±1.07
over 381 to 508	±0.51	over 2794 to 3048	±1.12
over 508 to 762	±0.61	over 3048 to 3302	±1.17
over 762 to 1016	±0.66	over 3302 to 3556	±1.22
over 1016 to 1270	±0.76	over 3556 to 3810	±1.28
over 1270 to 1524	±0.81	over 3810 to 4064	±1.32
over 1524 to 1778	±0.86	over 4064 to 4318	±1.37
over 1778 to 2032	±0.91	over 4318 to 4572	±1.42
over 2032 to 2286	±0.97		

Belt Width Tolerance

Unit mm					
Belt Type	Belt Width Code	Belt Pitch Length under 330 (838.2mm)		Belt Pitch Length over 330 (838.2mm) to 660 (1,676.4mm)	
MXL	under 4.8	+0.5	−0.6	+0.8	−0.8
	over 4.8 to 6.4	+0.5	−0.8	+0.8	−0.8
	over 6.4	+0.8	−0.8	+0.8	−1.3
XL L H XH XXH	under 037	+0.5	−0.8	+0.8	−1.3
	over 037 to 150	+0.8	−0.8	+0.8	−1.3
	over 150 to 250	+0.8	−1.3	+1.3	−1.3
	over 250 to 300	+1.3	−1.5	+1.5	−1.5
	over 300 to 400	+1.5	−1.5	+1.5	−2.0
	over 400	+2.4	−2.4	+2.4	−2.8

Belt Thickness Tolerance

Unit mm		
Belt Type	Standard Thickness	Over all Belt Thickness Tolerance Standard
MXL	1.14	±0.25
XL	2.30	±0.25
L	3.40	±0.25
H	3.90	±0.25
XH	11.4	±0.25
XXH	15.2	±0.25

Pulley Tolerance

Pulley O. D. Tolerance

Unit mm	
Pulley O. D.	Allowance
up to 25.4	+0.05 +0.00
over 25.4 to 50.8	+0.08 +0.00
over 50.8 to 101.6	+0.10 +0.00
over 101.6 to 177.8	+0.13 +0.00
over 177.8 to 304.8	+0.15 +0.00
over 304.8 to 508.0	+0.18 +0.00
over 508.0	+0.20 +0.00

Pulley Eccentricity

Unit mm	
Pulley O. D.	Radial Runout Allowance
up to 203.2	0.13
over 203.2	0.13+[(O.D.−203.2)×0.0005]

Helix Angle

Unit mm	
Per 10mm of Pulley groove face width	Within 0.01

Side wobble or Axial run-out

Unit mm	
Pulley O. D.	Axial Runout Allowance
up to 101.6	0.10
over 101.6 to 254.0	O.D.×0.001
over 254.0	0.25+[(O.D.−254.0)×0.0005]

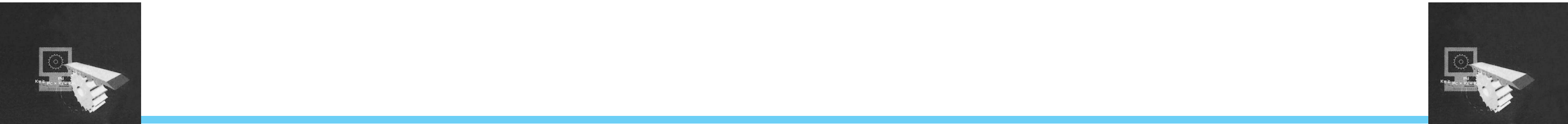
Cylindricity of O.D.

Unit mm	
Per 10mm of Pully groove face width	Within 0.01

Pulley hub O.D. for Frange Installation and F.I.D. Tolerance

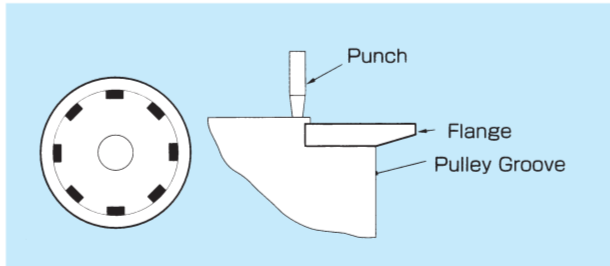
Unit mm			
Hub O.D. for frange Installation and F.I.D.	Hub O.D. for frange Installation Allowance		F.I.D. Allowance
up to 18	+0	−0.03	+0.07 −0
over 18 to 30	+0	−0.03	+0.08 −0
over 30 to 50	+0	−0.04	+0.10 −0
over 50 to 80	+0	−0.05	+0.12 −0
over 80 to 120	+0	−0.05	+0.14 −0
over 120 to 180	+0	−0.06	+0.16 −0
over 180 to 250	+0	−0.07	+0.19 −0
over 250 to 315	+0	−0.08	+0.21 −0
over 315 to 400	+0	−0.09	+0.23 −0
over 400 to 500	+0	−0.10	+0.25 −0
over 500 to 630	+0	−0.11	+0.28 −0
over 630 to 800	+0	−0.13	+0.32 −0
over 800 to 1000	+0	−0.14	+0.36 −0
over 1000	+0	−0.17	+0.42 −0

These specified vales are for pulleys processed through standard cutting work.
In applications requiring high positioning accuracy, torque precision, and noise reduction, higher accuracy may be needed as the accuracy of pulley largely effects the performance.



●Flange Installation

To install a flange to pulley, fit a flange to the outer edge of pulley and apply punch caulking. Since a slight clearance is provided, usually a flange matches to pulley easily. If it is hard to fit, heat and expand a flange before fitting. Apply caulking with a flat punch of 1mm×2mm to 2mm×3mm as shown below. Refer to the following table for the number of caulking.



Flange Inside Diameter	No. of punch caulking
up to 30	more than 4
over 30 to 45	more than 6
over 45 to 100	more than 8
over 100 to 190	more than 12
over 190	more than 16

■ Pulley Flange

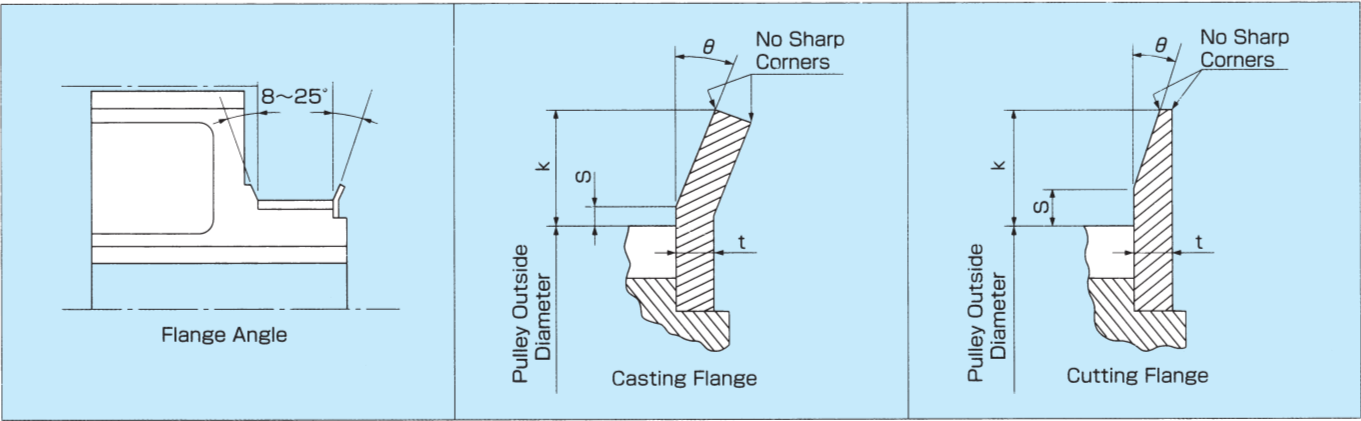
Angle of flange

Be sure to provide an angle to the flange in order to prevent the abnormal wear of belt sides, or keep the belt from running over the flange. An angle should be 8 to 25 degrees (20 degrees recommended).

Dimensions of flange

Design a flange, referring to the dimensions below.

■ Flanging Guideline



Belt Selection			θ (°)	k Recommendation (Minmum)	t (Nomal width)	s
1.5GT			8~25	2.0 (0.5)	0.5~1.5	0~0.5
2GT		MXL		2.0 (0.5)	0.5~1.5	
3GT	3M	XL		2.0 (1.0)	1.0~1.5	
5GT	5M			2.0 (1.5)	1.0~2.0	
		L		2.5 (1.5)	1.2~2.3	
		H		3.0 (2.0)	1.6~2.8	
8YU	8M			4.0 (2.0)	1.5~2.5	
	14M			7.5 (4.8)	2.0~5.0	
	20M	XXH		10 (6)	5.0~7.0	

Unit mm

Design Method I Designing From Transmission Power

Designing a belt means selecting an appropriate belt whose total transmission power will be bigger than the power (design power) which is equal to transmission power multiplied by the service correction factor (safety factor)

That is ; $\text{Design Power (Pd)} = \text{Transmission Power (Pm)} \times \text{Service Correction Factor (Ko)}$
 $\text{Design Power (Pd)} < \text{Total Transmission Power of Belt (Pt)}$

Design Step 1

Determine Service Correction Factor

Determine the service correction factor (Ko) in accordance with the use conditions of the belt.

$Ko = K1 + K2 + K3 + K4$

Table-1 Type of motors

		Class of motors	I	II	III
Type of driven equipment		Peak output/Basic output	up to 150%	over 150% to 250%	over 250%
Motors	A.C. motor	Single phase			
		All types			
		Squirrel cage induction	Two-pole	over 30kW	22kW
			Four-pole	over 75kW	up to 55.2kW
			Six-pole	over 11kW	up to 7.5kW
		Wound-rotor type	Eight-pole	over 3kW	up to 2.2kW
			Four-pole	—	up to 15.2kW
			Six-pole	—	up to 11.2kW
			Eight-pole	—	up to 5.5kW
		Synchronous motor	—	Regular torque	High torque
		D.C. motor	Shunt	Compound	Series
		Internal combustion engine	8 or more cylinders	7 to 5 cylinders	4 or less cylinders
		Hydraulic motor	—	—	All
		Line shaft	—	—	All

Table-2 Basic Service Correction Factor (K1)

Type of equipment		Class of motors		
		I	II	III
Office equipment	Computer, Typewriter, Calculator Facsimile, Copy machine	—	1.2	1.4
Automatized machine	Money exchanger, Ticket dispenser, Ticket collector, Automatic teller machine	1.3	1.4	1.5
Agitator, Mixer	Liquid Viscosity	1.2 1.3	1.4 1.5	1.6 1.7
Bread maker, Dough kneading machine		1.2	1.4	1.6
Brick machine, Drilling machine, Mixer, Granulating machine, Clay machine, Clay mill		1.4 1.6	1.6 1.8	1.8 2.0
Centrifugal separator		1.5	1.7	—
Compressor	Recipro Rotary	1.6 1.4	1.8 1.5	1.8 1.6
Conveyor	Belt conveyor (Light load) Belt conveyor (Ore, Coal, Gravel) Apron conveyor, Bucket, Elevator Flight conveyor, Screw conveyor	1.1 1.2 1.4 1.4	1.2 1.4 1.6 1.6	1.3 1.6 1.8 1.8
Fan, Blower	Fugal forced draft Axial flow, Mine, Roots	1.4 1.6	1.6 1.8	1.8 2.0
Generator, Exciter		1.4	1.6	1.8
Hammer, Mill		1.5	1.7	1.9
Hoist, Elevator		1.4	1.6	1.8
Laundry machine	General Squeezing machine, Washing machine	1.2 1.4	1.4 1.6	1.6 1.8
Line shaft		1.2	1.4	1.6

Type of equipment		Class of motors		
		I	II	III
Machine tool	Drilling machine, Lathe, Tapping machine Boring machine, Grinder, Miller, Shaper	1.2 1.3	1.4 1.5	1.6 1.7
Paper making machine	Agitator, Calender, Dryer, Beater Jordan, Nash pump, Pulper	1.2 1.4	1.4 1.6	1.6 1.8
Mill	Ball, Lot, Pebble	—	1.9	2.1
Printing press, Binding machine, Cutter		1.2	1.4	1.6
Pump	Centrifugal, Gear, Rotary, Axial flow, Recipro	1.2 1.7	1.4 1.9	1.6 2.1
Rubber industry machine	Rubber milling machine, Calender, Extruding machine	1.4	1.6	1.8
Lumbering machine		1.4	1.6	1.8
Screen	Vibrating screen Drum, Conical screen	1.3 1.2	1.5 1.4	— —
Textile machine	Weaving machine, Fine spinning frame, Twister, Warper, Hank scouring machine	1.3 1.2	1.5 1.4	1.7 —
Wood working machine	Wood lathe, Band sawing machine, Tenon cutter, Circular sawing machine, Planer	1.2 1.2	1.3 1.4	— —
Sewing machine	Household Industry	— —	1.2 1.6	1.4 1.8
Appliance	Juicer, Food mixer Vacuum cleaner, Projector	— 1.0	1.4 1.1	1.6 1.2
Packing machine		1.2	1.3	1.5
Medical equipment		1.0	1.1	1.2
Measuring equipment		1.0	1.1	1.2
Display equipment		1.0	1.1	1.2
Iron wire machine	Scutching wheel, Wire drawing machine, Wire stranding machine	1.4	1.6	1.8

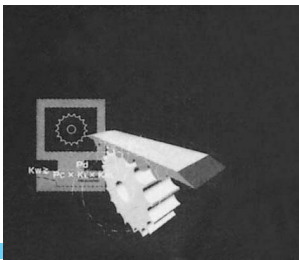
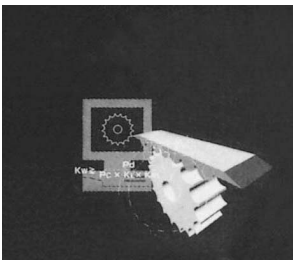


Table-3 Service Correction Factor In Accelerating(K₂)

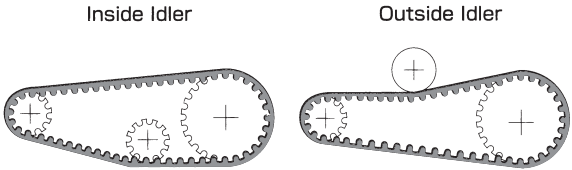
Accelerating ratio	Correction factor
over 1 to 1.25	0
over 1.25 to 1.75	+0.1
over 1.75 to 2.5	+0.2
over 2.5 to 3.5	+0.3
over 3.5	+0.4

Table-4 Service Correction Factor For Operating Hours(K₃)

Operating hours	Correction factor
Less than 10 hours (everyday)	0
10 - 16 hours continuous operation	+0.2
16 - 24 hours continuous operation	+0.4
Not more than 300 hours a year (Seasonal operation)	-0.2

Table-5 Service Correction Factor In Idler Use(K₄)

Position of Idler	Inside	Outside
Slack side of belt	0	+0.1
Tight side of belt	+0.1	+0.2



Design Step 2

Determine Design Power

Determine the design power (Pd) from the service correction factor as determined in Step 1 and transmission power.

$$Pd = P_m \times K_o$$

Pd : Design (kW or W)
Pm: Transmission (kW or W)
Ko : Service Correction Factor (K₁+K₂+K₃+K₄)

When inertia (GD² or moment of inertia) at driven side in the belt drive system is large, a machine has a higher start-stop frequency, or operating conditions include quick breaking or quick stop, make a check in Step 3 before going to Step 4. If not applicable, skip Step 3 and go directly to Step 4.

Design Step 3

When There Is Quick Start, Quick Stop, or Large Inertia at Driven Side

Determine a generated load from the inertia at driven side and the time of start/stop.

$$\text{Generated Torque } T_{rG} = \frac{GD^2 \times (n_1 - n_2)}{375 \times t}$$

$$\text{Generated Power } P_{mG} = \frac{T_{rG} \times n}{974}$$

$$\text{Design Power } P_{dG} = P_{mG} \times K_G$$

T_{rG} : Generated Torque (kgf·m)
GD² : Inertia Force (kgf·m²)
(n₁-n₂) : Difference of Revolution (r.p.m.)
t : Required Time for (n₁-n₂) (sec.)
P_{mG} : Generated Power (kW)
(Transmission Power)
P_{dG} : Design Power (kW)
K_G : Service Correction Factor

Use the correction factor (K_G) below according to the frequency of start/stop a day.

Table-6 Service Correction Factor for Frequency of Start/Stop(K_G)

Frequency of Start/Stop	K _G
Less than 10 times a day	1.0
10 to 99 times a day	1.5
100 to 999 times a day	2.0
Not less than 1000 times a day	2.5

Determine Design Power

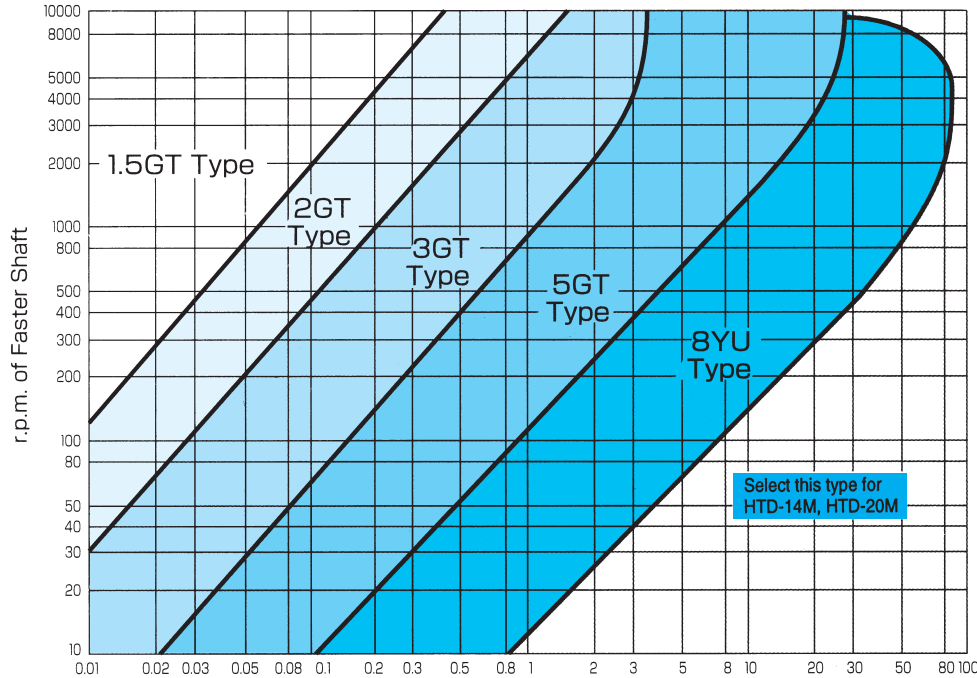
Compare the design powers determined in Step 2 and 3, and use the larger value for calculation in Step 4 and after.

