

Design Manual

V-Belt **RMA**

Classical V-Belts for RMA / MPTA
 Maxstar Wedge V-Belts for RMA / MPTA
 Narrow V-Belts for DIN

MITSUBOSHI

To give after the consideration to both humanity and nature.



Belt Application Designing Program can be downloaded at:
https://www.mitsuboshi.co.jp/english/sien/sien_dl.html

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

$$= \frac{1.6 \times L_s}{100}$$

$$T \delta = \frac{1}{10}$$

$$\frac{C}{C} \times (D_p - d_p)$$

High Performance

High Precision

High Quality

Mutual trust and confidence

Safety Precautions

Please read all the warnings!

- Please take all necessary precautions when using our products. Also, please review relevant product catalog and design documents, etc.

Significances of safety precautions are categorized as follows:

Signs	M e a n i n g s
 Danger	Imminently causing death or severe injury to the user who misuses products.
 Warning	Possibly causing death or severe injury to the user who misuses products.
 Caution	Possibly causing personal injury or property damage if misused.

Power Transmission Products

Use	
 Danger	● If you expect that a belt will fail and idle, free-run, or stop the system, thus causing a fatal or severe accident, please provide an extra safety device. ● Do not use a belt as a lifting or towing tool.
 Warning	● If you expect that static electricity will come from the power transmission belt system, thus causing fire or malfunction of the controller, use an antistatic belt and set a neutralization apparatus in the system.
 Caution	● Do not use a belt as an insulator. Contact us for information on insulation properties, which vary in belt type. ● For a belt that touches food directly, use one that complies with the applicable food hygiene law of your country. ● Do not modify a belt, or its quality and performance could deteriorate.

Function & Performance	
 Caution	● Do not use a belt beyond its capacity or for an application other than that specified by the catalog, design documents, etc. This can cause premature failure of the belt. ● If water, oil, chemical, paint, dust, etc. sticks to a belt or pulley, its power transmission could deteriorate and the belt may fail. ● A cogged belt makes louder noise during high-speed rotation. If this occurs, use a soundproof cover.

Storage & Transportation	
 Warning	● To store a heavy belt, use a suitable jig or stopper to prevent accidents such as belt toppling or tumbling.
 Caution	● Use suitable equipment to carry/handle a heavy belt or pulley. Otherwise, back injury may result. ● Do not put weight on or bend a belt forcibly to carry or store it. Otherwise, it will produce defects or scratches to the belt, resulting in damage. ● Store the belt in low humidity and a temperature range of -14°F to 104°F . Do not expose belts to direct sunlight.

Mounting & Operation	
 Danger	● Install a safety cover over rotating components including belt/ pulley. Otherwise, hair, gloves and clothing can become entangled in the belt/ pulley. If a belt/pulley breaks, fragments may cause injuries. ● Take the following precautions to maintain, inspect and replace a belt. 1)Turn off power and wait until the belt and pulley have stopped completely. 2)Secure machinery so that it may not move during belt removal. 3)Use caution : Do not unintentionally turn on power.
 Caution	● Use the same type of belts or pulleys per OEM specification. Use of a different type may cause premature failure. ● Misalignment of the pulleys can damage the belt and result in flange failure. Make proper adjustments to system. ● Loosen the belt tension when changing belts. Do not force or stretch a belt over the flange. Do not use a screw driver or other sharp objects into when replacing the belt as this will result in damage. ● Apply the appropriate belt tension as specified by the relevant catalog and design documents, etc. Inappropriate tension could result in damage of the belt and shaft. ● Take the following precautions to modify the pulley in use: 1)Remove burrs and maintain proper pulley angle; 2)Secure accurate dimensions after modification; 3)Maintain the pulley strength after modification. ● Before assembling the flange with the pulley, check for foreign materials between the pulley and flange. Fasten the flange with a caulking tool and so on. Inappropriate installation could result in the flange coming off.

Handling of Used items	
 Caution	● Do not burn belt, or hazardous gas could be produced.

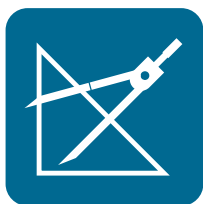


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1

Properties



2

Design



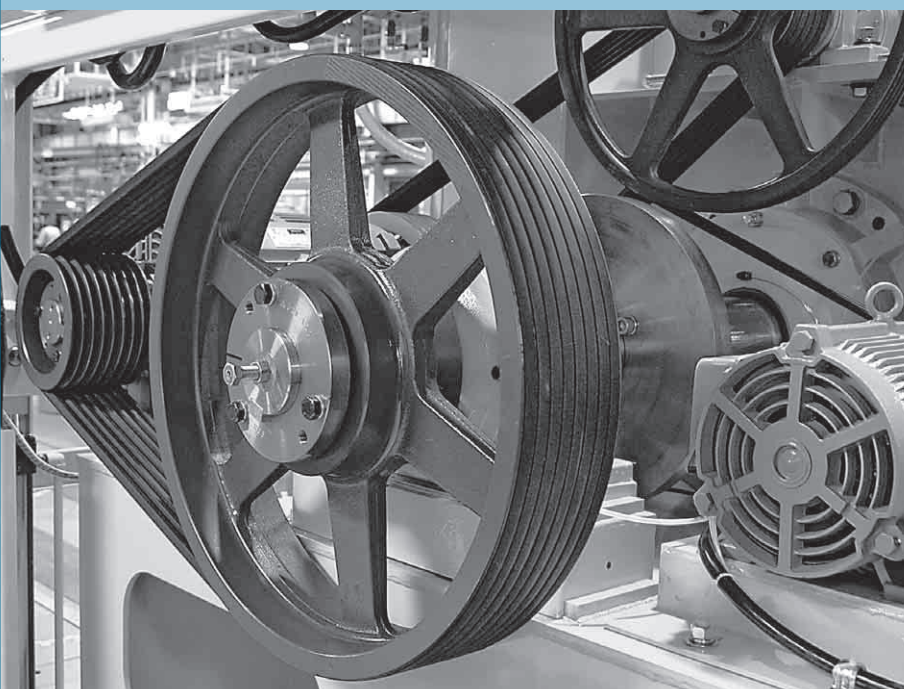
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Reference



1 Properties





1. Properties

Belt Construction

Product Classification

Standard Range

V-Belt pulleys

Belt construction

■ Wrapped V-Belts

"Wrapped" means that the V-Belt core is protected by cover fabric made of cotton or polyester.

The cover fabric is coated with rubber to reinforce the wear resistance.

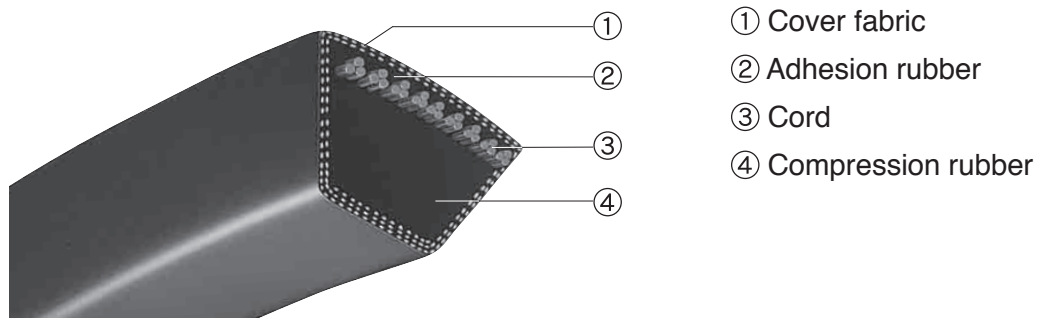


Fig. 1-1

■ Raw Edge V-Belts

Raw Edge V-Belts have no fabric on the belt sides.

The special rubber compound ensures greater wear resistance than Wrapped V-Belts.

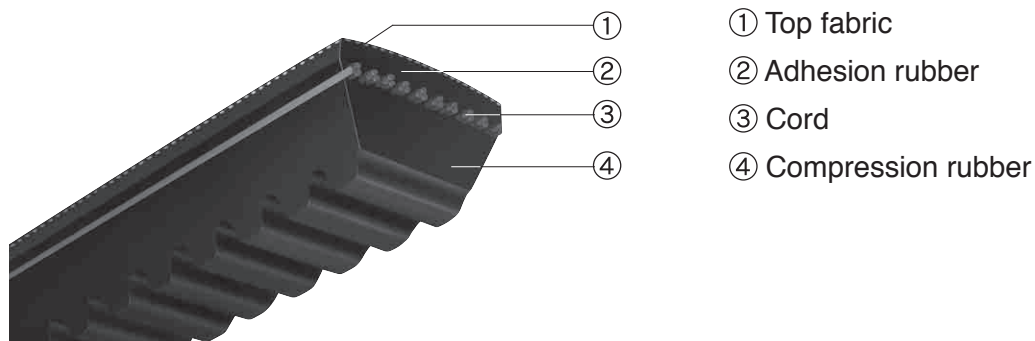


Fig. 1-2



Product Classification

■ Classical V-Belts for RMA / MPTA

Classical V-Belts are most widely used power transmission belts. Economical and easily obtained for replacement.

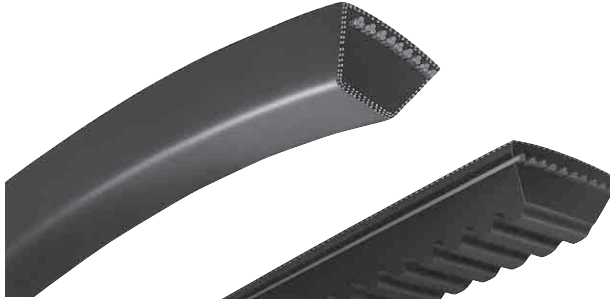


Fig. 1-3

Sections

Wrapped type : A / B / C / D / E

Raw Edge type : AX / BX / CX

Working temperature

Wrapped type : -40 ~ +158°F

Raw Edge type : -22 ~ +194°F

Electrical conductivity

Suitable for RMA IP-3-3

■ Maxstar Wedge V-Belts for RMA / MPTA

Maxstar Wedge V-Belts have double power transmission capacity of classical V-Belts due to greater wedge effect. It features high speed transmission, energy saving, and compact design.

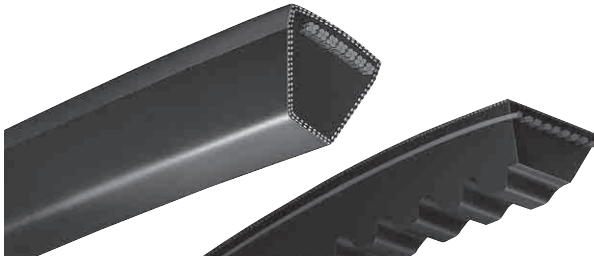


Fig. 1-4

Sections

Wrapped type : 3V / 5V / 8V

Raw Edge type : 3VX / 5VX

Working temperature

-22 ~ +194°F

Electrical conductivity

Suitable for RMA IP-3-3

■ Narrow V-Belts for DIN 7753 / ISO 4184

Narrow V-Belts enable space saving, high speed drive, and reduce the cost of operating and maintenance.

It features oil / heat resistance and electrical conductivity.

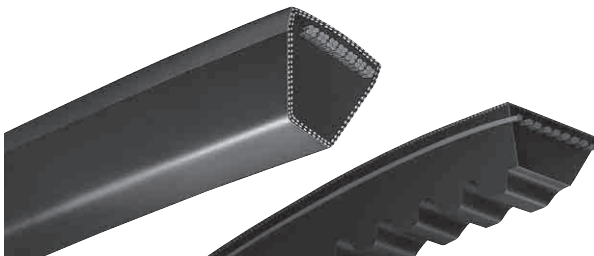


Fig. 1-5

Sections

Wrapped type : SPZ / SPA / SPB / SPC

Raw Edge type : SPZX / SPAX / SPBX / SPCX

Working temperature

-22 ~ +194°F

Electrical conductivity

Suitable for ISO 1813

1

Properties





Multi V-Belts

Multi V-Belts are made up of two or more standard V-Belts connected together at the top of the belts. Multi V-Belts have the advantage of preventing the belts from turning over or getting thrown off the drive even when belt vibration occurs.

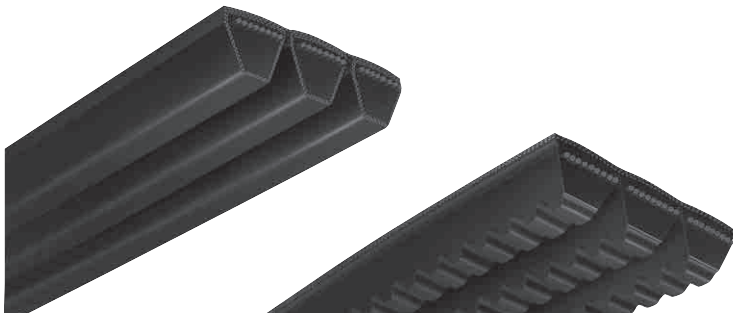


Fig. 1-6

Sections

Wrapped type : B / C / D
3V / 5V / 8V
SPB / SPC
Raw Edge type : BX / CX
3VX / 5VX

Electrical conductivity

Suitable for RMA IP-3-3

Double V-Belts

Double V-Belts are recommended for serpentine drives where the power must be transmitted by both the top and the bottom of the belts. Excellent flexibility in both directions.

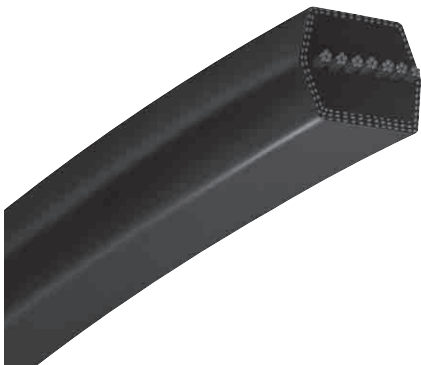


Fig. 1-7

Sections

AA / BB / CC

Electrical conductivity

Suitable for RMA IP-3-3

Perforated open-end V-Belts

Perforated open-end V-Belts are designed for easy installation with metal fasteners and a screwdriver.

These belts are recommended for temporary use or when installation of the standard V-Belts is difficult.

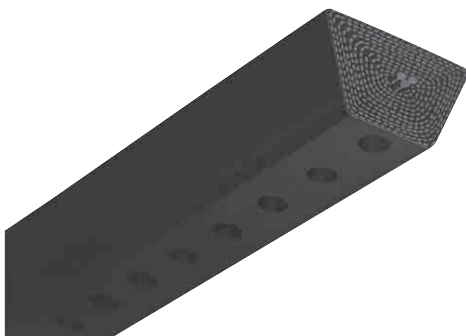


Fig. 1-8

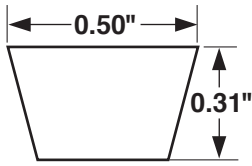
Sections

M / A / B / C

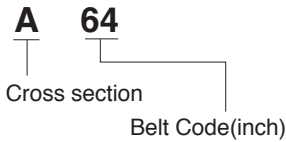
Classical V-Belts for RMA / MPTA

Table 1-1

A/13, AX



Belt indication



A-Section

Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)
20	22	21.3	60	62	61.3	100	102	101.3
21	23	22.3	61	63	62.3	102	104	103.3
22	24	23.3	62	64	63.3	105	107	106.3
23	25	24.3	63	65	64.3	108	110	109.3
24	26	25.3	64	66	65.3	110	112	111.3
25	27	26.3	65	67	66.3	112	114	113.3
26	28	27.3	66	68	67.3	115	117	116.3
27	29	28.3	67	69	68.3	118	120	119.3
28	30	29.3	68	70	69.3	120	122	121.3
29	31	30.3	69	71	70.3	122	124	123.3
30	32	31.3	70	72	71.3	125	127	126.3
31	33	32.3	71	73	72.3	128	130	129.3
32	34	33.3	72	74	73.3	130	132	131.3
33	35	34.3	73	75	74.3	135	137	136.3
34	36	35.3	74	76	75.3	140	142	141.3
35	37	36.3	75	77	76.3	145	147	146.3
36	38	37.3	76	78	77.3	150	152	151.3
37	39	38.3	77	79	78.3	155	157	156.3
38	40	39.3	78	80	79.3	160	162	161.3
39	41	40.3	79	81	80.3	165	167	166.3
40	42	41.3	80	82	81.3	170	172	171.3
41	43	42.3	81	83	82.3	180	182	181.3
42	44	43.3	82	84	83.3	Size range: 20" ~ 360"		
43	45	44.3	83	85	84.3			
44	46	45.3	84	86	85.3			
45	47	46.3	85	87	86.3			
46	48	47.3	86	88	87.3			
47	49	48.3	87	89	88.3			
48	50	49.3	88	90	89.3			
49	51	50.3	89	91	90.3			
50	52	51.3	90	92	91.3			
51	53	52.3	91	93	92.3			
52	54	53.3	92	94	93.3			
53	55	54.3	93	95	94.3			
54	56	55.3	94	96	95.3			
55	57	56.3	95	97	96.3			
56	58	57.3	96	98	97.3			
57	59	58.3	97	99	98.3			
58	60	59.3	98	100	99.3			
59	61	60.3	99	101	100.3			

Available size for Raw Edge Cogged V-Belts AX

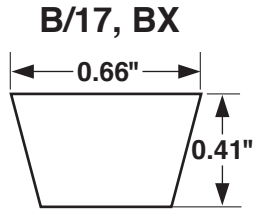
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Properties

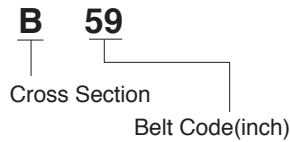


Classical V-Belts for RMA / MPTA

Table 1-2



Belt indication



B -Section

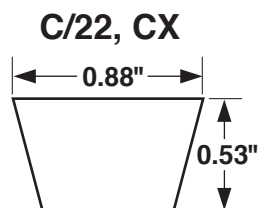
Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)
25	28	26.8	65	68	66.8	112	115	113.8
26	29	27.8	66	69	67.8	115	118	116.8
27	30	28.8	67	70	68.8	118	121	119.8
28	31	29.8	68	71	69.8	120	123	121.8
29	32	30.8	69	72	70.8	122	125	123.8
30	33	31.8	70	73	71.8	125	128	126.8
31	34	32.8	71	74	72.8	128	131	129.8
32	35	33.8	72	75	73.8	130	133	131.8
33	36	34.8	73	76	74.8	132	135	133.8
34	37	35.8	74	77	75.8	135	138	136.8
35	38	36.8	75	78	76.8	138	141	139.8
36	39	37.8	76	79	77.8	140	143	141.8
37	40	38.8	77	80	78.8	145	148	146.8
38	41	39.8	78	81	79.8	150	153	151.8
39	42	40.8	79	82	80.8	155	158	156.8
40	43	41.8	80	83	81.8	160	163	161.8
41	44	42.8	81	84	82.8	165	168	166.8
42	45	43.8	82	85	83.8	170	173	171.8
43	46	44.8	83	86	84.8	180	183	181.8
44	47	45.8	84	87	85.8	190	193	191.8
45	48	46.8	85	88	86.8	200	203	201.8
46	49	47.8	86	89	87.8	210	213	211.8
47	50	48.8	87	90	88.8	240	241	240.3
48	51	49.8	88	91	89.8	270	271	270.3
49	52	50.8	89	92	90.8			
50	53	51.8	90	93	91.8			
51	54	52.8	91	94	92.8			
52	55	53.8	92	95	93.8			
53	56	54.8	93	96	94.8			
54	57	55.8	94	97	95.8			
55	58	56.8	95	98	96.8			
56	59	57.8	96	99	97.8			
57	60	58.8	97	100	98.8			
58	61	59.8	98	101	99.8			
59	62	60.8	99	102	100.8			
60	63	61.8	100	103	101.8			
61	64	62.8	102	105	103.8			
62	65	63.8	105	108	106.8			
63	66	64.8	108	111	109.8			
64	67	65.8	110	113	111.8			

Size range: 23" ~ 660"

: Available size for Raw Edge Cogged V-Belts BX

Classical V-Belts for RMA / MPTA

Table 1-3



Belt indication

C 93

Cross Section Belt Code(inch)

C-Section

Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)
40	44	42.9	86	90	88.9	190	194	192.9
42	46	44.9	87	91	89.9	200	204	202.9
45	49	47.9	88	92	90.9	210	214	212.9
48	52	50.9	89	93	91.9	220	222	220.9
50	54	52.9	90	94	92.9	230	232	230.9
51	55	53.9	91	95	93.9	240	242	240.9
52	56	54.9	92	96	94.9	250	252	250.9
53	57	55.9	93	97	95.9	260	262	260.9
54	58	56.9	94	98	96.9	270	272	270.9
55	59	57.9	95	99	97.9			
56	60	58.9	96	100	98.9			
57	61	59.9	97	101	99.9			
58	62	60.9	98	102	100.9			
59	63	61.9	99	103	101.9			
60	64	62.9	100	104	102.9			
61	65	63.9	102	106	104.9			
62	66	64.9	105	109	107.9			
63	67	65.9	108	112	110.9			
64	68	66.9	110	114	112.9			
65	69	67.9	112	116	114.9			
66	70	68.9	115	119	117.9			
67	71	69.9	118	122	120.9			
68	72	70.9	120	124	122.9			
69	73	71.9	122	126	124.9			
70	74	72.9	125	129	127.9			
71	75	73.9	128	132	130.9			
72	76	74.9	130	134	132.9			
73	77	75.9	132	136	134.9			
74	78	76.9	135	139	137.9			
75	79	77.9	138	142	140.9			
76	80	78.9	140	144	142.9			
77	81	79.9	142	146	144.9			
78	82	80.9	145	149	147.9			
79	83	81.9	148	152	150.9			
80	84	82.9	150	154	152.9			
81	85	83.9	155	159	157.9			
82	86	84.9	160	164	162.9			
83	87	85.9	165	169	167.9			
84	88	86.9	170	174	172.9			
85	89	87.9	180	184	182.9			

Size range: 37" ~ 660"

Available size for Raw Edge Cogged V-Belts CX

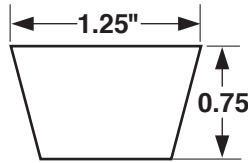
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Properties



Classical V-Belts for RMA / MPTA

Table 1-4

D/32

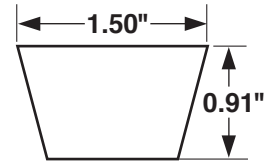


Belt indication

D 120

Cross Section
Belt Code(inch)

E/40



Belt indication

E 180

Cross Section
Belt Code(inch)

D-Section

Belt Code	Outer length La (in)	Datum length Ld (in)	Belt Code	Outer length La (in)	Datum length Ld (in)
100	105	103.3	180	187	184.5
105	110	108.3	210	217	214.5
110	115	113.3	240	243	241
115	120	118.3	270	273	271
120	125	123.3	300	303	301
125	130	128.3	330	333	331
130	135	133.3	360	363	361
135	140	138.3	390	393	391
140	145	143.3	420	423	421
145	150	148.3	Size range: 144" ~ 660"		
150	155	153.3			
155	160	158.3			
160	165	163.3			
165	170	168.3			
170	175	173.3			
180	185	183.3			
190	195	193.3			
200	205	203.3			
210	215	213.3			
220	223	220.8			
230	233	230.8			
240	243	240.8			
250	253	250.8			
260	263	260.8			
270	273	270.8			
280	283	280.8			
300	303	300.8			
310	313	310.8			
330	333	330.8			
360	363	360.8			
Size range: 100" ~ 660"					

Size range: 144" ~ 660"

Size range: 100" ~ 660"

Cross section dimension of Classical V-Belts for RMA / MPTA

Table 1-5

Section		A	B	C	D	E
Top belt width	bo (in)	0.50	0.66	0.88	1.25	1.50
Datum width	bd (in)	0.418	0.530	0.757	1.076	1.267
Height of belt	h (in)	0.31	0.41	0.53	0.75	0.91
Recommended minimum pulley datum diameter	dd (in)	3.0 (2.2)	5.4 (4.0)	9.0 (6.8)	13.0	17.7
Recommended maximum belt speed	V (fpm)	5900				

() : Recommended minimum pulley datum diameter for Raw Edge Cogged type.

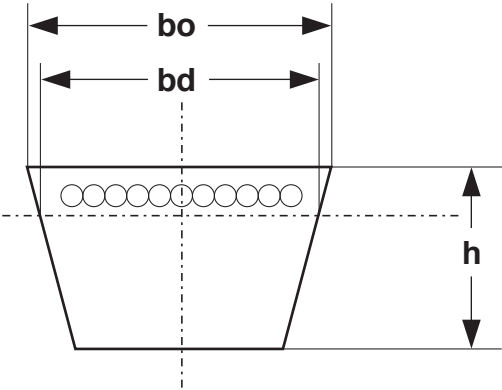
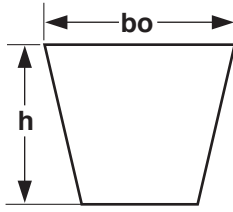


Fig. 1-9

Maxstar Wedge V-Belts for RMA / MPTA



Section	bo (in)	h (in)
3V/9N (3VX)	0.38	0.33
5V/15N (5VX)	0.63	0.55
8V/25N	1.00	0.88

Belt indication

5V 1000

Cross Section

Belt Code(inch×10)

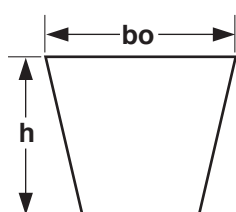
Table 1-6

3V(3VX)-Section		5V(5VX)-Section		8V-Section	
Belt Code	Effective length Le (in)	Belt Code	Effective length Le (in)	Belt Code	Effective length Le (in)
250	25	500	50	1000	100
265	26.5	530	53	1060	106
280	28	560	56	1120	112
300	30	600	60	1180	118
315	31.5	630	63	1250	125
335	33.5	670	67	1320	132
355	35.5	710	71	1400	140
375	37.5	750	75	1500	150
400	40	800	80	1600	160
425	42.5	850	85	1700	170
450	45	900	90	1800	180
475	47.5	950	95	1900	190
500	50	1000	100	2000	200
530	53	1060	106	2120	212
560	56	1120	112	2240	224
600	60	1180	118	2360	236
630	63	1250	125	2630	263
670	67	1320	132	2500	250
710	71	1400	140	2650	265
750	75	1500	150	2800	280
800	80	1600	160	3000	300
850	85	1700	170	3150	315
900	90	1800	180	3350	335
950	95	1900	190	3550	355
1000	100	2000	200	3750	375
1060	106	2120	212	4000	400
1120	112	2240	224	4250	425
1180	118	2360	236	4500	450
1250	125	2500	250	4750	475
1320	132	2650	265	5000	500
1400	140	2800	280	5600	560
		3000	300	6000	600
		3150	315		
		3350	335		
		3550	355		

: Available size for Raw Edge Cogged V-Belts 3VX & 5VX



Narrow V-Belts for DIN7753 / ISO4184



Section	bo (mm)	h (mm)
SPZ (SPZX)	9.7	8.0
SPA (SPAX)	12.7	10.0
SPB (SPBX)	16.3	13.0
SPC (SPCX)	22.0	18.0

Belt indication

SPZ 1000

Cross Section

Datum length(mm)

Table 1-7

SPZ(SPZX)-Section				SPA(SPAX)-Section				SPB(SPBX)-Section				SPC(SPCX)-Section	
Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)	Datum length Ld(mm)	Outer length La(mm)
487	500	1520	1533	732	750	2132	2150	1250	1272	4620	4642	2000	2030
512	525	1537	1550	742	760	2182	2200	1320	1342	4720	4742	2120	2150
562	575	1562	1575	757	775	2232	2250	1340	1362	4750	4772	2360	2390
587	600	1587	1600	782	800	2240	2258	1400	1422	4820	4842	2500	2530
612	625	1600	1613	800	818	2307	2325	1410	1432	4870	4892	3100	3130
630	643	1612	1625	807	825	2360	2378	1500	1522	5000	5022	3150	3180
637	650	1637	1650	832	850	2432	2450	1510	1532	5070	5092	3200	3230
662	675	1662	1675	850	868	2482	2500	1590	1612	5300	5322	3220	3250
670	683	1687	1700	857	875	2500	2518	1600	1622	5380	5402	3320	3350
687	700	1700	1713	882	900	2607	2625	1690	1712	5500	5522	3350	3380
710	723	1737	1750	900	918	2650	2668	1700	1722	5600	5622	3375	3405
722	735	1762	1775	907	925	2800	2818	1750	1772	5680	5702	3420	3450
737	750	1787	1800	932	950	3000	3018	1800	1822	5800	5822	3430	3460
750	763	1800	1813	950	968	3082	3100	1850	1872	5990	6012	3450	3480
760	773	1812	1825	957	975	3132	3150	1900	1922	6000	6022	3500	3530
762	775	1837	1850	967	985	3150	3168	1950	1972	6300	6322	3520	3550
772	785	1862	1875	982	1000	3182	3200	2000	2022	6340	6362	3550	3580
787	800	1887	1900	1000	1018	3282	3300	2030	2052	6700	6722	3600	3630
800	813	1900	1913	1032	1050	3350	3368	2060	2082	6720	6742	3620	3650
812	825	1937	1950	1057	1075	3382	3400	2120	2142	7100	7122	3670	3700
825	838	1987	2000	1082	1100	3482	3500	2150	2172	7500	7522	3700	3730
837	850	2000	2013	1107	1125	3500	3518	2180	2202	8000	8022	3750	3780
850	863	2030	2043	1120	1138	3550	3568	2240	2262	8500	8522	3770	3800
862	875	2037	2050	1132	1150	3650	3668	2280	2302	9000	9022	3800	3830
875	888	2087	2100	1157	1175	3750	3768	2310	2332			3810	3840
887	900	2120	2133	1182	1200	3870	3888	2360	2382			3970	4000
900	913	2137	2150	1207	1225	4000	4018	2410	2432			4000	4030
912	925	2160	2173	1232	1250	4120	4138	2425	2447			4050	4080
925	938	2187	2200	1250	1268	4250	4268	2500	2522			4100	4130
937	950	2200	2213	1257	1275	4300	4318	2530	2552			4200	4230
950	963	2240	2253	1272	1290	4500	4518	2650	2672			4250	4280
962	975	2280	2293	1282	1300	4600	4618	2680	2702			4300	4330
987	1000	2337	2350	1300	1318	4750	4768	2800	2822			4350	4380
1000	1013	2410	2423	1307	1325	4865	4883	2840	2862			4380	4410
1010	1023	2500	2513	1320	1338	5000	5018	3000	3022			4400	4430
1012	1025	2540	2553	1332	1350			3070	3092			4420	4450
1024	1037	2650	2663	1357	1375			3150	3172			4445	4475
1037	1050	2690	2703	1367	1385			3170	3192			4450	4480
1047	1060	2840	2853	1382	1400			3175	3197			4500	4530
1060	1073	3070	3083	1400	1413			3200	3222			4530	4560
1077	1090	3150	3163	1407	1425			3238	3260			4650	4680
1080	1093	3170	3183	1432	1450			3250	3272			4720	4750
1087	1100	3200	3213	1457	1475			3280	3302			4750	4780
1100	1113	3250	3263	1482	1500			3328	3350			4850	4880
1112	1125	3350	3363	1500	1518			3340	3362			4900	4930
1120	1133	3450	3463	1507	1525			3350	3372			4970	5000
1137	1150	3550	3563	1532	1550			3400	3422			5000	5030
1140	1153	3660	3673	1557	1575			3412	3434			5030	5060
1162	1175	3750	3763	1582	1600			3425	3447			5070	5100
1180	1193	4000	4013	1600	1618			3450	3472			5200	5230
1187	1200	4500	4513	1607	1625			3500	3522			5300	5330
1200	1213			1632	1650			3550	3572			5330	5360
1202	1215			1657	1675			3650	3672			5400	5430
1212	1225			1682	1700			3675	3697			5500	5530
1237	1250			1700	1718			3700	3722			5600	5630
1250	1263			1707	1725			3750	3772			5700	5730
1262	1275			1732	1750			3770	3792			6000	6030
1270	1283			1757	1775			3800	3822			6200	6230
1287	1300			1782	1800			3850	3872			6300	6330
1300	1313			1800	1818			3870	3892			6480	6510
1312	1325			1807	1825			3875	3897			6500	6530
1320	1333			1832	1850			4000	4022			6700	6730
1337	1350			1857	1875			4060	4082				
1340	1353			1882	1900			4100	4122				
1362	1375			1900	1918			4120	4142				
1387	1400			1907	1925			4250	4272				
1400	1413			1932	1950			4260	4282				
1412	1425			1957	1975			4296	4318				
1420	1433			1982	2000			4310	4332				
1437	1450			2000	2018			4318	4340				
1462	1475			2032	2050			4370	4392				
1487	1500			2057	2075			4500	4522				
1500	1513			2082	2100			4560	4582				
1512	1525			2120	2138			4600	4622				

up to 10000

up to 10000

: Available size for Narrow Raw Edge Cogged V-Belts SPZX, SPAX, SPBX, SPCX

Cross section dimension of Narrow V-Belts for DIN

Table 1-8

Section		SPZ	SPA	SPB	SPC
Top belt width	bo	9.7mm 0.38"	12.7mm 0.50"	16.3mm 0.64"	22.0mm 0.87"
Datum width	bd	8.5mm 0.33"	11.0mm 0.43"	14.0mm 0.55"	19.0mm 0.75"
Height of belt	h	8.0mm 0.31"	10.0mm 0.39"	13.0mm 0.51"	18.0mm 0.71"
Inner length	Li ÷ Ld-	38mm 1.5"	45mm 1.8"	60mm 2.4"	83mm 3.3"
Outer length	La ÷ Ld+	13mm 0.5"	18mm 0.7"	22mm 0.9"	30mm 1.2"
Distance down to datum line	hd	2.0mm 0.08"	2.8mm 0.11"	3.5mm 0.14"	4.8mm 0.19"
Recommended minimum Pulley datum diameter	dd (mm)	63 (56)	90 (71)	140 (112)	224 (180)
Recommended maximum Belt speed	v	40m/s 7900 feet per minute			

() : Recommended minimum Pulley datum diameter for Raw Edge Cogged type.