Design Step 4

Select Belt Type

Select a belt type from the Belt Type Selection Guide based on the design power determined in Step 2 (3) and the rpm of smaller pulley. If selecting conditions are satisfied between two types, either type can be used. Taking into account various conditions, select the better belt.

Belt Type Selection Guide



Design Step 5

Select Belt Length and Pulley Groove Number

First of all, determine the combination of the pulley groove numbers based on the required speed ratio.

$$\text{Speed ratio} = \frac{\text{No. of large pulley grooves}}{\text{No. of small pulley grooves}}$$

Calculate the required belt length from the nominal center distance and the pulley groove number.

How to calculate an approximate belt pitch length

$$L_p \div 2C + \frac{\pi (D_p + d_p)}{2} + \frac{(D_p - d_p)^2}{4C}$$

L_p : Approximate Width Correction Factor (mm)
C : Center Distance (mm)
D_p : Large Pulley P.D. (mm)
d_p : Small Pulley P.D. (mm)

Select the belt length which is nearest to this approximate belt pitch length from the Belt Size Table. The calculation can be also done by using the Center Distance Calculation Chart or the Center Distance Factor Table in a separate volume, instead of the above formula.

● Please use the Center Distance Factor Table in a separate volume which is very convenient to calculate the exact belt length and center distance.

Determine the center distance.
Calculate the center distance from the selected belt and pulley.
The exact center distance can be determined from the Center Distance Factor Table in a separate volume.
Calculation can be also done with the following formula, but note that an error will be bigger as the speed ratio becomes higher.

How to calculate center distance

$$C \div \frac{b + \sqrt{b^2 - 8(D_p - d_p)^2}}{8}$$
$$b = 2L_p - \pi(D_p + d_p)$$

D_p : Large Pulley P.D. (mm)
d_p : Small Pulley P.D. (mm)
L_p : Belt Pitch Length (mm)

Example of PowerGrip GT belt Design

Design Step 6

Determine Teeth in Mesh and Teeth in Mesh Correction Factor for Smaller Pulley

When the teeth-in-mesh of the belt on the smaller pulley is less than 6 teeth, calculate the teeth-in-mesh with the following formula and select the mesh correction factor (Km) from the table.

$$\theta = 180^\circ - \frac{57.3 (D_p - d_p)}{C}$$

$$T.I.M. = \frac{\theta}{360^\circ} \times n$$

θ : Contact Angle on small Pulley (°)
 D_p : Large Pulley P.D. (mm)
 d_p : Small Pulley P.D. (mm)
 C : Center Distance (mm)
 n : No. of Small Pulley Grooves

Table-7 Teeth-in-Mesh Correction Factor

No. of Teeth-in-Mesh	more than 6	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

Design Step 7

Determine Belt Width

Following the belt length and pulley size, determine the basic power rating per unit belt width from the smaller pulley groove number and rpm, using the Basic Power Rating Table prepared for each belt type. When using pulleys or rpm not presented in the Basic Power Rating Table, calculate proportionally from the nearest values of groove number and rpm in the table. Determine the approximate width factor with the following formula, and select the width correction factor which exceeds the approximate width factor from the Belt Width Correction Factor Table.

$$WF = \frac{P_d}{P_c \times K_L \times K_m}$$

$$K_w > WF$$

K_w : Belt Width Correction Factor
 WF : Approximate Width Correction Factor
 P_d : Design Power
 P_c : Belt Basic Power Rating
 K_L : Belt Length Correction Factor
 K_m : Teeth-in-Mesh Correction Factor

Select a value meeting the above requirements from the Belt Width Correction Factor Table (Belt width correction factors are provided on the page showing the Basic Power Rating Table).

Design Step 8

Check Resulting Selection

Using the correction factors as selected in Step1 to 7, calculate the total transmission power of the belt and the final service correction factor to check the resulting selection.

$$P_t = P_c \times K_w \times K_L \times K_m$$

$$K = \frac{P_t}{P_m}$$

$$K_o < K$$

P_t : Belt Total Power
 P_c : Belt Basic Power Rating
 K_w : Belt Width Correction Factor
 K_L : Belt Length Correction Factor
 K_m : Teeth-in-Mesh Correction Factor
 K_o : Service Correction Factor
 K : Calculated Service Correction Factor
 P_m : Transmission Power

Make sure that the above formulas are satisfied. If they are not satisfied, select the one-step wider belt, increase the pulley groove number, or make other changes.

Design from Transmission Power

Design conditions

Type of machine : Gear pump
 Rated power of motor : 7.5kW
 rpm of motor shaft : 1750rpm
 Speed ratio : 1:2 deceleration
 Center distance and Moving amount : 500mm ± 20mm
 Operating hours a day : 24 hours/day
 Limitation of shaft diameter : Motor shaft diameter $\phi 38$ mm
 Limitation of pulley diameter : 200mm or less at driven side pulley
 Quick start/Quick stop : None
 Operating environment : General plant, no adverse conditions

Design Step 1 Determine Service Correction Factor

Type of motors : Class III
 Basic service correction factor K_1 : 1.60
 Service correction factor in accelerating K_2 : 0
 Service correction factor for operating hours K_3 : 0.4
 Service correction factor in Idler use K_4 : 0

$$K_o = K_1 + K_2 + K_3 + K_4$$

$$K_o = 1.60 + 0 + 0.4 + 0 = 2.00$$

Design Step 2 Determine Design Power

Determine the design power from the service correction factor and transmission power.

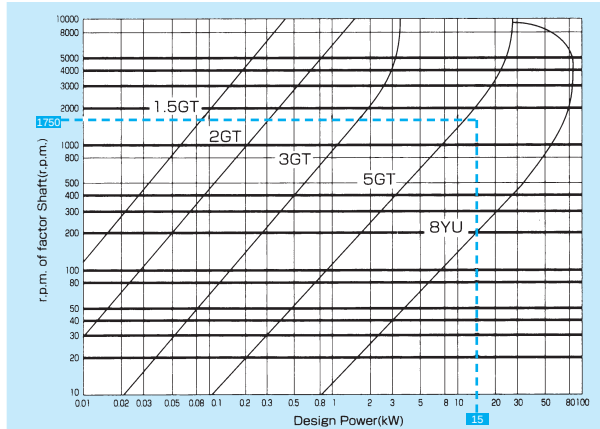
Transmission Power P_m : 7.5kW
 Service Correction Factor K_o : 2.00
 Design Power $P_d = P_m \times K_o$
 $P_d = 7.5 \times 2.00 = 15.0$ kW

※Since there is no large inertia, quick start, or quick stop at driven side, the calculation of an inertial load is omitted.

Design Step 3 Omitted

Design Step 4 Select Belt Type

Select the 8YU type belt from the Belt Type Selection Guide.



Design Step 5 Select Belt Length and Number of Pulley Grooves.

Select an appropriate pulley groove number tentatively, based on the speed ratio, pulley diameter limitation, and shaft diameter.

Driving pulley : P32-8YU
 Driven pulley : P64-8YU

Calculate the required belt length from the center distance and the number of pulley grooves.

$$L_p = 2C + \frac{\pi (D_p + d_p)}{2} + \frac{(D_p - d_p)^2}{4C}$$

$$L_p = (2 \times 500) + \frac{\pi (162.97 + 81.49)}{2} + \frac{(162.97 - 81.49)^2}{4 \times 500}$$

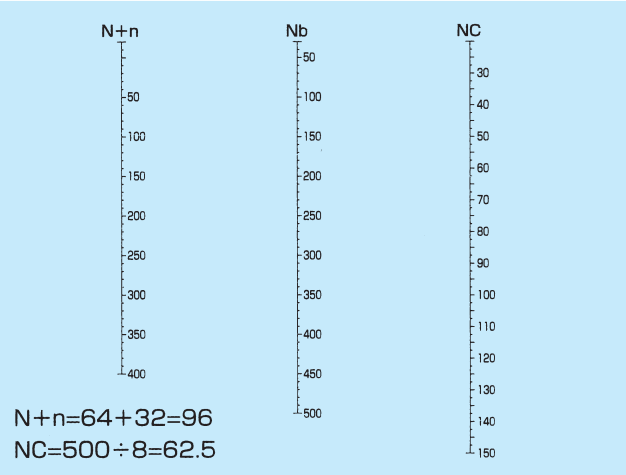
$$L_p = 1387.32 \text{ mm}$$

L_p : Belt Pitch Length (mm)
 C : Center Distance (mm)
 D_p : Large Pulley P.D. (mm)
 d_p : Small Pulley P.D. (mm)

The calculation can be also done by using the Center Distance Calculation Chart or the Center Distance Factor Table in a separate volume, instead of the above formula.

○Selection Example by the Center Distance Calculation Chart

Select the nearest belt length from the Belt Size Table.



Selected belt length

Selected Belt : 1384-8YU
 (Pitch Length 1384.0mm 173Teeth)

Power Grip GT Basic Power Rating

Calculate the exact center distance from the selected belt and pulley.
Here, calculation is done using the Center Distance Factor Table in a separate volume.

No. of Belt Teeth (Nb) : 173
No. of Large Pulley Grooves (N) : 64
No. of Small Pulley Grooves (n) : 32
(Nb-N)=173-64=109
(N-n)=64-32=32
Locate a value (CD factor) from (Nb-N) and (N-n);
CD factor = 62.292
Center Distance=CD Factor×Pitch=62.292×8=
498.33mm

How to Use the Center Distance Factor Table

		Nb-N									
		101	102	103	104	105	106	107	108	109	110
1	50.750	51.250	51.750	52.250	52.750	53.250	53.750	54.250	54.750	55.250	55.750
2	50.889	51.489	52.089	52.689	53.289	53.889	54.489	55.089	55.689	56.289	56.889
3	51.028	51.628	52.228	52.828	53.428	54.028	54.628	55.228	55.828	56.428	57.028
4	51.167	51.767	52.367	52.967	53.567	54.167	54.767	55.367	55.967	56.567	57.167
5	51.306	51.906	52.506	53.106	53.706	54.306	54.906	55.506	56.106	56.706	57.306
6	51.445	52.045	52.645	53.245	53.845	54.445	55.045	55.645	56.245	56.845	57.445
7	51.584	52.184	52.784	53.384	53.984	54.584	55.184	55.784	56.384	56.984	57.584
8	51.723	52.323	52.923	53.523	54.123	54.723	55.323	55.923	56.523	57.123	57.723
9	51.862	52.462	53.062	53.662	54.262	54.862	55.462	56.062	56.662	57.262	57.862
10	52.001	52.601	53.201	53.801	54.401	55.001	55.601	56.201	56.801	57.401	58.001
11	52.140	52.740	53.340	53.940	54.540	55.140	55.740	56.340	56.940	57.540	58.140
12	52.279	52.879	53.479	54.079	54.679	55.279	55.879	56.479	57.079	57.679	58.279
13	52.418	53.018	53.618	54.218	54.818	55.418	56.018	56.618	57.218	57.818	58.418
14	52.557	53.157	53.757	54.357	54.957	55.557	56.157	56.757	57.357	57.957	58.557
15	52.696	53.296	53.896	54.496	55.096	55.696	56.296	56.896	57.496	58.096	58.696
16	52.835	53.435	54.035	54.635	55.235	55.835	56.435	57.035	57.635	58.235	58.835
17	52.974	53.574	54.174	54.774	55.374	55.974	56.574	57.174	57.774	58.374	58.974
18	53.113	53.713	54.313	54.913	55.513	56.113	56.713	57.313	57.913	58.513	59.113
19	53.252	53.852	54.452	55.052	55.652	56.252	56.852	57.452	58.052	58.652	59.252
20	53.391	53.991	54.591	55.191	55.791	56.391	56.991	57.591	58.191	58.791	59.391
21	53.530	54.130	54.730	55.330	55.930	56.530	57.130	57.730	58.330	58.930	59.530
22	53.669	54.269	54.869	55.469	56.069	56.669	57.269	57.869	58.469	59.069	59.669
23	53.808	54.408	55.008	55.608	56.208	56.808	57.408	58.008	58.608	59.208	59.808
24	53.947	54.547	55.147	55.747	56.347	56.947	57.547	58.147	58.747	59.347	59.947
25	54.086	54.686	55.286	55.886	56.486	57.086	57.686	58.286	58.886	59.486	60.086
26	54.225	54.825	55.425	56.025	56.625	57.225	57.825	58.425	59.025	59.625	60.225
27	54.364	54.964	55.564	56.164	56.764	57.364	57.964	58.564	59.164	59.764	60.364
28	54.503	55.103	55.703	56.303	56.903	57.503	58.103	58.703	59.303	59.903	60.503
29	54.642	55.242	55.842	56.442	57.042	57.642	58.242	58.842	59.442	60.042	60.642
30	54.781	55.381	55.981	56.581	57.181	57.781	58.381	58.981	59.581	60.181	60.781
31	54.920	55.520	56.120	56.720	57.320	57.920	58.520	59.120	59.720	60.320	60.920
32	55.059	55.659	56.259	56.859	57.459	58.059	58.659	59.259	59.859	60.459	61.059
33	55.198	55.798	56.398	56.998	57.598	58.198	58.798	59.398	59.998	60.598	61.198
34	55.337	55.937	56.537	57.137	57.737	58.337	58.937	59.537	60.137	60.737	61.337
35	55.476	56.076	56.676	57.276	57.876	58.476	59.076	59.676	60.276	60.876	61.476
36	55.615	56.215	56.815	57.415	58.015	58.615	59.215	59.815	60.415	61.015	61.615
37	55.754	56.354	56.954	57.554	58.154	58.754	59.354	59.954	60.554	61.154	61.754
38	55.893	56.493	57.093	57.693	58.293	58.893	59.493	60.093	60.693	61.293	61.893
39	56.032	56.632	57.232	57.832	58.432	59.032	59.632	60.232	60.832	61.432	62.032
40	56.171	56.771	57.371	57.971	58.571	59.171	59.771	60.371	60.971	61.571	62.171
41	56.310	56.910	57.510	58.110	58.710	59.310	59.910	60.510	61.110	61.710	62.310
42	56.449	57.049	57.649	58.249	58.849	59.449	60.049	60.649	61.249	61.849	62.449
43	56.588	57.188	57.788	58.388	58.988	59.588	60.188	60.788	61.388	61.988	62.588
44	56.727	57.327	57.927	58.527	59.127	59.727	60.327	60.927	61.527	62.127	62.727
45	56.866	57.466	58.066	58.666	59.266	59.866	60.466	61.066	61.666	62.266	62.866
46	57.005	57.605	58.205	58.805	59.405	60.005	60.605	61.205	61.805	62.405	63.005
47	57.144	57.744	58.344	58.944	59.544	60.144	60.744	61.344	61.944	62.544	63.144
48	57.283	57.883	58.483	59.083	59.683	60.283	60.883	61.483	62.083	62.683	63.283
49	57.422	58.022	58.622	59.222	59.822	60.422	61.022	61.622	62.222	62.822	63.422
50	57.561	58.161	58.761	59.361	59.961	60.561	61.161	61.761	62.361	62.961	63.561
51	57.700	58.300	58.900	59.500	60.100	60.700	61.300	61.900	62.500	63.100	63.700
52	57.839	58.439	59.039	59.639	60.239	60.839	61.439	62.039	62.639	63.239	63.839
53	57.978	58.578	59.178	59.778	60.378	60.978	61.578	62.178	62.778	63.378	63.978
54	58.117	58.717	59.317	59.917	60.517	61.117	61.717	62.317	62.917	63.517	64.117
55	58.256	58.856	59.456	60.056	60.656	61.256	61.856	62.456	63.056	63.656	64.256
56	58.395	58.995	59.595	60.195	60.795	61.395	61.995	62.595	63.195	63.795	64.395
57	58.534	59.134	59.734	60.334	60.934	61.534	62.134	62.734	63.334	63.934	64.534
58	58.673	59.273	59.873	60.473	61.073	61.673	62.273	62.873	63.473	64.073	64.673
59	58.812	59.412	60.012	60.612	61.212	61.812	62.412	63.012	63.612	64.212	64.812
60	58.951	59.551	60.151	60.751	61.351	61.951	62.551	63.151	63.751	64.351	64.951

Design Step 6 Determine Teeth in Mesh and Teeth in Mesh Correction Factor for smaller pulley.

$$\theta = 180^\circ - \frac{57.3(D_p - d_p)}{C}$$

$$\theta = 180^\circ - \frac{57.3(162.97 - 81.49)}{498.33}$$

$$\theta = 170.63^\circ$$

$$T.I.M. = \frac{\theta}{360^\circ} \times n = \frac{170.63^\circ}{360^\circ} \times 32 = 15.17$$

Teeth in Mesh Correction Factor Km; 1.00

θ : Teeth-in-Mesh Contact Angle (°)

d_p : Small Pulley P.D. (mm)

C : Center Distance (mm) n : No. of Small Pulley Grooves

D_p : Large Pulley P.D. (mm)

Design Step 7 Determine Belt Width

$$WF = \frac{P_d}{P_c \times K_L \times K_m} = \frac{15.0}{6.13 \times 1.10 \times 1.00}$$

$$WF = 2.22$$

Select a belt width correction factor Kw which exceeds WF;

Kw = 2.73 (Belt width: 50mm)

WF : Approximate Width Correction Factor

KL : Belt Length Correction Factor

Pd : Design Power

Km : Teeth-in-Mesh Correction Factor

Pc : Basic Power Rating

Design Step 8 Confirmation of selected result

Determine the total transmission power of the belt.

$$P_t = P_c \times K_w \times K_L \times K_m$$

$$P_t = 6.13 \times 2.73 \times 1.10 \times 1.00 = 18.41 \text{ kW}$$

Determine the final service correction factor.

$$K = P_t \div P_m = 18.41 \div 7.5 = 2.45$$

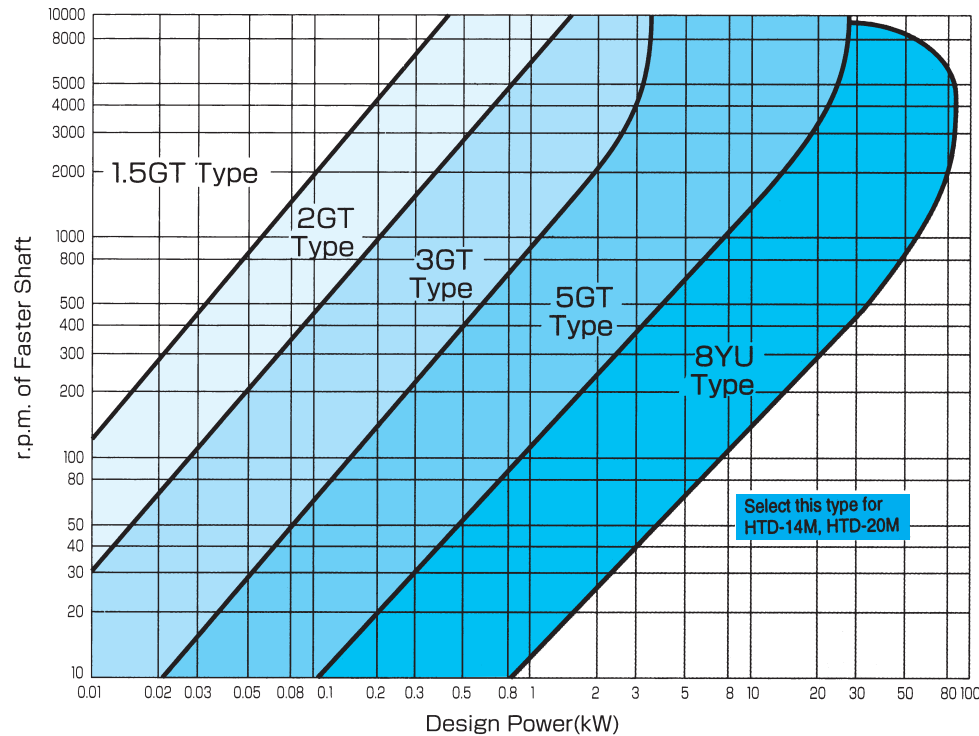
$$K_o < K \Rightarrow 2.00 < 2.45$$

As a result, this design fully satisfies the specification.

Result

Belt Size : 1384-8YU-50
Drive Pulley : P32-8YU-50-6F
Driven Pulley : P64-8YU-50-6W
Theoretical Center Distance : 498.33mm
Final Correction Factor : 2.45

Belt Pitch Selection Guide



$$K_w \geq \frac{P_d}{P_c \times K_L \times K_m}$$

Kw : Belt Width Correction Factor

Pd : Design Power (W)

Pc : Basic Power Rating (W)

KL : Belt Length Correction Factor

Km : Teeth in Mesh creation Factor

$$P_t = P_c \times K_w \times K_L \times K_m$$

Pt : Total transmission Power

Pc : Belt Basic Power Rating

Kw : Belt Width Correction Factor

KL : Belt Length Correction Factor

Km : Teeth in Mesh creation Factor

Ko : Designed Service Correction Factor (K1+K2+K3+K4)

K : Total Service Correction Factor

Pm : Transmission Power

$$\theta = 180^\circ - \frac{57.3(D_p - d_p)}{C}$$

$$T.I.M. = \frac{\theta}{360^\circ} \times n$$

θ : Contact Angle on small pulley (°)

D_p : Large Pulley P.D. (mm)

d_p : Small Pulley P.D. (mm)

C : Center Distance (mm)

n : No. of Small Pulley Grooves

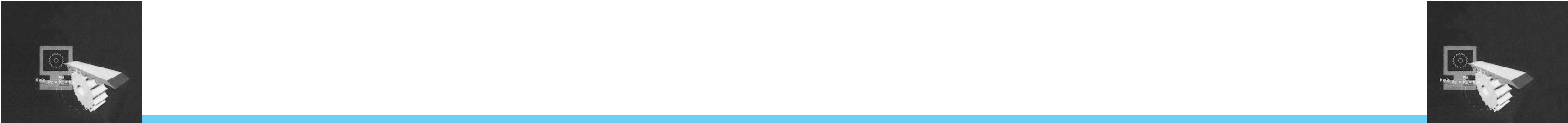
Teeth-in-Mesh Correction Factor (Km)

No. of Grooves	over 6	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

Note 1: In portion, the belt life is reduced in accordance with the relationship between pulley diameter and rpm.

Note 2: The selected pulley diameter (pitch diameter) should be larger than the belt width with the difference as large as possible.

Note 3: When using a non-standard pulley or rpm which is not provided in a table, calculate proportionally from the nearest values.



■ 1.5GT Basic Power Rating (Pc) - per 3mm Belt Width

Unit (watt)

No. of Teeth	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72	
Pitch Dia (mm)	5.73	6.68	7.64	8.59	9.55	10.50	11.46	12.41	13.37	14.32	15.28	17.19	19.10	21.01	22.92	23.87	28.65	34.38	
r.p.m. Of FaSter Shaft	20	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.2	1.3	1.6	2.0
	40	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.7	2.0	2.2	2.3	3.0	3.7
	60	0.5	0.6	0.8	0.9	1.0	1.1	1.2	1.4	1.5	1.7	1.8	2.1	2.5	2.8	3.2	3.4	4.4	5.3
	100	0.8	1.0	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.6	2.8	3.3	3.8	4.4	5.0	5.3	6.9	8.3
	200	1.4	1.7	2.0	2.3	2.7	3.0	3.4	3.8	4.2	4.6	5.0	6.0	6.9	8.0	9.1	9.6	12.8	15.3
	300	1.9	2.4	2.8	3.2	3.7	4.2	4.7	5.3	5.9	6.4	7.1	8.4	9.8	11.3	12.9	13.7	18.2	21.8
	400	2.4	2.9	3.5	4.0	4.7	5.3	6.0	6.7	7.4	8.2	8.9	10.6	12.4	14.4	16.4	17.5	23.4	28.0
	500	2.8	3.5	4.1	4.8	5.5	6.3	7.1	7.9	8.8	9.8	10.7	12.8	15.0	17.3	19.9	21.2	28.3	34.0
	600	3.2	4.0	4.7	5.5	6.3	7.2	8.2	9.2	10.2	11.3	12.4	14.8	17.4	20.2	23.1	24.7	33.2	39.8
	700	3.6	4.4	5.3	6.2	7.1	8.1	9.2	10.3	11.5	12.8	14.0	16.8	19.8	22.9	26.3	28.1	37.9	45.4
	800	4.0	4.9	5.8	6.8	7.9	9.0	10.2	11.5	12.8	14.2	15.6	18.7	22.0	25.6	29.4	31.5	42.4	50.9
	870	4.2	5.1	6.2	7.2	8.4	9.6	10.9	12.2	13.6	15.1	16.7	20.0	23.6	27.4	31.6	33.7	45.6	54.7
	900	4.3	5.3	6.3	7.4	8.6	9.8	11.1	12.5	14.0	15.5	17.1	20.5	24.2	28.2	32.5	34.7	46.9	56.3
	1000	4.6	5.7	6.8	8.0	9.3	10.6	12.1	13.6	15.2	16.8	18.6	22.3	26.4	30.7	35.4	37.9	51.3	61.6
	1160	5.1	6.3	7.5	8.9	10.3	11.8	13.5	15.2	17.0	18.9	20.9	25.1	29.7	34.7	40.0	42.8	58.2	69.9
	1200	5.2	6.4	7.7	9.1	10.6	12.1	13.8	15.6	17.4	19.4	21.4	25.8	30.5	35.7	41.2	44.0	59.9	71.9
	1400	5.7	7.1	8.5	10.1	11.8	13.5	15.4	17.4	19.5	21.8	24.1	29.1	34.5	40.4	46.7	50.0	68.2	81.9
	1450	5.9	7.2	8.7	10.3	12.0	13.9	15.8	17.9	20.1	22.3	24.7	29.9	35.5	41.5	48.0	51.5	70.3	84.3
	1600	6.2	7.7	9.3	11.0	12.9	14.9	17.0	19.2	21.6	24.0	26.6	32.2	38.3	44.9	52.0	55.8	76.3	91.6
	1750	6.6	8.1	9.9	11.7	13.7	15.8	18.1	20.5	23.0	25.7	28.5	34.5	41.1	48.2	55.9	60.0	82.3	98.7
	1800	6.7	8.3	10.0	11.9	14.0	16.1	18.4	20.9	23.5	26.2	29.1	35.3	42.0	49.3	57.2	61.4	84.2	101.1
	2000	7.1	8.8	10.7	12.8	15.0	17.3	19.8	22.5	25.3	28.3	31.5	38.2	45.6	53.6	62.3	66.8	92.0	110.3
	2400	7.8	9.8	12.0	14.3	16.8	19.5	22.5	25.5	28.8	32.3	36.0	43.8	52.5	61.9	72.0	77.4	107.0	128.4
	2800	8.5	10.7	13.1	15.7	18.5	21.6	24.9	28.4	32.1	36.0	40.2	49.2	59.0	69.7	81.3	87.5	121.5	145.7
3200	9.0	11.4	14.0	16.9	20.1	23.5	27.1	31.0	35.1	39.5	44.2	54.2	65.2	77.3	90.3	97.2	135.5	162.6	
3600	9.5	12.1	14.9	18.1	21.5	25.2	29.2	33.4	38.0	42.8	47.9	59.0	71.2	84.5	99.0	106.7	149.2	179.0	
4000	9.9	12.7	15.7	19.1	22.8	26.8	31.1	35.7	40.7	45.9	51.5	63.6	76.9	91.5	107.4	115.8	162.5	195.0	
5000	10.7	13.8	17.3	21.3	25.6	30.3	35.4	40.9	46.8	53.1	59.8	74.3	90.4	108.1	127.3	137.5	194.5	233.4	
6000	11.1	14.6	18.6	23.0	27.9	33.3	39.1	45.5	52.2	59.5	67.2	84.1	102.9	123.5	146.0	158.0	224.9	269.9	
7000	11.3	15.1	19.4	24.3	29.8	35.8	42.3	49.4	57.1	65.3	74.0	93.1	114.5	138.0	163.7	177.4	254.1	304.9	
8000	11.2	15.3	20.0	25.3	31.3	37.9	45.1	52.9	61.4	70.4	80.2	101.5	125.3	151.6	180.5	195.9	282.1	338.5	
10000	10.6	15.1	20.4	26.5	33.3	41.0	49.4	58.6	68.6	79.4	91.0	116.5	145.1	176.9	211.8	230.4	335.4	402.4	
12000	9.3	14.2	20.0	26.7	34.4	43.0	52.5	63.0	74.5	86.9	100.2	129.7	162.9	199.9	240.6	262.4	385.5	462.6	
14000	7.5	12.6	18.8	26.1	34.5	44.0	54.6	66.3	79.1	93.0	108.0	141.3	178.9	221.0	267.4	292.3	433.1	519.7	

Power Grip HTD Basic Power Rating

8YU Basic Power Rating (Pc) - per 20mm Belt Width

Unit(kW)

No. of Teeth	20	22	24	26	28	30	32	34	36	38	40	44	48	54	60	64	72	80
Pitch Dia (mm)	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.05	137.51	152.97	162.97	183.35	203.72
r.p.m. OF Faster Shaft	10	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.09	0.10	0.11	0.13	0.14	0.16	0.18
	20	0.05	0.06	0.07	0.08	0.09	0.10	0.10	0.11	0.12	0.13	0.14	0.16	0.21	0.24	0.26	0.30	0.34
	40	0.10	0.12	0.13	0.15	0.16	0.18	0.20	0.22	0.24	0.25	0.27	0.31	0.35	0.41	0.47	0.51	0.66
	60	0.14	0.17	0.19	0.21	0.24	0.26	0.29	0.32	0.34	0.37	0.40	0.45	0.51	0.60	0.69	0.74	0.96
	100	0.23	0.26	0.30	0.34	0.38	0.42	0.46	0.51	0.55	0.59	0.64	0.73	0.82	0.97	1.11	1.20	1.56
	200	0.42	0.49	0.56	0.64	0.71	0.79	0.87	0.96	1.04	1.12	1.21	1.39	1.57	1.84	2.12	2.30	2.98
	300	0.60	0.71	0.81	0.92	1.03	1.14	1.26	1.38	1.51	1.63	1.76	2.02	2.28	2.68	3.09	3.35	4.36
	400	0.78	0.91	1.05	1.19	1.33	1.48	1.64	1.80	1.96	2.12	2.29	2.63	2.98	3.50	4.03	4.38	5.70
	500	0.95	1.11	1.28	1.45	1.63	1.81	2.00	2.20	2.40	2.60	2.80	3.23	3.65	4.30	4.96	5.38	7.01
	600	1.11	1.30	1.50	1.71	1.92	2.14	2.36	2.60	2.83	3.07	3.31	3.81	4.32	5.09	5.87	6.37	8.29
	700	1.27	1.49	1.72	1.96	2.20	2.45	2.71	2.98	3.26	3.53	3.81	4.39	4.98	5.87	6.76	7.34	9.56
	800	1.42	1.67	1.93	2.20	2.48	2.77	3.06	3.37	3.68	3.99	4.30	4.96	5.62	6.63	7.64	8.30	10.81
	870	1.53	1.80	2.08	2.37	2.67	2.98	3.30	3.63	3.96	4.30	4.64	5.35	6.07	7.16	8.25	8.96	11.67
	900	1.57	1.85	2.14	2.44	2.75	3.07	3.40	3.74	4.09	4.44	4.79	5.52	6.26	7.38	8.51	9.24	12.03
	1000	1.72	2.03	2.35	2.68	3.02	3.38	3.74	4.11	4.49	4.88	5.26	6.07	6.89	8.13	9.37	10.17	13.24
	1160	1.96	2.31	2.67	3.05	3.45	3.85	4.26	4.70	5.13	5.57	6.02	6.95	7.88	9.30	10.72	11.64	15.14
	1200	2.01	2.38	2.75	3.15	3.55	3.97	4.39	4.84	5.29	5.75	6.20	7.16	8.12	9.59	11.06	12.00	15.60
	1400	2.30	2.72	3.15	3.60	4.07	4.55	5.04	5.55	6.07	6.59	7.12	8.22	9.33	11.01	12.70	13.78	17.89
	1450	2.37	2.80	3.25	3.71	4.19	4.69	5.20	5.73	6.26	6.80	7.35	8.48	9.63	11.36	13.10	14.22	18.45
	1600	2.57	3.05	3.53	4.04	4.57	5.11	5.67	6.25	6.83	7.42	8.02	9.26	10.51	12.41	14.30	15.52	20.10
	1750	2.77	3.29	3.82	4.37	4.94	5.53	6.13	6.76	7.39	8.04	8.68	10.03	11.38	13.43	15.47	16.79	21.70
	1800	2.84	3.37	3.91	4.48	5.06	5.67	6.28	6.93	7.58	8.24	8.90	10.28	11.66	13.76	15.86	17.20	22.23
	2000	3.10	3.68	4.28	4.90	5.55	6.21	6.88	7.59	8.31	9.03	9.76	11.27	12.79	15.09	17.38	18.84	24.27
	2400	3.61	4.29	4.99	5.72	6.48	7.26	8.05	8.89	9.73	10.57	11.42	13.19	14.96	17.63	20.27	21.95	28.08
	2800	4.09	4.87	5.68	6.51	7.38	8.27	9.18	10.13	11.09	12.05	13.01	15.02	17.02	20.03	22.98	24.84	31.49
	3200	4.56	5.44	6.33	7.27	8.24	9.24	10.25	11.31	12.38	13.45	14.52	16.75	18.96	22.26	25.48	27.48	34.44
	3600	5.01	5.97	6.97	8.00	9.07	10.17	11.28	12.44	13.62	14.79	15.95	18.38	20.78	24.33	27.75	29.85	36.89
	4000	5.43	6.49	7.57	8.70	9.86	11.05	12.26	13.52	14.78	16.05	17.30	19.91	22.46	26.21	29.77	31.92	38.79
	5000	6.42	7.68	8.96	10.30	11.67	13.06	14.47	15.93	17.39	18.84	20.26	23.19	25.99	29.99	33.60	35.64	40.76
	6000	7.29	8.73	10.18	11.68	13.22	14.77	16.32	17.93	19.51	21.06	22.57	25.63	28.45	32.28	35.42	36.93	38.10
	7000	8.04	9.62	11.20	12.83	14.48	16.13	17.76	19.44	21.07	22.64	24.13	27.09	29.67	32.82	34.87	35.36	29.94
	8000	8.66	10.34	12.02	13.72	15.43	17.12	18.76	20.42	22.01	23.49	24.85	27.44	29.46	31.35	31.59	30.50	15.44