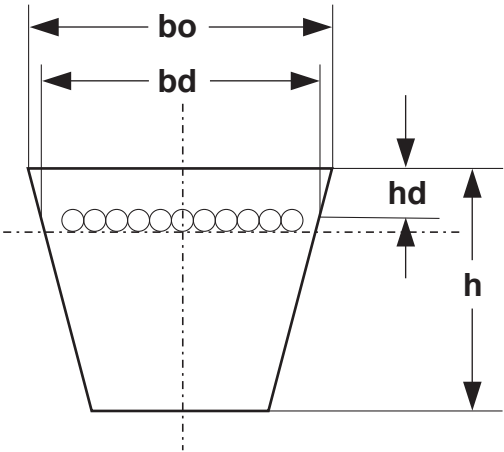


Fig. 1-10



Double V-Belts for RMA IP-21 / DIN 7722 / ISO 5289

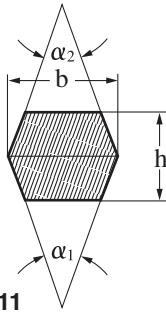


Fig. 1-11

Dimension of Double V-Belts

Table 1-9

Section	AA	BB	CC
Belt width b (in)	0.50	0.66	0.88
Belt height h (in)	0.41	0.53	0.69
Belt angle α_1 (°)	40	40	40
Belt angle α_2 (°)	40	40	40
Recommended minimum pulley diameter (in)	3.0	5.4	9.0

AA Cross Section Table 1-10

Belt Code	Pitch length	
	inch	mm
AA 41	43.1	1095
AA 46	48.1	1222
AA 49	51.1	1298
AA 51	53.1	1349
AA 52	54.1	1374
AA 53	55.1	1400
AA 55	57.1	1450
AA 60	62.1	1577
AA 72	74.1	1882
⋮	⋮	⋮
AA 300	301.1	7648

BB Cross Section Table 1-11

Belt Code	Pitch length	
	inch	mm
BB 54	56.9	1445
BB 55	57.9	1471
BB 59	61.9	1572
BB 60	62.9	1598
BB 71	73.9	1877
⋮	⋮	⋮
BB 400	401.4	10196

CC Cross Section Table 1-12

Belt Code	Pitch length	
	inch	mm
CC 71	75.2	1910
⋮	⋮	⋮
CC 500	502.2	12756

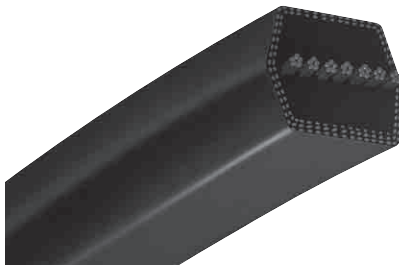


Fig. 1-12



Perforated Open-End V-Belts

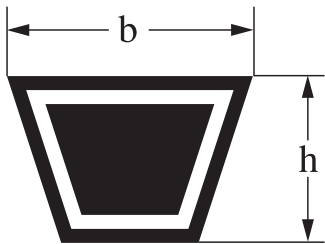


Fig. 1-13

Dimension of Perforated Open-End V-Belts					Table 1-13
Section	M	A	B	C	
Belt width b (in)	0.39	0.50	0.66	0.88	
Belt height h (in)	0.22	0.31	0.41	0.53	
Belt angle $(^\circ)$	40	40	40	40	
Length per roll (ft.)	328	328	328	328	
Hole diameter (in)	0.08	0.10	0.12	0.16	
Hole pitch (in)	0.20	0.31	0.35	0.43	

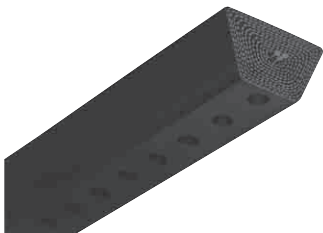


Fig. 1-14



Fig. 1-15 (Metal fastener)

1

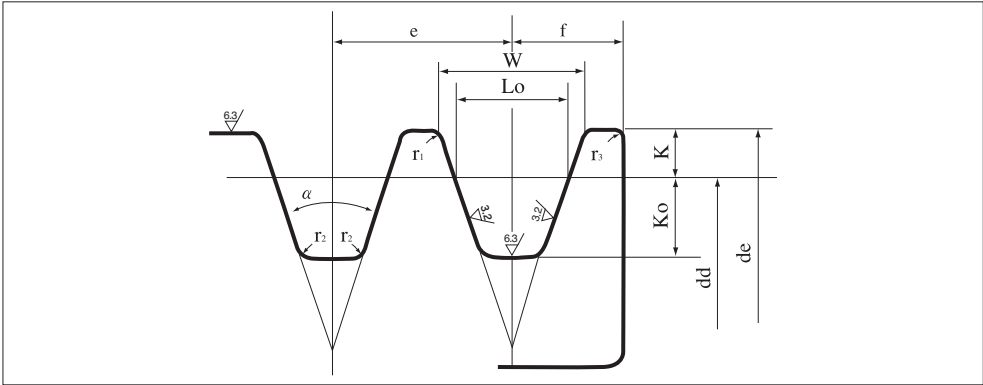
Properties



Pulley for Classical V-Belts and Double V-Belts for RMA / MPTA

Pulley for Classical V-Belts complies with IP-20 except E-section.
Pulley for Double V-Belts complies with IP-21.

Fig. 1-16



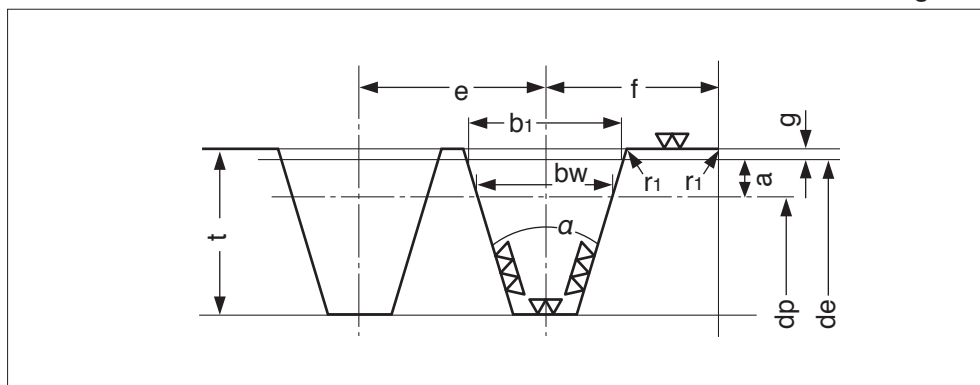
Dimensions (in)								Table 1-14
Belt section	Datum diameter : dd	α (°)	W	Lo	K	Ko	e	f
A, AX AA	$dd \leq 5.4$	34	0.494	0.418	0.125	0.335	0.625	0.375
	$5.4 < dd$	38	0.504					
B, BX BB	$dd \leq 7.0$	34	0.637	0.530	0.175	0.375	0.750	0.500
	$7.0 < dd$	38	0.650					
C, CX CC	$dd \leq 7.99$	34	0.879	0.757	0.200	0.550	1.000	0.688
	$7.99 < dd \leq 12.0$	36	0.887					
	$12.0 < dd$	38	0.895					
D	$dd \leq 12.99$	34	1.259	1.076	0.300	0.720	1.438	0.875
	$12.99 < dd \leq 17.0$	36	1.271					
	$17.0 < dd$	38	1.283					
E	$dd \leq 24.8$	36	1.455	1.130	0.500	0.760	1.752	1.142
	$24.8 < dd$	38	1.474					

Number of belts & pulley width (in)						Table 1-15
Number of belt	A, AX AA	B, BX BB	C, CX CC	D	E	
1	0.750	1.000	1.376	1.750	2.284	
2	1.375	1.750	2.376	3.188	4.036	
3	2.000	2.500	3.376	4.626	5.788	
4	2.625	3.250	4.376	6.064	7.540	
5	3.250	4.000	5.376	7.502	9.292	
6	3.875	4.750	6.376	8.940	11.044	
7	4.500	5.500	7.376	10.378	12.796	
8	5.125	6.250	8.376	11.816	14.548	
9	5.750	7.000	9.376	13.254	16.300	
10	6.375	7.750	10.376	14.692	18.052	
11	7.000	8.500	11.376	16.130	19.804	
12	7.625	9.250	12.376	17.568	21.556	
13	8.250	10.000	13.376	19.006	23.308	
14	8.875	10.750	14.376	20.444	25.060	
15		11.500	15.376	21.882	26.812	
16		12.250	16.376	23.320	28.564	
17		13.000	17.376	24.758	30.316	
18			18.376	26.196	32.068	
19			19.376	27.634	33.820	
20			20.376	29.072	35.572	

Pulley for Maxstar Wedge V-Belts for RMA / MPTA

Pulley for Maxstar Wedge V-Belts complies with IP-22.

Fig. 1-17



Dimensions(in)

Table 1-16

Belt section	Effective diameter : d_e	α (°)	Effective width : b_1	Groove depth min. t	Pitch e	Groove spacing : f	g
3V 3VX	≤ 3.49 $3.49 < d_e \leq 6.00$ $6.00 < d_e \leq 12.00$ > 12.00	36 38 40 42	0.35	0.340	0.406	0.344	0
5V 5VX	≤ 9.99 $9.99 < d_e \leq 16.00$ > 16.00	38 40 42	0.60	0.590	0.688	0.500	0
8V	≤ 15.99 $15.99 < d_e \leq 22.40$ > 22.40	38 40 42	1.00	1.990	1.125	0.750	0

Number of belts & pulley width(in)

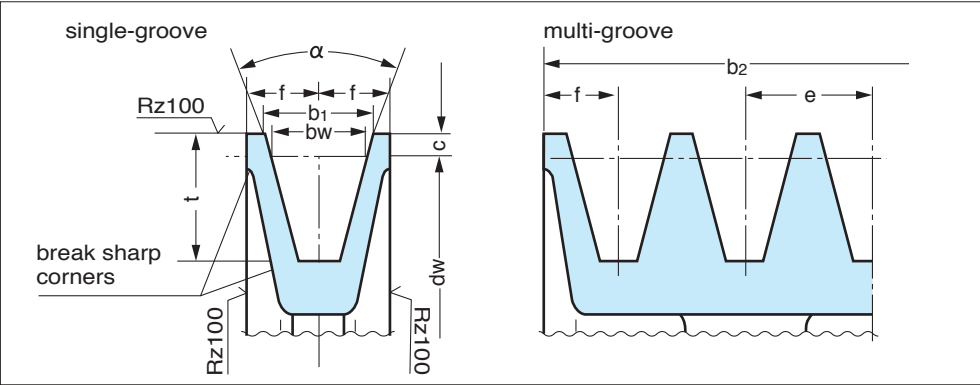
Table 1-17

Belt Section \ Number of belts	1	2	3	4	5	6	7	8	9	10
3V 3VX	0.688	1.094	1.500	1.906	2.312	2.718	3.124	3.530	3.936	4.342
5V 5VX	1.000	1.688	2.376	3.064	3.752	4.440	5.128	5.816	6.504	7.192
8V	1.500	2.625	3.750	4.875	6.000	7.125	8.250	9.375	10.500	11.625

Pulley for Narrow V-Belts for DIN

Pulley for Narrow V-Belts complies with DIN 2217 Part 1.

Fig. 1-18



1
Properties



Dimensions (mm)

Table 1-18

Belt section	Datum diameter : dw	α (°)	b1	bw	c	t	e	f
SPZ SPZX	$dw \leq 80$ $80 < dw$	34 38	9.7	8.5	2.0	$11^{+0.6}_{-0}$	12 ± 0.3	8 ± 0.6
SPA SPAX	$dw \leq 118$ $118 < dw$	34 38	12.7	11.0	2.8	$14^{+0.6}_{-0}$	15 ± 0.3	10 ± 0.6
SPB SPBX	$dw \leq 190$ $190 < dw$	34 38	16.3	14.0	3.5	$18^{+0.6}_{-0}$	19 ± 0.4	12.5 ± 0.8
SPC SPCX	$dw \leq 315$ $315 < dw$	34 38	22.0	19.0	4.8	$24^{+0.6}_{-0}$	25.5 ± 0.5	17.0 ± 1.0

bw corresponds to Datum width bd
dw corresponds to Datum diameter dd

Number of belts & pulley width b2 (mm)

Table 1-19

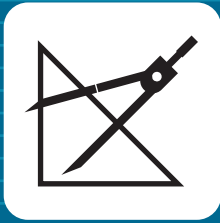
Number of belt	SPZ SPZX	SPA SPAX	SPB SPBX	SPC SPCX
1	16	20	25	34
2	28	35	44	59.5
3	40	50	63	85
4	52	65	82	110.5
5	64	80	101	136
6	76	95	120	161.5
7	88	110	139	187
8	100	125	158	212.5
9	112	140	177	238
10	124	155	196	263.5
11	136	170	215	289
12	148	185	234	314.5

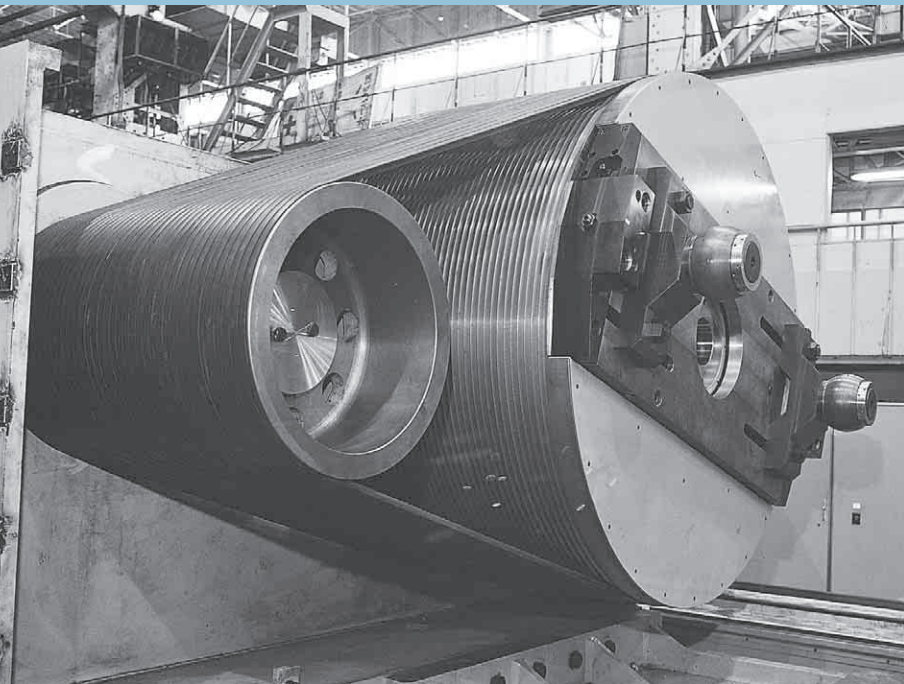
1

Properties



Design





2.Design

Design process

Calculation example

Formulas for V-Belt drive design

Power Rating Table

Drive Selection Table

Design process for Classical V-Belts / Narrow V-Belts

Design Flow

1

Set conditions required in design work.

a. Type of machine

b. Transmission power

It is ideal to use the actual load applied to the belt as the value of the transmission power, but the rated power of the motor is commonly used for calculation.

c. Running hours in a single day

d. Small pulley speed

e. Speed ratio

$$\text{Speed ratio} = \frac{\text{Large pulley datum diameter}}{\text{Small pulley datum diameter}}$$

f. Interim center distance

g. Special uses and environmental conditions

Contact us for the case of exposure to high or low temperature, water, oil, acid or alkali.

Design Flow

2

Set the design power.

1. How to calculate the service factor (Ks)

$$K_s = K_o + K_i + K_e$$

Wherein, Ks : Service factor

Ko : Service correction factor >> (Table 2-1)

Ki : Idler correction factor >> (Table 2-2)

Ke : Environment correction factor >> (Table 2-3)

2. How to calculate the design power (Pd)

$$P_d = P_t \times K_s$$

Wherein, Pd : Design power (HP)

Pt : Transmission power (HP)

Ks : Service factor

The value of transmission power used in designing is the power requirement of the driven machine, if obtained, or the power of driving unit (engine or motor).

Convert the value from torque (Tq) or SI unit (kW) into horse power (HP) with the formula below.

$$P_t = \frac{T_q \times n}{63025}$$

Wherein, Pt : Transmission power (HP)

Tq : Torque (lb·in)

n : Shaft speed (rpm)

$$1 \text{ kW} = 1.341 \text{ HP}$$

1. Ko

Service correction factor (Ko)

Table 2-1

Driven Machine	Driving unit / Motor					
	Max power $\leq$ 300% of rated power			Max power > 300% of rated power		
	AC motors, single-and three-phase with star-delta start. DC shunt-wound motors, Multiple cylinder internal combustion engines.			AC motors, single and three-phase, series wound, slip-ring motors with direct start. DC motors, series and compound wound. Single cylinder internal combustion engines.		
	Running time (hrs./day)			Running time (hrs./day)		
	3 ~ 5	8 ~ 12	16 ~ 24	3 ~ 5	8 ~ 12	16 ~ 24
● Agitator for liquid ● Small centrifugal blower ● Fan up to 10 HP ● Light-duty conveyor	1.0	1.1	1.2	1.1	1.2	1.3
● Belt conveyor (for sand, grain, etc.) ● Dough mixer ● Fan over 10 HP ● Generator ● Machine tool ● Punching machine ● Pressing machine ● Shearing machine ● Printing machine ● Positive displacement rotary pump ● Vibrating and rotary screen	1.1	1.2	1.3	1.2	1.3	1.4
● Brick-making machinery ● Bucket elevator ● Piston compressor ● Screw conveyor ● Hammer mill ● Hollander ● Piston pump ● Positive displacement blower ● Crusher ● Woodworking machinery ● Textile machinery	1.2	1.3	1.4	1.4	1.5	1.6
● Gyratory and jaw-roll crusher ● Mill (ball/rod) ● Hoist (heavy load) ● Rolling mill, calender etc, for the rubber and plastic industry	1.3	1.4	1.5	1.5	1.6	1.8

2. Ki

Idler correction factor (Ki)

Table 2-2

Location of Idler	Ki
Belt slack side, inside of belt	0.0
Belt slack side, outside of belt	0.1
Belt tight side, inside of belt	0.1
Belt tight side, outside of belt	0.2

3. Ke

Environment correction factor (Ke)

Table 2-3

Environmental condition	Ke
Frequent start and stop of machine	0.2
Hard to conduct maintenance checkup	0.2
Dusty environment	0.2
High temperature	0.2
Oil or water splashing	0.2

● Avoid oil and water splash by cover to prevent belt slipping.



3

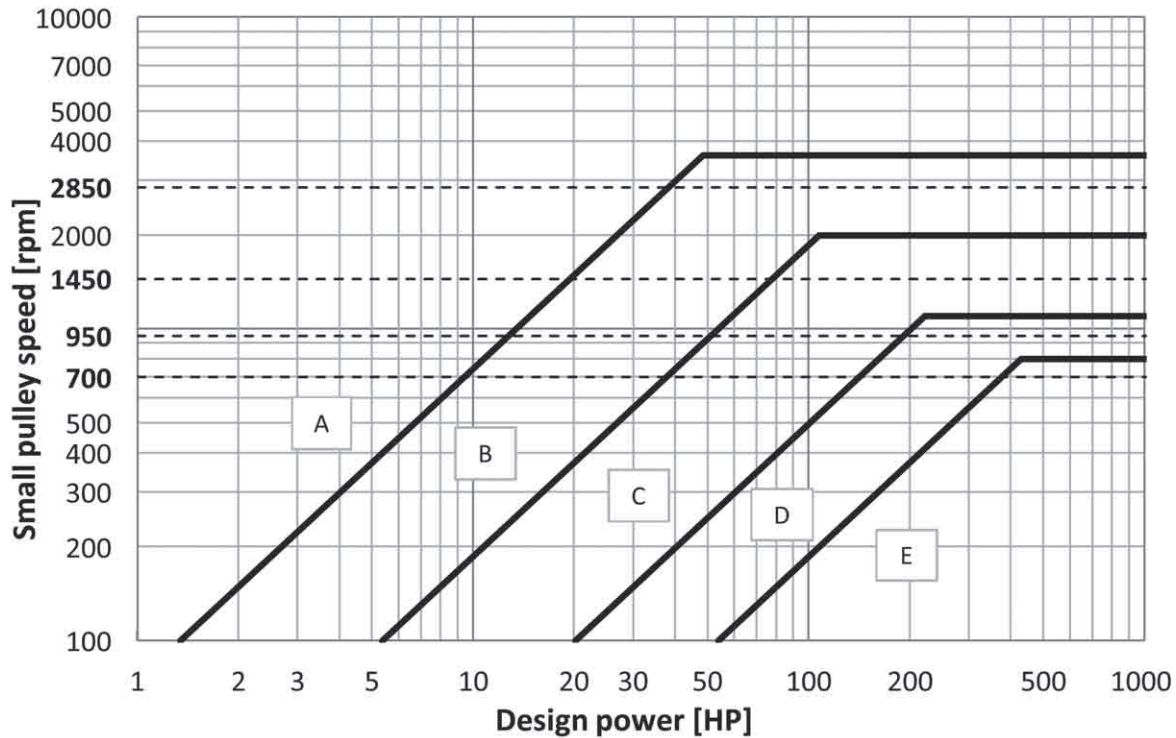
Select the belt type.

● Select the belt type in the selection charts below according to design power and small pulley speed.

● If the intersection locates near the dividing line, select belt type considering other conditions such as pulley cost.

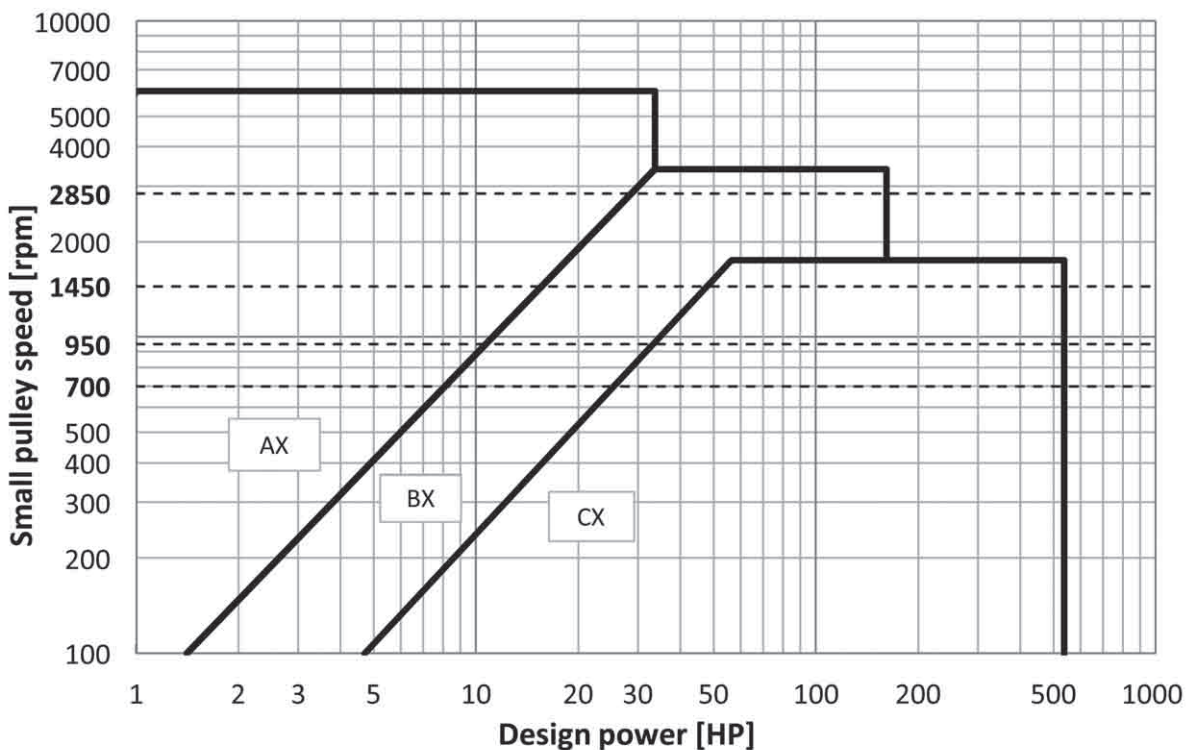
Cross section selection chart for Classical V-Belts for RMA

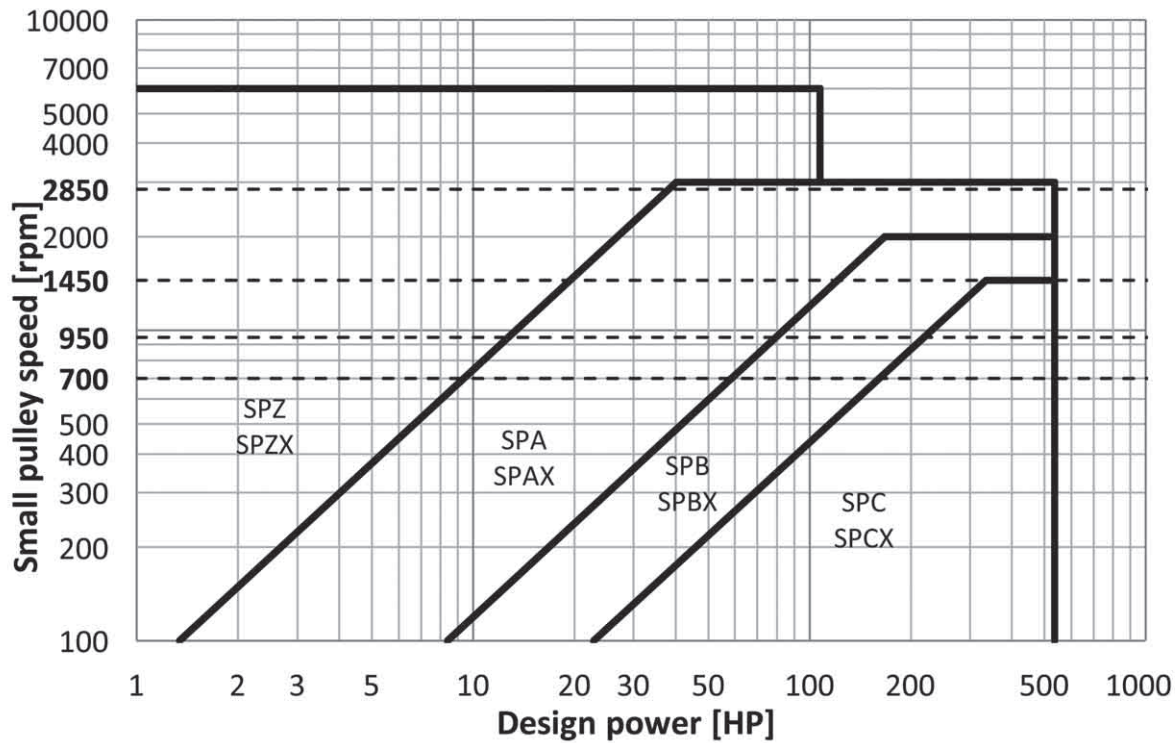
Fig. 2-1



Cross section selection chart for Classical Raw Edge Cogged V-Belts

Fig. 2-2





Design Flow

4

Select the pulley size.

- Select the small pulley datum diameter larger than the minimum specified in the Table 2-4. Inappropriate pulley reduces transmission efficiency and belts' durability significantly.

Minimum pulley datum diameter		Table 2-4				
Belt type		A	B	C	D	E
Minimum pulley datum diameter (in)		3.0	5.4	9.0	13.0	17.7
Belt type		AX	BX	CX		
Minimum pulley datum diameter (in)		2.2	4.0	6.8		

- Calculate the large pulley datum diameter.

$$D_d = d_d \times SR$$

D_d : Large pulley datum diameter (in)
 d_d : Small pulley datum diameter (in)
 SR : Speed ratio

Difference between pulley outside diameter and datum diameter is specified in the following table.

Difference between pulley outside diameter and datum diameter Unit : mm		Table 2-5					
Belt type		M	A	B	C	D	E
Difference		5.4	9.0	11.0	14.0	19.0	25.4

Design Flow

5

Determine the belt length.

- 1) Determine the interim belt datum length.

$$L_d' = 2C' + 1.57(D_d + d_d)$$

L_d' : Interim belt datum length (in)
 C' : Interim center distance (in)
 D_d : Large pulley datum diameter (in)
 d_d : Small pulley datum diameter (in)

- 2) Select the standard belt length closest to the L_d' from our lineup.

Center distance is calculated from the following formula.

$$C = \frac{b + \sqrt{b^2 - 8(D_d - d_d)^2}}{8}$$

C : Center distance (in)
 b : $2L_d - \pi(D_d + d_d)$
 L_d : Belt datum length (in)

- 3) If center distance is predetermined, use the following formula to determine interim belt datum length.

$$L_d' = 2C + \frac{\pi}{2}(D_d + d_d) + \frac{(D_d - d_d)^2}{4C}$$

2

Design



6

Determine the required number of belts.