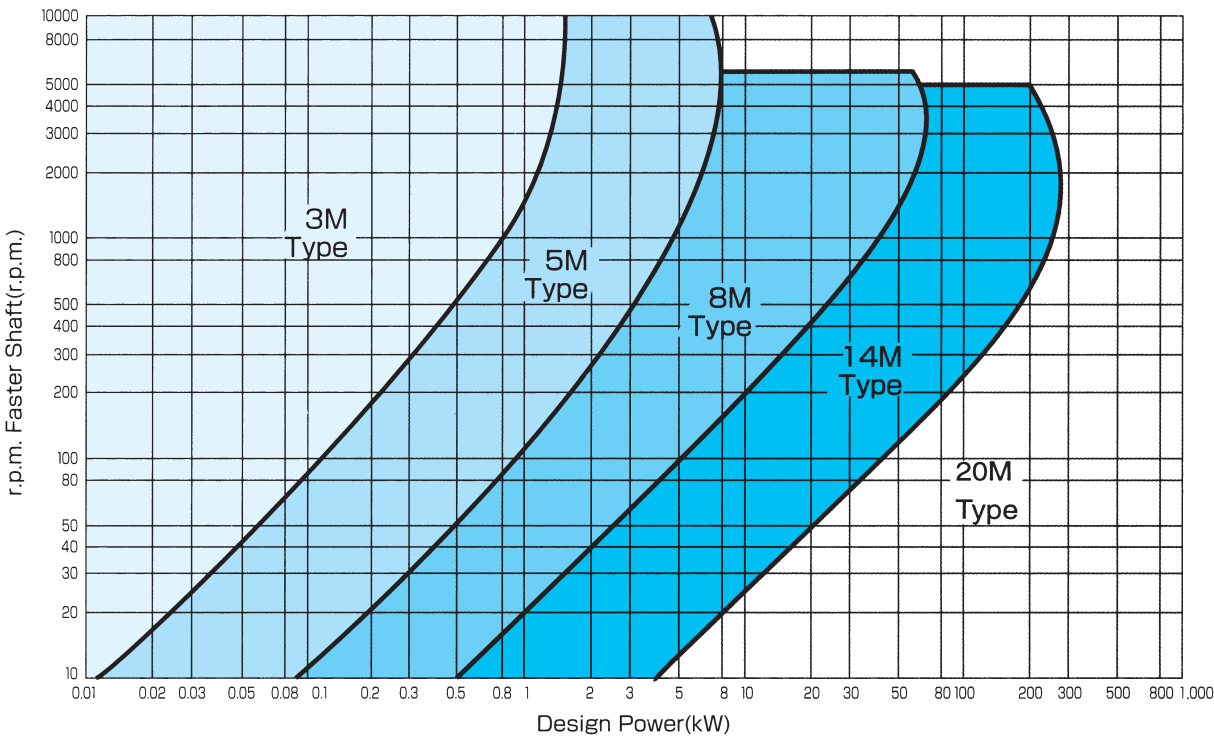
Width Correction Factor(Kw)

Belt Width (mm)	20	25	30	40	50	60	70	85
Width Correction Factor	1.00	1.29	1.58	2.15	2.73	3.31	3.89	4.75

Length Correction Factor(KL)

Belt Width (mm)	below 660	601~900	901~1250	1251~1799	over 1800
Length Correction Factor	0.80	0.90	1.00	1.10	1.20

Belt Pitch Selection Guide



$$Kw \geq \frac{Pd}{Pc \times KL \times Km}$$

Kw : Belt Width Correction Factor
Pd : Design Power (W)
Pc : Basic Power Rating (W)
KL : Belt Length Correction Factor
Km : Teeth in Mesh creation Factor

$$Pt = Pc \times Kw \times KL \times Km$$

$$K = \frac{Pt}{Pm}$$

$$Ko < K$$

Pt : Total transmission Power
Pc : Belt Basic Power Rating
Kw : Belt Width Correction Factor
KL : Belt Length Correction Factor
Km : Teeth in Mesh creation Factor
Ko : Designed Service Correction Factor (K1+K2+K3+K4)
K : Total Service Correction Factor
Pm : Transmission Power

$$\theta = 180^\circ - \frac{57.3 (Dp - dp)}{C}$$

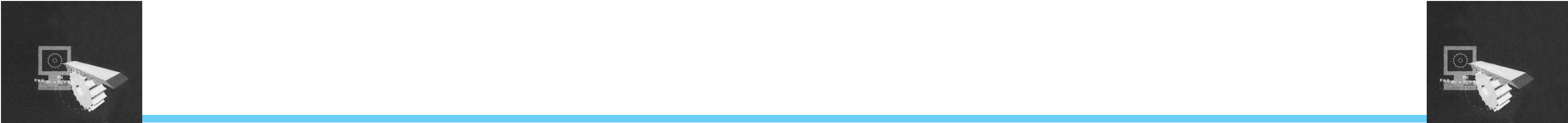
$$T.I.M. = \frac{\theta}{360^\circ} \times n$$

θ : Contact Angle on small pulley (°)
Dp : Large Pulley P.D. (mm)
dp : Small Pulley P.D. (mm)
C : Center Distance (mm)
n : No. of Small Pulley Grooves

Teeth-in-Mesh Correction Factor (Km)

No. of Grooves	Over6	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

Note 1: In portion, the belt life is reduced in accordance with the relationship between pulley diameter and rpm.
Note 2: The selected pulley diameter (pitch diameter) should be larger than the belt width with the difference as large as possible.
Note 3: When using a non-standard pulley or rpm which is not provided in a table, calculate proportionally from the nearest values.



3M Basic Power Rating (Pc)- per 6mm Belt Width

Unit (watt)

No. of Teeth	10	12	14	16	18	20	24	28	32	40	48	56	64	72	80
Pitch Dia (mm)	9.55	11.46	13.37	15.28	17.19	19.10	22.92	26.74	30.56	38.20	45.84	53.48	61.12	68.75	76.39
r.p.m. Of Faster Shaft	20	1	1	1	2	2	2	3	3	4	6	7	8	8	9
	40	2	2	2	3	3	4	5	6	9	11	13	15	17	19
	60	2	3	3	4	5	7	8	10	13	17	20	23	25	28
	100	4	5	6	7	8	9	11	13	16	21	28	33	38	42
	200	8	10	11	13	15	17	22	27	32	43	55	66	75	84
	300	11	13	16	18	21	24	30	36	43	58	74	87	100	112
	400	13	16	19	23	26	30	37	45	53	71	90	107	122	138
	500	16	19	23	27	31	35	44	53	62	83	106	125	143	161
	600	18	22	27	31	35	40	50	60	71	95	120	142	163	183
	700	20	25	30	35	40	45	56	68	80	106	134	159	181	204
	800	23	28	33	39	44	50	62	75	88	117	148	174	199	224
	870	24	30	35	41	47	53	66	80	94	124	157	185	211	238
	900	25	30	36	42	48	55	68	82	96	127	160	189	216	243
	1000	27	33	39	46	52	59	73	88	104	137	173	204	233	262
	1160	30	37	44	51	59	66	82	99	116	153	192	226	258	291
	1200	31	38	45	52	60	68	84	101	119	156	197	232	265	298
	1400	35	43	51	59	68	76	94	113	133	175	219	258	295	331
	1450	36	44	52	61	69	78	97	116	137	179	225	264	302	339
	1600	39	47	56	65	75	84	104	125	147	192	241	283	323	363
	1750	42	51	60	70	80	90	112	134	157	205	256	301	344	386
	1800	42	52	62	72	82	92	114	136	160	209	261	307	351	394
	2000	46	56	67	77	89	100	123	148	173	226	281	331	377	423
	2400	53	65	77	89	102	115	141	169	197	257	319	375	427	479
	2800	60	73	86	100	114	129	158	189	221	287	355	416	474	530
	3200	66	81	96	111	126	142	175	209	243	315	389	455	517	578
	3600	73	88	105	121	138	155	191	227	265	342	421	492	558	622
	4000	79	96	113	131	150	168	206	245	285	368	451	526	596	663
	5000	94	114	134	155	177	198	243	288	334	427	521	603	678	749
	6000	108	131	154	178	202	227	277	327	378	481	581	667	743	812
	7000	121	147	173	200	227	254	309	364	419	528	631	718	790	850
	8000	134	163	191	221	250	279	339	398	456	569	673	754	816	861
	10000	159	192	226	259	293	326	393	457	519	631	724	781	804	792
	12000	182	220	257	295	332	368	438	505	566	666	729	739	691	582
	14000	204	245	286	327	366	404	476	541	596	670	683	616	—	—

Width Correction Factor(Kw)

Belt Width (mm)	6	9	15
Width Correction Factor	1.00	1.66	2.97

Length Correction Factor(KL)

Belt Pitch Length (mm)	Below190	191~260	261~400	401~599	Over600
Length Correction Factor	0.8	0.9	1.0	1.1	1.2

5M Basic Power Rating (Pc)- per 9mm Belt Width

Unit (watt)

No. of Teeth	14	16	18	20	24	28	32	36	40	44	48	56	64	72	80
Pitch Dia (mm)	22.28	25.46	28.65	31.83	38.20	44.56	50.93	57.30	63.56	70.03	76.39	89.13	101.86	114.59	127.32
r.p.m. Of Faster Shaft	20	4	5	6	7	9	11	13	15	17	20	23	27	31	38
	40	9	11	12	14	18	21	26	30	35	40	45	54	61	69
	60	13	16	18	21	26	32	38	45	52	60	68	80	92	103
	100	22	26	30	35	44	54	64	75	87	100	113	134	153	172
	200	45	53	61	69	88	107	128	150	174	199	226	268	306	345
	300	61	72	83	94	119	145	172	202	233	266	300	356	407	458
	400	76	90	103	117	147	179	213	249	286	326	368	436	498	561
	500	91	106	122	139	174	211	251	292	336	382	430	510	583	656
	600	104	122	140	159	199	241	286	334	383	435	489	580	662	745
	700	117	137	158	179	223	271	321	373	428	485	545	646	738	829
	800	130	152	174	198	247	299	353	411	471	533	598	709	809	910
	870	139	162	186	211	263	318	376	437	500	566	634	751	858	965
	900	142	166	191	216	269	326	385	447	512	580	650	769	879	987
	1000	154	180	206	234	291	352	416	483	552	625	699	828	945	1062
	1160	173	201	231	262	326	393	464	537	614	694	776	918	1047	1176
	1200	177	207	237	268	334	403	475	551	629	710	794	939	1072	1204
	1400	199	232	266	301	375	451	532	615	702	791	884	1044	1191	1336
	1450	205	239	274	309	384	463	545	631	720	811	905	1070	1220	1368
	1600	221	257	295	333	414	498	586	677	771	869	969	1144	1303	1461
	1750	236	275	315	356	442	532	625	722	822	925	1030	1215	1384	1550
	1800	242	281	322	364	451	543	638	736	838	943	1050	1239	1410	1578
	2000	262	305	349	394	488	586	688	794	902	1014	1128	1329	1511	1689
	2400	301	350	400	451	558	669	784	902	1024	1148	1274	1497	1697	1891
	2800	338	393	449	506	625	748	874	1004	1137	1272	1408	1649	1863	2067
	3200	374	434	496	559	688	822	960	1100	1242	1386	1531	1786	2008	2217
	3600	409	474	541	609	749	893	1040	1190	1340	1492	1644	1908	2134	2340
	4000	443	513	585	658	808	961	1116	1274	1431	1589	1745	2015	2238	2436
	5000	523	605	688	772	943	1115	1288	1459	1628	1792	1951	2212	2402	2541
	6000	598	690	783	877	1064	1250	1433	1610	1778	1937	2084	2301	2411	2434
	7000	669	769	870	971	1171	1365	1550	1722	1880	2019	2137	2268	2245	2084
	8000	735	843	950	1057	1264	1459	1637	1794	1927	2031	2101	2100	1882	—
	10000	854	972	1088	1199	1403	1577	1714	1804	1842	1819	1729	—	—	—
	12000	956	1078	1193	1299	1476	1594	1643	1609	—	—	—	—	—	—
	14000	1039	1158	1264	1354	1473	1495	1403	—	—	—	—	—	—	—

Width Correction Factor(Kw)

Belt Width (mm)	9	15	20	25	30	40
Width Correction Factor	1.00	1.89	2.64	3.38	4.13	5.62

Length Correction Factor(KL)

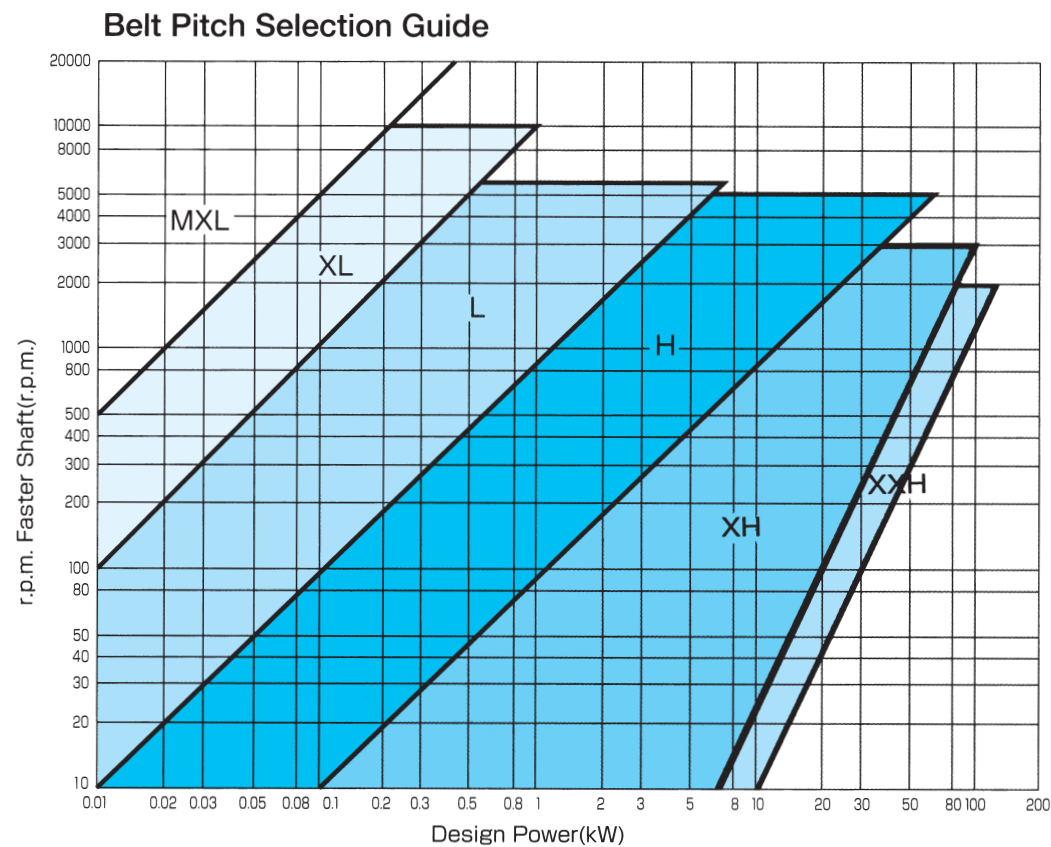
Belt Pitch Length (mm)	Below440	441~550	551~800	801~1100	Over1101
Length Correction Factor	0.8	0.9	1.0	1.1	1.2

8M Basic Power Rating (Pc) - per 20mm Belt Width

Unit (kW)

No. of Teeth	22	24	26	28	30	32	34	36	38	40	44	48	56	64	72	80	
Pitch Dia (mm)	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	142.60	162.97	182.75	203.72	
r.p.m. for Faster Shaft	10	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11
	20	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.14	0.16	0.18	0.20	0.23
	40	0.07	0.08	0.09	0.11	0.12	0.14	0.16	0.18	0.20	0.23	0.25	0.27	0.32	0.36	0.41	0.45
	60	0.10	0.12	0.14	0.16	0.19	0.21	0.24	0.27	0.30	0.34	0.37	0.41	0.47	0.54	0.61	0.68
	100	0.16	0.20	0.23	0.27	0.31	0.36	0.40	0.45	0.51	0.56	0.62	0.68	0.79	0.90	1.02	1.13
	200	0.33	0.39	0.46	0.54	0.62	0.71	0.81	0.91	1.02	1.13	1.24	1.36	1.58	1.81	2.03	2.26
	300	0.49	0.58	0.69	0.80	0.91	1.04	1.18	1.32	1.47	1.63	1.79	1.95	2.28	2.60	2.93	3.25
	400	0.65	0.77	0.91	1.05	1.20	1.36	1.53	1.71	1.91	2.11	2.32	2.53	2.95	3.37	3.79	4.21
	500	0.82	0.96	1.12	1.29	1.48	1.67	1.88	2.10	2.33	2.58	2.83	3.09	3.60	4.12	4.63	5.14
	600	0.98	1.15	1.34	1.54	1.75	1.98	2.22	2.48	2.75	3.03	3.33	3.64	4.24	4.84	5.44	6.04
	700	1.14	1.34	1.55	1.78	2.02	2.28	2.56	2.85	3.16	3.48	3.82	4.17	4.86	5.55	6.23	6.91
	800	1.31	1.53	1.77	2.02	2.29	2.58	2.89	3.22	3.56	3.92	4.30	4.69	5.47	6.24	7.01	7.77
	870	1.42	1.66	1.91	2.19	2.48	2.79	3.12	3.47	3.83	4.22	4.64	5.05	5.89	6.71	7.54	8.36
	900	1.47	1.71	1.98	2.26	2.56	2.88	3.22	3.58	3.95	4.34	4.78	5.21	6.06	6.92	7.76	8.60
	1000	1.63	1.90	2.19	2.50	2.82	3.17	3.54	3.93	4.34	4.77	5.24	5.71	6.65	7.58	8.50	9.42
	1170	1.91	2.21	2.54	2.89	3.27	3.67	4.08	4.52	4.99	5.47	6.01	6.55	7.62	8.68	9.72	10.75
	1200	1.95	2.27	2.61	2.96	3.35	3.75	4.18	4.63	5.10	5.59	6.15	6.69	7.79	8.86	9.93	10.98
	1460	2.37	2.75	3.14	3.56	4.01	4.49	4.98	5.51	6.06	6.63	7.28	7.93	9.20	10.46	11.69	12.90
	1500	2.44	2.82	3.22	3.66	4.11	4.60	5.11	5.64	6.20	6.79	7.45	8.11	9.42	10.70	11.95	13.18
	1600	2.60	3.00	3.43	3.88	4.37	4.87	5.41	5.97	6.56	7.18	7.88	8.57	9.94	11.28	12.59	13.87
	1750	2.84	3.27	3.73	4.22	4.74	5.28	5.86	6.46	7.09	7.75	8.50	9.24	10.71	12.13	13.52	14.86
	2000	3.24	3.72	4.24	4.78	5.35	5.96	6.59	7.26	7.95	8.68	9.51	10.33	11.93	13.49	14.98	16.41
	2400	3.87	4.43	5.03	5.65	6.31	7.00	7.73	8.48	9.27	10.09	11.04	11.97	13.77	15.47	17.07	18.55
	2920	4.69	5.34	6.03	6.75	7.51	8.30	9.13	9.99	10.89	11.82	12.88	13.92	15.88	17.68	19.29	20.69
	3200	5.12	5.82	6.55	7.32	8.13	8.97	9.85	10.76	11.71	12.68	13.80	14.88	16.89	18.68	20.23	21.49
	3500	5.58	6.32	7.10	7.92	8.78	9.67	10.59	11.55	12.54	13.57	14.73	15.83	17.86	19.60	21.01	22.06
	4000	5.73	6.49	7.29	8.12	8.99	9.89	10.83	11.81	12.81	13.85	15.02	16.13	18.15	19.86	21.22	22.18
	4500	6.32	7.14	8.00	8.89	9.81	10.77	11.76	12.79	13.84	14.92	16.12	17.24	19.20	20.73	21.78	22.28
4000	7.05	7.93	8.85	9.80	10.79	11.80	12.84	13.91	15.01	16.13	17.33	18.41	20.17	21.32	21.79	21.48	
5000	7.76	8.70	9.67	10.67	11.69	12.75	13.82	14.92	16.04	17.17	18.32	19.30	20.73	21.32	20.97	19.56	
5500	8.44	9.42	10.44	11.47	12.53	13.60	14.69	15.80	16.92	18.04	19.09	19.92	20.85	20.68	19.25	—	
6000	9.09	10.12	11.16	12.22	13.29	14.37	15.45	16.54	17.63	18.72	19.61	20.22	20.48	19.32	—	—	
6500	9.72	10.77	11.83	12.90	13.96	15.03	16.09	17.14	18.18	19.20	19.87	20.18	19.60	—	—	—	
7000	10.31	11.38	12.44	13.50	14.55	15.59	16.60	17.59	18.55	19.47	19.85	19.79	—	—	—	—	

Power Grip Timing Belt Basic Power Rating



$$Kw \geq \frac{Pd}{Pc \times Km}$$

Kw : Belt Width Correction Factor
Pd : Design Power (W)
Pc : Basic Power Rating (W)
Km : Teeth in Mesh creation Factor

$$Pt = Pc \times Kw \times Km$$
$$K = \frac{Pt}{Pm}$$

Ko < K

Pt : Total transmission Power
Pc : Belt Basic Power Rating
Kw : Belt Width Correction Factor
Km : Teeth in Mesh creation Factor
Ko : Designed Service Correction Factor (K1+K2+K3+K4)
K : Total Service Correction Factor
Pm : Transmission Power

$$\theta = 180^\circ - \frac{57.3 (Dp - dp)}{C}$$

$$T.I.M. = \frac{\theta}{360^\circ} \times n$$

θ : Contact Angle on small pulley (°)
Dp : Large Pulley P.D. (mm)
dp : Small Pulley P.D. (mm)
C : Center Distance (mm)
n : No. of Small Pulley Grooves

Teeth-in-Mesh Correction Factor (Km)

No. of Grooves	over 6	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

MXL Basic Power Rating Pc-per 6.4mm Belt Width

Unit (watt)

No. of Teeth	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40
Pitch Dia. (mm)	7.76	9.06	9.70	10.35	11.64	12.94	14.23	15.52	16.17	16.82	18.11	19.40	20.70	23.29	25.87
100	0.9	1.1	1.1	1.2	1.4	1.5	1.7	1.9	1.9	2.0	2.2	2.3	2.5	2.8	3.1
200	1.9	2.2	2.3	2.5	2.8	3.1	3.4	3.8	3.9	4.1	4.4	4.7	5.0	5.7	6.3
300	2.8	3.3	3.5	3.8	4.2	4.7	5.2	5.7	5.9	6.1	6.6	7.1	7.6	8.5	9.5
400	3.8	4.4	4.7	5.0	5.7	6.3	6.9	7.6	7.9	8.2	8.8	9.5	10.1	11.4	12.6
500	4.7	5.5	5.9	6.3	7.1	7.9	8.7	9.5	9.9	10.3	11.1	11.9	12.6	14.2	15.8
600	5.7	6.6	7.1	7.6	8.5	9.5	10.4	11.4	11.9	12.3	13.3	14.2	15.2	17.1	19.0
700	6.6	7.7	8.3	8.8	10.0	11.1	12.2	13.3	13.8	14.4	15.5	16.6	17.7	19.9	22.2
800	7.6	8.8	9.5	10.1	11.4	12.6	13.9	15.2	15.8	16.5	17.7	19.0	20.3	22.8	25.3
900	8.5	10.0	10.7	11.4	12.8	14.2	15.7	17.1	17.8	18.5	19.9	21.4	22.8	25.7	28.5
1000	9.5	11.1	11.9	12.6	14.2	15.8	17.4	19.0	19.8	20.6	22.2	23.8	25.3	28.5	31.7
1100	10.4	12.2	13.0	13.9	15.7	17.4	19.2	20.9	21.8	22.6	24.4	26.1	27.9	31.4	34.8
1200	11.4	13.3	14.2	15.2	17.1	19.0	20.9	22.8	23.8	24.7	26.6	28.5	30.4	34.2	38.0
1300		14.4	15.4	16.5	18.5	20.6	22.6	24.7	25.7	26.8	28.8	30.9	32.9	37.1	41.2
1400		15.5	16.6	17.7	19.9	22.2	24.4	26.6	27.7	28.8	31.0	33.3	35.5	39.9	44.3
1500		16.6	17.8	19.0	21.4	23.8	26.1	28.5	29.7	30.9	33.3	35.6	38.0	42.8	47.5
1600		17.7	19.0	20.3	22.8	25.3	27.9	30.4	31.7	32.9	35.5	38.0	40.5	45.6	50.7
1700		18.8	20.2	21.5	24.2	26.9	29.6	32.3	33.7	35.0	37.7	40.4	43.1	48.5	53.8
1800		19.9	21.4	22.8	25.7	28.5	31.4	34.2	35.6	37.1	39.9	42.8	45.6	51.3	57.0
2000			23.6	25.3	28.5	31.7	34.8	38.0	39.6	41.2	44.3	47.5	50.7	57.0	63.3
2200			26.8	27.9	31.4	34.8	38.3	41.8	43.6	45.3	48.8	52.2	55.7	62.7	69.6
2400			28.5	30.4	34.2	38.0	41.8	45.6	47.5	49.4	53.2	57.0	60.8	68.3	75.9
2600			32.9	37.1	41.2	45.3	49.4	53.5	55.4	57.3	61.7	66.4	70.8	79.6	88.4
2800			35.5	39.9	44.3	48.8	53.2	57.0	59.3	61.7	66.4	71.2	75.8	85.3	94.6
3000			38.0	42.8	47.5	52.2	57.0	60.8	63.3	65.8	70.8	75.9	80.9	90.9	100.9
3200			40.5	45.6	50.7	55.7	60.8	64.5	67.2	69.9	75.2	80.6	85.9	96.5	107.1
3400				43.1	48.5	53.8	59.2	64.5	67.2	69.9	75.2	80.6	85.9	96.5	107.1
3600				45.6	51.3	57.0	62.7	68.3	71.2	74.0	79.6	85.3	90.9	102.1	113.3
3800					54.1	60.1	66.1	72.1	75.1	78.1	84.0	90.0	95.9	107.7	119.5
4000					57.0	63.6	69.6	75.9	79.0	82.1	88.4	94.6	100.9	113.3	125.6
4200					59.8	66.4	73.0	79.6	82.9	86.2	92.8	99.3	105.8	118.8	131.8
4400					62.7	69.6	76.5	83.4	86.8	90.3	97.1	104.1	110.8	124.4	137.9
4600					65.5	72.7	79.9	87.1	90.7	94.3	101.5	108.6	115.8	129.9	144.0
4800					68.3	75.9	83.4	90.9	94.6	98.4	105.8	113.3	120.7	135.4	150.0

Width Correction Factor(Kw)

Belt Width (mm)	3.2	4.8	6.4	7.9	9.5	12.7
Width Correction Factor	0.45	0.72	1.00	1.30	1.59	2.20

XL Basic Power Rating Pc-per 25.4mm Belt Width

Unit (kW)

No. of Teeth	10	11	12	14	15	16	18	19	20	21	22	24	25	26	28	30
Pitch Dia. (mm)	16.17	17.79	19.40	22.64	24.26	25.87	29.11	30.72	32.34	33.96	35.57	38.81	40.43	42.04	45.28	48.51
100	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
200	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.09
300	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.13
400	0.06	0.06	0.07	0.08	0.09	0.09	0.11	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.16	0.18
500	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.16	0.18	0.19	0.20	0.21	0.23
600	0.09	0.10	0.11	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.20	0.22	0.23	0.24	0.25	0.27
700	0.10	0.11	0.12	0.15	0.16	0.17	0.19	0.20	0.21	0.22	0.23	0.25	0.27	0.28	0.30	0.32
800	0.12	0.13	0.14	0.17	0.18	0.19	0.22	0.23	0.24	0.25	0.27	0.29	0.30	0.32	0.34	0.37
950	0.14	0.16	0.17	0.20	0.21	0.23	0.26	0.27	0.29	0.30	0.32	0.35	0.36	0.38	0.41	0.43
1000	0.15	0.16	0.18	0.21	0.23	0.24	0.27	0.29	0.30	0.32	0.33	0.37	0.38	0.40	0.43	0.46
1160	0.17	0.19	0.21	0.25	0.26	0.28	0.32	0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.50	0.53
1200	0.18	0.20	0.22	0.25	0.27	0.29	0.33	0.35	0.37	0.38	0.40	0.44	0.46	0.48	0.51	0.55
1300	0.20	0.22	0.24	0.28	0.30	0.32	0.36	0.38	0.40	0.42	0.44	0.48	0.50	0.52	0.56	0.59
1425	0.22	0.24	0.26	0.30	0.32	0.35	0.39	0.41	0.43	0.46	0.48	0.52	0.54	0.57	0.61	0.65
1500	0.23	0.25	0.27	0.32	0.34	0.37	0.41	0.43	0.46	0.48	0.50	0.55	0.57	0.59	0.64	0.69
1600	0.25	0.27	0.29	0.34	0.37	0.39	0.44	0.46	0.49	0.51	0.54	0.59	0.61	0.63	0.68	0.73
1750	0.27	0.30	0.32	0.37	0.40	0.43	0.48	0.51	0.53	0.56	0.59	0.64	0.67	0.69	0.75	0.80
1800	0.28	0.31	0.33	0.38	0.41	0.44	0.49	0.52	0.55	0.58	0.60	0.66	0.69	0.71	0.77	0.82
2000	0.31	0.34	0.37	0.43	0.46	0.49	0.55	0.58	0.61	0.64	0.67	0.73	0.76	0.79	0.85	0.91
2200	0.34	0.37	0.40	0.47	0.50	0.54	0.60	0.64	0.67	0.70	0.74	0.80	0.84	0.87	0.94	1.00
2400	0.37	0.41	0.44	0.51	0.55	0.59	0.66	0.70	0.73	0.77	0.80	0.88	0.91	0.95	1.02	1.09
2600	0.40	0.44	0.48	0.56	0.59	0.63	0.71	0.75	0.79	0.83	0.87	0.95	0.99	1.03	1.10	1.18
2850	0.44	0.48	0.52	0.61	0.65	0.70	0.78	0.82	0.87	0.91	0.95	1.04	1.08	1.12	1.21	1.29
3000	0.46	0.51	0.55	0.64	0.69	0.73	0.82	0.87	0.91	0.96	1.00	1.09	1.14	1.18	1.27	1.35
3200	0.49	0.54	0.59	0.68	0.73	0.78	0.88	0.92	0.97	1.02	1.07	1.16	1.21	1.26	1.35	1.44
3450	0.53	0.58	0.63	0.74	0.79	0.84	0.91	1.00	1.05	1.10	1.15	1.25	1.30	1.35	1.45	1.55
3600	0.55	0.61	0.66	0.77	0.82	0.88	0.98	1.04	1.09	1.14	1.20	1.30	1.35	1.41	1.51	1.61
3800	0.58	0.63	0.70	0.82	0.87	0.92	1.04	1.09	1.15	1.21	1.26	1.37	1.43	1.48	1.59	1.69
4000	0.62	0.68	0.74	0.86	0.91	0.97	1.09	1.15	1.21	1.27	1.33	1.44	1.50	1.55	1.67	1.78
4200	0.65	0.71	0.77	0.90	0.96	1.02	1.14	1.21	1.27	1.33	1.39	1.51	1.57	1.63	1.74	1.86
4400	0.68	0.74	0.81	0.94	1.00	1.07	1.20	1.26	1.33	1.39	1.45	1.58	1.64	1.70	1.82	1.94
4600	0.71	0.78	0.85	0.98	1.05	1.12	1.25	1.32	1.38	1.45	1.52	1.64	1.71	1.77	1.90	2.02
4800	0.74	0.81	0.88	1.03	1.09	1.16	1.30	1.37	1.44	1.51	1.58	1.71	1.78	1.84	1.97	2.10

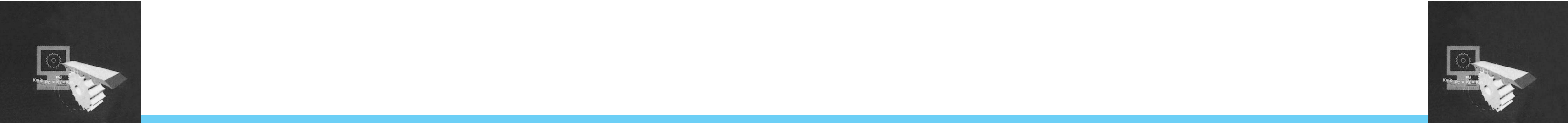
Width Correction Factor(Kw)

Belt Code	025	031	037	050	075	100	150
Belt Width (mm)	6.4	7.9	9.5	12.7	19.1	25.4	38.1
Width Correction Factor	0.15	0.21	0.28	0.42	0.71	1.00	1.56

Note 1: In  portion, the belt life is reduced in accordance with the relationship between pulley diameter and rpm.

Note 2: The selected pulley diameter (pitch diameter) should be larger than the belt width with the difference as large as possible.

Note 3: When using a non-standard pulley or rpm which is not provided in a table, calculate proportionally from the nearest values.