Required number of belts (nb) is determined as follows.
Round up the calculation results.

$$nb = \frac{Pd}{Pc}$$

$$\uparrow Pc = (Ps + Pa) \times Kc$$

$$\uparrow Kc = K\theta \times Kl$$

$$\uparrow Kl = \frac{Dd - dd}{C}$$

nb : Required number of belts
Pd : Design power (HP)
Pc : Correction power rating (HP)
Ps : Basic power rating (HP)
Pa : Additional power rating for speed ratio (HP)
Kc : Power rating correction factor
Kθ : Arc of contact correction factor
Kl : Belt length correction factor
Dd : Large pulley datum diameter (in)
dd : Small pulley datum diameter (in)
C : Center distance (in)

● Arc of contact correction factor : Kθ Table 2-6

$\frac{Dd-dd}{C}$	Contact angle on small pulley $\theta(^{\circ})$	Kθ
0.00	180	1.00
0.10	174	0.99
0.20	169	0.97
0.30	163	0.96
0.40	157	0.94
0.50	151	0.93
0.60	145	0.91
0.70	139	0.89
0.80	133	0.87
0.90	127	0.85
1.00	120	0.82
1.10	113	0.80
1.20	106	0.77
1.30	99	0.73
1.40	91	0.70
1.50	83	0.65

$$\text{Contact angle on small pulley : } \theta = 180 - 2\sin^{-1} \frac{Dd - dd}{2C}$$

$$\text{Contact angle on large pulley : } \theta = 180 + 2\sin^{-1} \frac{Dd - dd}{2C}$$

Dd : Large pulley datum diameter (in)
dd : Small pulley datum diameter (in)
C : Center distance (in)

● Belt length correction factor for Classical V-Belts: Kl Table 2-7

Length designation	A	B	C	D	E
20 ~ 25	0.77	0.72			
26 ~ 30	0.82	0.76			
31 ~ 34	0.85	0.79			
35 ~ 37	0.87	0.81	0.71		
38 ~ 41	0.89	0.83	0.73		
42 ~ 45	0.91	0.85	0.75		
46 ~ 50	0.93	0.87	0.77		
51 ~ 54	0.94	0.89	0.78		
55 ~ 59	0.96	0.91	0.80		
60 ~ 67	0.98	0.93	0.82		
68 ~ 74	1.01	0.95	0.84		
75 ~ 79	1.03	0.97	0.86		
80 ~ 84	1.04	0.98	0.87		
85 ~ 89	1.05	0.99	0.89		
90 ~ 95	1.07	1.01	0.90		
96 ~ 104	1.08	1.03	0.91	0.81	
105 ~ 111	1.10	1.04	0.93	0.82	
112 ~ 119	1.12	1.06	0.94	0.84	
120 ~ 127	1.13	1.07	0.96	0.85	
128 ~ 144	1.15	1.09	0.98	0.87	0.85
145 ~ 154	1.18	1.11	1.00	0.89	0.87
155 ~ 169	1.19	1.13	1.02	0.91	0.88
170 ~ 179	1.21	1.15	1.03	0.92	0.90
180 ~ 194	1.23	1.17	1.05	0.94	0.91
195 ~ 209	1.25	1.18	1.07	0.95	0.93
210 ~ 239	1.27	1.21	1.09	0.98	0.95
240 ~ 269	1.30	1.24	1.12	1.00	0.98
270 ~ 299	1.33	1.26	1.14	1.03	1.00
300 ~ 329	1.35	1.29	1.17	1.05	1.02
330 ~ 359	1.38	1.31	1.19	1.07	1.04
360 ~ 389	1.40	1.33	1.21	1.09	1.06
390 ~ 419		1.35	1.22	1.11	1.08
420 ~ 479		1.38	1.25	1.13	1.10
480 ~ 539		1.41	1.28	1.16	1.13
540 ~ 600		1.44	1.31	1.18	1.16
601 ~ 660		1.46	1.33	1.21	1.18

● Belt length correction factor for Narrow V-Belts: Kl Table 2-8

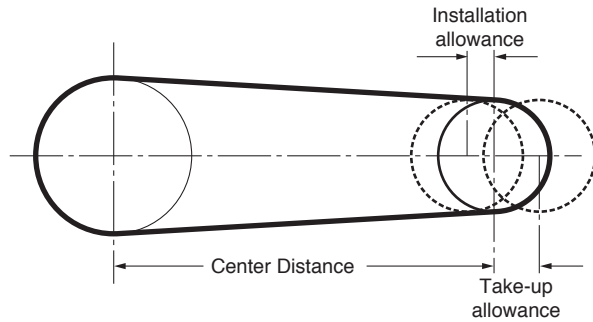
Length designation	Belt length correction factor : Kl			
	SPZ SPZX	SPA SPAX	SPB SPBX	SPC SPCX
487 ~ 670	0.80			
671 ~ 755	0.84	0.79		
756 ~ 850	0.86	0.81		
851 ~ 950	0.89	0.83		
951 ~ 1060	0.91	0.85		
1061 ~ 1185	0.93	0.87		
1186 ~ 1325	0.95	0.89	0.82	
1326 ~ 1500	0.98	0.91	0.84	
1501 ~ 1700	1.00	0.93	0.86	
1701 ~ 1900	1.02	0.95	0.88	
1901 ~ 2120	1.05	0.96	0.90	0.82
2121 ~ 2370	1.07	0.98	0.92	0.84
2371 ~ 2650	1.09	1.00	0.94	0.86
2651 ~ 2975	1.11	1.02	0.96	0.88
2976 ~ 3350	1.13	1.04	0.98	0.90
3351 ~ 3775	1.16	1.06	1.00	0.92
3776 ~ 4250	1.18	1.08	1.02	0.94
4251 ~ 4750	1.20	1.10	1.04	0.96
4751 ~ 5300		1.12	1.06	0.98
5301 ~ 5950			1.08	1.00
5951 ~ 6700			1.10	1.02
6701 ~ 7550			1.12	1.04
7551 ~ 8500			1.14	1.06
8501 ~ 9500			1.16	1.08
9501 ~ 10000			1.17	1.10



Installation and take-up allowance.

Installation and take-up allowance are as follows.
Use idler pulley if you cannot arrange allowance.

Fig. 2-4



● Installation and take-up allowance for Classical V-Belts

Table 2-9

Length designation	Installation allowance (in)					Take-up allowance (in)
	A, AX	B, BX	C, CX	D	E	All sections
Up to and incl. 35	0.75	1.00				1.00
Over 35 to and incl. 55	0.75	1.00	1.50			1.50
Over 55 to and incl. 85	0.75	1.25	1.50			2.00
Over 85 to and incl. 112	1.00	1.25	1.50			2.50
Over 112 to and incl. 144	1.00	1.25	1.50	2.00	2.50	3.00
Over 144 to and incl. 180	1.00	1.25	2.00	2.00	2.50	3.50
Over 180 to and incl. 210	1.20	1.50	2.00	2.00	2.50	4.00
Over 210 to and incl. 240		1.50	2.00	2.50	2.50	4.50
Over 240 to and incl. 300		1.50	2.00	2.50	3.00	5.00
Over 300 to and incl. 390		1.80	2.00	2.60	3.00	6.00
Over 390 to and incl. 660			2.50	3.00	3.50	$L_d \times 0.015$

● Installation and take-up allowance for Narrow V-Belts

Table 2-10

Length designation	Installation allowance (in)				Take-up allowance (in)
	SPZ SPZX	SPA SPAX	SPB SPBX	SPC SPCX	All sections
Up to and incl. 670	0.63	0.75			0.39
Over 670 to and incl. 1000	0.71	0.83			0.39
Over 1000 to and incl. 1320	0.75	0.87	1.06		0.51
Over 1320 to and incl. 1662	0.83	0.94	1.14		0.67
Over 1662 to and incl. 2240	0.94	1.06	1.26	1.54	0.87
Over 2240 to and incl. 3000	1.10	1.22	1.38	1.69	1.18
Over 3000 to and incl. 3550	1.18	1.30	1.50	1.81	1.42
Over 3550 to and incl. 4500	1.38	1.50	1.69	2.01	1.77
Over 4500 to and incl. 5600	1.61	1.73	1.89	2.20	2.20
Over 5600 to and incl. 6700	1.81		2.13	2.44	2.64
Over 6700 to and incl. 8500	2.17		2.48	2.80	3.35
Over 8500 to and incl. 10000			2.76	3.07	3.94



Calculation example for Classical V-Belts / Narrow V-Belts

Design Flow

1

Set conditions required in design work.

- a. Type of machine ... Compressor
- b. Transmission power ... Four pole motor 5 HP/1750rpm
- c. Running hours in a single day ... 8 hours / day
- d. Small pulley speed ... 1750rpm

- e. Speed ratio ... 2 : 1 (Deceleration)
- f. Interim center distance ... 12"
- g. Special uses and environmental conditions ... None

Design Flow

2

Set the design power.

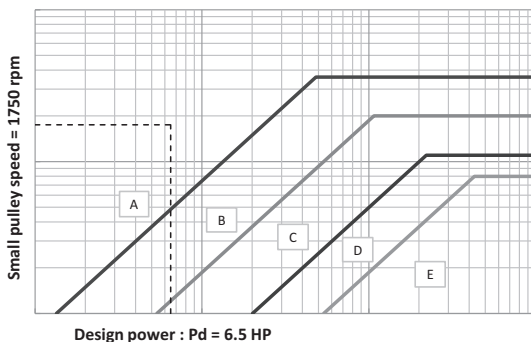
Service correction factor : $K_o = 1.3$ (Table 2-1)
 Idler correction factor : $K_i = 0$ (Table 2-2)
 Environment correction factor : $K_e = 0$ (Table 2-3)
 Service factor : $K_s = K_o + K_i + K_e$
 $= 1.3 + 0 + 0$
 $= 1.3$
 Design power : $P_d = P_t \times K_s$
 $= 5 \times 1.3$
 $= 6.5 \text{ HP}$

Design Flow

3

Select the belt type.

Select the belt type in Cross section selection chart.
 The lines of P_d (6.5 HP) and small pulley speed (1750rpm) intersect in A section.



Design Flow

4

Select the pulley size.

- 1) Select the small pulley of 3.00" datum diameter.
 (The recommended minimum pulley datum diameter is specified in Table 2-4.)
- 2) Calculate the large pulley datum diameter.

Large pulley datum diameter : $D_d = d_d \times SR$
 $= 3.00 \times 2$
 $= 6.00"$

Design Flow

5

Determine the belt length.

- 1) Determine the interim belt datum length.

$$L_d' = 2 \times 12 + 1.57 \times (6.00 + 3.00) = 38.1"$$

- 2) Select the standard belt length closest to the L_d' from Table 1-2.

Belt datum length 38.3" : Length designation A37 is selected.

Center distance is calculated as follows.

$$b = 2 \times 38.3 - 3.14 \times (6.00 + 3.00) = 48.3$$

$$C = \frac{48.3 + \sqrt{48.3^2 - 8 \times (6.00 + 3.00)^2}}{8} = 12.0$$

Center distance : $C = 12.0"$

Design Flow

6

Determine the required number of belts.

$P_s = 1.68 \text{ HP}$ (Refer to Power Rating Table)

$P_a = 0.50 \text{ HP}$ (Refer to Power Rating Table)

$$\frac{D_d - d_d}{C} = \frac{6.00 - 3.00}{12.0} = 0.25$$

$K_\theta = 0.96$ (Refer to Table 2-6).

$K_l = 0.89$ (Refer to Table 2-7).

$$K_c = K_\theta \times K_l = 0.96 \times 0.87 = 0.84$$

$$P_c = (P_s + P_a) \times K_c = (1.68 + 0.50) \times 0.84 = 1.83 \text{ HP}$$

$$n_b = \frac{P_d}{P_c} = \frac{6.5}{1.83} = 3.6 \rightarrow 4 \text{ pcs.}$$

Design Flow

7

Installation and take-up allowance.

Installation and take-up allowance are obtained from Table 2-9.

Installation allowance = 0.75"

$$\rightarrow \text{Minimum center distance} = 12.0 - 0.75 = 11.25"$$

Take-up allowance = 1.50"

$$\rightarrow \text{Maximum center distance} = 12.0 + 1.5 = 13.5"$$

Design process for Maxstar Wedge V-Belts

Design Flow

1

Set conditions required in design work.

a. Type of machine

b. Transmission power

It is ideal to use the actual load applied to the belt as the value of the transmission power, but the rated power of the motor is commonly used for calculation.

c. Running hours in a single day

d. Small pulley speed

e. Speed ratio

$$\text{Speed ratio} = \frac{\text{Large pulley pitch diameter}}{\text{Small pulley pitch diameter}}$$

f. Interim center distance

g. Special uses and environmental conditions

Contact us for the case of exposure to high or low temperature, water, oil, acid or alkali.

Design Flow

2

Set the design power.

1. How to calculate the service factor (Ks)

$$K_s = K_o + K_i + K_e$$

Wherein, Ks : Service factor

Ko : Service correction factor >> (Table 2-11)

Ki : Idler correction factor >> (Table 2-12)

Ke : Environment correction factor >> (Table 2-13)

2. How to calculate the design power (Pd)

$$P_d = P_t \times K_s$$

Wherein, Pd : Design power (HP)

Pt : Transmission power (HP)

Ks : Service factor

The value of transmission power used in designing is the power requirement of the driven machine, if obtained, or the power of driving unit (engine or motor).

Convert the value from torque (Tq) or SI unit (kW) into horse power (HP) with the formula below.

$$P_t = \frac{T_q \times n}{63025}$$

Wherein, Pt : Transmission power (HP)

Tq : Torque (lb•in)

n : Shaft speed (rpm)

$$1 \text{ kW} = 1.341 \text{ HP}$$

2

Design



1. Ko

Service correction factor (Ko)

Table 2-11

Driven Machine	Driving unit / Motor					
	Max power $\leq$ 300% of rated power			Max power > 300% of rated power		
	AC motors, single-and three-phase with star-delta start. DC shunt-wound motors, Multiple cylinder internal combustion engines.			AC motors, single and three-phase, series wound, slip-ring motors with direct start. DC motors, series and compound wound. Single cylinder internal combustion engines.		
	Running time (hrs./day)			Running time (hrs./day)		
	3 ~ 5	8 ~ 12	16 ~ 24	3 ~ 5	8 ~ 12	16 ~ 24
● Agitator for liquid ● Small centrifugal blower ● Fan up to 10 HP ● Light-duty conveyor	1.0	1.1	1.2	1.1	1.2	1.3
● Belt conveyor (for sand, grain, etc.) ● Dough mixer ● Fan over 10 HP ● Generator ● Machine tool ● Punching machine ● Pressing machine ● Shearing machine ● Printing machine ● Positive displacement rotary pump ● Vibrating and rotary screen	1.1	1.2	1.3	1.2	1.3	1.4
● Brick-making machinery ● Bucket elevator ● Piston compressor ● Screw conveyor ● Hammer mill ● Hollander ● Piston pump ● Positive displacement blower ● Crusher ● Woodworking machinery ● Textile machinery	1.2	1.3	1.4	1.4	1.5	1.6
● Gyratory and jaw-roll crusher ● Mill (ball/rod) ● Hoist (heavy load) ● Rolling mill, calender etc, for the rubber and plastic industry	1.3	1.4	1.5	1.5	1.6	1.8

2. Ki

Idler correction factor (Ki)

Table 2-12

Location of Idler	Ki
Belt slack side, inside of belt	0.0
Belt slack side, outside of belt	0.1
Belt tight side, inside of belt	0.1
Belt tight side, outside of belt	0.2

3. Ke

Environment correction factor (Ke)

Table 2-13

Environmental condition	Ke
Frequent start and stop of machine	0.2
Hard to conduct maintenance checkup	0.2
Dusty environment	0.2
High temperature	0.2
Oil or water splashing	0.2

● Avoid oil and water splash by cover to prevent belt slipping.



3

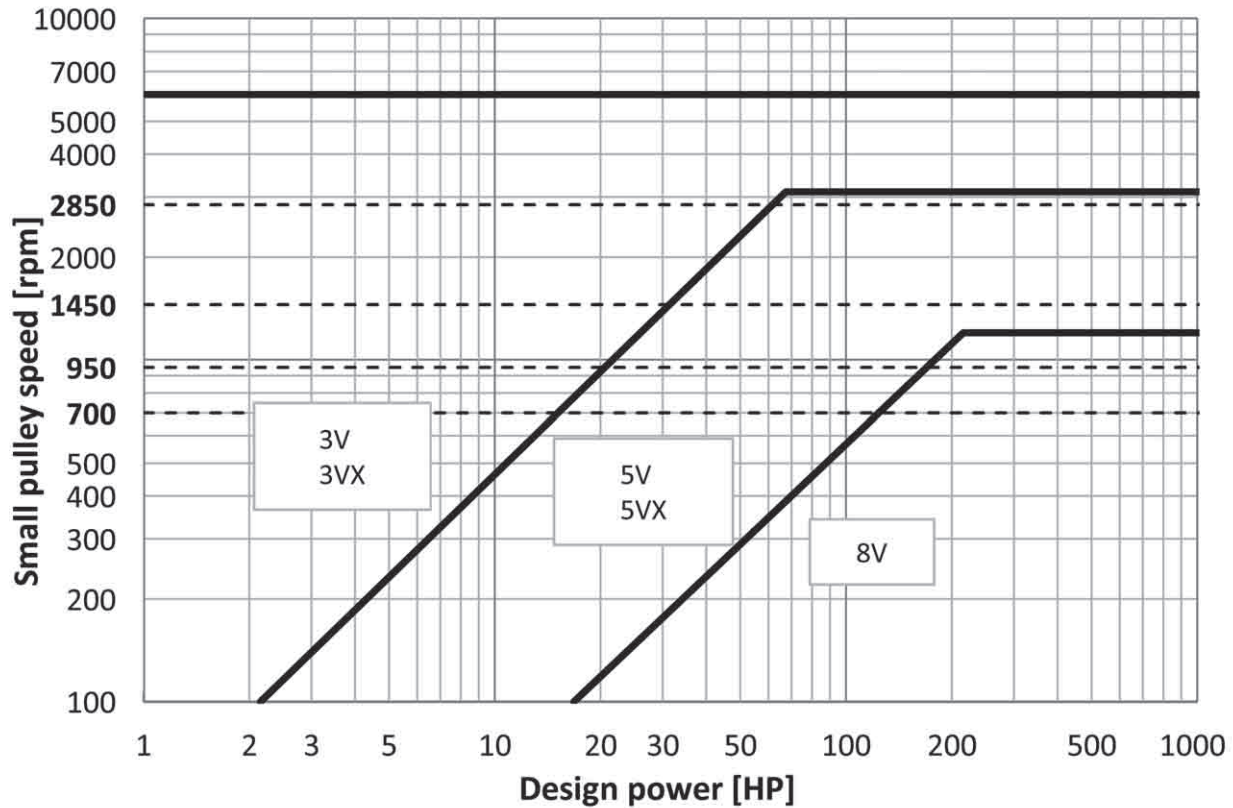
Select the belt type.

● Select the belt type in the selection charts below according to design power and small pulley speed.

● If the intersection locates near the dividing line, select belt type considering other conditions such as pulley cost.

Cross section selection chart for Maxstar Wedge V-Belts

Fig. 2-5



4

Select the pulley size.

4-A : Select from the standard pulleys.

You can obtain pulley size, belt length, and center distance easily by using Drive Selection Table on page 2-43 ~ 2-66.

Speed ratio	Effective diameter (inches)		Center distance (inches)							
	Small pulley	Large pulley	3V 250	3V 265	3V 280	3V 300	3V 315	3V 335	3V 355	
1.59	3.35	5.30	5.6	6.4	7.1	8.1	8.9	9.9	10.9	
1.60	3.15	5.00	6.0	6.8	7.5	8.5	9.3	10.3	11.3	
1.61	5.00	8.00	-	-	-	-	-	-	7.4	
1.62	2.80	4.50	6.7	7.5	8.2	9.2	10.0	11.0	12.0	
1.64	6.50	10.60	-	-	-	-	-	-	-	
1.65	3.65	6.00	5.5	6.3	7.0	8.0	8.8	9.8	10.8	
1.66	2.50 *	4.12	7.3	8.0	8.8	9.8	10.5	11.5	12.5	
1.67	2.20 *	3.65	7.9	8.6	9.4	10.4	11.1	12.1	13.1	
1.68	3.00	5.00	6.1	6.9	7.7	8.7	9.4	10.4	11.4	
1.68	3.35	5.60	5.4	6.1	6.9	7.9	8.6	9.7	10.7	

- 1) Choose the speed ratio to satisfy your drive design.
- 2) Choose the pulley size.
- 3) Choose the center distance.
- 4) Look up to find the belt length.
→Go to design flow ⑥

4-B : With the nonstandard pulley.

Follow the procedure below if you cannot find the desired speed ratio in the Drive Selection Table.

- 1) Choose the speed ratio closest to the desired speed ratio.
- 2) Choose the large pulley from the standard pulleys.
- 3) Calculate the effective diameter of the small pulley from the following formula.

$$de = \frac{Dp}{SR} + (\text{Difference between effective diameter and pitch diameter})$$

de : Small pulley effective diameter
Dp : Large pulley pitch diameter
SR : Speed ratio

Difference between effective diameter and pitch diameter Table 2-14

Belt type	3V-3VX	5V-5VX	8V
Difference (in)	0.05	0.10	0.20

Pulley diameter should be larger than the minimum pulley effective diameter specified in Table 2-15.

Minimum pulley effective diameter Table 2-15

Belt type	3V	3VX	5V	5VX	8V
Minimum pulley effective diameter (in)	2.65	2.20	7.10	4.40	12.50

5

Determine the belt length.

5-A : Determine from Drive Selection Table.

- 1) Choose the speed ratio and center distance closest to your drive in Drive Selection Table on page 2-43 ~ 2-66.
- 2) Precise center distance is calculated by adding the following correction value to the center distance in Drive Selection Table.

Center distance correction value = $0.8 \times (\text{Effective diameter of the standard small pulley} - \text{Effective diameter of the calculated small pulley})$

5-B : Determine from the calculation formula.

- 1) Determine the interim belt effective length.

$$Le' = 2C' + 1.57(De + de)$$

Le' : Interim belt effective length (in)

C' : Interim center distance (in)

De : Large pulley effective diameter (in)

de : Small pulley effective diameter (in)

- 2) Select the standard belt length closest to the Lp' from our lineup.

Center distance is calculated by the following formula.

$$C = \frac{b + \sqrt{b^2 - 8(De - de)^2}}{8}$$

C : Center distance (in)

b : $2Le - \pi(De + de)$

Le : Belt effective length (in)



6

Determine the required number of belts.

Required number of belts (nb) is determined as follows.
Round up the calculation results.

$$nb = \frac{Pd}{Pc}$$

$$\uparrow Pc = (Ps + Pa) \times Kc$$

$$\uparrow Kc = K\theta \times K\ell$$

$$\uparrow K\ell = \frac{De - de}{C}$$

nb : Required number of belt
Pd : Design power (HP)
Pc : Correction power rating (HP)
Ps : Basic power rating (HP)
Pa : Additional power rating for speed ratio (HP)
Kc : Power rating correction factor
Kθ : Arc of contact correction factor
Kℓ : Belt length correction factor
De : Large pulley effective diameter (in)
de : Small pulley effective diameter (in)
C : Center distance (in)

With the standard pulley, you can obtain Kc easily from Drive Selection Table.

Kc is as in Color coding below.

Color coding of Power rating correction factor : Kc

0.7	0.8	0.9	1.0	1.1	1.2
-----	-----	-----	-----	-----	-----

●Arc of contact correction factor : Kθ Table 2-16

$\frac{De-de}{C}$	Contact angle on small pulley $\theta(^{\circ})$	Kθ
0.00	180	1.00
0.10	174	0.99
0.20	169	0.97
0.30	163	0.96
0.40	157	0.94
0.50	151	0.93
0.60	145	0.91
0.70	139	0.89
0.80	133	0.87
0.90	127	0.85
1.00	120	0.82
1.10	113	0.80
1.20	106	0.77
1.30	99	0.73
1.40	91	0.70
1.50	83	0.65

$$\text{Contact angle on small pulley : } \theta = 180 - 2\sin^{-1} \frac{De - de}{2C}$$

$$\text{Contact angle on large pulley : } \theta = 180 + 2\sin^{-1} \frac{De - de}{2C}$$

De : Large pulley effective diameter (in)
de : Small pulley effective diameter (in)
C : Center distance (in)

●Belt length correction factor for Maxstar Wedge V-Belts: Kℓ

Table 2-17

Length designation	Belt length correction factor : Kℓ		
	3V 3VX	5V 5VX	8V
250	0.83		
265	0.84		
280	0.85		
300	0.86		
315	0.87		
335	0.88		
355	0.89		
375	0.90		
400	0.92		
425	0.93		
450	0.94		
475	0.95		
500	0.96	0.85	
530	0.97	0.86	
560	0.98	0.87	
600	0.99	0.88	
630	1.00	0.89	
670	1.01	0.90	
710	1.02	0.91	
750	1.03	0.92	
800	1.04	0.93	
850	1.06	0.94	
900	1.07	0.95	
950	1.08	0.96	
1000	1.09	0.96	0.87
1060	1.10	0.97	0.88
1120	1.11	0.98	0.88
1180	1.12	0.99	0.89
1250	1.13	1.00	0.90
1320	1.14	1.01	0.91
1400	1.15	1.02	0.92
1500		1.03	0.93
1600		1.04	0.94
1700		1.05	0.94
1800		1.06	0.95
1900		1.07	0.96
2000		1.08	0.97
2120		1.09	0.98
2240		1.09	0.98
2360		1.10	0.99
2500		1.11	1.00
2650		1.12	1.01
2800		1.13	1.02
3000		1.14	1.03
3150		1.15	1.03
3350		1.16	1.04
3550		1.17	1.05
3750			1.06
4000			1.07
4250			1.08
4500			1.09
4750			1.09
5000			1.10
5600			1.11
6000			1.13

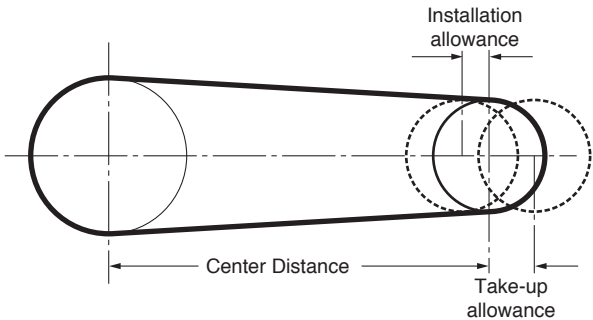


7

Installation and take-up allowance.

Installation and take-up allowance are as follows.
Use idler pulley if you cannot arrange allowance.

Fig. 2-6



● Installation and take-up allowance for Maxstar Wedge V-Belts

Table 2-18

Length designation	Installation allowance (in)			Take-up allowance (in)
	3V, 3VX	5V, 5VX	8V	
Up to and incl. 475	0.5			1.0
Over 475 to and incl. 710	0.8	1.0		1.2
Over 710 to and incl. 1060	0.8	1.0	1.5	1.5
Over 1060 to and incl. 1250	0.8	1.0	1.5	1.8
Over 1250 to and incl. 1700	0.8	1.0	1.5	2.2
Over 1700 to and incl. 2000		1.0	1.8	2.5
Over 2000 to and incl. 2360		1.2	1.8	3.0
Over 2360 to and incl. 2650		1.2	1.8	3.2
Over 2650 to and incl. 3000		1.2	1.8	3.5
Over 3000 to and incl. 3550		1.2	2.0	4.0
Over 3550 to and incl. 3750			2.0	4.5
Over 3750 to and incl. 6000			2.0	5.5

Calculation example for Maxstar Wedge V-Belts #1 (With the standard pulley)

Design Flow

1

Set conditions required in design work.

- a. Type of machine ... Blower
- b. Transmission power ... 5 HP
- c. Running hours in a single day ... 8 hours / day
- d. Small pulley speed ... 1750rpm

- e. Speed ratio ... 1.87 (Deceleration)
- f. Interim center distance ... 16"
- g. Special uses and environmental conditions ... None

Design Flow

2

Set the design power.

Service correction factor : $K_o = 1.1$ (Table 2-11)
 Idler correction factor : $K_i = 0$ (Table 2-12)
 Environment correction factor : $K_e = 0$ (Table 2-13)
 Service factor : $K_s = K_o + K_i + K_e$
 $= 1.1 + 0 + 0$
 $= 1.1$
 Design power : $P_d = P_t \times K_s$
 $= 5 \times 1.1$
 $= 5.5 \text{ HP}$

Design Flow

6

Determine the required number of belts.

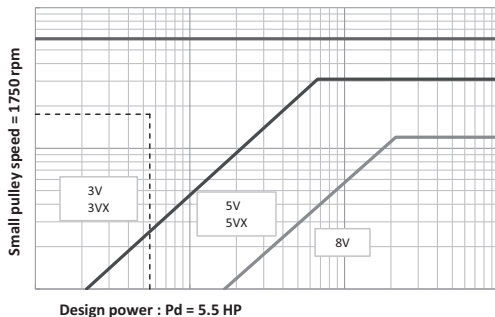
$P_s = 2.37 \text{ HP}$ (Refer to Power Rating Table)
 $P_a = 0.39 \text{ HP}$ (Refer to Power Rating Table)
 $K_c = 0.9$ (Refer to Drive Selection Table)
 $P_c = (P_s + P_a) \times K_c = (2.37 + 0.39) \times 0.9 = 2.48 \text{ HP}$
 $n_b = \frac{P_d}{P_c} = \frac{5.5}{2.48} = 2.2 \rightarrow 3 \text{ pcs.}$

Design Flow

3

Select the belt type.

Select the belt type in Cross section selection chart.
 The lines of P_d (5.5 HP) and small pulley speed (1750rpm) intersect in 3V section.



Design Flow

7

Installation and take-up allowance.

Installation and take-up allowance are obtained from Table 2-18.

Installation allowance = 0.5"
 $\rightarrow$ Minimum center distance = $15.7 - 0.5 = 15.2"$
 Take-up allowance = 1.0"
 $\rightarrow$ Maximum center distance = $15.7 + 1.0 = 16.7"$

Summary

Belt : 3V-450, 3 pcs.
 Driver pulley : 3.00-3V-3 (Effective diameter = 3.00", 3 grooves)
 Driven pulley : 5.60-3V-3 (Effective diameter = 5.60", 3 grooves)
 Center distance : 15.7" (+1.0" / -0.5")

Design Flow

4

5

Select the pulley size.
 Determine the belt length.

Speed ratio	Effective diameter (inches)		Center distance (inches)							
	Small pulley	Large pulley	3V 250	3V 265	3V 355	3V 375	3V 400	3V 425	3V 450	4)
1.82 1)	2.50	4.50	6.9	7.7	12.2	13.2	14.5	15.7	17.5	
1.86 1)	3.00	5.60	7.5	8.2	12.8	13.8	15.0	16.3	17.5	
1.89	2.20	4.12	6.4	7.1	11.7	12.7	13.9	15.2	16.4	
1.90	2.65	5.00	-	-	9.3	10.3	11.6	12.9	14.1	
1.90	3.65	6.90	-	-	-	-	-	-	-	

Small pulley effective diameter : $d_e = 3.00"$
 Large pulley effective diameter : $D_e = 5.60"$
 Center distance : $C = 15.7"$
 Belt size = 3V-450

2
Design



Calculation example for Maxstar Wedge V-Belts #2 (With nonstandard pulley)

Design Flow

1

Set conditions required in design work.

- a. Type of machine ... Generator
- b. Transmission power ... 50 HP (Gasoline engine)
- c. Running hours in a single day ... 8 hours / day
- d. Small pulley speed ... 1000rpm

- e. Speed ratio ... 1.65 (Deceleration)
- f. Interim center distance ... 60"
- g. Special uses and environmental conditions ... None

Design Flow

2

Set the design power.

Service correction factor : $K_o = 1.3$ (Table 2-11)
 Idler correction factor : $K_i = 0$ (Table 2-12)
 Environment correction factor : $K_e = 0$ (Table 2-13)
 Service factor : $K_s = K_o + K_i + K_e$
 $= 1.3 + 0 + 0$
 $= 1.3$
 Design power : $P_d = P_t \times K_s$
 $= 50 \times 1.3$
 $= 65 \text{ HP}$

Design Flow

5

Determine the belt length.

1) Center distance = 62.3" (5V-1600) is chosen from the SR = 1.65 in Drive Selection Table.

2) Precise center distance is calculated as follows.
 Effective diameter of the standard small pulley = 8.50"
 Effective diameter of the calculated small pulley = 8.52"

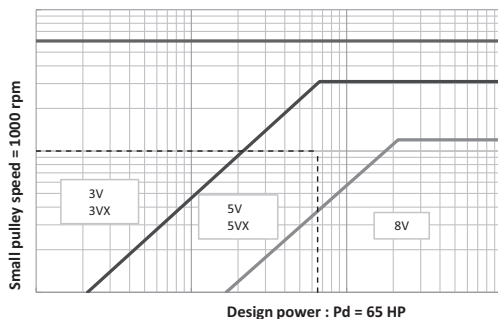
$$C = 62.3 + 0.8 \times (8.50 - 8.52) \\ \doteq 62.28"$$

Design Flow

3

Select the belt type.

Select the belt type in the cross section selection chart. The lines of P_d (65 HP) and small pulley speed (1000rpm) intersect in 5V section.