■ L Basic Power Rating Pc-per 25.4mm Belt Width

Unit (kW)

No. of Teeth	10	12	14	16	18	19	20	21	22	24	26	28	30	32	36	40	44	48	
Pitch Dia (mm)	30.32	36.38	42.45	48.51	54.57	57.61	60.64	63.67	66.70	72.77	78.83	84.89	90.96	97.02	109.15	121.28	133.40	145.53	
r.p.m. Of Faster Shaft	100	0.04	0.04	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.10	0.11	0.12	0.13	0.15	0.17	0.18
	200	0.08	0.09	0.10	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.20	0.21	0.23	0.24	0.27	0.30	0.34	0.37
	300	0.12	0.13	0.16	0.18	0.20	0.22	0.23	0.24	0.25	0.27	0.30	0.32	0.34	0.37	0.41	0.46	0.51	0.55
	400	0.16	0.18	0.21	0.24	0.27	0.29	0.30	0.32	0.34	0.37	0.40	0.43	0.46	0.49	0.55	0.61	0.68	0.74
	500	0.19	0.23	0.27	0.30	0.34	0.36	0.38	0.40	0.42	0.46	0.50	0.54	0.58	0.61	0.69	0.77	0.85	0.92
	600	0.23	0.27	0.32	0.37	0.41	0.44	0.46	0.48	0.51	0.55	0.60	0.64	0.69	0.74	0.83	0.92	1.02	1.10
	700	0.27	0.32	0.37	0.43	0.48	0.51	0.54	0.56	0.59	0.64	0.70	0.75	0.81	0.86	0.97	1.07	1.18	1.28
	800	0.31	0.37	0.43	0.49	0.55	0.58	0.61	0.64	0.68	0.74	0.80	0.86	0.92	0.98	1.10	1.22	1.35	1.46
	950	0.37	0.44	0.51	0.58	0.66	0.69	0.73	0.77	0.80	0.87	0.95	1.02	1.09	1.16	1.31	1.45	1.59	1.73
	1000	0.39	0.46	0.54	0.61	0.69	0.73	0.77	0.81	0.84	0.92	1.00	1.07	1.15	1.22	1.37	1.52	1.67	1.81
	1160	0.45	0.53	0.62	0.71	0.80	0.85	0.89	0.93	0.98	1.07	1.15	1.24	1.33	1.41	1.59	1.76	1.93	2.09
	1200	0.46	0.55	0.64	0.74	0.83	0.87	0.92	0.97	1.01	1.10	1.19	1.28	1.37	1.46	1.64	1.81	1.99	2.15
	1300	0.50	0.60	0.70	0.80	0.90	0.95	1.00	1.05	1.09	1.19	1.29	1.39	1.48	1.58	1.77	1.96	2.15	2.32
	1425	0.55	0.66	0.77	0.87	0.98	1.04	1.09	1.14	1.20	1.31	1.41	1.52	1.62	1.73	1.93	2.13	2.34	2.52
	1500	0.58	0.70	0.81	0.92	1.03	1.09	1.15	1.20	1.26	1.37	1.48	1.59	1.70	1.81	2.03	2.24	2.45	2.64
	1600	0.62	0.74	0.86	0.98	1.10	1.16	1.22	1.28	1.34	1.46	1.58	1.70	1.81	1.93	2.15	2.38	2.60	2.80
	1750	0.68	0.81	0.94	1.07	1.20	1.27	1.34	1.40	1.47	1.59	1.72	1.85	1.97	2.10	2.34	2.58	2.81	3.02
	1800		0.83	0.97	1.10	1.24	1.31	1.37	1.44	1.51	1.64	1.77	1.90	2.03	2.15	2.40	2.64	2.88	3.10
	1900		0.88	1.02	1.16	1.31	1.38	1.45	1.52	1.59	1.73	1.86	2.00	2.13	2.27	2.52	2.77	3.02	3.24
	2000		0.93	1.08	1.22	1.37	1.45	1.52	1.59	1.67	1.81	1.96	2.10	2.24	2.38	2.64	2.90	3.15	3.38
	2200		1.02	1.18	1.34	1.51	1.59	1.67	1.75	1.83	1.99	2.14	2.29	2.44	2.59	2.87	3.14	3.40	3.64
	2400		1.11	1.29	1.46	1.64	1.73	1.81	1.90	1.99	2.15	2.32	2.48	2.64	2.80	3.10	3.38	3.64	3.87
	2500		1.15	1.34	1.52	1.70	1.80	1.89	1.97	2.06	2.24	2.41	2.58	2.74	2.90	3.20	3.49	3.75	3.98
	2600		1.20	1.39	1.58	1.77	1.86	1.96	2.05	2.14	2.32	2.52	2.67	2.84	3.00	3.31	3.59	3.86	4.09
	2850		1.13	1.52	1.73	1.93	2.03	2.13	2.23	2.33	2.52	2.71	2.89	3.07	3.24	3.56	3.84	4.10	4.31
	3000		1.38	1.60	1.81	2.03	2.13	2.24	2.34	2.44	2.64	2.84	3.02	3.20	3.38	3.70	3.98	4.23	4.43
	3200			1.70	1.93	2.15	2.27	2.38	2.48	2.59	2.80	3.00	3.19	3.38	3.55	3.87	4.15	4.39	4.56
	3450			1.83	2.07	2.31	2.43	2.54	2.66	2.77	2.99	3.19	3.39	3.58	3.76	4.07	4.33	4.54	4.67
	3600			1.90	2.15	2.40	2.52	2.64	2.76	2.87	3.10	3.31	3.51	3.70	3.87	4.18	4.43	4.61	4.71
	3800			2.00	2.27	2.52	2.65	2.77	2.89	3.01	3.24	3.45	3.66	3.84	4.02	4.31	4.54	4.69	4.73
	4000			2.10	2.38	2.64	2.77	2.90	3.02	3.14	3.38	3.59	3.80	3.98	4.15	4.43	4.62	4.73	4.72
	4200				2.49	2.76	2.89	3.02	3.15	3.27	3.51	3.73	3.93	4.11	4.27	4.53	4.69	4.74	4.66
	4400				2.60	2.87	3.01	3.14	3.27	3.40	3.64	3.85	4.05	4.23	4.38	4.61	4.72	4.72	4.56
	4600				2.70	2.99	3.13	3.26	3.39	3.52	3.76	3.97	4.17	4.33	4.48	4.67	4.73	4.66	4.42
	4800				2.80	3.10	3.24	3.38	3.51	3.64	3.87	4.09	4.27	4.43	4.56	4.71	4.72	4.57	4.23

Width Correction Factor(Kw)

Belt Code	050	075	100	150	200	250	300
Belt Width (mm)	12.7	19.1	25.4	38.1	50.8	63.5	76.2
Width Correction Factor	0.42	0.71	1.00	1.56	2.14	2.72	3.36

■ H Basic Power Rating Pc-per 25.4mm Belt Width

Unit (kW)

No. of Teeth	14	16	18	19	20	21	22	24	26	28	30	32	36	40	44	48	
Pitch Dia (mm)	56.60	64.68	72.77	76.81	80.85	84.89	88.94	97.02	105.11	113.19	121.28	129.36	145.53	161.70	177.87	194.04	
r.p.m. Of Faster Shaft	100	0.18	0.21	0.23	0.25	0.26	0.27	0.28	0.31	0.34	0.36	0.39	0.42	0.47	0.52	0.58	0.63
	200	0.36	0.42	0.47	0.50	0.52	0.55	0.57	0.63	0.68	0.73	0.79	0.84	0.94	1.05	1.16	1.26
	300	0.55	0.63	0.71	0.75	0.79	0.83	0.86	0.94	1.02	1.10	1.18	1.26	1.42	1.57	1.74	1.89
	400	0.73	0.84	0.94	1.00	1.05	1.10	1.15	1.26	1.36	1.47	1.57	1.68	1.89	2.10	2.31	2.52
	500	0.92	1.05	1.18	1.25	1.31	1.38	1.44	1.57	1.71	1.84	1.97	2.10	2.36	2.62	2.89	3.14
	600	1.10	1.26	1.42	1.50	1.57	1.65	1.73	1.89	2.05	2.20	2.36	2.52	2.83	3.14	3.46	3.76
	700	1.29	1.47	1.65	1.75	1.84	1.93	2.02	2.20	2.39	2.57	2.75	2.93	3.30	3.66	4.02	4.38
	800	1.47	1.68	1.89	1.99	2.10	2.20	2.13	2.52	2.73	2.93	3.14	3.35	3.76	4.17	4.58	4.99
	950	1.75	1.99	2.24	2.37	2.49	2.61	2.74	2.99	3.23	3.48	3.72	3.97	4.45	4.93	5.42	5.89
	1000	1.84	2.10	2.36	2.49	2.62	2.75	2.88	3.14	3.40	3.66	3.92	4.17	4.68	5.19	5.69	6.18
	1160	2.14	2.43	2.74	2.89	3.04	3.19	3.34	3.64	3.94	4.23	4.53	4.82	5.41	5.99	6.56	7.12
	1200		2.52	2.83	2.99	3.14	3.30	3.45	3.76	4.07	4.38	4.68	4.99	5.59	6.18	6.77	7.35
	1300		2.73	3.06	3.23	3.40	3.57	3.74	4.07	4.40	4.73	5.06	5.39	6.03	6.67	7.30	7.91
	1425		2.99	3.35	3.54	3.72	3.91	4.09	4.45	4.81	5.17	5.53	5.89	6.59	7.27	7.95	8.61
	1500		3.15	3.53	3.72	3.92	4.11	4.30	4.68	5.06	5.44	5.81	6.18	6.91	7.63	8.34	9.01
	1600		3.35	3.76	3.97	4.17	4.38	4.58	4.99	5.39	5.79	6.18	6.57	7.35	8.10	8.84	9.55
	1750		3.66	4.11	4.33	4.55	4.78	5.00	5.44	5.87	6.31	6.73	7.16	7.98	8.79	9.57	10.32
	1800		3.77	4.22	4.45	4.68	4.91	5.14	5.59	6.03	6.48	6.91	7.35	8.19	9.01	9.81	10.57
	1900		3.97	4.46	4.70	4.93	5.17	5.41	5.89	6.35	6.82	7.27	7.73	8.61	9.46	10.28	11.06
	2000		4.18	4.69	4.94	5.19	5.44	5.69	6.18	6.67	7.16	7.63	8.10	9.01	9.89	10.74	11.53
	2100			4.91	5.18	5.44	5.70	5.96	6.48	6.99	7.49	7.98	8.47	9.41	10.32	11.18	11.99
	2200			5.14	5.42	5.69	5.96	6.23	6.77	7.30	7.82	8.33	8.83	9.81	10.73	11.62	12.43
	2300			5.37	5.66	5.94	6.22	6.50	7.06	7.61	8.15	8.68	9.19	10.19	11.14	12.03	12.85
	2400			5.59	5.89	6.18	6.48	6.77	7.35	7.91	8.47	9.01	9.55	10.57	11.53	12.43	13.25
	2500			5.82	6.13	6.43	6.73	7.03	7.63	8.22	8.79	9.35	9.89	10.94	11.91	12.82	13.63
	2600			6.04	6.36	6.67	6.99	7.30	7.91	8.52	9.10	9.68	10.24	11.30	12.28	13.19	13.99
	2850			6.59	6.94	7.27	7.61	7.95	8.61	9.25	9.87	10.48	11.06	12.16	13.15	14.04	14.80
	3000			6.92	7.28	7.63	7.98	8.33	9.01	9.68	10.32	10.94	11.53	12.64	13.63	14.50	15.21
	3200			7.35	7.73	8.10	8.47	8.83	9.55	10.24	10.90	11.53	12.14	13.25	14.22	15.04	15.67
	3450			7.88	8.29	8.68	9.07	9.45	10.19	10.91	11.59	12.24	12.85	13.95	14.87	15.60	16.09
	3600				9.01	9.41	9.18	9.18	10.57	11.30	11.99	12.64	13.25	14.33	15.21	15.87	16.26
3800				9.46	9.88	10.28	11.06	11.80	12.50	13.15	13.75	14.80	15.60	16.14	16.38		
4000				9.90	10.32	10.73	11.53	12.28	12.99	13.63	14.22	15.21	15.92	16.32	16.37		
4200				10.32	10.76	11.18	11.99	12.75	13.44	14.08	14.65	15.56	16.16	16.40	16.23		
4400				10.74	11.18	11.61	12.43	13.19	13.87	14.49	15.03	15.86	16.31	16.37	15.94		
4600					11.14	11.60	12.03	12.85	13.60	14.28	14.87	15.37	16.09	16.39	16.22	15.51	
4800					11.54	12.00	12.43	13.25	13.99	14.65	15.21	15.67	16.26	16.37	15.96	14.93	

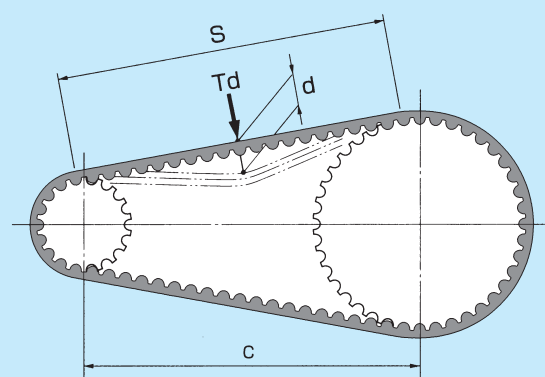
★Simple Measuring Method

- Apply a force (Td) to the back side of the belt at mid-span between two pulleys.
- Deflect the belt 1/64 of span length.
- Be sure to fix the motor and the bearing stand at driven side securely during this operation.

$$S = \sqrt{C^2 - \frac{(D_p - d_p)^2}{4}}$$

Dp : Large Pulley P.D. (mm)
dp : Small Pulley P.D. (mm)
C : Center Distance (mm)
S : Span Length (mm)
d : Deflection (mm)

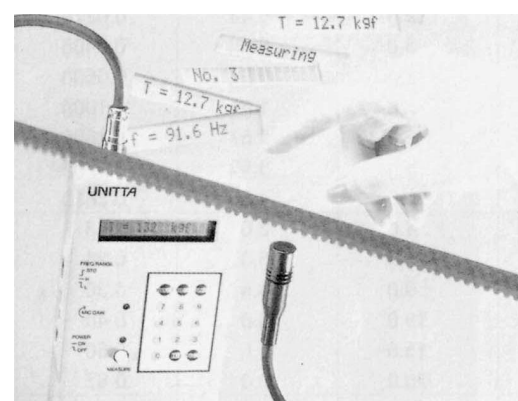
$$d = \frac{S}{64} \div 0.016 \times S$$



S : Span Length (mm) Td : Deflection Force (kgf)
d : Deflection (mm) C : Center Distance (mm)

■ How to Measure Installation Tension

Conventionally, there are many factors depending on technician's intuition in measuring the belt tension, and sometimes the results are different depending on a person. Improper tension will cause the premature failure of the belt. The sound wave tension gauge originally developed by UNITTA catches sound waves (natural frequency) generated from the belt by its sensor, and digitally displays the accurate tension through computer processing. Using a tension gauge is recommended in measuring the belt installation tension.

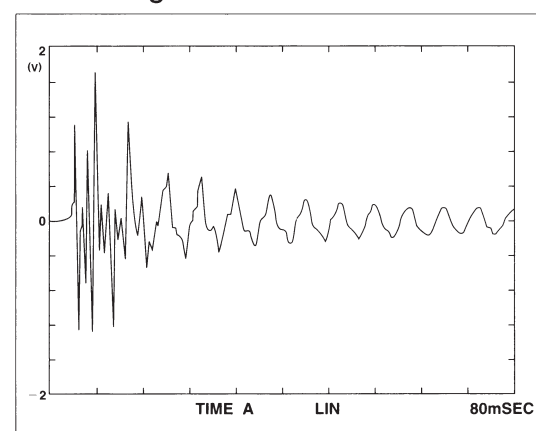


■ Principles of Measuring Belt Tension

Overview

When the belt stretched between pulleys receives impact, it vibrates creating irregular waves which include high frequency components and impact components, then starts to vibrate with its own regular waves as shown right. But these waves decline in a very short time, and vibrations with high-order components are generated, which made the capturing of a basic wave cycle more difficult. However, the originally developed data processing method makes it relatively easy. In this method, vibrating frequencies are captured with the help of microcomputer, and a tension value is calculated by the programmed formulas.

●Declining Vibration of Toothed Belt



Caution ●Any misalignment of pulley may cause a premature failure of belt or coming off from flange. Make an adjustment for proper alignment.

■ Tensioner/Idler

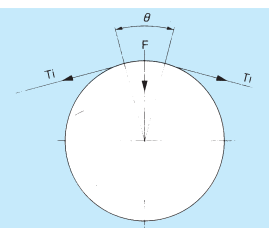
Tensioners (or Tension pulleys) are pulleys which provide tension to the belt when the center distance is fixed. Idlers are pulleys which are used to change the direction of belt running, or to avoid obstacles without any direct relation with power transmission.

Selection of Inside (tooth side) or Outside (back side) Tensioner/Idler

Inside (teeth side) Use

When using toothed pulleys inside, use pulleys with a groove number more than minimally allowed.

Make sure that the number of teeth-in-mesh (T.I.M) with more than 30 degrees of contact angle (ϕ) is three or more as shown below.



ex. When the contact angle is 30 degrees;

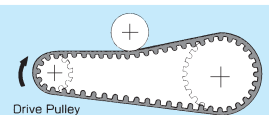
$$\begin{aligned} F &= 2Ti \times \sin \frac{\theta}{2} \\ &= 2Ti \times \sin \frac{30}{2} \\ &= 2Ti \times 0.2588 \\ &= 0.5176Ti \\ &\div 0.5Ti \end{aligned}$$

When the contact angle is not more than 30 degrees, the force of pulley pressing the belt (F) will be 1/2 or less of the initial tension (Ti). As a result, the belt becomes easy to jump, and it may also cause belt tooth wear or noise.

Outside (back side) Use

When using flat pulleys outside, use flat pulleys with no crown (middle and high) with a diameter more than minimally allowed.

Be sure not to bend the belt sharply in installation.



■ Minimum Idler Diameter (Outside Use)

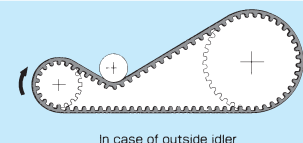
	Type					Unit(mm)
	1.5GT	2GT	3GT	5GT	8YU	
Minimum Idler Diameter	10	12	20	30	60	

	Type				Unit(mm)
	3M	5M	8M	14M	
Minimum Idler Diameter	20	30	60	130	

	Type				Unit(mm)
	MXL	XL	L	H	
Minimum Idler Diameter	7	16	30	60	

●Position of Tensioners

In principle, tensioners should be positioned at the slack side of the belt. When tensioners are installed in order to prevent smaller pulleys from jumping, or to increase the contact angle, the closer to the objective pulley, the more it is effective.



In case of outside idler

■ Drive Alignment (Shaft Parallelism)

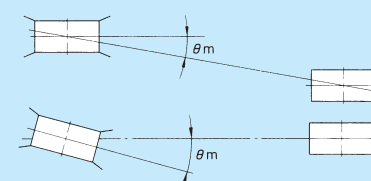
In running the Power Grip GT Belt, the belt always moves to either side instead of staying at the center of pulley (by the side thrust property of belt) and stops at pulley flange.

If the pulley alignment is improper, the belt is strongly pressed to the pulley flange. It may cause not only the wear and damage of the belt side, but sometimes the belt is cut off by running over the flange. In addition, since the elongation of the tensile member is very small, the bigger the pulley alignment error is, the bigger the difference of the belt tension in both sides becomes. It makes the belt life shorter.

Therefore, the pulley alignment should be as accurate as possible. Generally, it should be adjusted within the tolerance shown below.

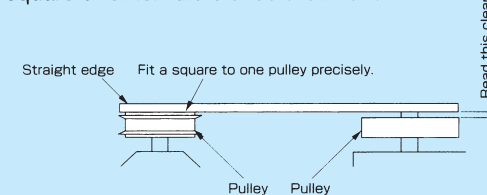
■ Pulley Misalignment Tolerance

Belt Width (mm)	up to 20	over 20 to 40	over 40 to 70	over 70 to 100	over 100
tan θ m	6/1000	5/1000	4/1000	3/1000	2/1000

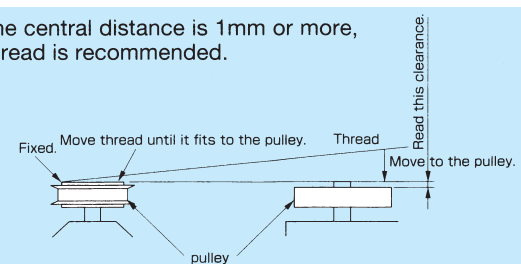


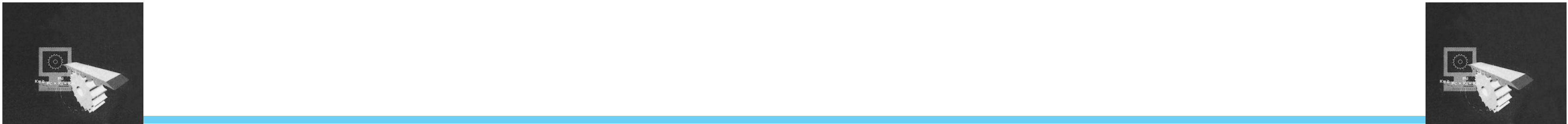
■ How to Adjust Pulley Alignment

①When the central distance is 1mm or less, a square or other rulers should be used.



②When the central distance is 1mm or more, using thread is recommended.





Caution

●Loose belt tension before removing the belt.

Forceful belt installing over flange or with a screwdriver may cause a premature failure.

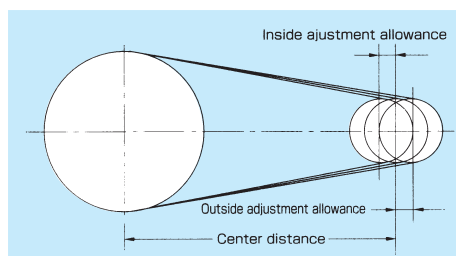
Material which is extremely hard to be stretched is employed as tensile cords of PowerGrip GT Belt.

Therefore the belt can not be installed in case that the center distance is up as the theoretical center distance and forceful installing may cause a tensile cord damage.

Since a little tolerance of belt pitch length, pulley outside diameter or center distance cause a big change of belt installation tension, it is required to adjust the center distance or to set up tensioned to give proper tension.

Adjustment Allowance for Center Distance

Minimum Adjustment allowance for center distance below.



Power Grip GT & HTD

Inside adjustment allowance Unit (mm)

Belt Type	Minimum inside adjustment allowance
1.5GT	4
2GT	4
3GT 3M	5
5GT 5M	10
8YU 8M	20
14M	40

Outside adjustment allowance Unit(mm)

Belt Pitch Length	Minimum outside adjustment allowance
up to 500	3
over 1500 to 1000	5
over 1000 to 2000	10
over 2000 to 3000	15
over 3000 to 4000	20
over 4000	30

Power Grip Timing Belt

Inside adjustment allowance Unit(mm)

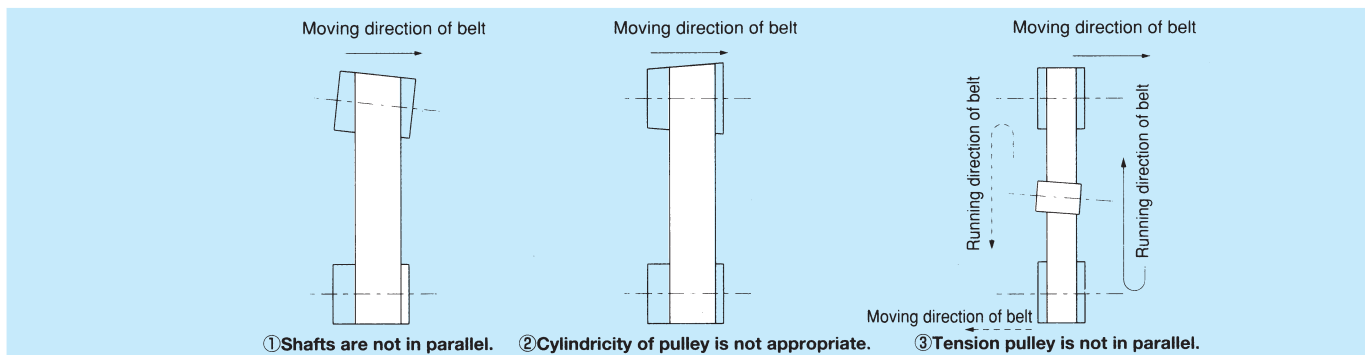
Belt Type	Minimum inside adjustment allowance
MXL	4
XL	5
L	10
H	15

Outside adjustment allowance Unit(mm)

Belt Pitch Length	Minimum outside adjustment allowance
up to 508.0	3
over 508.0 to 990.6	5
over 990.6 to 2032.0	10
over 2032.0 to 3048.0	15
over 3048.0	

Flange Installation

The toothed belt has a character that it moves to either right or left in running direction if the balance goes even slightly out of alignment during operation. The belt is designed to run neutrally, but the following cases will cause the belt to move to either side.



In using the toothed belt, flanges are installed at both sides of the pulley to prevent the belt from deviating from pulley caused by these moves.

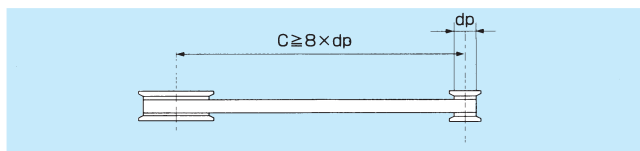
When the center distance is less than 8 times the smaller pulley diameter, install flanges at both sides of either pulley.



Otherwise, install one flange to both pulleys at the opposite side.

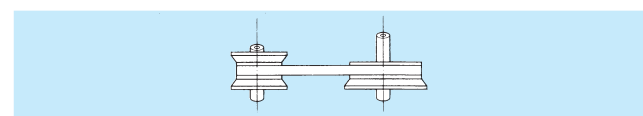


When the center distance is more than 8 times the smaller pulley diameter, install flanges to both pulleys.



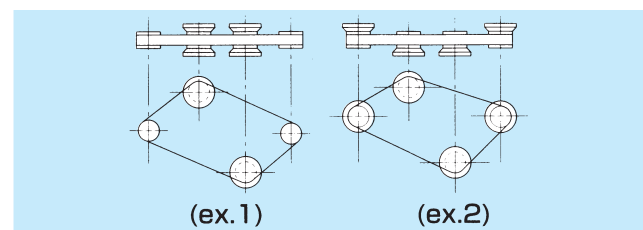
In Horizontal Shaft Drive;

Since there is a possibility that the belt may move out downward because of its weight, install flanges to both sides of one pulley and down side of the other.



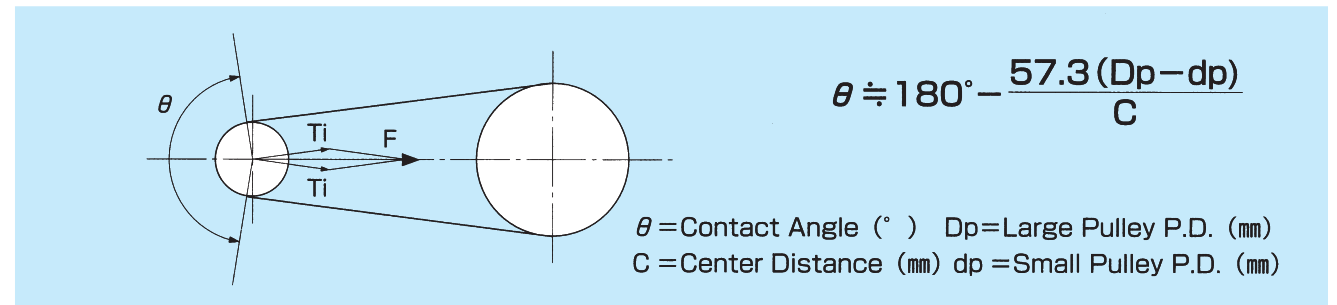
In Multi-Pulley Drive;

Install flanges to both sides of every other pulley (ex.1), or one side of every pulley by turns (ex.2).



Shaft Load

Calculate the shaft load, using the following formulas.



Shaft load at rest(Fa)

$$\theta = 180^\circ \rightarrow Fa = 2 \times Ti$$

$$\theta < 180^\circ \rightarrow Fa = 2 \times Ti \times \sin \frac{\theta}{2}$$

$$\theta > 180^\circ \rightarrow Fa = 2 \times Ti \times \sin \frac{360^\circ - \theta}{2}$$

θ = Contact Angle
F = Shaft Load
Ti = Installation Tension

Shaft load in drive(Fb)

$$1. Ti > \frac{Te}{2}$$

$$\theta = 180^\circ \rightarrow Fb = 2 \times Ti$$

$$\theta < 180^\circ \rightarrow Fb = 2 \times Ti \times \sin \frac{\theta}{2}$$

$$\theta > 180^\circ \rightarrow Fb = 2 \times Ti \times \sin \frac{360^\circ - \theta}{2}$$

Te = Effective Tension
 θ = Contact Angle
F = Shaft Load
Ti = Installation Tension
Tt = Tight Side Tension
Ts = Slack Side Tension

$$2. Ti \leq \frac{Te}{2}$$

$$\theta = 180^\circ \rightarrow$$

$$\theta < 180^\circ \rightarrow$$

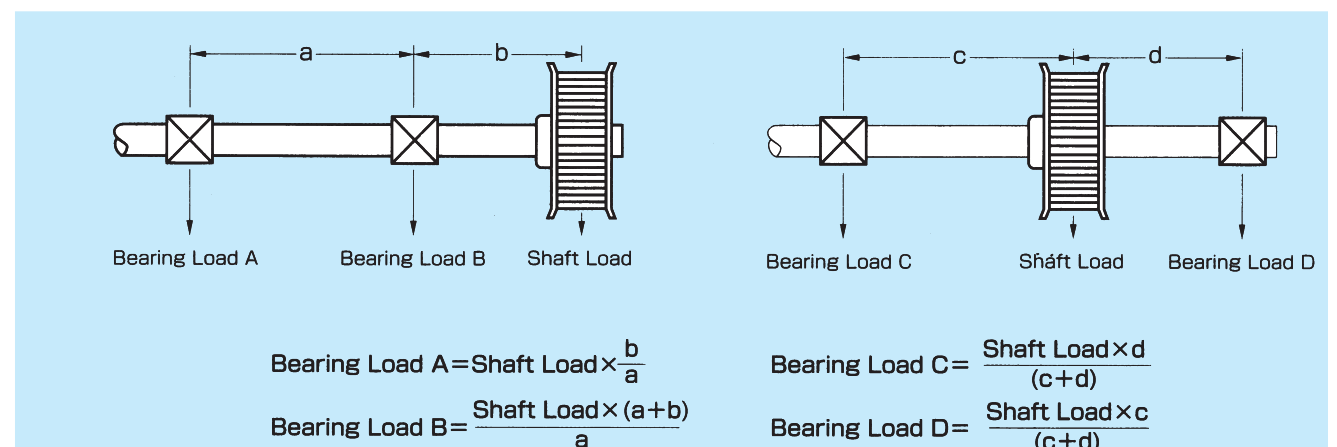
$$\theta > 180^\circ \rightarrow$$

$$Fb = Te$$

Te = Effective Tension
 θ = Contact Angle
F = Shaft Load
Ti = Installation Tension
Tt = Tight Side Tension
Ts = Slack Side Tension

Bearing Load

Calculate the bearing load, using the following formulas.



$$\text{Bearing Load A} = \text{Shaft Load} \times \frac{b}{a}$$

$$\text{Bearing Load B} = \frac{\text{Shaft Load} \times (a+b)}{a}$$

$$\text{Bearing Load C} = \frac{\text{Shaft Load} \times d}{(c+d)}$$

$$\text{Bearing Load D} = \frac{\text{Shaft Load} \times c}{(c+d)}$$

Storage • Transport

Belt Specification

Special operating environment	Belt specifications	Instructions on use
Use in Multi-pulley drive and High-speed revolution	Belt with aramid tensile members	In principle, use for multi-pulley drive with 6 or less shafts. Contact us when using for multi-pulley drive with 7 or more shafts. Since heavy pulley wear may cause premature failure of belt, use abrasion resistant materials for pulley, or provide surface treatment.
Use in environment with water	Belt with aramid tensile members	In principle, prevent the belt from getting water. Especially, using a belt in water or under conditions in which water is caught in belt teeth will cause premature failure. If pulleys gather rust, provide surface treatment.
Use in environment where static electricity generated from belt may cause a fire or malfunction of machine	Antistatic belt Electric resistance value of belt is 300MΩ (3.0×10 ⁵ Ω or less) when applied voltage is 500V.	 Warning When there is a possibility of occurring a fire or a malfunction of control device because of static electricity developed by a belt transmission drive, use the special type of belt which prevents electrostatic buildup and install a static eraser to the equipment.
Use in environment where conductivity of belt may cause malfunction of machine	Non-conductive belt Electric resistance value of belt is 100MΩ (1.0×10 ⁸ Ω or less) when applied voltage is 500V.	 Caution Do not use a belt as an insulator. The insulating property is different depending on the types of belts. Please contact us for more information.
Use in environment where belts get oil all the time	Oil resistant belt	In principle, prevent the belt from getting oil. Using an oil resistant belt may still cause decrease of belt life depending on oil types.
Use in high temperature environment (120°C or lower)	Heat resistant belt	Since belt life changes considerably depending on temperatures and use hours, contact us when using a belt in high temperature environment.
Use in low temperature environment (-30°C or higher)	Cold resistant belt	Do not use a cold resistant belt at high temperatures. Available temperatures (-30°C to +40°C)

Unit Weight of Toothed Belt with Standard Construction

1. Timing Belt

Type	MXL	XXL(50)	XL	L	H
Pitch(mm)	2.032	3.175	5.080	9.525	12.70
Unit Weight (gf/mm Width×m Length)	1.2	1.4	2.1	3.1	3.8

2. HTD Belt

Type	3M-HTD	5M-HTD	8M-HTD	14M-HTD
Pitch(mm)	3.0	5.0	8.0	14.0
Unit Weight (gf/mm Width×m Length)	2.4	3.8	6.1	10.0

3. GT Belt

Type	1.5GT	2GT	3GT	5GT	8YU
Pitch(mm)	1.5	2.0	3.0	5.0	8.0
Unit Weight (gf/mm Width×m Length)	0.9	1.3	2.5	4.0	5.2



Caution

- Do not bend a belt by force, or transport or store with heavy materials on it. It may leave improper form or flaws on it, and cause a premature failure.

Since glass fiber cords are employed for the tensile member, be careful not to bend the belt to a small size or sharply. It may damage the tensile member and cause premature failure of belt.



10mm
20mm
30mm
50mm

Tolerance

1.5GT	7mm	MXL	10mm
2GT	10mm	XL	20mm
3GT,3M	15mm	L	30mm
5GT,5M	25mm	H	50mm
8YU,8M	40mm	XH	120mm
14M	70mm	XXH	180mm
20M	210mm		

When the belt might be bent more sharply than tolerance, place a pulley or a round bar so that a sharp angle will not be generated.



Danger

- Be sure to install safety covers in rotating sections including belts and pulleys as there is a possibility that hair, gloves, and clothes may be caught in belts or pulleys. In addition, if belt shear or pulley failure occurs, broken pieces of them may spin off and cause injury.
- Follow the precautions below when carrying out maintenance, inspection, and replacement work for belts.
 - Be sure to turn off the switch and carry out the work after belts and pulleys have completely stopped.
 - If equipment may start to run by removing belts, secure the moving parts before starting the work.
 - Be sure not to turn on the switch accidentally during the work.



Caution

- When replacing a belt or pulley, use the same type product. Using a different type of product may cause a premature failure.
- Store belts in a place with low humidity at temperatures from -10°C to 40°C. Keep belts out of direct sunlight in storage.
- When transporting or dealing with heavy belts or pulleys, use appropriate transport apparatus or devices. Lifting them up by hands may cause back trouble.

Treatment After Use



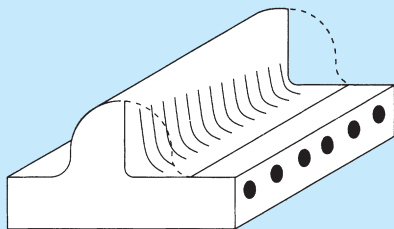
Caution

- Do not burn belts because poisonous gas will be emitted.

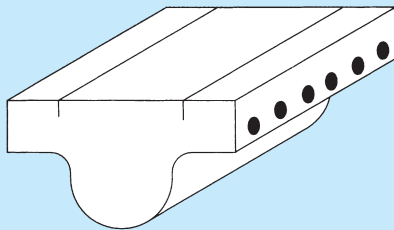
Guidance for replacing belt and pulley

In case that a pulley or a belt is found as the state below, Please replace it with new one as soon as possible.

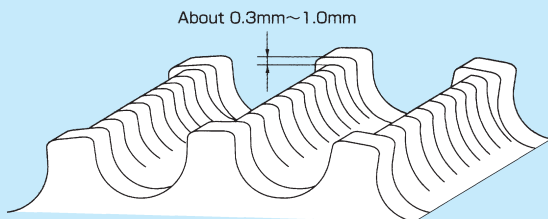
Tooth wear (about half of tooth width) of the belt



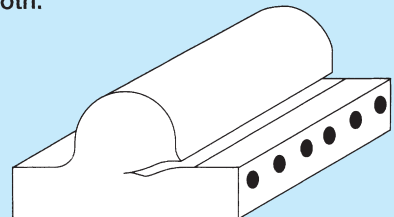
Cracks on the neoprene backing of the belt



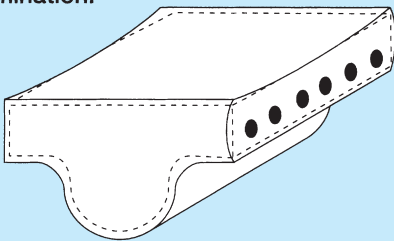
Groove wear of the pulley



Cracks (about half of tooth width) at the root of the belt tooth.