Center distance is also calculated as follows.

$$b = 2Le - \pi (De + de) \\ = 2 \times 160 - 3.14 \times (14.00 + 8.52) \\ \doteq 249.25 \\ C = \frac{b + \sqrt{b^2 - 8(De - de)^2}}{8} \\ = \frac{249.25 + \sqrt{249.25^2 - 8(14.00 - 8.52)^2}}{8} \\ \doteq 62.25"$$

Design Flow

4

Select the pulley size.

- 1) Choose the speed ratio closest to the desired speed ratio.
- 2) Choose the large pulley from the standard pulley.

Large pulley effective diameter : $De = 14.00"$
 is chosen from the SR = 1.65 in Drive Selection Table.

- 3) Calculate the small pulley effective diameter.

$$de = \frac{14.00 - 0.10}{1.65} + 0.1 \\ \doteq 8.52"$$

Design Flow



Determine the required number of belts.

$P_s = 15.64$ HP (Refer to Power Rating Table)

$P_a = 1.25$ HP (Refer to Power Rating Table)

$$\frac{D_e - d_e}{C} = \frac{14.00 - 8.52}{62.25} = 0.088$$

$K_\theta = 0.99$ (Refer to Table 2-16).

$K_\ell = 1.04$ (Refer to Table 2-17).

$K_c = K_\theta \times K_\ell = 0.99 \times 1.04 = 1.03$

$P_c = (P_s + P_a) \times K_c = (15.64 + 1.25) \times 1.03 = 17.40$ HP

$$n_b = \frac{P_d}{P_c} = \frac{65}{17.40} = 3.7 \rightarrow 4 \text{ pcs.}$$

Design Flow



Installation and take-up allowance.

Installation and take-up allowance are obtained from Table 2-18.

Installation allowance = 1.0"

→ Minimum center distance = $62.25 - 1.0 = 61.25$ "

Take-up allowance = 2.2"

→ Maximum center distance = $62.25 + 2.2 = 64.45$ "

●Summary

Belt : 5V-1600, 4 pcs.

Driver pulley : 8.52-5V-4 (Effective diameter = 8.52", 4 grooves)

Driven pulley : 14.00-5V-4 (Effective diameter = 14.00", 4 grooves)

Center distance : 62.25" (+2.2" / -1.0")



Formulas for V-Belt drives design

Table 2-19

Item	Formula	Term
Design power	$P_d = P_t \times K_s$	P_d : Design power (HP) P_t : Transmission power (HP) K_s : Service factor
Service factor	$K_s = K_o + K_i + K_e$	K_s : Service factor K_o : Service correction factor K_i : Idler correction factor K_e : Environment correction factor
Power rating	$P_r = P_s + P_a$	P_r : Power rating (HP) P_s : Basic power rating (HP) P_a : Additional power rating for speed ratio (HP)
Correction power rating	$P_c = P_r \times K_l \times K_\theta$	P_c : Correction power rating (HP) P_r : Power rating (HP) K_l : Belt length correction factor K_θ : Arc of contact correction factor
Speed ratio	$SR = \frac{n_d}{n_D} = \frac{D_d}{d_d}$	SR : Speed ratio n_d : Small pulley speed (rpm) n_D : Large pulley speed (rpm) D_d : Large pulley datum diameter (in) d_d : Small pulley datum diameter (in)
Interim effective length	$L_e' = 2C' + 1.57(D_e + d_e)$	L_e' : Interim effective length (in) C' : Interim center distance (in) D_e : Large pulley effective diameter (in) d_e : Small pulley effective diameter (in)
Effective length	$L_e = 2C + \frac{\pi(D_e + d_e)}{2} + \frac{(D_e - d_e)^2}{4C}$	L_e : Effective length (in) C : Center distance (in) D_e : Large pulley effective diameter (in) d_e : Small pulley effective diameter (in) π : 3.1416
Center distance	$C = \frac{b + \sqrt{b^2 - 8(D_e - d_e)^2}}{8}$ $b = 2L_e - \pi(D_e + d_e)$	C : Center distance (in) D_e : Large pulley effective diameter (in) d_e : Small pulley effective diameter (in) L_e : Effective length (in) π : 3.1416
Arc of contact	$\theta = 180^\circ - \frac{57.3(D_e - d_e)}{C}$	θ : Arc of contact for small pulley (°) D_e : Large pulley effective diameter (in) d_e : Small pulley effective diameter (in) C : Center distance (in)
Number of belts	$n_b = \frac{P_d}{P_c}$	n_b : Number of belts P_d : Design power (HP) P_c : Correction power rating (HP)

Table 2-19

Item	Formula	Term
Belt speed	$V = \frac{dd \times nd}{3.82}$	V : Belt speed (ft/min.) dd : Small pulley datum diameter (in) nd : Small pulley speed (rpm)
Transmission power	$P_t = \frac{T_e \times V}{33000}$	P _t : Transmission power (HP) T _e : Effective tension (lb) V : Belt speed (ft/min.)
Transmission power	$P_t = \frac{T_q \times n}{63025}$	P _t : Transmission power (HP) T _q : Torque (lb·in) n : Pulley speed (rpm)
Effective tension	$T_e = \frac{2T_q}{dd}$	T _e : Effective tension (lb) T _q : Torque (lb·in) dd : Small pulley datum diameter (in)
Effective tension	$T_e = \frac{33000 \times P_t}{V}$	T _e : Effective tension (lb) P _t : Transmission power (HP) V : Belt speed (ft/min.)
Torque	$T_q = T_e \times \frac{dd}{2}$	T _q : Torque (lb·in) T _e : Effective tension (lb) dd : Small pulley datum diameter (in)
Tight side tension	$T_t = \frac{33000 \times P_d}{nb \times V} \times \frac{2.5}{2 \times K\theta} + W \times V^2 \times 5.8 \times 10^{-6}$	T _t : Tight side tension (lb) P _d : Design power (HP) nb : Number of belts V : Belt speed (ft/min.) Kθ : Arc of contact correction factor W : Belt weight per unit (kg/m)
Slack side tension	$T_s = \frac{33000 \times P_d}{nb \times V} \times \frac{2.5 - 2 \times K\theta}{2 \times K\theta} + W \times V^2 \times 5.8 \times 10^{-6}$	T _s : Slack side tension (lb) P _d : Design power (HP) nb : Number of belts V : Belt speed (ft/min.) Kθ : Arc of contact correction factor W : Belt weight per unit (kg/m)
Tension ratio	$TR = \frac{T_t}{T_s}$	TR : Tension ratio T _t : Tight side tension (lb) T _s : Slack side tension (lb)
Minimum static tension	$T_o = 0.9 \times \frac{T_t + T_s}{2}$ $= 0.9 \times \left\{ \frac{33000 \times P_d}{nb \times V} \times \frac{2.5 - K\theta}{2 \times K\theta} + W \times V^2 \times 5.8 \times 10^{-6} \right\}$	T _o : Minimum static tension (lb) Kθ : Arc of contact correction factor P _d : Design power (HP) nb : Number of belts V : Belt speed (ft/min.) W : Belt weight per unit (kg/m)
Static shaft load	$F_s = 1.5 (2nb \times T_o \times \sin \frac{\theta}{2})$	F _s : Static shaft load (lb) nb : Number of belts T _o : Minimum static tension (lb) θ : Arc of contact for small pulley (°)
Span length	$L_s = \sqrt{C^2 - \frac{(D_e - d_e)^2}{4}}$	L _s : Span length (in) C : Center distance (in) D _e : Large pulley effective diameter (in) d _e : Small pulley effective diameter (in)



C-Section Power Rating

Table 2-24

small pulley speed (rpm)	Basic power rating for small pulley datum diameter : Ps									Additional power rating for speed ratio : Pa			
	Small pulley datum diameter (in)									Speed ratio			
	9.00	9.50	10.00	10.50	11.00	12.00	13.00	14.00	16.00	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	1.57<
700	9.93	10.88	11.83	12.77	13.70	15.52	17.32	19.07	22.46	0.09	0.59	0.84	1.03
950	12.48	13.70	14.90	16.08	17.24	19.51	21.71	23.83	27.83	0.12	0.80	1.14	1.40
1450	16.42	18.00	19.54	21.03	22.47	25.19	27.71	29.99	33.84	0.19	1.22	1.73	2.13
2850	17.07	18.11	18.86	19.31	-	-	-	-	-	0.37	2.40	3.41	4.19
50	1.07	1.16	1.25	1.34	1.43	1.60	1.78	1.95	2.30	0.01	0.04	0.06	0.07
100	1.96	2.13	2.29	2.46	2.63	2.96	3.29	3.62	4.27	0.01	0.08	0.12	0.15
150	2.77	3.02	3.26	3.51	3.75	4.23	4.71	5.18	6.12	0.02	0.13	0.18	0.22
200	3.54	3.86	4.18	4.50	4.81	5.43	6.05	6.67	7.88	0.03	0.17	0.24	0.29
250	4.28	4.67	5.06	5.45	5.83	6.59	7.35	8.10	9.57	0.03	0.21	0.30	0.37
300	4.99	5.45	5.91	6.36	6.81	7.71	8.59	9.47	11.21	0.04	0.25	0.36	0.44
350	5.67	6.20	6.72	7.24	7.76	8.79	9.80	10.81	12.79	0.05	0.29	0.42	0.51
400	6.34	6.93	7.52	8.10	8.68	9.84	10.98	12.10	14.32	0.05	0.34	0.48	0.59
450	6.98	7.64	8.29	8.94	9.58	10.85	12.11	13.36	15.79	0.06	0.38	0.54	0.66
500	7.60	8.32	9.04	9.75	10.45	11.84	13.22	14.57	17.23	0.07	0.42	0.60	0.74
550	8.21	8.99	9.76	10.53	11.30	12.81	14.29	15.75	18.61	0.07	0.46	0.66	0.81
600	8.80	9.64	10.47	11.30	12.12	13.74	15.33	16.90	19.94	0.08	0.51	0.72	0.88
650	9.37	10.27	11.16	12.04	12.92	14.65	16.34	18.00	21.23	0.08	0.55	0.78	0.96
700	9.93	10.88	11.83	12.77	13.70	15.52	17.32	19.07	22.46	0.09	0.59	0.84	1.03
750	10.47	11.48	12.48	13.47	14.45	16.38	18.26	20.10	23.65	0.10	0.63	0.90	1.10
800	11.00	12.06	13.11	14.15	15.18	17.20	19.17	21.09	24.78	0.10	0.67	0.96	1.18
850	11.51	12.62	13.73	14.82	15.89	18.00	20.05	22.04	25.85	0.11	0.72	1.02	1.25
900	12.00	13.17	14.32	15.46	16.58	18.77	20.90	22.96	26.87	0.12	0.76	1.08	1.32
950	12.48	13.70	14.90	16.08	17.24	19.51	21.71	23.83	27.83	0.12	0.80	1.14	1.40
1000	12.95	14.21	15.45	16.67	17.88	20.22	22.48	24.65	28.73	0.13	0.84	1.20	1.47
1050	13.40	14.70	15.99	17.25	18.49	20.90	23.22	25.44	29.57	0.14	0.88	1.26	1.54
1100	13.83	15.18	16.50	17.80	19.08	21.55	23.92	26.18	30.35	0.14	0.93	1.32	1.62
1150	14.25	15.64	17.00	18.34	19.64	22.17	24.58	26.87	31.06	0.15	0.97	1.38	1.69
1200	14.66	16.08	17.48	18.84	20.18	22.76	25.21	27.52	31.71	0.16	1.01	1.44	1.76
1250	15.04	16.50	17.93	19.33	20.69	23.31	25.79	28.12	32.28	0.16	1.05	1.50	1.84
1300	15.41	16.91	18.37	19.79	21.18	23.84	26.33	28.66	32.78	0.17	1.10	1.55	1.91
1350	15.77	17.29	18.78	20.23	21.64	24.32	26.83	29.16	33.21	0.18	1.14	1.61	1.99
1400	16.10	17.66	19.17	20.64	22.07	24.78	27.29	29.60	33.56	0.18	1.18	1.67	2.06
1450	16.42	18.00	19.54	21.03	22.47	25.19	27.71	29.99	33.84	0.19	1.22	1.73	2.13
1500	16.72	18.33	19.89	21.39	22.84	25.57	28.07	30.33	34.03	0.20	1.26	1.79	2.21
1550	17.01	18.64	20.21	21.73	23.18	25.92	28.40	30.60	34.14	0.20	1.31	1.85	2.28
1600	17.28	18.92	20.51	22.04	23.50	26.22	28.61	30.82	34.17	0.21	1.35	1.91	2.35
1650	17.52	19.19	20.79	22.32	23.78	26.49	28.90	30.98	34.11	0.22	1.39	1.97	2.43
1700	17.75	19.43	21.04	22.57	24.03	26.71	29.07	31.08	33.95	0.22	1.43	2.03	2.50
1750	17.96	19.65	21.26	22.80	24.25	26.90	29.19	31.11	33.71	0.23	1.47	2.09	2.57
1800	18.16	19.85	21.46	22.99	24.43	27.04	29.27	31.08	33.38	0.23	1.52	2.15	2.65
1850	18.33	20.03	21.64	23.16	24.58	27.14	29.28	30.98	32.94	0.24	1.56	2.21	2.72
1900	18.48	20.18	21.78	23.29	24.70	27.20	29.25	30.82	-	0.25	1.60	2.27	2.79
1950	18.61	20.31	21.91	23.40	24.78	27.21	29.16	30.59	-	0.25	1.64	2.33	2.87
2000	18.72	20.41	22.00	23.47	24.83	27.18	29.01	30.29	-	0.26	1.69	2.39	2.94
2050	18.81	20.50	22.06	23.51	24.84	27.10	28.80	29.91	-	0.27	1.73	2.45	3.02
2100	18.88	20.55	22.10	23.52	24.81	26.97	28.53	29.46	-	0.27	1.77	2.51	3.09
2150	18.93	20.58	22.11	23.50	24.75	26.79	28.20	28.94	-	0.28	1.81	2.57	3.16
2200	18.95	20.59	22.09	23.44	24.64	26.57	27.81	-	-	0.29	1.85	2.63	3.24
2250	18.95	20.57	22.04	23.35	24.50	26.29	27.36	-	-	0.29	1.90	2.69	3.31
2300	18.93	20.52	21.95	23.22	24.32	25.96	26.84	-	-	0.30	1.94	2.75	3.38
2350	18.89	20.45	21.84	23.06	24.09	25.58	-	-	-	0.31	1.98	2.81	3.46
2400	18.82	20.34	21.69	22.86	23.83	25.15	-	-	-	0.31	2.02	2.87	3.53
2450	18.73	20.22	21.52	22.62	23.52	24.66	-	-	-	0.32	2.06	2.93	3.60
2500	18.61	20.06	21.30	22.34	23.17	24.12	-	-	-	0.33	2.11	2.99	3.68
2550	18.47	19.87	21.06	22.03	22.77	-	-	-	-	0.33	2.15	3.05	3.75
2600	18.30	19.65	20.78	21.68	22.33	-	-	-	-	0.34	2.19	3.11	3.82
2650	18.11	19.41	20.47	21.29	21.85	-	-	-	-	0.35	2.23	3.17	3.90
2700	17.89	19.13	20.12	20.85	21.32	-	-	-	-	0.35	2.28	3.23	3.97
2750	17.64	18.82	19.74	20.38	-	-	-	-	-	0.36	2.32	3.29	4.04
2800	17.37	18.48	19.32	19.87	-	-	-	-	-	0.36	2.36	3.35	4.12
2850	17.07	18.11	18.86	19.31	-	-	-	-	-	0.37	2.40	3.41	4.19
2900	16.75	17.71	18.37	-	-	-	-	-	-	0.38	2.44	3.47	4.27
2950	16.39	17.28	17.84	-	-	-	-	-	-	0.38	2.49	3.53	4.34
3000	16.01	16.81	17.27	-	-	-	-	-	-	0.39	2.53	3.59	4.41
3050	15.60	16.30	-	-	-	-	-	-	-	0.40	2.57	3.65	4.49
3100	15.16	15.77	-	-	-	-	-	-	-	0.40	2.61	3.71	4.56
3150	14.69	15.20	-	-	-	-	-	-	-	0.41	2.65	3.77	4.63
3200	14.19	-	-	-	-	-	-	-	-	0.42	2.70	3.83	4.71
3250	13.65	-	-	-	-	-	-	-	-	0.42	2.74	3.89	4.78

Unit : (HP)

Belt speed is over 5900 to 6900 feet per minute. Please consult our sales company or Engineering Department.

Belt speed is over 6900 to 7900 feet per minute. Please consult our sales company or Engineering Department.

E-Section Power Rating

Table 2-27

small pulley speed (rpm)	Basic power rating for small pulley datum diameter : Ps												Additional power rating for speed ratio : Pa			
	Small pulley datum diameter (in)												Speed ratio			
	17.70	19.70	22.00	24.80	26.40	28.00	29.50	31.50	33.50	35.40	37.40	39.40	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	1.57 <
450	31.13	37.13	43.83	51.70	56.04	60.28	64.14	69.14	73.94	78.32	82.73	86.93	0.29	1.87	2.65	3.26
700	42.19	50.16	58.76	68.36	73.39	78.07	82.12	87.00	91.24	94.66	97.58	99.78	0.45	2.90	4.12	5.07
950	48.92	57.54	66.17	74.68	78.48	81.45	83.45	84.87	-	-	-	-	0.61	3.94	5.59	6.88
1450	45.99	50.27	-	-	-	-	-	-	-	-	-	-	0.93	6.01	8.54	10.50
20	2.20	2.57	2.99	3.50	3.79	4.08	4.35	4.71	5.07	5.40	5.76	6.11	0.01	0.08	0.12	0.14
40	4.05	4.76	5.56	6.53	7.08	7.63	8.14	8.81	9.49	10.12	10.79	11.45	0.03	0.17	0.24	0.29
60	5.78	6.80	7.97	9.37	10.17	10.96	11.70	12.68	13.65	14.57	15.54	16.50	0.04	0.25	0.35	0.43
80	7.42	8.75	10.27	12.09	13.13	14.16	15.12	16.39	17.65	18.84	20.09	21.34	0.05	0.33	0.47	0.58
100	9.00	10.63	12.49	14.72	15.99	17.24	18.42	19.97	21.52	22.97	24.50	26.01	0.06	0.41	0.59	0.72
120	10.53	12.45	14.64	17.27	18.76	20.24	21.62	23.45	25.27	26.98	28.77	30.55	0.08	0.50	0.71	0.87
140	12.01	14.22	16.73	19.75	21.46	23.16	24.74	26.84	28.92	30.87	32.92	34.95	0.09	0.58	0.82	1.01
160	13.45	15.94	18.77	22.17	24.10	26.01	27.79	30.14	32.47	34.67	36.96	39.23	0.10	0.66	0.94	1.16
180	14.85	17.62	20.77	24.54	26.67	28.79	30.76	33.36	35.94	38.36	40.89	43.39	0.12	0.75	1.06	1.30
200	16.23	19.26	22.72	26.85	29.19	31.51	33.66	36.50	39.31	41.96	44.71	47.43	0.13	0.83	1.18	1.45
220	17.57	20.87	24.62	29.12	31.65	34.16	36.49	39.57	42.60	45.46	48.42	51.35	0.14	0.91	1.30	1.59
240	18.88	22.45	26.49	31.33	34.06	36.75	39.26	42.56	45.81	48.86	52.03	55.15	0.15	1.00	1.41	1.74
260	20.17	23.99	28.32	33.50	36.41	39.29	41.96	45.47	48.93	52.17	55.53	58.83	0.17	1.08	1.53	1.88
280	21.43	25.50	30.11	35.62	38.71	41.76	44.59	48.31	51.96	55.38	58.91	62.38	0.18	1.16	1.65	2.03
300	22.66	26.98	31.87	37.69	40.95	44.17	47.15	51.06	54.90	58.49	62.18	65.81	0.19	1.24	1.77	2.17
320	23.87	28.43	33.58	39.71	43.14	46.53	49.65	53.75	57.76	61.49	65.34	69.10	0.21	1.33	1.88	2.32
340	25.05	29.85	35.26	41.69	45.28	48.82	52.08	56.35	60.52	64.39	68.37	72.25	0.22	1.41	2.00	2.46
360	26.21	31.24	36.90	43.62	47.36	51.05	54.44	58.87	63.18	67.18	71.28	75.26	0.23	1.49	2.12	2.61
380	27.35	32.60	38.51	45.50	49.39	53.21	56.72	61.30	65.75	69.86	74.06	78.13	0.24	1.58	2.24	2.75
400	28.46	33.93	40.08	47.33	51.36	55.31	58.94	63.65	68.22	72.43	76.71	80.84	0.26	1.66	2.36	2.90
420	29.55	35.24	41.61	49.12	53.28	57.35	61.08	65.91	70.59	74.88	79.23	83.40	0.27	1.74	2.47	3.04
440	30.61	36.51	43.10	50.85	55.14	59.32	63.14	68.09	72.85	77.21	81.60	85.79	0.28	1.83	2.59	3.19
460	31.65	37.75	44.55	52.53	56.93	61.22	65.13	70.17	75.01	79.41	83.83	88.02	0.30	1.91	2.71	3.33
480	32.67	38.96	45.97	54.16	58.67	63.05	67.03	72.15	77.05	81.48	85.91	90.08	0.31	1.99	2.83	3.48
500	33.66	40.14	47.34	55.74	60.35	64.81	68.86	74.04	78.98	83.42	87.83	91.96	0.32	2.07	2.94	3.62
520	34.63	41.29	48.68	57.26	61.96	66.49	70.60	75.83	80.79	85.22	89.60	93.66	0.33	2.16	3.06	3.76
540	35.57	42.40	49.97	58.73	63.51	68.10	72.25	77.52	82.48	86.89	91.21	95.17	0.35	2.24	3.18	3.91
560	36.48	43.49	51.22	60.14	64.99	69.64	73.82	79.10	84.04	88.41	92.64	96.49	0.36	2.32	3.30	4.05
580	37.38	44.54	52.43	61.50	66.40	71.09	75.29	80.57	85.48	89.78	93.91	97.60	0.37	2.41	3.41	4.20
600	38.24	45.56	53.60	62.80	67.75	72.47	76.67	81.94	86.79	91.00	94.99	98.51	0.38	2.49	3.53	4.34
620	39.09	46.55	54.72	64.03	69.02	73.76	77.96	83.19	87.96	92.06	95.89	99.21	0.40	2.57	3.65	4.49
640	39.90	47.50	55.80	65.21	70.23	74.97	79.15	84.32	89.00	92.96	96.61	99.70	0.41	2.65	3.77	4.63
650	40.30	47.97	56.32	65.78	70.80	75.54	79.71	84.84	89.46	93.35	96.90	99.85	0.42	2.70	3.83	4.71
680	41.45	49.31	57.82	67.38	72.41	77.13	81.23	86.23	90.64	94.27	97.46	99.99	0.44	2.82	4.00	4.92
700	42.19	50.16	58.76	68.36	73.39	78.07	82.12	87.00	91.24	94.66	97.58	99.78	0.45	2.90	4.12	5.07
720	42.89	50.97	59.65	69.28	74.29	78.92	82.90	87.64	91.69	94.88	97.50	99.33	0.46	2.99	4.24	5.21
740	43.57	51.75	60.50	70.14	75.11	79.68	83.57	88.15	91.99	94.91	97.20	98.64	0.47	3.07	4.36	5.36
760	44.23	52.49	61.29	70.92	75.85	80.34	84.13	88.52	92.12	94.76	96.69	97.70	0.49	3.15	4.47	5.50
780	44.85	53.19	62.03	71.63	76.51	80.91	84.58	88.76	92.09	94.42	95.95	-	0.50	3.24	4.59	5.65
800	45.44	53.85	62.72	72.28	77.08	81.37	84.91	88.87	91.90	93.89	94.99	-	0.51	3.32	4.71	5.79
820	46.01	54.47	63.36	72.85	77.56	81.73	85.12	88.82	91.54	93.15	-	-	0.53	3.40	4.83	5.94
840	46.54	55.06	63.95	73.34	77.96	81.99	85.22	88.64	91.00	92.22	-	-	0.54	3.48	4.95	6.08
860	47.04	55.60	64.48	73.76	78.26	82.14	85.18	88.30	90.29	-	-	-	0.55	3.57	5.06	6.23
880	47.52	56.11	64.95	74.11	78.48	82.19	85.03	87.81	89.39	-	-	-	0.56	3.65	5.18	6.37
900	47.96	56.57	65.37	74.37	78.60	82.12	84.74	87.17	88.31	-	-	-	0.58	3.73	5.30	6.52
920	48.37	56.99	65.73	74.56	78.62	81.94	84.33	86.37	-	-	-	-	0.59	3.82	5.42	6.66
940	48.75	57.36	66.04	74.66	78.55	81.64	83.78	85.41	-	-	-	-	0.60	3.90	5.53	6.81
960	49.09	57.70	66.28	74.68	78.38	81.23	83.09	-	-	-	-	-	0.62	3.98	5.65	6.95
980	49.41	57.98	66.47	74.62	78.11	80.70	82.27	-	-	-	-	-	0.63	4.06	5.77	7.10
1000	49.68	58.23	66.59	74.47	77.74	80.05	81.31	-	-	-	-	-	0.64	4.15	5.89	7.24
1020	49.93	58.43	66.65	74.23	77.26	79.28	80.20	-	-	-	-	-	0.65	4.23	6.01	7.38
1040	50.14	58.58	66.65	73.90	76.68	78.37	-	-	-	-	-	-	0.67	4.31	6.12	7.53
1060	50.31	58.68	66.58	73.49	75.98	77.35	-	-	-	-	-	-	0.68	4.40	6.24	7.67
1080	50.45	58.74	66.45	72.98	75.18	-	-	-	-	-	-	-	0.69	4.48	6.36	7.82
1100	50.56	58.74	66.26	72.38	74.27	-	-	-	-	-	-	-	0.71	4.56	6.48	7.96
1120	50.62	58.70	65.99	71.69	73.24	-	-	-	-	-	-	-	0.72	4.65	6.59	8.11
1140	50.65	58.61	65.66	70.90	72.10	-	-	-	-	-	-	-	0.73	4.73	6.71	8.25
1160	50.64	58.47	65.26	70.01	-	-	-	-	-	-	-	-	0.74	4.81	6.83	8.40
1180	50.60	58.28	64.79	69.02	-	-	-	-	-	-	-	-	0.76	4.89	6.95	8.54
1200	50.51	58.03	64.24	67.94	-	-	-	-	-	-	-	-	0.77	4.98	7.07	8.69
1220	50.39	57.73	63.63	-	-	-	-	-	-	-	-	-	0.78	5.06	7.18	8.83
1240	50.23	57.38	62.94	-	-	-	-	-	-	-	-	-	0.80	5.14	7.30	8.98
1260	50.02	56.97	62.17	-	-	-	-	-	-	-	-	-	0.81	5.23	7.42	9.12
1280	49.78	56.51	61.33	-	-	-	-	-	-	-	-	-	0.82	5.31	7.54	9.27
1300	49.49	56.00	60.42	-	-	-	-	-	-	-	-	-	0.83	5.39	7.65	9.41

Belt speed is over 5900 to 6900 feet per minute. Please consult our sales company or Engineering Department.

Belt speed is over 6900 to 7900 feet per minute. Please consult our sales company or Engineering Department.

Unit : (HP)

2

Design



SPB-Section Power Rating

Table 2-32

small pulley speed (rpm)	Basic power rating for small pulley datum diameter : Ps															Additional power rating for speed ratio : Pa			
	Small pulley datum diameter (mm)															Speed ratio			
	140	150	160	180	190	200	212	224	236	250	280	315	355	375	400	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	1.57<
700	4.62	5.39	6.16	7.68	8.44	9.19	10.08	10.97	11.85	12.88	15.04	17.52	20.29	21.65	23.33	0.07	0.44	0.62	0.76
950	5.90	6.92	7.93	9.93	10.91	11.89	13.06	14.21	15.36	16.68	19.46	22.61	26.09	27.78	29.84	0.09	0.59	0.84	1.03
1450	8.16	9.62	11.07	13.91	15.30	16.68	18.30	19.90	21.47	23.26	26.96	31.02	35.30	37.28	39.59	0.14	0.90	1.28	1.58
2850	12.20	14.53	16.78	20.99	22.94	24.79	26.86	28.76	30.49	32.27	-	-	-	-	-	0.27	1.77	2.52	3.10
100	0.88	1.01	1.13	1.39	1.51	1.64	1.79	1.93	2.08	2.25	2.62	3.04	3.53	3.77	4.06	0.01	0.06	0.09	0.11
200	1.61	1.85	2.09	2.57	2.81	3.05	3.33	3.62	3.90	4.23	4.93	5.74	6.65	7.10	7.67	0.02	0.12	0.18	0.22
300	2.27	2.63	2.98	3.68	4.03	4.38	4.79	5.20	5.61	6.09	7.11	8.28	9.61	10.27	11.08	0.03	0.19	0.27	0.33
400	2.90	3.36	3.82	4.74	5.19	5.64	6.18	6.72	7.26	7.88	9.20	10.72	12.44	13.29	14.35	0.04	0.25	0.35	0.43
500	3.50	4.07	4.63	5.75	6.31	6.86	7.53	8.18	8.84	9.60	11.21	13.07	15.16	16.20	17.48	0.05	0.31	0.44	0.54
600	4.07	4.74	5.41	6.73	7.39	8.04	8.82	9.60	10.37	11.26	13.16	15.34	17.78	18.98	20.47	0.06	0.37	0.53	0.65
700	4.62	5.39	6.16	7.68	8.44	9.19	10.08	10.97	11.85	12.88	15.04	17.52	20.29	21.65	23.33	0.07	0.44	0.62	0.76
800	5.15	6.02	6.88	8.60	9.45	10.30	11.30	12.30	13.29	14.44	16.86	19.62	22.70	24.20	26.05	0.08	0.50	0.71	0.87
900	5.66	6.63	7.59	9.49	10.43	11.37	12.48	13.59	14.68	15.94	18.61	21.64	24.99	26.62	28.61	0.09	0.56	0.80	0.98
1000	6.15	7.21	8.27	10.36	11.39	12.41	13.63	14.83	16.02	17.40	20.29	23.56	27.16	28.90	31.02	0.10	0.62	0.88	1.09
1100	6.62	7.78	8.93	11.19	12.31	13.42	14.73	16.03	17.32	18.80	21.90	25.40	29.21	31.04	33.26	0.11	0.69	0.97	1.20
1200	7.08	8.33	9.57	12.00	13.20	14.39	15.80	17.19	18.57	20.15	23.45	27.13	31.13	33.03	35.32	0.12	0.75	1.06	1.30
1300	7.52	8.86	10.18	12.79	14.07	15.33	16.83	18.31	19.77	21.44	24.91	28.77	32.91	34.86	37.18	0.13	0.81	1.15	1.41
1400	7.95	9.37	10.78	13.54	14.90	16.24	17.82	19.38	20.91	22.67	26.30	30.30	34.54	36.51	38.84	0.13	0.87	1.24	1.52
1500	8.36	9.87	11.35	14.27	15.70	17.11	18.77	20.41	22.01	23.84	27.60	31.72	36.01	37.99	40.29	0.14	0.93	1.33	1.63
1600	8.75	10.34	11.91	14.97	16.47	17.94	19.68	21.38	23.05	24.94	28.82	33.01	37.33	39.28	41.51	0.15	1.00	1.41	1.74
1700	9.13	10.80	12.44	15.64	17.20	18.74	20.54	22.31	24.03	25.98	29.95	34.19	38.47	40.36	42.48	0.16	1.06	1.50	1.85
1800	9.49	11.23	12.94	16.28	17.90	19.50	21.36	23.18	24.95	26.95	30.99	35.24	39.43	41.24	43.21	0.17	1.12	1.59	1.96
1900	9.83	11.65	13.43	16.89	18.57	20.21	22.14	24.00	25.81	27.85	31.93	36.15	40.20	41.89	43.67	0.18	1.18	1.68	2.07
2000	10.16	12.04	13.89	17.47	19.20	20.89	22.86	24.77	26.61	28.68	32.76	36.92	40.77	42.31	-	0.19	1.25	1.77	2.17
2100	10.47	12.42	14.33	18.02	19.79	21.52	23.54	25.48	27.34	29.42	33.50	37.54	41.14	-	-	0.20	1.31	1.86	2.28
2200	10.76	12.77	14.74	18.53	20.35	22.12	24.16	26.13	28.01	30.09	34.12	38.01	-	-	-	0.21	1.37	1.94	2.39
2300	11.03	13.11	15.13	19.01	20.86	22.66	24.73	26.72	28.60	30.67	34.63	38.32	-	-	-	0.22	1.43	2.03	2.50
2400	11.29	13.42	15.49	19.45	21.34	23.16	25.25	27.24	29.12	31.17	35.02	38.47	-	-	-	0.23	1.49	2.12	2.61
2500	11.52	13.71	15.83	19.86	21.77	23.61	25.71	27.70	29.56	31.58	35.28	-	-	-	-	0.24	1.56	2.21	2.72
2600	11.74	13.97	16.13	20.23	22.16	24.01	26.12	28.09	29.93	31.90	35.42	-	-	-	-	0.25	1.62	2.30	2.83
2700	11.94	14.22	16.41	20.56	22.51	24.36	26.46	28.41	30.22	32.12	35.43	-	-	-	-	0.26	1.68	2.39	2.93
2800	12.12	14.43	16.67	20.86	22.81	24.66	26.74	28.66	30.42	32.24	-	-	-	-	-	0.27	1.74	2.48	3.04
2900	12.27	14.63	16.89	21.11	23.06	24.90	26.96	28.84	30.53	32.26	-	-	-	-	-	0.28	1.81	2.56	3.15
3000	12.41	14.80	17.08	21.32	23.27	25.09	27.11	28.94	30.56	32.18	-	-	-	-	-	0.29	1.87	2.65	3.26
3100	12.52	14.94	17.24	21.49	23.43	25.23	27.20	28.96	30.49	-	-	-	-	-	-	0.30	1.93	2.74	3.37
3200	12.61	15.06	17.37	21.62	23.53	25.30	27.21	28.90	30.34	-	-	-	-	-	-	0.31	1.99	2.83	3.48
3300	12.68	15.14	17.47	21.70	23.59	25.31	27.16	28.75	-	-	-	-	-	-	-	0.32	2.06	2.92	3.59
3400	12.73	15.21	17.54	21.73	23.59	25.26	27.03	28.53	-	-	-	-	-	-	-	0.33	2.12	3.01	3.70
3500	12.75	15.24	17.57	21.72	23.53	25.15	26.83	-	-	-	-	-	-	-	-	0.34	2.18	3.09	3.80
3600	12.75	15.24	17.57	21.66	23.42	24.97	26.55	-	-	-	-	-	-	-	-	0.35	2.24	3.18	3.91
3700	12.73	15.22	17.53	21.56	23.25	24.73	-	-	-	-	-	-	-	-	-	0.36	2.30	3.27	4.02
3800	12.68	15.17	17.45	21.40	23.03	24.42	-	-	-	-	-	-	-	-	-	0.37	2.37	3.36	4.13
3900	12.60	15.08	17.34	21.19	22.74	-	-	-	-	-	-	-	-	-	-	0.38	2.43	3.45	4.24
4000	12.50	14.96	17.19	20.92	22.39	-	-	-	-	-	-	-	-	-	-	0.39	2.49	3.54	4.35
4100	12.38	14.81	17.01	20.61	-	-	-	-	-	-	-	-	-	-	-	0.39	2.55	3.62	4.46
4200	12.22	14.63	16.78	20.23	-	-	-	-	-	-	-	-	-	-	-	0.40	2.62	3.71	4.57
4300	12.04	14.42	16.51	-	-	-	-	-	-	-	-	-	-	-	-	0.41	2.68	3.80	4.67
4400	11.83	14.17	16.21	-	-	-	-	-	-	-	-	-	-	-	-	0.42	2.74	3.89	4.78
4500	11.59	13.88	15.86	-	-	-	-	-	-	-	-	-	-	-	-	0.43	2.80	3.98	4.89
4600	11.33	13.56	15.47	-	-	-	-	-	-	-	-	-	-	-	-	0.44	2.86	4.07	5.00
4700	11.03	13.21	15.03	-	-	-	-	-	-	-	-	-	-	-	-	0.45	2.93	4.15	5.11
4800	10.70	12.82	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46	2.99	4.24	5.22
4900	10.34	12.39	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47	3.05	4.33	5.33
5000	9.96	11.92	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48	3.11	4.42	5.44
5100	9.53	11.42	-	-	-	-	-	-	-	-	-	-	-	-	-	0.49	3.18	4.51	5.54
5200	9.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50	3.24	4.60	5.65
5300	8.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51	3.30	4.69	5.76
5400	8.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.52	3.36	4.77	5.87
5500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.53	3.43	4.86	5.98

Belt speed is over 5900 to 6900 feet per minute. Please consult our sales company or Engineering Department.

Belt speed is over 6900 to 7900 feet per minute. Please consult our sales company or Engineering Department.

Unit : (HP)

5V-Section Power Rating

Table 2-38

small pulley speed (rpm)	Basic power rating for small pulley effective diameter : Ps																Additional power rating for speed ratio : Pa			
	Small pulley effective diameter (in)																Speed ratio			
	7.10	7.50	8.00	8.50	9.00	9.25	9.75	10.30	10.90	11.30	11.80	12.50	13.20	14.00	15.00	16.00	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	1.57<
700	8.53	9.41	10.50	11.58	12.65	13.19	14.25	15.41	16.66	17.49	18.52	19.95	21.37	22.97	24.94	26.89	0.08	0.50	0.71	0.87
950	11.02	12.17	13.59	14.99	16.39	17.08	18.45	19.95	21.56	22.62	23.93	25.75	27.54	29.54	31.99	34.37	0.11	0.68	0.96	1.19
1450	15.43	17.05	19.04	21.01	22.93	23.88	25.75	27.77	29.91	31.31	33.02	35.34	37.57	40.01	42.88	45.56	0.16	1.04	1.47	1.81
2850	23.29	25.59	28.29	30.78	33.07	34.13	36.07	37.94	-	-	-	-	-	-	-	-	0.32	2.04	2.89	3.56
100	1.55	1.69	1.87	2.05	2.23	2.32	2.50	2.70	2.91	3.05	3.23	3.47	3.72	4.00	4.34	4.69	0.01	0.07	0.10	0.12
200	2.87	3.14	3.49	3.83	4.17	4.35	4.69	5.06	5.46	5.73	6.07	6.54	7.00	7.53	8.19	8.85	0.02	0.14	0.20	0.25
300	4.10	4.50	5.00	5.51	6.00	6.25	6.75	7.29	7.88	8.27	8.76	9.44	10.11	10.88	11.83	12.78	0.03	0.21	0.30	0.37
400	5.27	5.80	6.45	7.11	7.75	8.08	8.72	9.43	10.19	10.70	11.33	12.21	13.09	14.08	15.32	16.54	0.04	0.29	0.41	0.50
500	6.40	7.04	7.85	8.65	9.44	9.84	10.63	11.49	12.42	13.04	13.82	14.89	15.96	17.17	18.66	20.15	0.06	0.36	0.51	0.62
600	7.48	8.24	9.19	10.14	11.07	11.54	12.47	13.48	14.58	15.31	16.21	17.47	18.72	20.13	21.87	23.60	0.07	0.43	0.61	0.75
700	8.53	9.41	10.50	11.58	12.65	13.19	14.25	15.41	16.66	17.49	18.52	19.95	21.37	22.97	24.94	26.89	0.08	0.50	0.71	0.87
800	9.55	10.54	11.76	12.98	14.18	14.78	15.97	17.27	18.67	19.60	20.75	22.35	23.92	25.69	27.88	30.01	0.09	0.57	0.81	1.00
900	10.54	11.63	12.99	14.33	15.66	16.33	17.64	19.07	20.61	21.63	22.90	24.64	26.36	28.29	30.66	32.97	0.10	0.64	0.91	1.12
1000	11.49	12.69	14.18	15.64	17.10	17.82	19.25	20.81	22.48	23.59	24.95	26.83	28.68	30.76	33.28	35.73	0.11	0.72	1.02	1.25
1100	12.42	13.72	15.33	16.91	18.48	19.26	20.80	22.48	24.27	25.46	26.92	28.92	30.89	33.08	35.74	38.30	0.12	0.79	1.12	1.37
1200	13.32	14.71	16.44	18.14	19.82	20.65	22.30	24.08	25.99	27.24	28.79	30.90	32.97	35.26	38.02	40.66	0.13	0.86	1.22	1.50
1300	14.18	15.67	17.51	19.32	21.10	21.99	23.73	25.61	27.62	28.94	30.56	32.77	34.91	37.28	40.12	42.80	0.14	0.93	1.32	1.62
1400	15.02	16.60	18.54	20.46	22.34	23.26	25.09	27.07	29.17	30.54	32.22	34.51	36.72	39.14	42.01	44.70	0.15	1.00	1.42	1.75
1500	15.82	17.49	19.53	21.54	23.51	24.48	26.40	28.45	30.63	32.05	33.78	36.13	38.38	40.83	43.70	46.35	0.17	1.07	1.52	1.87
1600	16.60	18.34	20.49	22.58	24.64	25.65	27.63	29.75	32.00	33.45	35.23	37.61	39.88	42.33	45.17	47.74	0.18	1.14	1.62	2.00
1700	17.34	19.16	21.39	23.57	25.70	26.74	28.79	30.97	33.27	34.75	36.55	38.96	41.23	43.65	46.40	48.84	0.19	1.22	1.73	2.12
1800	18.05	19.94	22.26	24.51	26.71	27.78	29.88	32.11	34.44	35.94	37.75	40.15	42.40	44.76	47.40	49.66	0.20	1.29	1.83	2.25
1900	18.73	20.69	23.07	25.40	27.65	28.75	30.89	33.15	35.51	37.02	38.82	41.20	43.39	45.66	48.13	-	0.21	1.36	1.93	2.37
2000	19.37	21.39	23.85	26.23	28.53	29.64	31.82	34.10	36.47	37.97	39.76	42.09	44.20	46.35	48.60	-	0.22	1.43	2.03	2.50
2100	19.97	22.05	24.57	27.00	29.34	30.47	32.67	34.96	37.32	38.80	40.55	42.81	44.81	46.80	-	-	0.23	1.50	2.13	2.62
2200	20.54	22.67	25.24	27.71	30.08	31.22	33.43	35.72	38.05	39.50	41.20	43.35	45.23	-	-	-	0.24	1.57	2.23	2.75
2300	21.08	23.25	25.86	28.37	30.75	31.90	34.10	36.37	38.66	40.07	41.70	43.72	-	-	-	-	0.25	1.65	2.34	2.87
2400	21.57	23.78	26.43	28.96	31.35	32.50	34.68	36.92	39.14	40.49	42.03	43.90	-	-	-	-	0.27	1.72	2.44	3.00
2500	22.02	24.26	26.94	29.48	31.87	33.01	35.17	37.35	39.49	40.77	42.21	-	-	-	-	-	0.28	1.79	2.54	3.12
2600	22.44	24.70	27.40	29.94	32.32	33.44	35.56	37.67	39.71	40.90	-	-	-	-	-	-	0.29	1.86	2.64	3.25
2700	22.81	25.09	27.80	30.33	32.68	33.78	35.84	37.87	39.78	-	-	-	-	-	-	-	0.30	1.93	2.74	3.37
2800	23.14	25.43	28.14	30.65	32.96	34.04	36.02	37.95	-	-	-	-	-	-	-	-	0.31	2.00	2.84	3.50
2900	23.42	25.72	28.42	30.90	33.16	34.20	36.10	37.90	-	-	-	-	-	-	-	-	0.32	2.07	2.95	3.62
3000	23.66	25.96	28.63	31.07	33.26	34.26	36.06	-	-	-	-	-	-	-	-	-	0.33	2.15	3.05	3.75
3100	23.86	26.14	28.78	31.16	33.28	34.23	-	-	-	-	-	-	-	-	-	-	0.34	2.22	3.15	3.87
3200	24.00	26.27	28.86	31.18	33.20	34.09	-	-	-	-	-	-	-	-	-	-	0.35	2.29	3.25	4.00
3300	24.10	26.34	28.88	31.11	33.02	-	-	-	-	-	-	-	-	-	-	-	0.37	2.36	3.35	4.12
3400	24.15	26.35	28.82	30.96	-	-	-	-	-	-	-	-	-	-	-	-	0.38	2.43	3.45	4.25
3500	24.14	26.30	28.69	30.72	-	-	-	-	-	-	-	-	-	-	-	-	0.39	2.50	3.55	4.37
3600	24.08	26.19	28.49	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40	2.58	3.66	4.50
3700	23.97	26.02	28.21	-	-	-	-	-	-	-	-	-	-	-	-	-	0.41	2.65	3.76	4.62
3800	23.81	25.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.42	2.72	3.86	4.75
3900	23.59	25.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43	2.79	3.96	4.87
4000	23.31	25.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.44	2.86	4.06	5.00
4100	22.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.45	2.93	4.16	5.12
4200	22.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46	3.00	4.27	5.25
4300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48	3.08	4.37	5.37
4400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.49	3.15	4.47	5.49
4500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50	3.22	4.57	5.62

Belt speed is over 5900 to 6900 feet per minute. Please consult our sales company or Engineering Department.

Belt speed is over 6900 to 7900 feet per minute. Please consult our sales company or Engineering Department.

Unit : (HP)

8V-Section Power Rating

Table 2-40

small pulley speed (rpm)	Basic power rating for small pulley effective diameter : Ps											Additional power rating for speed ratio : Pa			
	Small pulley effective diameter (in)											Speed ratio			
	12.50	13.20	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.20	22.40	1.01 to 1.05	1.06 to 1.26	1.27 to 1.57	1.57<
450	24.64	27.32	30.37	34.14	37.88	41.59	45.27	48.91	52.52	56.81	61.05	0.25	1.64	2.32	2.86
700	35.33	39.25	43.68	49.14	54.51	59.80	65.01	70.12	75.14	81.03	86.79	0.39	2.55	3.61	4.44
950	44.45	49.41	54.97	61.77	68.39	74.82	81.07	87.11	92.95	99.67	106.07	0.53	3.46	4.91	6.03
1450	57.38	63.61	70.44	78.50	86.01	92.94	99.25	104.93	109.93	-	-	0.82	5.27	7.49	9.21
50	3.59	3.94	4.34	4.84	5.34	5.83	6.32	6.81	7.30	7.88	8.47	0.03	0.18	0.26	0.32
100	6.67	7.34	8.10	9.05	10.00	10.95	11.89	12.82	13.75	14.87	15.98	0.06	0.36	0.52	0.63
150	9.54	10.52	11.63	13.02	14.40	15.78	17.15	18.51	19.87	21.50	23.11	0.08	0.55	0.77	0.95
200	12.27	13.55	15.01	16.83	18.63	20.42	22.21	23.99	25.76	27.87	29.97	0.11	0.73	1.03	1.27
250	14.91	16.48	18.27	20.50	22.71	24.91	27.10	29.28	31.44	34.03	36.60	0.14	0.91	1.29	1.59
300	17.45	19.31	21.43	24.05	26.67	29.26	31.84	34.41	36.96	40.00	43.01	0.17	1.09	1.55	1.90
350	19.92	22.06	24.49	27.51	30.51	33.49	36.45	39.39	42.31	45.78	49.23	0.20	1.27	1.81	2.22
400	22.31	24.73	27.47	30.87	34.25	37.60	40.92	44.22	47.49	51.39	55.24	0.23	1.46	2.07	2.54
450	24.64	27.32	30.37	34.14	37.88	41.59	45.27	48.91	52.52	56.81	61.05	0.25	1.64	2.32	2.86
500	26.90	29.84	33.18	37.32	41.42	45.47	49.49	53.46	57.39	62.05	66.65	0.28	1.82	2.58	3.17
550	29.10	32.30	35.92	40.41	44.85	49.23	53.57	57.86	62.09	67.10	72.03	0.31	2.00	2.84	3.49
600	31.24	34.68	38.59	43.41	48.17	52.88	57.52	62.10	66.62	71.95	77.19	0.34	2.18	3.10	3.81
650	33.32	37.00	41.17	46.32	51.40	56.40	61.34	66.19	70.97	76.60	82.11	0.37	2.36	3.36	4.13
700	35.33	39.25	43.68	49.14	54.51	59.80	65.01	70.12	75.14	81.03	86.79	0.39	2.55	3.61	4.44
750	37.28	41.43	46.10	51.86	57.52	63.08	68.53	73.88	79.11	85.25	91.21	0.42	2.73	3.87	4.76
800	39.17	43.53	48.45	54.49	60.41	66.22	71.91	77.47	82.89	89.23	95.36	0.45	2.91	4.13	5.08
850	41.00	45.56	50.71	57.02	63.19	69.23	75.12	80.87	86.46	92.96	99.23	0.48	3.09	4.39	5.40
900	42.76	47.52	52.88	59.44	65.85	72.10	78.18	84.09	89.82	96.45	102.80	0.51	3.27	4.65	5.71
950	44.45	49.41	54.97	61.77	68.39	74.82	81.07	87.11	92.95	99.67	106.07	0.53	3.46	4.91	6.03
1000	46.08	51.21	56.96	63.98	70.79	77.39	83.78	89.93	95.85	102.62	109.02	0.56	3.64	5.16	6.35
1050	47.64	52.94	58.87	66.08	73.07	79.81	86.31	92.54	98.50	105.29	111.64	0.59	3.82	5.42	6.67
1100	49.12	54.58	60.68	68.07	75.21	82.07	88.65	94.93	100.91	107.66	113.92	0.62	4.00	5.68	6.98
1150	50.53	56.14	62.39	69.94	77.21	84.16	90.80	97.10	103.06	109.72	115.83	0.65	4.18	5.94	7.30
1200	51.87	57.62	64.00	71.69	79.06	86.09	92.75	99.04	104.93	111.46	117.37	0.68	4.37	6.20	7.62
1250	53.13	59.00	65.50	73.32	80.77	87.83	94.49	100.73	106.53	112.88	118.53	0.70	4.55	6.45	7.94
1300	54.32	60.30	66.91	74.82	82.32	89.39	96.02	102.17	107.84	113.95	119.28	0.73	4.73	6.71	8.25
1350	55.42	61.50	68.20	76.18	83.71	90.77	97.33	103.36	108.85	114.67	-	0.76	4.91	6.97	8.57
1400	56.44	62.60	69.37	77.41	84.94	91.95	98.41	104.28	109.55	115.03	-	0.79	5.09	7.23	8.89
1450	57.38	63.61	70.44	78.50	86.01	92.94	99.25	104.93	109.93	-	-	0.82	5.27	7.49	9.21
1500	58.22	64.52	71.38	79.44	86.90	93.71	99.86	105.29	109.99	-	-	0.84	5.46	7.75	9.52
1550	58.99	65.32	72.21	80.24	87.61	94.28	100.21	105.36	-	-	-	0.87	5.64	8.00	9.84
1600	59.65	66.02	72.90	80.89	88.14	94.63	100.31	-	-	-	-	0.90	5.82	8.26	10.16
1650	60.23	66.61	73.47	81.38	88.49	94.76	100.14	-	-	-	-	0.93	6.00	8.52	10.48
1700	60.71	67.09	73.91	81.71	88.64	94.65	-	-	-	-	-	0.96	6.18	8.78	10.79
1750	61.10	67.46	74.22	81.87	88.59	94.32	-	-	-	-	-	0.98	6.37	9.04	11.11
1800	61.38	67.71	74.39	81.87	88.34	-	-	-	-	-	-	1.01	6.55	9.29	11.43
1850	61.57	67.84	74.42	81.70	87.89	-	-	-	-	-	-	1.04	6.73	9.55	11.75
1900	61.65	67.85	74.30	81.35	-	-	-	-	-	-	-	1.07	6.91	9.81	12.06
1950	61.62	67.73	74.04	80.83	-	-	-	-	-	-	-	1.10	7.09	10.07	12.38
2000	61.48	67.49	73.62	80.11	-	-	-	-	-	-	-	1.13	7.28	10.33	12.70
2050	61.24	67.12	73.05	-	-	-	-	-	-	-	-	1.15	7.46	10.59	13.02
2100	60.88	66.62	72.33	-	-	-	-	-	-	-	-	1.18	7.64	10.84	13.33
2150	60.40	65.98	71.44	-	-	-	-	-	-	-	-	1.21	7.82	11.10	13.65
2200	59.81	65.20	-	-	-	-	-	-	-	-	-	1.24	8.00	11.36	13.97
2250	59.10	64.28	-	-	-	-	-	-	-	-	-	1.27	8.19	11.62	14.29

Belt speed is over 5900 to 6900 feet per minute. Please consult our sales company or Engineering Department.

Belt speed is over 6900 to 7900 feet per minute. Please consult our sales company or Engineering Department.

Unit : (HP)

2

Design



Maxstar Wedge V-Belts

● 3V·3VX (SR = 1.00 ~ 1.32)

Table 2-41-1 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)													
	Small pulley	Large pulley	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V
			250	265	280	300	315	335	355	375	400	425	450	475	500	530
1.00	2.20 *	2.20 *	9.0	9.8	10.5	11.5	12.3	13.3	14.3	15.3	16.5	17.8	19.0	20.3	21.5	23.0
1.00	2.35 *	2.35 *	8.8	9.6	10.3	11.3	12.1	13.1	14.1	15.1	16.3	17.6	18.8	20.1	21.3	22.8
1.00	2.50 *	2.50 *	8.6	9.3	10.1	11.1	11.8	12.8	13.8	14.8	16.1	17.3	18.6	19.8	21.1	22.6
1.00	2.65	2.65	8.3	9.1	9.8	10.8	11.6	12.6	13.6	14.6	15.8	17.1	18.3	19.6	20.8	22.3
1.00	2.80	2.80	8.1	8.9	9.6	10.6	11.4	12.4	13.4	14.4	15.6	16.9	18.1	19.4	20.6	22.1
1.00	3.00	3.00	7.8	8.5	9.3	10.3	11.0	12.0	13.0	14.0	15.3	16.5	17.8	19.0	20.3	21.8
1.00	3.15	3.15	7.6	8.3	9.1	10.1	10.8	11.8	12.8	13.8	15.1	16.3	17.6	18.8	20.1	21.6
1.00	3.35	3.35	7.2	8.0	8.7	9.7	10.5	11.5	12.5	13.5	14.7	16.0	17.2	18.5	19.7	21.2
1.00	3.65	3.65	6.8	7.5	8.3	9.3	10.0	11.0	12.0	13.0	14.3	15.5	16.8	18.0	19.3	20.8
1.00	4.12	4.12	6.0	6.8	7.5	8.5	9.3	10.3	11.3	12.3	13.5	14.8	16.0	17.3	18.5	20.0
1.00	4.50	4.50	5.4	6.2	6.9	7.9	8.7	9.7	10.7	11.7	12.9	14.2	15.4	16.7	17.9	19.4
1.00	4.75	4.75	5.0	5.8	6.5	7.5	8.3	9.3	10.3	11.3	12.5	13.8	15.0	16.3	17.5	19.0
1.00	5.00	5.00	-	5.4	6.1	7.1	7.9	8.9	9.9	10.9	12.1	13.4	14.6	15.9	17.1	18.6
1.00	5.30	5.30	-	-	5.7	6.7	7.4	8.4	9.4	10.4	11.7	12.9	14.2	15.4	16.7	18.2
1.00	5.60	5.60	-	-	-	6.2	7.0	8.0	9.0	10.0	11.2	12.5	13.7	15.0	16.2	17.7
1.00	6.00	6.00	-	-	-	-	6.3	7.3	8.3	9.3	10.6	11.8	13.1	14.3	15.6	17.1
1.00	6.50	6.50	-	-	-	-	-	6.5	7.5	8.5	9.8	11.0	12.3	13.5	14.8	16.3
1.00	6.90	6.90	-	-	-	-	-	-	6.9	7.9	9.2	10.4	11.7	12.9	14.2	15.7
1.00	8.00	8.00	-	-	-	-	-	-	-	-	-	8.7	9.9	11.2	12.4	13.9
1.00	10.60	10.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.05	3.00	3.15	7.7	8.4	9.2	10.2	10.9	11.9	12.9	13.9	15.2	16.4	17.7	18.9	20.2	21.7
1.05	4.75	5.00	-	5.6	6.3	7.3	8.1	9.1	10.1	11.1	12.3	13.6	14.8	16.1	17.3	18.8
1.06	2.50 *	2.65	8.5	9.2	10.0	11.0	11.7	12.7	13.7	14.7	16.0	17.2	18.5	19.7	21.0	22.5
1.06	2.65	2.80	8.2	9.0	9.7	10.7	11.5	12.5	13.5	14.5	15.7	17.0	18.2	19.5	20.7	22.2
1.06	3.15	3.35	7.4	8.1	8.9	9.9	10.6	11.6	12.6	13.6	14.9	16.1	17.4	18.6	19.9	21.4
1.06	4.50	4.75	5.2	6.0	6.7	7.7	8.5	9.5	10.5	11.5	12.7	14.0	15.2	16.5	17.7	19.2
1.06	5.00	5.30	-	5.2	5.9	6.9	7.7	8.7	9.7	10.7	11.9	13.2	14.4	15.7	16.9	18.4
1.06	5.30	5.60	-	-	-	6.4	7.2	8.2	9.2	10.2	11.4	12.7	13.9	15.2	16.4	17.9
1.06	6.50	6.90	-	-	-	-	-	-	7.2	8.2	9.5	10.7	12.0	13.2	14.5	16.0
1.07	2.20 *	2.35 *	8.9	9.7	10.4	11.4	12.2	13.2	14.2	15.2	16.4	17.7	18.9	20.2	21.4	22.9
1.07	2.35 *	2.50 *	8.7	9.4	10.2	11.2	11.9	12.9	13.9	14.9	16.2	17.4	18.7	19.9	21.2	22.7
1.07	2.80	3.00	7.9	8.7	9.4	10.4	11.2	12.2	13.2	14.2	15.4	16.7	17.9	19.2	20.4	21.9
1.07	5.60	6.00	-	-	-	5.9	6.6	7.6	8.6	9.6	10.9	12.1	13.4	14.6	15.9	17.4
1.08	6.00	6.50	-	-	-	-	-	6.9	7.9	8.9	10.2	11.4	12.7	13.9	15.2	16.7
1.09	3.35	3.65	7.0	7.8	8.5	9.5	10.3	11.3	12.3	13.3	14.5	15.8	17.0	18.3	19.5	21.0
1.09	4.12	4.50	5.7	6.5	7.2	8.2	9.0	10.0	11.0	12.0	13.2	14.5	15.7	17.0	18.2	19.7
1.11	4.50	5.00	5.0	5.8	6.5	7.5	8.3	9.3	10.3	11.3	12.5	13.8	15.0	16.3	17.5	19.0
1.12	2.50 *	2.80	8.3	9.1	9.8	10.8	11.6	12.6	13.6	14.6	15.8	17.1	18.3	19.6	20.8	22.3
1.12	3.00	3.35	7.5	8.3	9.0	10.0	10.8	11.8	12.8	13.8	15.0	16.3	17.5	18.8	20.0	21.5
1.12	4.75	5.30	-	5.3	6.1	7.1	7.9	8.9	9.9	10.9	12.1	13.4	14.6	15.9	17.1	18.6
1.12	5.00	5.60	-	-	5.7	6.7	7.4	8.4	9.4	10.4	11.7	12.9	14.2	15.4	16.7	18.2
1.13	2.35 *	2.65	8.6	9.3	10.1	11.1	11.8	12.8	13.8	14.8	16.1	17.3	18.6	19.8	21.1	22.6
1.13	2.65	3.00	8.1	8.8	9.6	10.6	11.3	12.3	13.3	14.3	15.6	16.8	18.1	19.3	20.6	22.1
1.13	2.80	3.15	7.8	8.6	9.3	10.3	11.1	12.1	13.1	14.1	15.3	16.6	17.8	19.1	20.3	21.8
1.13	3.65	4.12	6.4	7.1	7.9	8.9	9.6	10.6	11.6	12.6	13.9	15.1	16.4	17.6	18.9	20.4
1.13	5.30	6.00	-	-	-	6.1	6.9	7.9	8.9	9.9	11.1	12.4	13.6	14.9	16.1	17.6
1.14	2.20 *	2.50 *	8.8	9.6	10.3	11.3	12.1	13.1	14.1	15.1	16.3	17.6	18.8	20.1	21.3	22.8
1.15	4.12	4.75	5.5	6.3	7.0	8.0	8.8	9.8	10.8	11.8	13.0	14.3	15.5	16.8	18.0	19.5
1.15	6.00	6.90	-	-	-	-	-	6.6	7.6	8.6	9.9	11.1	12.4	13.6	14.9	16.4
1.16	3.15	3.65	7.2	7.9	8.7	9.7	10.4	11.4	12.4	13.4	14.7	15.9	17.2	18.4	19.7	21.2
1.16	5.60	6.50	-	-	-	-	6.2	7.2	8.2	9.2	10.5	11.7	13.0	14.2	15.5	17.0
1.16	6.90	8.00	-	-	-	-	-	-	-	-	8.3	9.5	10.8	12.0	13.3	14.8
1.18	4.50	5.30	-	5.5	6.3	7.3	8.0	9.0	10.0	11.0	12.3	13.5	14.8	16.0	17.3	18.8
1.18	4.75	5.60	-	-	5.9	6.9	7.6	8.6	9.6	10.6	11.9	13.1	14.4	15.6	16.9	18.4
1.19	2.65	3.15	7.9	8.7	9.4	10.4	11.2	12.2	13.2	14.2	15.4	16.7	17.9	19.2	20.4	21.9
1.20	2.35 *	2.80	8.5	9.2	10.0	11.0	11.7	12.7	13.7	14.7	16.0	17.2	18.5	19.7	21.0	22.5
1.20	2.50 *	3.00	8.2	8.9	9.7	10.7	11.4	12.4	13.4	14.4	15.7	16.9	18.2	19.4	20.7	22.2
1.20	2.80	3.35	7.7	8.4	9.2	10.2	10.9	11.9	12.9	13.9	15.2	16.4	17.7	18.9	20.2	21.7
1.20	5.00	6.00	-	-	-	6.3	7.1	8.1	9.1	10.1	11.3	12.6	13.9	15.1	16.4	17.9
1.21	2.20 *	2.65	8.7	9.4	10.2	11.2	11.9	12.9	13.9	14.9	16.2	17.4	18.7	19.9	21.2	22.7
1.22	3.00	3.65	7.3	8.0	8.8	9.8	10.5	11.5	12.5	13.5	14.8	16.0	17.3	18.5	19.8	21.3
1.22	4.12	5.00	5.3	6.1	6.8	7.8	8.6	9.6	10.6	11.6	12.8	14.1	15.3	16.6	17.8	19.3
1.23	3.35	4.12	6.6	7.4	8.1	9.1	9.9	10.9	11.9	12.9	14.1	15.4	16.6	17.9	19.1	20.6
1.23	5.30	6.50	-	-	-	-	6.5	7.5	8.5	9.5	10.7	12.0	13.2	14.5	15.7	17.2
1.23	5.60	6.90	-	-	-	-	-	6.9	7.9	8.9	10.2	11.4	12.7	13.9	15.2	16.7
1.23	6.50	8.00	-	-	-	-	-	-	-	7.3	8.6	9.8	11.1	12.3	13.6	15.1
1.24	3.65	4.50	6.1	6.8	7.6	8.6	9.3	10.3	11.3	12.3	13.6	14.8	16.1	17.3	18.6	20.1
1.25	4.50	5.60	-	5.3	6.0	7.0	7.8	8.8	9.8	10.8	12.1	13.3	14.6	15.8	17.1	18.6
1.27	2.50 *	3.15	8.1	8.8	9.6	10.6	11.3	12.3	13.3	14.3	15.6	16.8	18.1	19.3	20.6	22.1
1.27	2.65	3.35	7.8	8.5	9.3	10.3	11.0	12.0	13.0	14.0	15.3	16.5	17.8	19.0	20.3	21.8
1.27	4.75	6.00	-	-	5.5	6.5	7.3	8.3	9.3	10.3	11.5	12.8	14.0	15.3	16.5	18.0
1.28	2.20 *	2.80	8.6	9.3	10.1	11.1	11.8	12.8	13.8	14.8	16.1	17.3	18.6	19.8	21.1	22.6
1.28	2.35 *	3.00	8.3	9.0	9.8	10.8	11.5	12.5	13.5	14.5	15.8	17.0	18.3	19.5	20.8	22.3
1.29	4.12	5.30	5.1	5.8	6.6	7.6	8.3	9.3	10.3	11.3	12.6	13.8	15.1	16.3	17.6	19.1
1.30	5.00	6.50	-	-	-	5.9	6.7	7.7	8.7	9.7	10.9	12.2	13.4	14.7	16.0	17.5
1.30	5.30	6.90	-	-	-	-	6.1	7.1	8.1	9.1	10.4	11.6	12.9	14.1	15.4	16.9
1.31	2.80	3.65	7.4	8.2	8.9	9.9	10.7	11.7	12.7	13.7	14.9	16.2	17.4	18.7	19.9	21.4
1.31	3.15	4.12	6.8	7.5	8.3	9.3	10.0	11.0	12.0	13.0	14.3	15.5	16.8	18.0	19.3	20.8
1.31	3.65	4.75	5.9	6.6	7.4	8.4	9.1	10.1	11.1	12.1	13.4	14.6	15.9	17.1	18.4	19.9