Heavy swelling of the belt due to the heavy oil contamination.



Causes and Remedies of Premature Failure

Causes and Remedies of Premature Failure

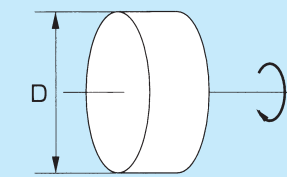
Type of Failure	Cause of Failure	Corrective Action
1. Belt cut	① Excessive load ② Machine accident ③ High-speed rotation of small pulley ④ Degradation of tensile member caused by water ⑤ Belt bending ⑥ Foreign substance is caught in	Design change required Check operating conditions Change to aramid tensile member Install waterproof cover, Change to aramid tensile member Handle with care Improve environment, Install noise-proof cover
2. Belt tooth wear	① Excessive load ② Belt tension is excessive (excessive tension) ③ Belt tension is too loose ④ Outer diameter of pulley is in abnormal conditions	Design change required Adjust to proper tension Adjust to proper tension Change to proper pulley
3. Belt tooth shear	① Excessive load caused by shock ② Machine accident ③ Insufficient initial tension ④ Inertia at start/stop is not taken into account	Design change required Check operating conditions Adjust to proper tension Design change required
4. Belt tooth jumping	Same as 3-①~④, belt is finally sheared.	
5. Belt bottom wear	① Belt tension is excessive (excessive tension)	Adjust to proper tension
6. Belt side wear	① Pulley alignment failure ② Insufficient rigidity of shaft and bearing ③ Distortion or deformation of pulley flange ④ Surface of pulley flange is rough	Adjust alignment Pay attention to shaft load and provide reinforcement Use proper flange Use proper flange
7. Vertical tear of belt	① Belt side is out of pulley in running ② Belt is running over pulley flange ③ Belt is forcefully installed over flange	Adjust alignment, Add pulley flange Adjust alignment, Add pulley flange Handle with care
8. Wear of neoprene backing	① Misalignment of pulley facing neoprene backing	Adjust alignment
9. Hardening of neoprene backing	① Belt rubber degradation caused by high temperatures ② Heating caused by contact with obstacles ③ Bearing of outside idler pulley is in abnormal conditions ④ Contact with obstacles caused by belt chord vibration	Lower environment temperature, Change to heat resistant belt Remove obstacles Check heating source and repair Remove obstacles, Add idler pulley
10. Cracks in neoprene backing	① Belt rubber degradation caused by high temperatures ② Rubber gradation caused by ozone ③ Operation in low temperature environment	Lower environment temperature, Change to heat resistant belt Isolate from ozone source Lower environment temperature, Use cold resistant belt
11. Hardening or deformation of belt	① Oil contamination	Avoid oil contamination, Change to oil resistant belt
12. Contraction of belt	① Oil contamination	Avoid oil contamination, Change to oil resistant belt
13. Abnormal noise	① Excessive load ② Belt tension is too loose ③ Deformation of pulley groove ④ Belt width is too wide for pulley diameter ⑤ Excessive design	Design change required Adjust to proper tension Change to proper pulley Design change required Reduce belt width
14. Pulley groove wear	① Excessive load ② Belt tension is excessive ③ Built-up of abrasive dust ④ Pulley material is not appropriate	Design change required Change to proper pulley Improve environment, Install noise-proof cover Change materials, Provide hardening treatment to surface

Case1

$$GD^2 = 4gI$$

GD^2 : Inertia (kgf·m²)
 g : Acceleration of gravity (9.8m/s²)
 I : Moment of Inertia (kg·m·s²)

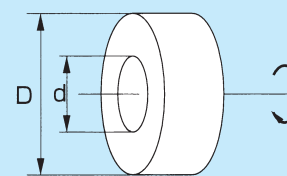
Case2



$$GD^2 = \frac{1}{2}WD^2$$

W : Weight of rotary body (kgf)
 D : Diameter of rotary body (m)

Case3

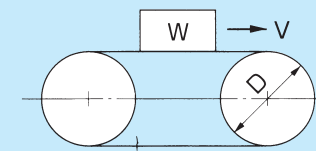


$$GD^2 = \frac{1}{2}W(D^2 + d^2)$$

W : Diameter of rotary body (kgf)
 D : Outside diameter of rotary body (m)
 d : Inside diameter of rotary body (m)

Case4

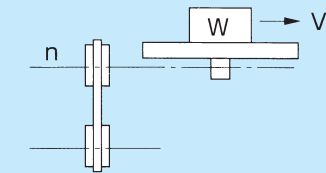
a) Conveyor



$$GD^2 = WD^2$$

W : Weight of work (kgf)
 D : Pulley diameter (m)

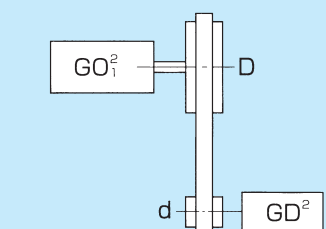
b) Table



$$GD^2 = W \left(\frac{V}{\pi n} \right)^2$$

W : Weight of work and table (kgf)
 n : Revolution of drive shaft (r.p.m.)
 V : Velocity of work (m/min)

Case5



$$GD^2 = GD_1^2 \times \left(\frac{d}{D} \right)^2$$

D : No. of driven pulley grooves
 d : No. of driving pulley grooves

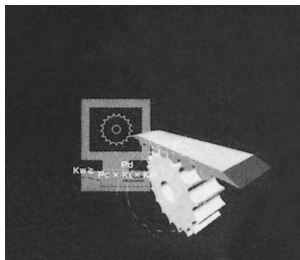
No. of driven pulley grooves

$$\text{Torque } Tr_G = \frac{GD^2 \times (n_1 - n_2)}{375 \times t} \text{ (kgf·m)}$$

Where $(n_1 - n_2)$: Change of revolution (r.p.m.)
 t : Required time for $(n_1 - n_2)$ (sec)

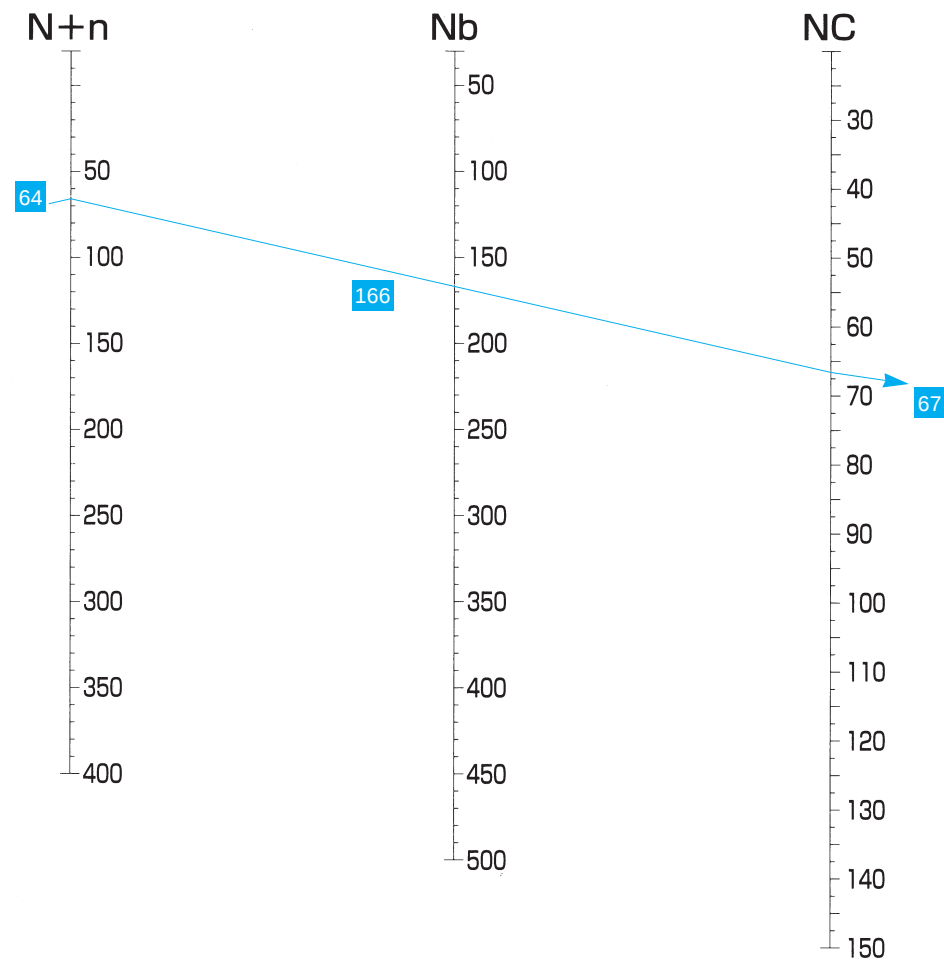
$$\text{Power } Pd = \frac{Tr_G \times n}{974} \text{ (kW)}$$

n : Revolution of driven shaft (r.p.m.)



DESIGN NOMOGRAPH

In the first step of belt design, an approximate belt length can be easily determined.
Use this chart with the Center Distance Factor Table.



Nb : No. of Belt Teeth
N+n : No. of Large Pulley Grooves + No. of Small Pulley Grooves
NC : Center Distance Correction

【Calculation Example】

Belt Pitch : 3.0mm
Selected Center Distance : 200mm
Small Pulley : P16
Large Pulley : P48

Center Distance Correction $NC = \text{Selected Center Distance} \div \text{Pitch}$
 $= 200 \div 3 \div 67$
 $N+n = 48 + 16 = 64$

In the Center Distance Calculation Chart, link two values, (N+n) and NC, then read the value of Nd on the linked line (solid line). The approximate value "166" is obtained.

Approximate Belt Length = Nb × Pitch
 $= 166 \times 3 = 498\text{mm}$

Select the belt length nearest to this value from the Belt Size Table. The result is "501-3GT".

● ゲイツ・ユニッタ・アジア 歯付きベルト商品群ポジション

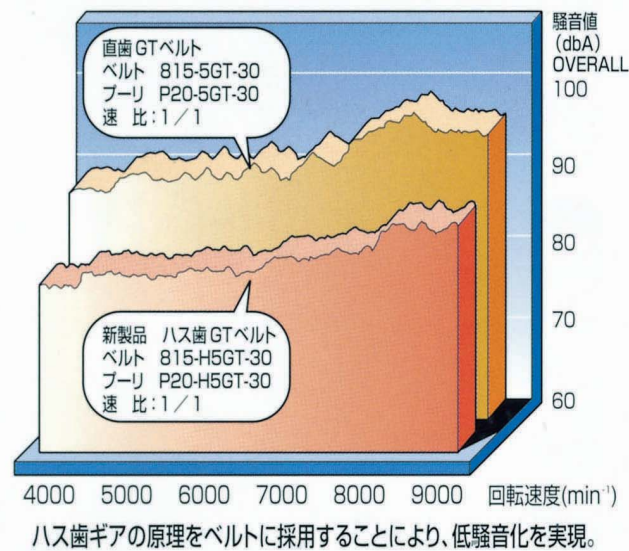


● ゲイツ・ユニッタ・アジア製品の特長

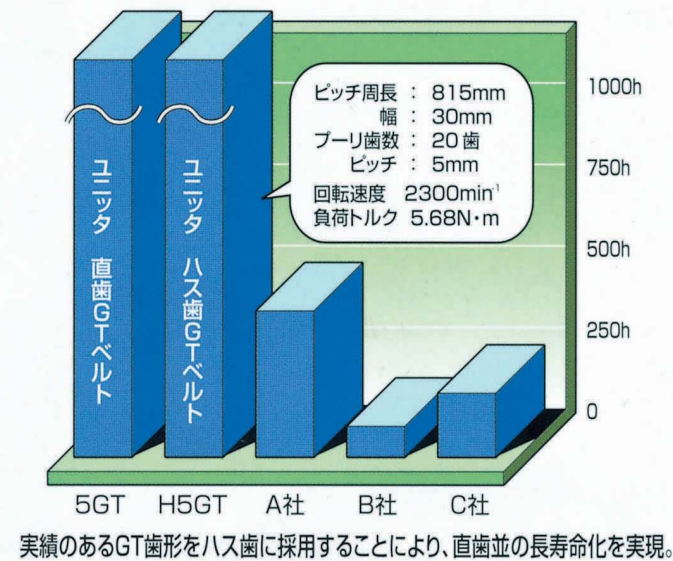
- ① ユニッタ独自のインボリュートかみ合い**
第3世代歯形(GT歯形)は自動車エンジンのカムシャフト駆動にも数多く採用され、その優れた耐久性及び静音性は幅広く認められています。
- ② 豊富なベルト種類**
時代のニーズに応じて多彩な製品ラインナップを用意、様々な領域でお客様の企業活動をサポートします。
- ③ 新商品開発**
タイミングベルト専門メーカーとして常に新製品の開発、新アプリケーションの発掘に全力で取り組んでおります。

低騒音はハス歯から。

騒音特性



寿命特性



H3GT



H5GT



H8YU



ベルトの呼び方

300 - H3GT - 6

ベルト幅 (mm)

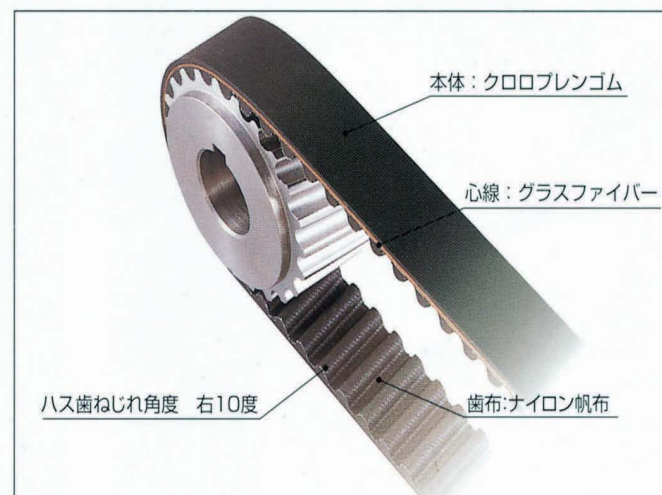
タイプ記号

ピッチ周長 (mm)

※ベルト幅は、現行のGTベルトに準じた幅が製作可能です。
※ベルト長については、弊社にお問い合わせ下さい。
※注意事項に関しては「ベルトを安全にご使用いただくために」
をお読み下さい。



ベルト構成



INFORMATION

大幅機能アップで使いやすさが向上。
今まで以上のコストパフォーマンスでさらに高機能を実現した
ゲイツ・ユニッタ・アジアの音波式張力計。

音波を解析することにより、非接触でベルト張力を解析する
画期的なテンションメータがさらにグレードアップ (特許出願中)

ベルトの寿命とも大きく関わりのあるベルトの張力測定は、これまで測定する人の勘に頼る要素が多く、
時として測定結果にはかなりの個人差を伴うことがありました。そこで誰にでも簡単かつ正確に測定
できることを目的に開発したのが、音波式ベルト張力計です。ベルトから発生させた音波(自然周波数)を
センサが捕らえ、それを高機能コンピュータで処理。ベルト張力を正確にデジタル表示します。
新製品のU-507は、従来機種をご利用いただいているお客様からのご意見を活かして
液晶画面表示において、より見やすくかつ情報量の拡大を実現。
いっそう使いやすく生まれ変わりました。また、マイク感度の向上や周波数のエリアの拡大など
多くの新機能も盛り込みつつさらに、今まで以上のコストパフォーマンスも実現させています。

● ベルト張力の計測原理

概要

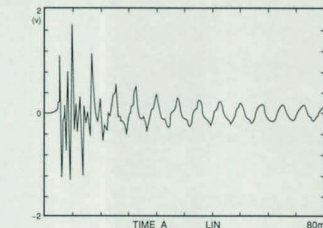
プーリ間に張られたベルトに衝撃を加えると、当初ベルトは高周波成分や衝撃成分を含む不規則
な波形で振動し、その後ベルト固有の不規則な波形へ推移します。その振動の発生などと併せて、
これまで基本波形の周期を捕えることはとても困難でした。しかしマイクロコンピュータを駆使
した振動周波数を捕える独自のデータ処理の開発によってこれを実現。プログラムに組み込まれ
た演算式により正確な張力値を表示します。
特許: No.1931781

● 演算式

$$\text{張力値: } T_0 = 4 \times M \times W \times S^2 \times f^2 \times 10^{-9} \text{ N}$$

M: 単位質量 (ベルトの場合: g/1m長さ×1mm幅当たり
ワイヤの場合: g/1m長さ当たり)
W: 幅 (ベルトの場合: ベルト幅をmm単位で入れる
ワイヤの場合: 「1本」を表す「1」を入力)
S: 測定スパン長さ (mm)
f: センサにより計測されたベルト1次固有振動数 (Hz)

● 歯付ベルトの振動減衰推移



製品の入口 (設計) から出口 (トレサビリティ体系) まで保証

設計部門

要望

張力の変化が機械性能にど
う影響するのか、数値で押
え込みたい。

解決策

高精度な位置決め精度や、
回転精度を要求される用途
でも、個人差無くデジタル
で張力値を表示します。張
力値と性能の相関が容易に
取れます。

製造部門

要望

現場で、簡単に、張力をバ
ラツキなく、測定したい。

解決策

持ち運びに便利な軽量、コン
パクトな仕様。様々な現場
や、客先での張力測定も容
易。各種機器のメンテナ
ンス管理に有効です。

品証部門

要望

設定の管理、検証の為に使
用したいが販売体制はどう
なっているのか?

解決策

ISO9000の取得等で必須条
件となる計測機器のトレサ
ビリティ体系を確立してい
ます。検査成績表とトレサ
ビリティ証明書が発行体制
を完備。