● 3V·3VX (SR = 1.33 ~ 2.04)

Table 2-41-2 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)												
	Small pulley	Large pulley	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V
			250	265	280	300	315	335	355	375	400	425	450	475	500
1.33	8.00	10.60	-	-	-	-	-	-	-	-	-	-	-	-	10.3
1.34	4.50	6.00	-	-	-	6.7	7.5	8.5	9.5	10.5	11.7	13.0	14.2	15.5	16.7
1.34	6.00	8.00	-	-	-	-	-	-	-	7.7	8.9	10.2	11.5	12.7	14.0
1.35	2.35*	3.15	8.2	8.9	9.7	10.7	11.4	12.4	13.4	14.4	15.7	16.9	18.2	19.4	20.7
1.35	2.50*	3.35	7.9	8.6	9.4	10.4	11.1	12.1	13.1	14.1	15.4	16.6	17.9	19.2	20.4
1.35	3.35	4.50	6.3	7.1	7.8	8.8	9.6	10.6	11.6	12.6	13.8	15.1	16.3	17.6	18.8
1.36	4.12	5.60	-	5.6	6.3	7.3	8.1	9.1	10.1	11.1	12.3	13.6	14.8	16.1	17.4
1.37	2.20*	3.00	8.4	9.2	9.9	10.9	11.7	12.7	13.7	14.7	15.9	17.2	18.4	19.7	20.9
1.37	4.75	6.50	-	-	-	-	6.9	7.9	8.9	9.9	11.1	12.4	13.6	14.9	16.1
1.38	2.65	3.65	7.5	8.3	9.0	10.0	10.8	11.8	12.8	13.8	15.0	16.3	17.5	18.8	20.0
1.38	3.00	4.12	6.9	7.6	8.4	9.4	10.1	11.1	12.1	13.1	14.4	15.6	16.9	18.1	19.4
1.38	3.65	5.00	5.7	6.4	7.2	8.2	8.9	9.9	10.9	11.9	13.2	14.4	15.7	16.9	18.2
1.38	5.00	6.90	-	-	-	-	-	7.3	8.3	9.4	10.6	11.9	13.1	14.4	15.6
1.42	3.35	4.75	6.1	6.9	7.6	8.6	9.4	10.4	11.4	12.4	13.6	14.9	16.1	17.4	18.6
1.43	2.35*	3.35	8.0	8.8	9.5	10.5	11.3	12.3	13.3	14.3	15.5	16.8	18.0	19.3	20.5
1.43	5.60	8.00	-	-	-	-	-	-	-	8.0	9.2	10.5	11.8	13.0	14.3
1.44	2.20*	3.15	8.3	9.0	9.8	10.8	11.5	12.5	13.5	14.5	15.8	17.0	18.3	19.5	20.8
1.44	3.15	4.50	6.5	7.2	8.0	9.0	9.7	10.7	11.7	12.7	14.0	15.2	16.5	17.7	19.0
1.45	4.50	6.50	-	-	-	6.3	7.0	8.0	9.1	10.1	11.3	12.6	13.8	15.1	16.3
1.46	3.65	5.30	5.4	6.2	6.9	7.9	8.7	9.7	10.7	11.7	12.9	14.2	15.4	16.7	18.0
1.46	4.12	6.00	-	-	6.0	7.0	7.7	8.8	9.8	10.8	12.0	13.3	14.5	15.8	17.0
1.46	4.75	6.90	-	-	-	-	6.5	7.5	8.5	9.5	10.8	12.1	13.3	14.6	15.8
1.47	2.50*	3.65	7.6	8.4	9.2	10.2	10.9	11.9	12.9	13.9	15.2	16.4	17.7	18.9	20.2
1.48	2.80	4.12	7.0	7.8	8.5	9.5	10.3	11.3	12.3	13.3	14.6	15.8	17.1	18.3	19.6
1.50	3.35	5.00	5.9	6.6	7.4	8.4	9.2	10.2	11.2	12.2	13.4	14.7	15.9	17.2	18.4
1.51	3.00	4.50	6.6	7.3	8.1	9.1	9.8	10.8	11.8	12.8	14.1	15.3	16.6	17.8	19.1
1.51	5.30	8.00	-	-	-	-	-	-	7.2	8.2	9.5	10.7	12.0	13.2	14.5
1.52	3.15	4.75	6.2	7.0	7.8	8.8	9.5	10.5	11.5	12.5	13.8	15.0	16.3	17.5	18.8
1.53	2.20*	3.35	8.1	8.9	9.6	10.6	11.4	12.4	13.4	14.4	15.6	16.9	18.1	19.4	20.6
1.54	3.65	5.60	5.1	5.9	6.7	7.7	8.4	9.4	10.4	11.4	12.7	14.0	15.2	16.5	17.7
1.54	4.50	6.90	-	-	-	-	6.7	7.7	8.7	9.7	11.0	12.2	13.5	14.7	16.0
1.54	6.90	10.60	-	-	-	-	-	-	-	-	-	-	-	9.8	11.1
1.57	2.35*	3.65	7.8	8.5	9.3	10.3	11.0	12.0	13.0	14.0	15.3	16.5	17.8	19.0	20.3
1.57	2.65	4.12	7.1	7.9	8.7	9.7	10.4	11.4	12.4	13.4	14.7	15.9	17.2	18.4	19.7
1.58	4.12	6.50	-	-	-	6.6	7.3	8.3	9.3	10.3	11.6	12.9	14.1	15.4	16.6
1.59	3.00	4.75	6.4	7.1	7.9	8.9	9.6	10.6	11.6	12.6	13.9	15.1	16.4	17.6	18.9
1.59	3.35	5.30	5.6	6.4	7.1	8.1	8.9	9.9	10.9	11.9	13.2	14.4	15.7	16.9	18.2
1.60	3.15	5.00	6.0	6.8	7.5	8.5	9.3	10.3	11.3	12.3	13.6	14.8	16.1	17.3	18.6
1.61	5.00	8.00	-	-	-	-	-	-	7.4	8.4	9.7	10.9	12.2	13.5	14.7
1.62	2.80	4.50	6.7	7.5	8.2	9.2	10.0	11.0	12.0	13.0	14.2	15.5	16.7	18.0	19.2
1.64	6.50	10.60	-	-	-	-	-	-	-	-	-	-	-	10.1	11.4
1.65	3.65	6.00	-	5.5	6.3	7.3	8.1	9.1	10.1	11.1	12.4	13.6	14.9	16.1	17.4
1.66	2.50*	4.12	7.3	8.0	8.8	9.8	10.5	11.5	12.5	13.5	14.8	16.0	17.3	18.5	19.8
1.67	2.20*	3.65	7.9	8.6	9.4	10.4	11.1	12.1	13.1	14.1	15.4	16.6	17.9	19.1	20.4
1.68	3.00	5.00	6.1	6.9	7.7	8.7	9.4	10.4	11.4	12.4	13.7	14.9	16.2	17.4	18.7
1.68	3.35	5.60	5.4	6.1	6.9	7.9	8.6	9.7	10.7	11.7	12.9	14.2	15.4	16.7	17.9
1.68	4.12	6.90	-	-	-	6.2	7.0	8.0	9.0	10.0	11.3	12.5	13.8	15.0	16.3
1.69	3.15	5.30	5.8	6.5	7.3	8.3	9.0	10.1	11.1	12.1	13.3	14.6	15.8	17.1	18.3
1.69	4.75	8.00	-	-	-	-	-	-	7.6	8.6	9.9	11.1	12.4	13.6	14.9
1.71	2.65	4.50	6.8	7.6	8.3	9.3	10.1	11.1	12.1	13.1	14.4	15.6	16.9	18.1	19.4
1.71	2.80	4.75	6.5	7.3	8.0	9.0	9.8	10.8	11.8	12.8	14.0	15.3	16.5	17.8	19.0
1.75	8.00	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
1.77	2.35*	4.12	7.4	8.1	8.9	9.9	10.6	11.6	12.6	13.6	14.9	16.1	17.4	18.6	19.9
1.77	6.00	10.60	-	-	-	-	-	-	-	-	-	-	9.2	10.5	11.7
1.78	3.00	5.30	5.9	6.6	7.4	8.4	9.2	10.2	11.2	12.2	13.4	14.7	15.9	17.2	18.4
1.79	3.15	5.60	5.5	6.3	7.0	8.0	8.8	9.8	10.8	11.8	13.1	14.3	15.6	16.8	18.1
1.79	3.65	6.50	-	-	5.9	6.9	7.6	8.7	9.7	10.7	11.9	13.2	14.5	15.7	17.0
1.79	4.50	8.00	-	-	-	-	-	-	7.7	8.8	10.0	11.3	12.6	13.8	15.1
1.80	2.80	5.00	6.3	7.0	7.8	8.8	9.6	10.6	11.6	12.6	13.8	15.1	16.3	17.6	18.8
1.80	3.35	6.00	-	5.8	6.5	7.5	8.3	9.3	10.3	11.3	12.6	13.8	15.1	16.4	17.6
1.80	10.60	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
1.81	2.65	4.75	6.6	7.4	8.1	9.1	9.9	10.9	11.9	12.9	14.1	15.4	16.7	17.9	19.2
1.82	2.50*	4.50	6.9	7.7	8.4	9.4	10.2	11.2	12.2	13.2	14.5	15.7	17.0	18.2	19.5
1.88	3.00	5.60	5.6	6.4	7.1	8.1	8.9	9.9	10.9	11.9	13.2	14.4	15.7	16.9	18.2
1.89	2.20*	4.12	7.5	8.2	9.0	10.0	10.7	11.7	12.8	13.8	15.0	16.3	17.5	18.8	20.0
1.90	2.65	5.00	6.4	7.1	7.9	8.9	9.7	10.7	11.7	12.7	13.9	15.2	16.4	17.7	19.0
1.90	3.65	6.90	-	-	-	6.5	7.3	8.3	9.3	10.3	11.6	12.9	14.1	15.4	16.6
1.90	5.60	10.60	-	-	-	-	-	-	-	-	-	-	9.4	10.7	12.0
1.91	2.80	5.30	6.0	6.8	7.5	8.5	9.3	10.3	11.3	12.3	13.6	14.8	16.1	17.3	18.6
1.92	2.50*	4.75	6.7	7.5	8.2	9.2	10.0	11.0	12.0	13.0	14.3	15.5	16.8	18.0	19.3
1.92	3.15	6.00	5.1	5.9	6.7	7.7	8.4	9.5	10.5	11.5	12.7	14.0	15.2	16.5	17.8
1.93	2.35*	4.50	7.0	7.8	8.6	9.6	10.3	11.3	12.3	13.3	14.6	15.8	17.1	18.3	19.6
1.95	3.35	6.50	-	-	6.1	7.1	7.9	8.9	9.9	10.9	12.2	13.4	14.7	15.9	17.2
1.95	4.12	8.00	-	-	-	-	-	7.0	8.0	9.0	10.3	11.6	12.8	14.1	15.4
2.01	5.30	10.60	-	-	-	-	-	-	-	-	-	-	9.6	10.9	12.2
2.02	2.50*	5.00	6.5	7.3	8.0	9.0	9.8	10.8	11.8	12.8	14.1	15.3	16.6	17.8	19.1
2.02	2.65	5.30	6.1	6.9	7.6	8.7	9.4	10.4	11.4	12.4	13.7	14.9	16.2	17.5	18.7
2.02	2.80	5.60	5.7	6.5	7.3	8.3	9.0	10.1	11.1	12.1	13.3	14.6	15.8	17.1	18.3
2.02	3.00	6.00	5.2	6.0	6.8	7.8	8.5	9.6	10.6	11.6	12.8	14.1	15.4	16.6	17.9
2.04	2.35*	4.75	6.8	7.6	8.3	9.3	10.1	11.1	12.1	13.1	14.4	15.6	16.9	18.1	19.4

*Pulley effective diameter is smaller than minimum for Wrapped V-Belts (3V). Use these pulleys for Raw Edge V-Belts (3VX) only.

● 3V•3VX (SR = 2.04 ~ 4.50)

Table 2-41-3 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)												
	Small pulley	Large pulley	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V	3V
			250	265	280	300	315	335	355	375	400	425	450	475	500
2.04	6.90	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.07	2.20 *	4.50	7.1	7.9	8.7	9.7	10.4	11.4	12.4	13.4	14.7	15.9	17.2	18.5	19.7
2.08	3.15	6.50	-	5.4	6.2	7.2	8.0	9.0	10.0	11.0	12.3	13.6	14.8	16.1	17.3
2.08	3.35	6.90	-	-	5.7	6.7	7.5	8.5	9.5	10.6	11.8	13.1	14.3	15.6	16.9
2.13	2.65	5.60	5.8	6.6	7.4	8.4	9.2	10.2	11.2	12.2	13.4	14.7	16.0	17.2	18.5
2.13	5.00	10.60	-	-	-	-	-	-	-	-	-	8.5	9.8	11.1	12.4
2.14	2.50 *	5.30	6.2	7.0	7.7	8.8	9.5	10.5	11.5	12.5	13.8	15.1	16.3	17.6	18.8
2.15	2.35 *	5.00	6.6	7.4	8.1	9.1	9.9	10.9	11.9	12.9	14.2	15.4	16.7	17.9	19.2
2.16	2.80	6.00	5.3	6.1	6.9	7.9	8.7	9.7	10.7	11.7	13.0	14.2	15.5	16.8	18.0
2.16	6.50	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.19	2.20 *	4.75	6.9	7.7	8.4	9.5	10.2	11.2	12.2	13.2	14.5	15.7	17.0	18.2	19.5
2.19	3.00	6.50	-	5.5	6.3	7.3	8.1	9.1	10.1	11.2	12.4	13.7	14.9	16.2	17.5
2.21	3.15	6.90	-	-	5.8	6.9	7.6	8.7	9.7	10.7	12.0	13.2	14.5	15.7	17.0
2.21	3.65	8.00	-	-	-	-	-	7.3	8.3	9.3	10.6	11.9	13.2	14.4	15.7
2.24	4.75	10.60	-	-	-	-	-	-	-	-	-	8.7	10.0	11.3	12.6
2.27	2.50 *	5.60	5.9	6.7	7.5	8.5	9.3	10.3	11.3	12.3	13.5	14.8	16.1	17.3	18.6
2.28	2.35 *	5.30	6.3	7.1	7.9	8.9	9.6	10.6	11.6	12.7	13.9	15.2	16.4	17.7	18.9
2.29	2.65	6.00	5.4	6.2	7.0	8.0	8.8	9.8	10.8	11.8	13.1	14.4	15.6	16.9	18.1
2.30	2.20 *	5.00	6.7	7.5	8.2	9.2	10.0	11.0	12.0	13.0	14.3	15.5	16.8	18.0	19.3
2.32	3.00	6.90	-	-	5.9	7.0	7.7	8.8	9.8	10.8	12.1	13.3	14.6	15.9	17.1
2.34	6.00	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.35	2.80	6.50	-	5.6	6.4	7.5	8.2	9.3	10.3	11.3	12.6	13.8	15.1	16.3	17.6
2.36	10.60	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.37	4.50	10.60	-	-	-	-	-	-	-	-	-	8.9	10.2	11.5	12.8
2.38	8.00	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.41	2.35 *	5.60	6.0	6.8	7.6	8.6	9.4	10.4	11.4	12.4	13.7	14.9	16.2	17.4	18.7
2.41	3.35	8.00	-	-	-	-	6.4	7.5	8.5	9.6	10.8	12.1	13.4	14.7	15.9
2.43	2.50 *	6.00	5.5	6.3	7.1	8.1	8.9	9.9	10.9	11.9	13.2	14.5	15.7	17.0	18.2
2.44	2.20 *	5.30	6.4	7.2	8.0	9.0	9.7	10.7	11.8	12.8	14.0	15.3	16.5	17.8	19.0
2.48	2.65	6.50	-	5.7	6.5	7.6	8.3	9.4	10.4	11.4	12.7	13.9	15.2	16.5	17.7
2.49	2.80	6.90	-	-	6.0	7.1	7.9	8.9	9.9	10.9	12.2	13.5	14.7	16.0	17.3
2.51	5.60	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.56	3.15	8.00	-	-	-	-	6.5	7.6	8.7	9.7	11.0	12.3	13.5	14.8	16.1
2.58	2.20 *	5.60	6.1	6.9	7.7	8.7	9.5	10.5	11.5	12.5	13.8	15.0	16.3	17.5	18.8
2.59	2.35 *	6.00	5.6	6.4	7.2	8.2	9.0	10.0	11.0	12.1	13.3	14.6	15.8	17.1	18.4
2.59	4.12	10.60	-	-	-	-	-	-	-	-	-	9.1	10.4	11.7	13.0
2.63	2.50 *	6.50	5.0	5.8	6.6	7.7	8.4	9.5	10.5	11.5	12.8	14.0	15.3	16.6	17.8
2.63	2.65	6.90	-	5.3	6.1	7.2	8.0	9.0	10.0	11.0	12.3	13.6	14.8	16.1	17.4
2.66	5.30	14.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.69	3.00	8.00	-	-	-	-	6.6	7.7	8.8	9.8	11.1	12.4	13.6	14.9	16.2
2.77	2.20 *	6.00	5.7	6.5	7.3	8.3	9.1	10.1	11.1	12.2	13.4	14.7	15.9	17.2	18.5
2.77	6.90	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.80	2.35 *	6.50	5.1	5.9	6.7	7.8	8.5	9.6	10.6	11.6	12.9	14.1	15.4	16.7	17.9
2.80	2.50 *	6.90	-	5.4	6.2	7.3	8.1	9.1	10.1	11.2	12.4	13.7	15.0	16.2	17.5
2.82	5.00	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.6
2.89	2.80	8.00	-	-	-	5.9	6.8	7.8	8.9	9.9	11.2	12.5	13.8	15.0	16.3
2.93	3.65	10.60	-	-	-	-	-	-	-	-	8.1	9.4	10.7	12.1	13.4
2.94	6.50	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
2.97	4.75	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.8
2.98	2.35 *	6.90	-	5.5	6.3	7.4	8.2	9.2	10.2	11.3	12.5	13.8	15.1	16.3	17.6
3.00	2.20 *	6.50	5.2	6.0	6.8	7.9	8.6	9.7	10.7	11.7	13.0	14.3	15.5	16.8	18.0
3.06	2.65	8.00	-	-	-	6.0	6.9	7.9	9.0	10.0	11.3	12.6	13.9	15.1	16.4
3.13	4.50	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.9
3.14	8.00	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.17	10.60	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-
3.18	6.00	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.19	2.20 *	6.90	-	5.6	6.4	7.5	8.3	9.3	10.3	11.4	12.6	13.9	15.2	16.4	17.7
3.20	3.35	10.60	-	-	-	-	-	-	-	-	8.2	9.6	10.9	12.3	13.6
3.24	2.50 *	8.00	-	-	-	6.1	7.0	8.0	9.1	10.1	11.4	12.7	14.0	15.3	16.5
3.40	3.15	10.60	-	-	-	-	-	-	-	-	8.4	9.7	11.1	12.4	13.7
3.41	5.60	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.43	4.12	14.00	-	-	-	-	-	-	-	-	-	-	-	-	11.2
3.46	2.35 *	8.00	-	-	-	6.2	7.1	8.1	9.2	10.2	11.5	12.8	14.1	15.4	16.6
3.58	3.00	10.60	-	-	-	-	-	-	-	-	8.5	9.8	11.2	12.5	13.8
3.61	5.30	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.64	6.90	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.70	2.20 *	8.00	-	-	-	6.3	7.2	8.2	9.3	10.3	11.6	12.9	14.2	15.5	16.7
3.83	5.00	19.00	-	-	-	-	-	-	-	-	-	-	-	-	18.3
3.84	2.80	10.60	-	-	-	-	-	-	-	-	8.6	10.0	11.3	12.6	13.9
3.87	6.50	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.88	3.65	14.00	-	-	-	-	-	-	-	-	-	-	-	-	9.8
4.03	4.75	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
4.06	2.65	10.60	-	-	-	-	-	-	-	7.3	8.7	10.1	11.4	12.7	14.0
4.19	6.00	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-
4.21	8.00	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-
4.23	3.35	14.00	-	-	-	-	-	-	-	-	-	-	-	-	9.9
4.26	4.50	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-
4.31	2.50 *	10.60	-	-	-	-	-	-	-	7.3	8.8	10.2	11.5	12.8	14.1
4.50	3.15	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.1
4.50	5.60	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pulley effective diameter is smaller than minimum for Wrapped V-Belts (3V). Use these pulleys for Raw Edge V-Belts (3VX) only.



● 3V·3VX (SR = 4.59 ~ 15.56)

Table 2-41-4 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)													
	Small pulley	Large pulley	3V 250	3V 265	3V 280	3V 300	3V 315	3V 335	3V 355	3V 375	3V 400	3V 425	3V 450	3V 475	3V 500	3V 530
4.59	2.35 *	10.60	-	-	-	-	-	-	-	7.4	8.9	10.2	11.6	12.9	14.2	15.8
4.66	4.12	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.73	3.00	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.2	11.9
4.75	5.30	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.88	6.90	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.91	2.20 *	10.60	-	-	-	-	-	-	-	7.5	9.0	10.3	11.7	13.0	14.3	15.9
5.04	5.00	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.07	2.80	14.00	-	-	-	-	-	-	-	-	-	-	-	-	10.3	12.0
5.19	6.50	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.26	3.65	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.31	4.75	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.37	2.65	14.00	-	-	-	-	-	-	-	-	-	-	-	8.9	10.4	12.1
5.61	4.50	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.62	6.00	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.69	2.50 *	14.00	-	-	-	-	-	-	-	-	-	-	-	8.9	10.5	12.2
5.74	3.35	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.03	5.60	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.07	2.35 *	14.00	-	-	-	-	-	-	-	-	-	-	-	9.0	10.6	12.3
6.11	3.15	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.13	4.12	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.37	5.30	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.42	3.00	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.49	2.20 *	14.00	-	-	-	-	-	-	-	-	-	-	-	9.1	10.6	12.4
6.76	5.00	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.89	2.80	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.93	3.65	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.12	4.75	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.29	2.65	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.52	4.50	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.56	3.35	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.73	2.50 *	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.05	3.15	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.22	4.12	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.24	2.35 *	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.46	3.00	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.81	2.20 *	19.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.07	2.80	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.29	3.65	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.60	2.65	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.14	3.35	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.18	2.50 *	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.79	3.15	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.85	2.35 *	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.34	3.00	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.60	2.20 *	25.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.16	2.80	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.87	2.65	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.65	2.50 *	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.54	2.35 *	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.56	2.20 *	33.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pulley effective diameter is smaller than minimum for Wrapped V-Belts (3V). Use these pulleys for Raw Edge V-Belts (3VX) only.

3V·3VX**4.59 ~ 15.56**

Color coding of Power rating correction factor : Kc

0.7	0.8	0.9	1.0	1.1	1.2
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Center distance (inches)																	Speed ratio
3V 560	3V 600	3V 630	3V 670	3V 710	3V 750	3V 800	3V 850	3V 900	3V 950	3V 1000	3V 1060	3V 1120	3V 1180	3V 1250	3V 1320	3V 1400	
17.3	19.4	20.9	23.0	25.0	27.0	29.5	32.1	34.6	37.1	39.6	42.6	45.6	48.7	52.2	55.7	59.7	4.59
-	-	-	13.3	15.6	17.8	20.5	23.1	25.8	28.4	30.9	34.0	37.1	40.2	43.7	47.3	51.3	4.66
13.5	15.7	17.3	19.4	21.4	23.5	26.1	28.6	31.2	33.7	36.2	39.3	42.3	45.3	48.8	52.4	56.4	4.73
-	-	-	-	-	-	-	-	18.6	21.4	24.2	27.4	30.6	33.8	37.4	41.0	45.1	4.75
-	-	-	-	-	-	-	-	-	-	-	-	-	23.5	27.6	31.5	35.8	4.88
17.4	19.5	21.0	23.1	25.1	27.1	29.6	32.2	34.7	37.2	39.7	42.7	45.8	48.8	52.3	55.8	59.8	4.91
-	-	-	-	-	-	-	-	18.8	21.6	24.4	27.6	30.8	34.0	37.6	41.2	45.3	5.04
13.7	15.8	17.4	19.5	21.6	23.6	26.2	28.8	31.3	33.8	36.4	39.4	42.4	45.5	49.0	52.5	56.5	5.07
-	-	-	-	-	-	-	-	-	-	-	-	-	23.7	27.8	31.7	36.1	5.19
-	-	-	13.5	15.9	18.1	20.8	23.5	26.1	28.7	31.3	34.4	37.4	40.5	44.0	47.6	51.6	5.26
-	-	-	-	-	-	-	15.9	18.9	21.8	24.5	27.8	31.0	34.1	37.8	41.4	45.5	5.31
13.8	15.9	17.5	19.6	21.7	23.7	26.3	28.9	31.4	33.9	36.5	39.5	42.5	45.6	49.1	52.6	56.6	5.37
-	-	-	-	-	-	-	16.1	19.1	21.9	24.7	28.0	31.1	34.3	37.9	41.6	45.7	5.61
-	-	-	-	-	-	-	-	-	-	-	-	-	24.0	28.1	32.0	36.4	5.62
13.8	16.0	17.6	19.7	21.8	23.8	26.4	29.0	31.5	34.1	36.6	39.6	42.7	45.7	49.2	52.7	56.7	5.69
-	-	-	13.7	16.0	18.3	21.0	23.7	26.3	28.9	31.5	34.6	37.6	40.7	44.3	47.8	51.9	5.74
-	-	-	-	-	-	-	-	-	-	-	-	20.6	24.3	28.4	32.3	36.6	6.03
13.9	16.1	17.7	19.8	21.9	24.0	26.5	29.1	31.6	34.2	36.7	39.7	42.8	45.8	49.3	52.8	56.9	6.07
-	-	-	13.8	16.2	18.4	21.1	23.8	26.4	29.0	31.6	34.7	37.8	40.8	44.4	47.9	52.0	6.11
-	-	-	-	-	-	-	16.3	19.3	22.2	24.9	28.2	31.4	34.6	38.2	41.8	45.9	6.13
-	-	-	-	-	-	-	-	-	-	-	-	20.7	24.5	28.5	32.5	36.8	6.37
-	-	-	13.9	16.3	18.5	21.2	23.9	26.5	29.1	31.7	34.8	37.9	40.9	44.5	48.1	52.1	6.42
14.0	16.2	17.8	19.9	22.0	24.1	26.6	29.2	31.7	34.3	36.8	39.8	42.9	45.9	49.4	52.9	57.0	6.49
-	-	-	-	-	-	-	-	-	-	-	-	20.9	24.6	28.7	32.7	37.0	6.76
-	-	-	14.0	16.4	18.6	21.3	24.0	26.6	29.3	31.8	34.9	38.0	41.1	44.6	48.2	52.3	6.89
-	-	-	-	-	-	-	16.6	19.6	22.5	25.2	28.5	31.7	34.9	38.5	42.1	46.3	6.93
-	-	-	-	-	-	-	-	-	-	-	-	21.1	24.8	28.9	32.8	37.2	7.12
-	-	-	14.1	16.5	18.7	21.4	24.1	26.7	29.4	32.0	35.0	38.1	41.2	44.7	48.3	52.4	7.29
-	-	-	-	-	-	-	-	-	-	-	-	21.2	24.9	29.0	33.0	37.3	7.52
-	-	-	-	-	-	-	16.7	19.8	22.6	25.4	28.7	31.9	35.1	38.7	42.4	46.5	7.56
-	-	11.7	14.2	16.6	18.8	21.5	24.2	26.8	29.5	32.1	35.1	38.2	41.3	44.9	48.4	52.5	7.73
-	-	-	-	-	-	-	16.8	19.9	22.8	25.6	28.8	32.0	35.2	38.9	42.5	46.6	8.05
-	-	-	-	-	-	-	-	-	-	-	-	21.4	25.2	29.3	33.2	37.6	8.22
-	-	11.8	14.3	16.7	18.9	21.6	24.3	26.9	29.6	32.2	35.2	38.3	41.4	45.0	48.5	52.6	8.24
-	-	-	-	-	-	-	16.9	20.0	22.9	25.7	28.9	32.1	35.3	39.0	42.6	46.7	8.46
-	-	11.9	14.4	16.7	19.0	21.7	24.4	27.0	29.7	32.3	35.4	38.4	41.5	45.1	48.6	52.7	8.81
-	-	-	-	-	-	-	17.1	20.1	23.0	25.8	29.0	32.3	35.4	39.1	42.7	46.9	9.07
-	-	-	-	-	-	-	-	-	-	-	-	21.7	25.4	29.6	33.5	37.9	9.29
-	-	-	-	-	-	-	17.1	20.2	23.1	25.9	29.1	32.4	35.5	39.2	42.8	47.0	9.60
-	-	-	-	-	-	-	-	-	-	-	-	21.9	25.6	29.7	33.7	38.1	10.14
-	-	-	-	-	-	-	17.2	20.3	23.2	26.0	29.2	32.5	35.6	39.3	42.9	47.1	10.18
-	-	-	-	-	-	-	-	-	-	-	-	22.0	25.7	29.9	33.8	38.2	10.79
-	-	-	-	-	-	-	17.3	20.4	23.3	26.1	29.3	32.5	35.7	39.4	43.0	47.2	10.85
-	-	-	-	-	-	-	-	-	-	-	-	22.1	25.8	30.0	33.9	38.3	11.34
-	-	-	-	-	-	-	17.4	20.5	23.4	26.2	29.4	32.6	35.8	39.5	43.1	47.3	11.60
-	-	-	-	-	-	-	-	-	-	-	-	22.2	26.0	30.1	34.0	38.4	12.16
-	-	-	-	-	-	-	-	-	-	-	-	22.3	26.0	30.2	34.1	38.5	12.87
-	-	-	-	-	-	-	-	-	-	-	-	22.4	26.1	30.3	34.2	38.6	13.65
-	-	-	-	-	-	-	-	-	-	-	-	22.4	26.2	30.3	34.3	38.7	14.54
-	-	-	-	-	-	-	-	-	-	-	-	22.5	26.3	30.4	34.4	38.8	15.56

2

Design



● 5V•5VX (SR = 1.00 ~ 1.19)

Table 2-42-1 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)															
			5V 500	5V 530	5V 560	5V 600	5V 630	5V 670	5V 710	5V 750	5V 800	5V 850	5V 900	5V 950	5V 1000	5V 1060	5V 1120	5V 1180
	Small pulley	Large pulley																
1.00	4.40 *	4.40 *	18.1	19.6	21.1	23.1	24.6	26.6	28.6	30.6	33.1	35.6	38.1	40.6	43.1	46.1	49.1	52.1
1.00	4.65 *	4.65 *	17.7	19.2	20.7	22.7	24.2	26.2	28.2	30.2	32.7	35.2	37.7	40.2	42.7	45.7	48.7	51.7
1.00	4.90 *	4.90 *	17.3	18.8	20.3	22.3	23.8	25.8	27.8	29.8	32.3	34.8	37.3	39.8	42.3	45.3	48.3	51.3
1.00	5.20 *	5.20 *	16.8	18.3	19.8	21.8	23.3	25.3	27.3	29.3	31.8	34.3	36.8	39.3	41.8	44.8	47.8	50.8
1.00	5.50 *	5.50 *	16.4	17.9	19.4	21.4	22.9	24.9	26.9	28.9	31.4	33.9	36.4	38.9	41.4	44.4	47.4	50.4
1.00	5.90 *	5.90 *	15.7	17.2	18.7	20.7	22.2	24.2	26.2	28.2	30.7	33.2	35.7	38.2	40.7	43.7	46.7	49.7
1.00	6.30 *	6.30 *	15.1	16.6	18.1	20.1	21.6	23.6	25.6	27.6	30.1	32.6	35.1	37.6	40.1	43.1	46.1	49.1
1.00	6.70 *	6.70 *	14.5	16.0	17.5	19.5	21.0	23.0	25.0	27.0	29.5	32.0	34.5	37.0	39.5	42.5	45.5	48.5
1.00	7.10	7.10	13.8	15.3	16.8	18.8	20.3	22.3	24.3	26.3	28.8	31.3	33.8	36.3	38.8	41.8	44.8	47.8
1.00	7.50	7.50	13.2	14.7	16.2	18.2	19.7	21.7	23.7	25.7	28.2	30.7	33.2	35.7	38.2	41.2	44.2	47.2
1.00	8.00	8.00	12.4	13.9	15.4	17.4	18.9	20.9	22.9	24.9	27.4	29.9	32.4	34.9	37.4	40.4	43.4	46.4
1.00	8.50	8.50	11.6	13.1	14.6	16.6	18.1	20.1	22.1	24.1	26.6	29.1	31.6	34.1	36.6	39.6	42.6	45.6
1.00	9.00	9.00	10.9	12.4	13.9	15.9	17.4	19.4	21.4	23.4	25.9	28.4	30.9	33.4	35.9	38.9	41.9	44.9
1.00	9.25	9.25	10.5	12.0	13.5	15.5	17.0	19.0	21.0	23.0	25.5	28.0	30.5	33.0	35.5	38.5	41.5	44.5
1.00	9.75	9.75	-	11.2	12.7	14.7	16.2	18.2	20.2	22.2	24.7	27.2	29.7	32.2	34.7	37.7	40.7	43.7
1.00	10.30	10.30	-	-	11.8	13.8	15.3	17.3	19.3	21.3	23.8	26.3	28.8	31.3	33.8	36.8	39.8	42.8
1.00	10.90	10.90	-	-	-	12.9	14.4	16.4	18.4	20.4	22.9	25.4	27.9	30.4	32.9	35.9	38.9	41.9
1.00	11.30	11.30	-	-	-	-	13.8	15.8	17.8	19.8	22.3	24.8	27.3	29.8	32.3	35.3	38.3	41.3
1.00	11.80	11.80	-	-	-	-	13.0	15.0	17.0	19.0	21.5	24.0	26.5	29.0	31.5	34.5	37.5	40.5
1.00	12.50	12.50	-	-	-	-	-	13.9	15.9	17.9	20.4	22.9	25.4	27.9	30.4	33.4	36.4	39.4
1.00	13.20	13.20	-	-	-	-	-	-	14.8	16.8	19.3	21.8	24.3	26.8	29.3	32.3	35.3	38.3
1.00	14.00	14.00	-	-	-	-	-	-	-	15.5	18.0	20.5	23.0	25.5	28.0	31.0	34.0	37.0
1.00	15.00	15.00	-	-	-	-	-	-	-	-	16.4	18.9	21.4	23.9	26.4	29.4	32.4	35.4
1.00	16.00	16.00	-	-	-	-	-	-	-	-	-	17.4	19.9	22.4	24.9	27.9	30.9	33.9
1.03	9.00	9.25	10.7	12.2	13.7	15.7	17.2	19.2	21.2	23.2	25.7	28.2	30.7	33.2	35.7	38.7	41.7	44.7
1.04	10.90	11.30	-	-	-	12.6	14.1	16.1	18.1	20.1	22.6	25.1	27.6	30.1	32.6	35.6	38.6	41.6
1.04	11.30	11.80	-	-	-	-	13.4	15.4	17.4	19.4	21.9	24.4	26.9	29.4	31.9	34.9	37.9	40.9
1.05	4.65 *	4.90 *	17.5	19.0	20.5	22.5	24.0	26.0	28.0	30.0	32.5	35.0	37.5	40.0	42.5	45.5	48.5	51.5
1.05	9.25	9.75	-	11.6	13.1	15.1	16.6	18.6	20.6	22.6	25.1	27.6	30.1	32.6	35.1	38.1	41.1	44.1
1.06	4.40 *	4.65 *	17.9	19.4	20.9	22.9	24.4	26.4	28.4	30.4	32.9	35.4	37.9	40.4	42.9	45.9	48.9	51.9
1.06	4.90 *	5.20 *	17.1	18.6	20.1	22.1	23.6	25.6	27.6	29.6	32.1	34.6	37.1	39.6	42.1	45.1	48.1	51.1
1.06	5.20 *	5.50 *	16.6	18.1	19.6	21.6	23.1	25.1	27.1	29.1	31.6	34.1	36.6	39.1	41.6	44.6	47.6	50.6
1.06	6.30 *	6.70 *	14.8	16.3	17.8	19.8	21.3	23.3	25.3	27.3	29.8	32.3	34.8	37.3	39.8	42.8	45.8	48.8
1.06	6.70 *	7.10	14.2	15.7	17.2	19.2	20.7	22.7	24.7	26.7	29.2	31.7	34.2	36.7	39.2	42.2	45.2	48.2
1.06	7.10	7.50	13.5	15.0	16.5	18.5	20.0	22.0	24.0	26.0	28.5	31.0	33.5	36.0	38.5	41.5	44.5	47.5
1.06	8.00	8.50	12.0	13.5	15.0	17.0	18.5	20.5	22.5	24.5	27.0	29.5	32.0	34.5	37.0	40.0	43.0	46.0
1.06	8.50	9.00	11.3	12.8	14.3	16.3	17.8	19.8	21.8	23.8	26.3	28.8	31.3	33.8	36.3	39.3	42.3	45.3
1.06	9.75	10.30	-	-	12.2	14.3	15.8	17.8	19.8	21.8	24.3	26.8	29.3	31.8	34.3	37.3	40.3	43.3
1.06	10.30	10.90	-	-	-	13.3	14.8	16.8	18.8	20.8	23.3	25.8	28.3	30.8	33.3	36.3	39.3	42.3
1.06	11.80	12.50	-	-	-	-	-	14.4	16.4	18.4	20.9	23.4	25.9	28.4	30.9	33.9	36.9	39.9
1.06	12.50	13.20	-	-	-	-	-	-	15.3	17.3	19.8	22.3	24.8	27.3	29.8	32.8	35.8	38.8
1.06	13.20	14.00	-	-	-	-	-	-	-	16.1	18.6	21.1	23.6	26.1	28.6	31.6	34.6	37.6
1.07	5.50 *	5.90 *	16.0	17.5	19.0	21.0	22.5	24.5	26.5	28.5	31.0	33.5	36.0	38.5	41.0	44.0	47.0	50.0
1.07	5.90 *	6.30 *	15.4	16.9	18.4	20.4	21.9	23.9	25.9	27.9	30.4	32.9	35.4	37.9	40.4	43.4	46.4	49.4
1.07	7.50	8.00	12.8	14.3	15.8	17.8	19.3	21.3	23.3	25.3	27.8	30.3	32.8	35.3	37.8	40.8	43.8	46.8
1.07	14.00	15.00	-	-	-	-	-	-	-	-	17.2	19.7	22.2	24.7	27.2	30.2	33.2	36.2
1.07	15.00	16.00	-	-	-	-	-	-	-	-	-	18.1	20.6	23.1	25.6	28.6	31.6	34.6
1.08	9.00	9.75	-	11.8	13.3	15.3	16.8	18.8	20.8	22.8	25.3	27.8	30.3	32.8	35.3	38.3	41.3	44.3
1.08	10.90	11.80	-	-	-	-	13.7	15.7	17.7	19.7	22.2	24.7	27.2	29.7	32.2	35.2	38.2	41.2
1.09	8.50	9.25	11.1	12.6	14.1	16.1	17.6	19.6	21.6	23.6	26.1	28.6	31.1	33.6	36.1	39.1	42.1	45.1
1.10	10.30	11.30	-	-	-	13.0	14.5	16.5	18.5	20.5	23.0	25.5	28.0	30.5	33.0	36.0	39.0	42.0
1.11	9.25	10.30	-	11.1	12.6	14.6	16.1	18.1	20.1	22.1	24.6	27.1	29.6	32.1	34.6	37.6	40.6	43.6
1.11	11.30	12.50	-	-	-	-	-	14.8	16.8	18.8	21.3	23.8	26.3	28.8	31.3	34.3	37.3	40.3
1.12	4.40 *	4.90 *	17.7	19.2	20.7	22.7	24.2	26.2	28.2	30.2	32.7	35.2	37.7	40.2	42.7	45.7	48.7	51.7
1.12	4.65 *	5.20 *	17.3	18.8	20.3	22.3	23.8	25.8	27.8	29.8	32.3	34.8	37.3	39.8	42.3	45.3	48.3	51.3
1.12	6.70 *	7.50	13.8	15.3	16.8	18.8	20.3	22.3	24.3	26.3	28.8	31.3	33.8	36.3	38.8	41.8	44.8	47.8
1.12	9.75	10.90	-	-	11.8	13.8	15.3	17.3	19.3	21.3	23.8	26.3	28.8	31.3	33.8	36.8	39.8	42.8
1.12	11.80	13.20	-	-	-	-	-	13.8	15.8	17.9	20.4	22.9	25.4	27.9	30.4	33.4	36.4	39.4
1.12	12.50	14.00	-	-	-	-	-	-	14.7	16.7	19.2	21.7	24.2	26.7	29.2	32.2		

● 5V·5VX (SR = 1.19 ~ 1.46)

Table 2-42-2 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)																
			5V 500	5V 530	5V 560	5V 600	5V 630	5V 670	5V 710	5V 750	5V 800	5V 850	5V 900	5V 950	5V 1000	5V 1060	5V 1120	5V 1180	
	Small pulley	Large pulley																	
1.19	6.30 *	7.50	14.1	15.7	17.2	19.2	20.7	22.7	24.7	26.7	29.2	31.7	34.2	36.7	39.2	42.2	45.2	48.2	
1.19	11.80	14.00	-	-	-	-	-	-	15.2	17.2	19.7	22.2	24.7	27.2	29.7	32.7	35.7	38.7	
1.20	6.70 *	8.00	13.4	14.9	16.4	18.4	19.9	21.9	23.9	25.9	28.4	30.9	33.4	35.9	38.4	41.4	44.4	47.5	
1.20	7.10	8.50	12.7	14.2	15.7	17.7	19.2	21.2	23.2	25.2	27.7	30.2	32.7	35.2	37.7	40.7	43.7	46.7	
1.20	7.50	9.00	12.0	13.5	15.0	17.0	18.5	20.5	22.5	24.5	27.0	29.5	32.0	34.5	37.0	40.0	43.0	46.0	
1.20	12.50	15.00	-	-	-	-	-	-	15.9	18.4	20.9	23.4	25.9	28.4	31.4	34.4	37.4	37.4	
1.21	4.90 *	5.90 *	16.5	18.0	19.5	21.5	23.0	25.0	27.0	29.0	31.5	34.0	36.5	39.0	41.5	44.5	47.5	50.5	
1.21	5.90 *	7.10	14.8	16.3	17.8	19.8	21.3	23.3	25.3	27.3	29.8	32.3	34.8	37.3	39.8	42.8	45.8	48.8	
1.21	8.50	10.30	-	11.7	13.2	15.2	16.7	18.7	20.7	22.7	25.2	27.7	30.2	32.7	35.2	38.2	41.2	44.2	
1.21	9.00	10.90	-	-	12.3	14.3	15.8	17.8	19.8	21.8	24.4	26.9	29.4	31.9	34.4	37.4	40.4	43.4	
1.21	9.75	11.80	-	-	-	13.0	14.5	16.5	18.5	20.5	23.1	25.6	28.1	30.6	33.1	36.1	39.1	42.1	
1.21	10.90	13.20	-	-	-	-	-	14.5	16.5	18.5	21.0	23.5	26.0	28.5	31.1	34.1	37.1	40.1	
1.21	13.20	16.00	-	-	-	-	-	-	-	-	17.0	19.5	22.0	24.5	27.0	30.0	33.0	36.0	
1.22	5.20 *	6.30 *	16.0	17.5	19.0	21.0	22.5	24.5	26.5	28.5	31.0	33.5	36.0	38.5	41.0	44.0	47.0	50.0	
1.22	5.50 *	6.70 *	15.4	16.9	18.4	20.4	21.9	23.9	25.9	27.9	30.4	32.9	35.4	37.9	40.4	43.4	46.4	49.4	
1.22	8.00	9.75	11.0	12.5	14.0	16.0	17.5	19.5	21.5	23.5	26.0	28.5	31.0	33.5	36.0	39.0	42.1	45.1	
1.22	9.25	11.30	-	-	11.8	13.8	15.3	17.3	19.3	21.3	23.8	26.3	28.8	31.3	33.8	36.8	39.8	42.8	
1.22	10.30	12.50	-	-	-	-	13.5	15.6	17.6	19.6	22.1	24.6	27.1	29.6	32.1	35.1	38.1	41.1	
1.24	7.50	9.25	11.8	13.3	14.8	16.8	18.3	20.3	22.3	24.3	26.8	29.3	31.8	34.3	36.8	39.8	42.8	45.8	
1.24	11.30	14.00	-	-	-	-	-	-	15.6	17.6	20.1	22.6	25.1	27.6	30.1	33.1	36.1	39.1	
1.25	15.00	18.70	-	-	-	-	-	-	-	-	-	-	18.4	21.0	23.5	26.5	29.5	32.5	
1.26	4.40 *	5.50 *	17.2	18.7	20.2	22.2	23.7	25.7	27.7	29.7	32.2	34.7	37.2	39.7	42.2	45.2	48.2	51.2	
1.26	9.00	11.30	-	-	12.0	14.0	15.5	17.5	19.5	21.5	24.0	26.5	29.0	31.5	34.0	37.0	40.0	43.0	
1.27	4.65 *	5.90 *	16.7	18.2	19.7	21.7	23.2	25.2	27.2	29.2	31.7	34.2	36.7	39.2	41.7	44.7	47.7	50.7	
1.27	6.30 *	8.00	13.7	15.2	16.7	18.7	20.3	22.3	24.3	26.3	28.8	31.3	33.8	36.3	38.8	41.8	44.8	47.8	
1.27	6.70 *	8.50	13.0	14.5	16.0	18.0	19.5	21.5	23.5	25.5	28.0	30.5	33.0	35.6	38.1	41.1	44.1	47.1	
1.27	7.10	9.00	12.3	13.8	15.3	17.3	18.8	20.8	22.8	24.8	27.3	29.8	32.3	34.8	37.3	40.3	43.3	46.3	
1.27	11.80	15.00	-	-	-	-	-	-	-	16.4	18.9	21.4	23.9	26.4	28.9	31.9	34.9	37.9	
1.28	5.90 *	7.50	14.5	16.0	17.5	19.5	21.0	23.0	25.0	27.0	29.5	32.0	34.5	37.0	39.5	42.5	45.5	48.5	
1.28	9.25	11.80	-	-	-	13.4	14.9	16.9	18.9	20.9	23.4	25.9	28.4	30.9	33.4	36.4	39.4	42.4	
1.28	9.75	12.50	-	-	-	12.4	14.0	16.0	18.0	20.0	22.5	25.0	27.5	30.0	32.5	35.5	38.5	41.5	
1.28	10.30	13.20	-	-	-	-	13.0	15.0	17.0	19.0	21.5	24.0	26.5	29.0	31.5	34.5	37.5	40.5	
1.28	12.50	16.00	-	-	-	-	-	-	-	-	17.5	20.0	22.5	25.1	27.6	30.6	33.6	36.6	
1.29	4.90 *	6.30 *	16.2	17.7	19.2	21.2	22.7	24.7	26.7	28.7	31.2	33.7	36.2	38.7	41.2	44.2	47.2	50.2	
1.29	5.20 *	6.70 *	15.6	17.1	18.6	20.6	22.1	24.1	26.1	28.1	30.6	33.1	35.6	38.1	40.6	43.6	46.6	49.6	
1.29	8.00	10.30	10.6	12.1	13.6	15.6	17.1	19.1	21.1	23.1	25.6	28.1	30.6	33.1	35.6	38.6	41.6	44.6	
1.29	8.50	10.90	-	11.2	12.7	14.7	16.2	18.2	20.2	22.2	24.7	27.2	29.7	32.2	34.7	37.7	40.7	43.7	
1.29	10.90	14.00	-	-	-	-	-	13.9	15.9	17.9	20.4	22.9	25.4	27.9	30.4	33.4	36.4	39.4	
1.30	5.50 *	7.10	15.1	16.6	18.1	20.1	21.6	23.6	25.6	27.6	30.1	32.6	35.1	37.6	40.1	43.1	46.1	49.1	
1.30	7.50	9.75	11.4	12.9	14.4	16.4	17.9	19.9	21.9	23.9	26.4	28.9	31.4	33.9	36.4	39.4	42.4	45.4	
1.31	7.10	9.25	12.1	13.6	15.1	17.1	18.6	20.6	22.6	24.6	27.1	29.6	32.1	34.6	37.1	40.1	43.1	46.1	
1.31	9.00	11.80	-	-	11.6	13.6	15.1	17.1	19.1	21.1	23.6	26.1	28.6	31.1	33.6	36.6	39.6	42.6	
1.33	8.50	11.30	-	-	12.4	14.4	15.9	17.9	19.9	21.9	24.4	26.9	29.4	31.9	34.4	37.4	40.4	43.4	
1.33	11.30	15.00	-	-	-	-	-	-	14.7	16.7	19.3	21.8	24.3	26.8	29.3	32.3	35.3	38.3	
1.33	16.00	21.20	-	-	-	-	-	-	-	-	-	-	-	-	20.6	23.6	26.7	29.7	
1.34	14.00	18.70	-	-	-	-	-	-	-	-	-	-	19.2	21.7	24.2	27.2	30.2	33.2	
1.35	4.40 *	5.90 *	16.9	18.4	19.9	21.9	23.4	25.4	27.4	29.4	31.9	34.4	36.9	39.4	41.9	44.9	47.9	50.9	
1.35	6.30 *	8.50	13.3	14.8	16.3	18.3	19.8	21.8	23.9	25.9	28.4	30.9	33.4	35.9	38.4	41.4	44.4	47.4	
1.35	6.70 *	9.00	12.6	14.1	15.6	17.6	19.1	21.1	23.1	25.1	27.6	30.1	32.6	35.2	37.7	40.7	43.7	46.7	
1.36	4.65 *	6.30 *	16.4	17.9	19.4	21.4	22.9	24.9	26.9	28.9	31.4	33.9	36.4	38.9	41.4	44.4	47.4	50.4	
1.36	5.90 *	8.00	14.0	15.5	17.1	19.1	20.6	22.6	24.6	26.6	29.1	31.6	34.1	36.6	39.1	42.1	45.1	48.1	
1.36	9.25	12.50	-	-	-	12.8	14.3	16.3	18.3	20.4	22.9	25.4	27.9	30.4	32.9	35.9	38.9	41.9	
1.36	9.75	13.20	-	-	-	-	13.4	15.4	17.4	19.4	21.9	24.4	26.9	29.4	31.9	34.9	37.9	40.9	
1.36	10.30	14.00	-	-	-	-	-	14.3	16.3	18.3	20.8	23.3	25.8	28.4	30.9	33.9	36.9	39.9	
1.36	11.80	16.00	-	-	-	-	-	-	15.5	18.0	20.6	23.1	25.6	28.1	31.1	34.1	37.1	40.1	
1.37	5.20 *	7.10	15.3	16.8	18.3	20.3	21.8	23.8	25.8	27.8	30.3	32.8	35.3	37.8	40.3	43.3	46.3	49.3	
1.37	5.50 *	7.50	14.8	16.3	17.8	19.8	21.3	23.3	25.3	27.3	29.8	32.3	34.8	37.3	39.8	42.8	45.8	48.8	
1.37	8.00	10.90	-	11.6	13.1	15.1	16.6	18.6	20.6	22.6	25.1	27.6	30.1	32.6	35.1	38.1	41.1	44.1	
1.38	4.90 *	6.70 *	15.9	17.4	18.9	20.9	22.4	24.4	26.4	28.4	30.9	33.4	35.9	38.4	40.9	43.9	46.9	49.9	
1.38	7.10	9.75	11.7	13.2															

5V·5VX**1.19 ~ 1.46**

Color coding of Power rating correction factor : Kc

0.7	0.8	0.9	1.0	1.1	1.2
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Center distance (inches)																			Speed ratio
5V 1250	5V 1320	5V 1400	5V 1500	5V 1600	5V 1700	5V 1800	5V 1900	5V 2000	5V 2120	5V 2240	5V 2360	5V 2500	5V 2650	5V 2800	5V 3000	5V 3150	5V 3350	5V 3550	
51.7	55.2	59.2	64.2	69.2	74.2	79.2	84.2	89.2	95.2	101.2	107.2	114.2	121.7	129.2	139.2	146.7	156.7	166.7	1.19
42.2	45.7	49.7	54.7	59.7	64.7	69.7	74.7	79.7	85.7	91.7	97.7	104.7	112.2	119.7	129.7	137.2	147.2	157.2	1.19
51.0	54.5	58.5	63.5	68.5	73.5	78.5	83.5	88.5	94.5	100.5	106.5	113.5	121.0	128.5	138.5	146.0	156.0	166.0	1.20
50.2	53.7	57.7	62.7	67.7	72.7	77.7	82.7	87.7	93.7	99.7	105.7	112.7	120.2	127.7	137.7	145.2	155.2	165.2	1.20
49.5	53.0	57.0	62.0	67.0	72.0	77.0	82.0	87.0	93.0	99.0	105.0	112.0	119.5	127.0	137.0	144.5	154.5	164.5	1.20
40.9	44.4	48.4	53.4	58.4	63.4	68.4	73.4	78.4	84.4	90.4	96.4	103.4	110.9	118.4	128.4	135.9	145.9	155.9	1.20
54.0	57.5	61.5	66.5	71.5	76.5	81.5	86.5	91.5	97.5	103.5	109.5	116.5	124.0	131.5	141.5	149.0	159.0	169.0	1.21
52.3	55.8	59.8	64.8	69.8	74.8	79.8	84.8	89.8	95.8	101.8	107.8	114.8	122.3	129.8	139.8	147.3	157.3	167.3	1.21
47.7	51.2	55.2	60.2	65.2	70.2	75.2	80.2	85.2	91.2	97.2	103.2	110.2	117.7	125.2	135.2	142.7	152.7	162.7	1.21
46.9	50.4	54.4	59.4	64.4	69.4	74.4	79.4	84.4	90.4	96.4	102.4	109.4	116.9	124.4	134.4	141.9	151.9	161.9	1.21
45.6	49.1	53.1	58.1	63.1	68.1	73.1	78.1	83.1	89.1	95.1	101.1	108.1	115.6	123.1	133.1	140.6	150.6	160.6	1.21
43.6	47.1	51.1	56.1	61.1	66.1	71.1	76.1	81.1	87.1	93.1	99.1	106.1	113.6	121.1	131.1	138.6	148.6	158.6	1.21
39.5	43.0	47.0	52.0	57.0	62.1	67.1	72.1	77.1	83.1	89.1	95.1	102.1	109.6	117.1	127.1	134.6	144.6	154.6	1.21
53.5	57.0	61.0	66.0	71.0	76.0	81.0	86.0	91.0	97.0	103.0	109.0	116.0	123.5	131.0	141.0	148.5	158.5	168.5	1.22
52.9	56.4	60.4	65.4	70.4	75.4	80.4	85.4	90.4	96.4	102.4	108.4	115.4	122.9	130.4	140.4	147.9	157.9	167.9	1.22
48.6	52.1	56.1	61.1	66.1	71.1	76.1	81.1	86.1	92.1	98.1	104.1	111.1	118.6	126.1	136.1	143.6	153.6	163.6	1.22
46.3	49.8	53.9	58.9	63.9	68.9	73.9	78.9	83.9	89.9	95.9	101.9	108.9	116.4	123.9	133.9	141.4	151.4	161.4	1.22
44.6	48.1	52.1	57.1	62.1	67.1	72.1	77.1	82.1	88.1	94.1	100.1	107.1	114.6	122.1	132.1	139.6	149.6	159.6	1.22
49.3	52.8	56.8	61.8	66.8	71.8	76.8	81.8	86.8	92.8	98.8	104.8	111.8	119.3	126.8	136.8	144.3	154.3	164.3	1.24
42.6	46.1	50.1	55.1	60.1	65.1	70.1	75.1	80.1	86.1	92.1	98.1	105.1	112.6	120.1	130.1	137.6	147.6	157.6	1.24
36.0	39.5	43.5	48.5	53.5	58.5	63.5	68.5	73.5	79.5	85.5	91.5	98.5	106.0	113.5	123.5	131.0	141.0	151.0	1.25
54.7	58.2	62.2	67.2	72.2	77.2	82.2	87.2	92.2	98.2	104.2	110.2	117.2	124.7	132.2	142.2	149.7	159.7	169.7	1.26
46.5	50.0	54.0	59.0	64.0	69.0	74.0	79.0	84.0	90.0	96.0	102.0	109.1	116.6	124.1	134.1	141.6	151.6	161.6	1.26
54.2	57.7	61.7	66.7	71.7	76.7	81.7	86.7	91.7	97.7	103.7	109.7	116.7	124.2	131.7	141.7	149.2	159.2	169.2	1.27
51.3	54.8	58.8	63.8	68.8	73.8	78.8	83.8	88.8	94.8	100.8	106.8	113.8	121.3	128.8	138.8	146.3	156.3	166.3	1.27
50.6	54.1	58.1	63.1	68.1	73.1	78.1	83.1	88.1	94.1	100.1	106.1	113.1	120.6	128.1	138.1	145.6	155.6	165.6	1.27
49.8	53.3	57.3	62.3	67.3	72.3	77.3	82.3	87.3	93.3	99.3	105.3	112.4	119.9	127.4	137.4	144.9	154.9	164.9	1.27
41.4	44.9	48.9	53.9	58.9	63.9	68.9	73.9	78.9	84.9	90.9	96.9	103.9	111.4	118.9	128.9	136.4	146.4	156.4	1.27
52.0	55.5	59.5	64.5	69.5	74.5	79.5	84.5	89.5	95.5	101.5	107.5	114.5	122.0	129.5	139.5	147.0	157.0	167.0	1.28
45.9	49.5	53.5	58.5	63.5	68.5	73.5	78.5	83.5	89.5	95.5	101.5	108.5	116.0	123.5	133.5	141.0	151.0	161.0	1.28
45.0	48.5	52.5	57.5	62.5	67.5	72.5	77.5	82.5	88.5	94.5	100.5	107.5	115.0	122.5	132.5	140.0	150.0	160.0	1.28
44.0	47.5	51.5	56.5	61.5	66.5	71.5	76.5	81.5	87.5	93.5	99.5	106.5	114.0	121.5	131.5	139.0	149.0	159.0	1.28
40.1	43.6	47.6	52.6	57.6	62.6	67.6	72.6	77.6	83.6	89.6	95.6	102.6	110.1	117.6	127.6	135.1	145.1	155.1	1.28
53.7	57.2	61.2	66.2	71.2	76.2	81.2	86.2	91.2	97.2	103.2	109.2	116.2	123.7	131.2	141.2	148.7	158.7	168.7	1.29
53.1	56.6	60.6	65.6	70.6	75.6	80.6	85.6	90.6	96.6	102.6	108.6	115.6	123.1	130.6	140.6	148.1	158.1	168.1	1.29
48.1	51.6	55.6	60.6	65.6	70.6	75.6	80.6	85.6	91.6	97.6	103.6	110.6	118.1	125.6	135.6	143.1	153.1	163.1	1.29
47.2	50.7	54.8	59.8	64.8	69.8	74.8	79.8	84.8	90.8	96.8	102.8	109.8	117.3	124.8	134.8	142.3	152.3	162.3	1.29
42.9	46.4	50.4	55.4	60.4	65.4	70.4	75.4	80.4	86.4	92.4	98.4	105.4	112.9	120.4	130.4	137.9	147.9	157.9	1.29
52.6	56.1	60.1	65.1	70.1	75.1	80.1	85.1	90.1	96.1	102.1	108.1	115.1	122.6	130.1	140.1	147.6	157.6	167.6	1.30
48.9	52.4	56.4	61.4	66.4	71.4	76.4	81.4	86.4	92.4	98.4	104.4	111.4	118.9	126.4	136.4	143.9	153.9	163.9	1.30
49.6	53.1	57.1	62.1	67.2	72.2	77.2	82.2	87.2	93.2	99.2	105.2	112.2	119.7	127.2	137.2	144.7	154.7	164.7	1.31
46.1	49.6	53.6	58.6	63.6	68.6	73.7	78.7	83.7	89.7	95.7	101.7	108.7	116.2	123.7	133.7	141.2	151.2	161.2	1.31
46.9	50.4	54.4	59.4	64.4	69.4	74.4	79.4	84.4	90.4	96.4	102.4	109.4	116.9	124.4	134.4	141.9	151.9	161.9	1.33
41.8	45.3	49.3	54.3	59.3	64.3	69.3	74.3	79.3	85.3	91.3	97.3	104.3	111.8	119.3	129.3	136.8	146.8	156.8	1.33
33.2	36.7	40.7	45.7	50.7	55.7	60.7	65.7	70.7	76.7	82.7	88.7	95.7	103.3	110.8	120.8	128.3	138.3	148.3	1.33
36.7	40.2	44.3	49.3	54.3	59.3	64.3	69.3	74.3	80.3	86.3	92.3	99.3	106.8	114.3	124.3	131.8	141.8	151.8	1.34
54.4	57.9	61.9	66.9	71.9	76.9	81.9	86.9	91.9	97.9	103.9	109.9	116.9	124.4	131.9	141.9	149.4	159.4	169.4	1.35
50.9	54.4	58.4	63.4	68.4	73.4	78.4	83.4	88.4	94.4	100.4	106.4	113.4	120.9	128.4	138.4	145.9	155.9	165.9	1.35
50.2	53.7	57.7	62.7	67.7	72.7	77.7	82.7	87.7	93.7	99.7	105.7	112.7	120.2	127.7	137.7	145.2	155.2	165.2	1.35
53.9	57.4	61.4	66.4	71.4	76.4	81.4	86.4	91.4	97.4	103.4	109.4	116.4	123.9	131.4	141.4	148.9	158.9	168.9	1.36
51.6	55.1	59.1	64.1	69.1	74.1	79.1	84.1	89.1	95.1	101.1	107.1	114.1	121.6	129.1	139.1	146.6	156.6	166.6	1.36
45.4	48.9	52.9	57.9	62.9	67.9	72.9	77.9	82.9	88.9	94.9	100.9	107.9	115.4	122.9	132.9	140.4	150.4	160.4	1.3>

● 5V•5VX (SR = 3.88 ~ 11.60)

Table 2-42-6 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)															
	Small pulley	Large pulley	5V 500	5V 530	5V 560	5V 600	5V 630	5V 670	5V 710	5V 750	5V 800	5V 850	5V 900	5V 950	5V 1000	5V 1060	5V 1120	5V 1180
3.88	9.75	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.91	5.50 *	21.20	-	-	-	-	-	-	-	14.4	17.2	20.0	22.7	25.3	27.9	31.0	34.1	37.2
3.97	8.00	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.8	25.2
3.99	7.10	28.00	-	-	-	-	-	-	-	-	-	-	-	-	19.7	23.1	26.4	29.6
4.02	12.50	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.05	5.90 *	23.60	-	-	-	-	-	-	-	-	-	17.0	19.9	22.6	25.3	28.5	31.6	34.7
4.09	4.65 *	18.70	-	-	-	-	-	13.3	15.6	17.8	20.5	23.1	25.7	28.3	30.9	33.9	37.0	40.0
4.09	9.25	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.14	5.20 *	21.20	-	-	-	-	-	-	-	14.6	17.4	20.2	22.9	25.5	28.1	31.2	34.3	37.4
4.20	9.00	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.23	6.70 *	28.00	-	-	-	-	-	-	-	-	-	-	-	-	19.9	23.3	26.6	29.8
4.24	7.50	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.1	25.6
4.26	11.80	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.33	4.40 *	18.70	-	-	-	-	-	13.5	15.7	17.9	20.6	23.3	25.9	28.5	31.0	34.1	37.2	40.2
4.35	5.50 *	23.60	-	-	-	-	-	-	-	-	-	17.3	20.1	22.9	25.5	28.7	31.9	35.0
4.40	4.90 *	21.20	-	-	-	-	-	-	-	14.7	17.6	20.4	23.1	25.7	28.3	31.4	34.5	37.6
4.45	8.50	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.46	11.30	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.49	7.10	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.4	25.8
4.50	6.30 *	28.00	-	-	-	-	-	-	-	-	-	-	-	-	20.1	23.6	26.9	30.1
4.61	5.20 *	23.60	-	-	-	-	-	-	-	-	-	17.5	20.3	23.0	25.7	28.9	32.1	35.2
4.62	10.90	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.64	4.65 *	21.20	-	-	-	-	-	-	-	14.9	17.8	20.5	23.2	25.9	28.5	31.6	34.7	37.8
4.73	8.00	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.76	6.70 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.6	26.0
4.81	5.90 *	28.00	-	-	-	-	-	-	-	-	-	-	-	-	20.4	23.8	27.1	30.4
4.89	10.30	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.90	4.90 *	23.60	-	-	-	-	-	-	-	-	-	17.6	20.5	23.2	25.9	29.1	32.3	35.4
4.91	4.40 *	21.20	-	-	-	-	-	-	-	15.0	17.9	20.7	23.4	26.0	28.7	31.8	34.9	38.0
5.05	7.50	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.06	6.30 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.8	26.3
5.16	4.65 *	23.60	-	-	-	-	-	-	-	-	-	17.8	20.6	23.4	26.1	29.3	32.4	35.5
5.17	5.50 *	28.00	-	-	-	-	-	-	-	-	-	-	-	-	20.6	24.1	27.4	30.6
5.17	9.75	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.34	7.10	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.41	5.90 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.1	26.5
5.45	9.25	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.47	4.40 *	23.60	-	-	-	-	-	-	-	-	-	17.9	20.8	23.6	26.3	29.4	32.6	35.7
5.47	5.20 *	28.00	-	-	-	-	-	-	-	-	-	-	-	17.8	20.8	24.2	27.6	30.8
5.61	9.00	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.67	6.70 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.81	4.90 *	28.00	-	-	-	-	-	-	-	-	-	-	-	17.9	21.0	24.4	27.8	31.0
5.81	5.50 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	19.6	23.3	26.8
5.94	8.50	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.03	6.30 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.13	4.65 *	28.00	-	-	-	-	-	-	-	-	-	-	-	18.1	21.1	24.6	27.9	31.2
6.16	5.20 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	19.8	23.5	27.0
6.32	8.00	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.45	5.90 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.49	4.40 *	28.00	-	-	-	-	-	-	-	-	-	-	-	18.2	21.3	24.7	28.1	31.3
6.54	4.90 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0	23.7	27.2
6.74	7.50	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.90	4.65 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	20.1	23.8	27.3
6.93	5.50 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.13	7.10	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.30	4.40 *	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	20.3	24.0	27.5
7.33	5.20 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.56	6.70 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.79	4.90 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.05	6.30 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.22	4.65 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.60	5.90 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.70	4.40 *	37.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.24	5.50 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.78	5.20 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.40	4.90 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.97	4.65 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.60	4.40 *	50.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

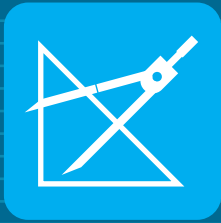
*Pulley effective diameter is smaller than minimum for Wrapped V-Belts (5V). Use these pulleys for Raw Edge V-Belts (5VX) only.

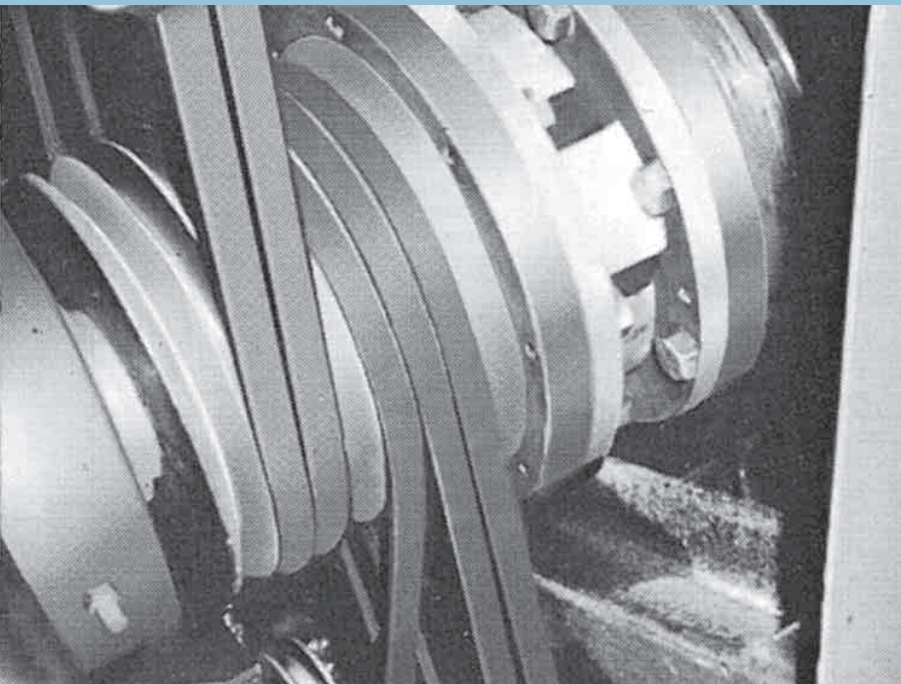
● 8V (SR = 1.77 ~ 5.76)

Table 2-43-2 Drive selection table

Speed ratio	Effective diameter (inches)		Center distance (inches)													
	Small pulley	Large pulley	8V	8V	8V	8V	8V	8V	8V	8V	8V	8V	8V	8V	8V	8V
			1000	1060	1120	1180	1250	1320	1400	1500	1600	1700	1800	1900	2000	2120
1.77	17.00	30.00	-	-	-	-	-	28.3	32.4	37.5	42.6	47.6	52.7	57.7	62.7	68.8
1.78	14.00	24.80	-	21.9	24.9	28.0	31.6	35.1	39.2	44.2	49.2	54.3	59.3	64.3	69.3	75.3
1.78	20.00	35.50	-	-	-	-	-	-	-	30.4	35.6	40.7	45.8	50.8	55.9	61.9
1.79	22.40	40.00	-	-	-	-	-	-	-	-	-	34.9	40.0	45.1	50.2	56.3
1.80	12.50	22.40	22.0	25.1	28.2	31.2	34.7	38.3	42.3	47.3	52.4	57.4	62.4	67.4	72.4	78.4
1.88	19.00	35.50	-	-	-	-	-	-	-	31.1	36.3	41.4	46.5	51.5	56.6	62.7
1.89	13.20	24.80	-	22.4	25.5	28.6	32.1	35.7	39.7	44.8	49.8	54.8	59.9	64.9	69.9	75.9
1.89	16.00	30.00	-	-	-	-	25.4	29.0	33.1	38.2	43.3	48.4	53.4	58.5	63.5	69.5
1.90	21.20	40.00	-	-	-	-	-	-	-	-	-	35.7	40.9	46.0	51.1	57.2
1.98	18.00	35.50	-	-	-	-	-	-	-	31.8	36.9	42.1	47.2	52.2	57.3	63.4
2.00	12.50	24.80	-	22.9	26.0	29.1	32.6	36.2	40.2	45.3	50.3	55.4	60.4	65.4	70.4	76.5
2.00	22.40	44.50	-	-	-	-	-	-	-	-	-	-	35.7	41.0	46.1	52.3
2.01	15.00	30.00	-	-	-	-	26.1	29.7	33.8	38.9	44.0	49.1	54.1	59.2	64.2	70.3
2.01	20.00	40.00	-	-	-	-	-	-	-	-	-	36.5	41.7	46.8	51.9	58.0
2.10	17.00	35.50	-	-	-	-	-	-	-	32.4	37.6	42.8	47.9	53.0	58.0	64.1
2.11	21.20	44.50	-	-	-	-	-	-	-	-	-	-	36.5	41.8	47.0	53.1
2.12	19.00	40.00	-	-	-	-	-	-	-	-	31.9	37.2	42.4	47.5	52.6	58.7
2.16	14.00	30.00	-	-	-	-	26.7	30.4	34.5	39.6	44.7	49.8	54.9	59.9	64.9	71.0
2.23	16.00	35.50	-	-	-	-	-	-	27.8	33.1	38.3	43.5	48.6	53.7	58.7	64.8
2.24	18.00	40.00	-	-	-	-	-	-	-	-	32.6	37.8	43.0	48.2	53.3	59.4
2.24	20.00	44.50	-	-	-	-	-	-	-	-	-	-	37.3	42.6	47.8	54.0
2.29	13.20	30.00	-	-	-	23.6	27.3	30.9	35.1	40.2	45.3	50.4	55.4	60.5	65.5	71.6
2.36	19.00	44.50	-	-	-	-	-	-	-	-	-	-	38.0	43.2	48.4	54.6
2.37	17.00	40.00	-	-	-	-	-	-	-	-	33.2	38.5	43.7	48.9	54.0	60.1
2.38	22.40	53.00	-	-	-	-	-	-	-	-	-	-	-	-	-	44.1
2.39	15.00	35.50	-	-	-	-	-	-	28.5	33.8	39.0	44.1	49.3	54.4	59.5	65.5
2.42	12.50	30.00	-	-	-	24.0	27.7	31.4	35.5	40.7	45.8	50.9	55.9	61.0	66.0	72.1
2.49	18.00	44.50	-	-	-	-	-	-	-	-	-	33.3	38.6	43.9	49.1	55.3
2.51	21.20	53.00	-	-	-	-	-	-	-	-	-	-	-	-	-	44.9
2.52	16.00	40.00	-	-	-	-	-	-	-	-	33.9	39.2	44.4	49.6	54.7	60.8
2.56	14.00	35.50	-	-	-	-	-	-	29.1	34.4	39.7	44.8	50.0	55.1	60.2	66.3
2.64	17.00	44.50	-	-	-	-	-	-	-	-	-	33.9	39.3	44.6	49.8	56.0
2.67	20.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	39.2	45.7
2.69	15.00	40.00	-	-	-	-	-	-	-	29.1	34.5	39.8	45.1	50.2	55.4	61.5
2.72	13.20	35.50	-	-	-	-	-	-	29.7	35.0	40.2	45.4	50.5	55.6	60.7	66.8
2.80	16.00	44.50	-	-	-	-	-	-	-	-	-	34.5	39.9	45.2	50.5	56.7
2.81	19.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	39.8	46.3
2.83	22.40	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.87	12.50	35.50	-	-	-	-	-	25.7	30.1	35.4	40.7	45.9	51.0	56.1	61.2	67.3
2.88	14.00	40.00	-	-	-	-	-	-	-	29.7	35.2	40.5	45.7	50.9	56.1	62.2
2.97	18.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	40.5	47.0
2.99	15.00	44.50	-	-	-	-	-	-	-	-	-	35.2	40.6	45.9	51.1	57.4
2.99	21.20	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.06	13.20	40.00	-	-	-	-	-	-	-	30.2	35.7	41.0	46.3	51.5	56.6	62.8
3.14	17.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	41.1	47.6
3.17	20.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.19	22.40	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.21	14.00	44.50	-	-	-	-	-	-	-	-	-	35.8	41.2	46.6	51.8	58.1
3.24	12.50	40.00	-	-	-	-	-	-	-	30.7	36.2	41.5	46.7	51.9	57.1	63.3
3.34	16.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	41.7	48.3
3.34	19.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.37	21.20	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.41	13.20	44.50	-	-	-	-	-	-	-	-	30.7	36.3	41.7	47.1	52.3	58.6
3.53	18.00	63.00	-	-	-	-	-	-	-	-	-	-	-	36.7	42.3	48.9
3.57	15.00	53.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.58	20.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.60	12.50	44.50	-	-	-	-	-	-	-	-	31.1	36.7	42.2	47.5	52.8	59.1
3.74	17.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.77	19.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.83	14.00	53.00	-	-	-	-	-	-	-	-	-	-	-	37.3	43.0	49.5
3.97	16.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.98	18.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.06	13.20	53.00	-	-	-	-	-	-	-	-	-	-	-	37.8	43.4	50.1
4.21	17.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.24	15.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.29	12.50	53.00	-	-	-	-	-	-	-	-	-	-	-	38.2	43.9	50.5
4.48	16.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.55	14.00	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.78	15.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.83	13.20	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.11	12.50	63.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.13	14.00	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.45	13.20	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.76	12.50	71.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference





3. Reference

Length measurement

Tensioning

Use of idlers

Quarter-Turn Drives

V-Flat pulley drives

Multi V-Belts

Storage and Handling of V-Belts

Request for belt design

Global Factories & Sales Offices

Length measurement

Precise measuring methods are specified in RMA IP-20 for Classical V-Belts, RMA IP-22 for Maxstar Wedge V-Belts, and DIN 7753 Part 1 for Narrow V-Belts. The V-Belt is laid over two equal size pulleys as following figure. These pulley grooves are designed to correspond with the belt section specified in Table 3-2 ~ 3-4. The measuring force is added to the measuring pulley in such a way. Belt length is calculated by the formula which is specified in Table 3-1.

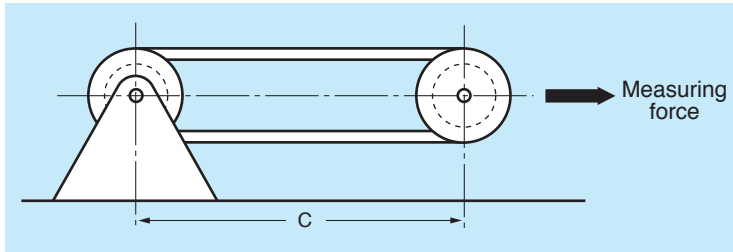


Fig. 3-1 Diagram of fixture for length measurement

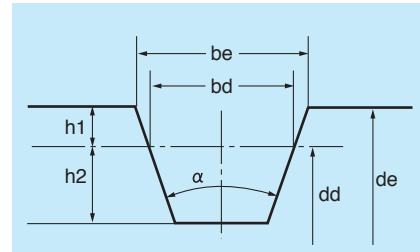


Fig. 3-2 Measuring pulley

Length calculation formula

Table 3-1

	Belt section	Length designation	Length calculation formula
Classical	A, AX	Ld - 1.3"	$Ld = 2C + \pi dd$
	B, BX (~ 210")	Ld - 1.8"	
	B, BX (211" ~)	Ld - 0.3"	
	C, CX (~ 210")	Ld - 2.9"	
	C, CX (211" ~)	Ld - 0.9"	
	D (~ 210")	Ld - 3.3"	
	D (211" ~)	Ld - 0.8"	
	E (~ 210")	Ld - 4.5"	
	E (211" ~)	Ld - 1.0"	
Maxstar Wedge	3V, 3VX	Effective length : Le	$Le = 2C + \pi de$
	5V, 5VX		
	8V		
Narrow	SPZ, SPZX	Datum length : Ld	$Ld = 2C + \pi dd$
	SPA, SPAX		
	SPB, SPBX		
	SPC, SPCX		



Pulley dimensions and measuring force of Classical V-Belts for RMA / MPTA**Table 3-2**

Belt section		A AX	B BX	C CX	D	E
Datum width : bd	inch	0.418	0.530	0.757	1.076	1.267
Effective width : be	inch	0.494	0.637	0.879	1.259	1.527
Datum diameter : dd	inch	3.888	5.380	7.558	12.132	18.299
Effective diameter : de	inch	4.138	5.730	7.958	12.732	19.099
Pulley datum circumference : πdd	inch	12.214	16.902	23.744	38.114	57.487
Pulley effective circumference : πde	inch	13.000	18.000	25.000	40.000	60.000
Angle : α	°	34	34	34	34	36
Distance down to datum line : h1	inch	0.125	0.175	0.200	0.300	0.400
Measuring force	pound	50	65	165	300	400

**Pulley dimensions and measuring force of
Maxstar Wedge V-Belts for RMA/MPTA****Table 3-3**

Belt section		3V 3VX	5V 5VX	8V
Effective width : be	inch	0.350	0.600	1.000
Effective diameter : de	inch	3.820	7.958	15.916
Pulley effective circumference : πde	inch	12.000	25.000	50.000
Angle : α	°	38	38	38
Measuring force	pound	100	225	500

Pulley dimensions and measuring force of Narrow V-Belts for DIN**Table 3-4**

Belt section		SPZ SPZX	SPA SPAX	SPB SPBX	SPC SPCX
Datum width : bd	mm	8.5	11.0	14.0	19.0
Datum diameter : dd	mm	95.49	143.24	190.99	318.31
Effective diameter : de	mm	100	149	198	328
Pulley datum circumference : πdd	mm	300	450	600	1000
Angle : α	°	36	36	36	36
Distance down to datum line : h1	mm	2.255	2.880	3.505	4.845
Measuring force	N	360	560	900	1500
	pound	80.99	125.98	202.47	337.44



■ Tensioning design V-Belts

Tension of the belts on a V-Belt drive is usually not critical. A few simple rules about tensioning will satisfy most of your requirements. For your proper tensioning of V-Belts, just follow these four steps.

Step 1.

After placing V-Belts into the pulleys grooves, increase the distance between pulleys until V-Belts are snug.

Step 2.

Measure the length of the span for your drive. At the center of the span, apply Deflection load (F) in Fig. 3-3 on page 3-7 with spring scale in a direction perpendicular to the span until the belt is deflected from the normal by amount equal to 1/64" per inch of span length.

Step 3.

A few days are necessary for V-Belts to seat into pulley grooves. The belt tension for a V-Belt drive is the lowest at which the belts will not slip under the highest load condition. A bigger tension than force maximum will reduce the life of belts and bearings, and a less tension than force minimum, will cause slip.

Step 4.

During the normal operation, V-belts will seat itself into pulley grooves, and will require periodic checks to maintain tension. The seating occurs more rapidly during the first 20-24 hours of operation. It is necessary to keep the belts and pulleys from any foreign materials which may cause slip. If V-belts slip, tighten them. Recommendable belt Deflection load to get the proper tension is shown in table 3-6. But the ideal tension can be obtained as follows :

1. Calculate Span length

$$L_s = \sqrt{C^2 - \frac{(D_d - d_d)^2}{4}}$$

L_s : Span length (in)
 C : Center distance (in)
 D_d : Large pulley datum diameter (in)
 d_d : Small pulley datum diameter (in)

2. Calculate Minimum static tension

$$T_o = 0.9 \times \left\{ \frac{33000 \times P_d}{n_b \times V} \times \frac{2.5 - K_\theta}{2 \times K_\theta} + W \times V^2 \times 5.8 \times 10^{-6} \right\}$$

T_o : Minimum static tension (lb / a belt) n_b : Number of belts
 K_θ : Arc of contact correction factor W : Belt weight per unit (kg / m) → see Table 3-5 in page 3-6
 P_d : Design power (HP) V : Belt speed (feet per minute)

$$T_{o\max}(\text{initial}) = 1.5 \times T_o$$

$$T_{o\max}(\text{retension}) = 1.3 \times T_o$$

$T_{o\max}(\text{initial})$: Maximum belt tension at initial fitting (lb/a belt)
 $T_{o\max}(\text{retension})$: Maximum belt tension at retensioning (lb/a belt)

3. Calculate Deflection load

A) Multiple V-Belts drivers :

$$F\delta_{\min} = \frac{T_o + Y}{16}$$

$$F\delta_{\max}(\text{initial}) = \frac{1.5 \cdot T_o + Y}{16}$$

$$F\delta_{\max}(\text{retension}) = \frac{1.3 \cdot T_o + Y}{16}$$

$F\delta$: Deflection load (lb / a belt)
 Y : a constant → see Table 3-5 in page 3-6
 L : Belt length (in)
 L_s : Span length (in)

B) Single V-Belts drivers :

$$F\delta_{\min} = \frac{T_o + Y(L_s/L)}{16}$$

$$F\delta_{\max}(\text{initial}) = \frac{1.5 \cdot T_o + Y(L_s/L)}{16}$$

$$F\delta_{\max}(\text{retension}) = \frac{1.3 \cdot T_o + Y(L_s/L)}{16}$$

4. Calculate maximum Shaft load at initial fitting

$$F_s = 2n_b \times T_o \times \sin \frac{\theta}{2} \times 1.5$$

F_s : Static shaft load (lb)
 θ : Arc of contact for small pulley



Belt weight per unit : W & Constant : Y

Table 3-5

Belt Section	W (kg/m)	Y (lb/pc)
A	0.12	3.3
B	0.20	4.4
C	0.30	6.6
D	0.65	13.2
E	1.00	24.3
SPZ	0.08	4.4
SPA	0.13	5.9
SPB	0.21	8.8
SPC	0.37	16.0
3V	0.08	4.4
5V	0.23	8.8
8V	0.60	22.1
AX	0.11	3.3
BX	0.18	4.4
CX	0.33	6.6
SPZX	0.08	4.4
SPAX	0.11	5.9
SPBX	0.21	8.8
SPCX	0.36	16.0
3VX	0.07	4.4
5VX	0.20	8.8



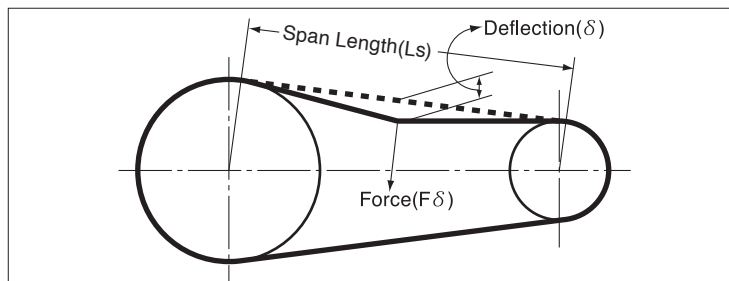
Tensioning of V-Belts

Step 1. Calculate Span length

Span length means the length between the belt contact points to the pulleys (L_s in Fig. 3-3).

If the diameter of the drive pulley and the driven pulley are the same, it is the same with Center Distance.

Fig. 3-3 Deflection measurement



Step 2. Calculate Deflection load by loading on the center of Span length.

Load on the center of Span length at right angle to the belt with the equipment like a spring balance, then check the load.

Deflection should be 1/64" per inch of Span length. For example, if Span length is 32", Deflection should be 0.5".

Step 3. Adjust the belt tension so that the load calculated by step 2. is between maximum and minimum Deflection load in Table 3-6.

Deflection load & Belt tension

Table 3-6

Belt section	Small pulley diameter (in)	Minimum tensioning conditions		Maximum tensioning conditions			
		Deflection load (lb)	Belt tension (lb)	Initial fitting		Retension	
				Deflection load (lb)	Belt tension (lb)	Deflection load (lb)	Belt tension (lb)
13/A	~ 3.1	2.7	38	3.8	56	3.4	49
	3.2 ~ 3.9	3.4	49	4.9	74	4.3	65
	4.0 ~ 5.2	4.0	61	6.1	92	5.2	79
17/B	~ 4.9	4.3	65	6.5	99	5.6	85
	5.0 ~ 6.3	5.6	85	8.1	126	7.2	110
	6.4 ~ 7.9	6.3	97	9.2	144	8.1	126
22/C	~ 7.9	8.1	121	11.7	180	10.3	157
	8.0 ~ 9.8	9.4	146	13.9	218	12.1	189
	9.9 ~ 14.0	11.2	173	16.6	261	14.4	225
32/D	~ 14.0	16.2	245	23.8	369	20.7	319
	14.1 ~ 22.0	21.1	326	31.3	488	27.2	423
	22.1 ~ 31.5	24.5	380	36.4	569	31.7	493
40/E	~ 22.0	24.1	360	35.3	540	30.8	468
	22.1 ~ 31.5	30.1	457	44.3	686	38.7	594
	31.6 ~ 37.4	33.3	508	49.3	763	43.0	661
SPZ/3V	~ 2.8	2.7	40	3.8	58	3.6	52
	2.9 ~ 3.5	3.4	49	4.9	76	4.3	65
	3.6 ~ 4.9	4.3	63	6.1	94	5.4	81
SPA	~ 3.9	4.5	65	6.5	97	5.6	83
	4.0 ~ 5.5	6.1	90	8.8	135	7.6	117
	5.6 ~ 7.9	7.2	108	10.6	162	9.0	139
SPB/5V	~ 6.3	8.1	119	11.7	180	10.3	155
	6.4 ~ 8.8	10.3	155	15.1	232	13.0	200
	8.9 ~ 14.0	11.9	182	17.8	274	15.5	238
SPC	~ 9.8	14.8	223	22.0	335	19.1	290
	9.9 ~ 14.0	18.9	288	27.9	430	24.3	373
	14.1 ~ 22.0	22.3	340	32.8	511	28.8	443
8V	~ 14.0	23.4	353	34.6	531	30.1	459
	14.1 ~ 22.0	30.6	468	45.2	702	39.4	607
	22.1 ~ 31.5	34.6	531	51.1	796	44.5	691
13/AX	~ 3.1	3.8	56	5.4	83	4.7	72
	3.2 ~ 3.9	4.0	63	6.1	94	5.2	81
	4.0 ~ 5.2	4.5	70	6.7	103	5.8	90
17/BX	~ 4.9	6.1	92	9.0	139	7.9	121
	5.0 ~ 6.3	6.5	99	9.4	148	8.3	128
	6.4 ~ 7.9	6.7	103	9.9	155	8.8	135
22/CX	~ 7.9	10.3	160	15.5	241	13.5	209
	8.0 ~ 9.8	10.8	166	16.0	250	13.9	216
	9.9 ~ 14.0	11.2	173	16.6	261	14.4	225
SPZX/3VX	~ 2.8	3.8	58	5.8	88	4.9	76
	2.9 ~ 3.5	4.5	67	6.5	101	5.8	88
	3.6 ~ 4.9	4.9	76	7.4	115	6.5	99
SPAX	~ 3.9	6.1	90	8.8	135	7.6	117
	4.0 ~ 5.5	7.4	112	11.0	169	9.4	146
	5.6 ~ 7.9	8.3	128	12.4	193	10.8	166
SPBX/5VX	~ 6.3	10.3	155	15.1	234	13.3	202
	6.4 ~ 8.8	12.4	189	18.2	281	16.0	245
	8.9 ~ 14.0	14.2	218	20.9	326	18.2	283
SPCX	~ 9.8	17.8	270	26.3	405	22.9	351
	9.9 ~ 14.0	20.5	310	30.1	466	26.1	403
	14.1 ~ 22.0	22.7	349	33.7	524	29.5	454

Tension values must be calculated for the pulleys which are not included in the above table.

PLEASE USE THIS DATA AS A REFERENCE.

■ Use of idlers

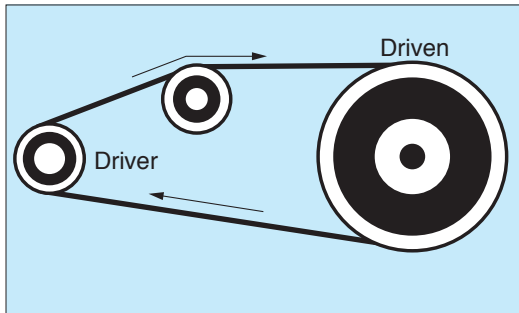
Idlers shorten the belt life. Use idlers only in the following cases.

- When the center distance cannot be adjusted.
- When the V-Belt is used as a clutch.
- When the belt span is too long and the belt vibrates.
- When a longer arc of contact with pulleys is required.
- When the belt tension is to be maintained during operation.
- When the belt is required to avoid obstructions.

Use of inside idlers

Inside idler

Fig. 3-4



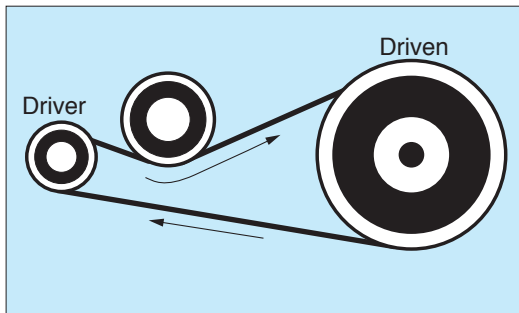
Place a grooved idler on the slack side of the belt. It is preferable to use an idler on the inside of the layout, not the outside.

The inside idler should be placed near the large pulley, otherwise the arc of contact becomes smaller and belt might slip.

Use of backside idlers

Backside idler

Fig. 3-5



The backside idlers shorten the belt life significantly, and are not recommended.

Use a flat pulley as a backside idler and place it near the small pulley.

The diameter of idler pulleys shall be larger than the diameter specified in Table 3-7.

Use the idler bigger than twice the size of the small pulley for Maxstar Wedge.

Minimum datum diameter of idler pulley

Table 3-7

Section	Inside idler(in)	Backside idler(in)
A	3.0	4.3
B	4.9	7.5
C	8.9	13.4
D	12.8	19.3
E	20.7	31.1

■ Quarter-Turn Drives

Quarter-Turn Drives are drives where the driver and driven shafts are at right angles to each other. To design Quarter-Turn Drives, follow the steps given in "Calculation of V-Belt drives design" section for designing an ordinary drive, keeping in mind the following special points:

1. Speed ratio should be 2.50 or less.
2. A standard V-Belt length should be chosen which will give a minimum Center distance of:

$$\text{Minimum } C = 5.5(D+W)(\text{in})$$

D = Large pulley outside diameter (in)

W = Width of Deep Grooved Pulley, from Table 3-9

3. Aligning the drive

Looking down on the drive, a line from the center of the vertical shaft should pass through the center of the face of the pulley on the horizontal shaft. The horizontal shaft should be at right angles to this line. See "Top View" in Fig. 3-6.

Looking at the side of the drive, the center of the horizontal shaft should be raised a distance "Y", from Table 3-8 above the level line through the center of the face of the pulley on the vertical shaft. See "Side View" in Fig. 3-6.

4. Direction of rotation

The direction of rotation must be such that the Tight side of the drive will be on the bottom. See "Side View" in Fig. 3-6.

5. Power rating for Quarter-Turn Drives should be 90% from it for ordinary drives. And Arc of contact correction factor ($K\theta$) may be taken as 1.00 on Quarter-Turn Drives.

6. Deep grooved pulleys should always be used on Quarter-Turn Drives using individual V-Belts.

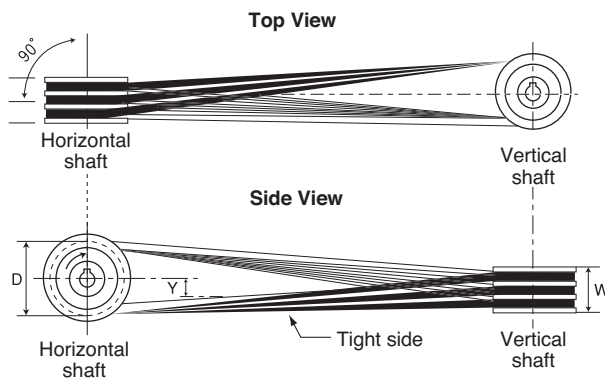


Fig. 3-6

Table 3-8 (Unit: in)

Center distance	Dimension Y
59	2.6
79	2.8
98	3.0
118	3.9
138	5.1
157	6.5
177	7.7
197	9.1
217	10.6
236	12.0

Width of deep grooved pulley : W

Table 3-9 (unit: in)

No. of Grooves	V-Belt Section							
	A	B	C	D	E	3V	5V	8V
1	0.945	1.124	1.624	2.124	2.677	0.750	1.124	1.688
2	1.654	1.999	2.874	3.874	4.744	1.250	1.936	3.000
3	2.362	2.874	4.124	5.624	6.811	1.750	2.748	4.312
4	3.071	3.749	5.374	7.374	8.878	2.250	3.560	5.624
5	3.780	4.624	6.624	9.124	10.945	2.750	4.372	6.936
6	4.488	5.499	7.874	10.874	13.012	3.250	5.184	8.248
7	5.197	6.374	9.124	12.624	15.079	3.750	5.996	9.560
8	5.906	7.249	10.374	14.374	17.146	4.250	6.808	10.872
9	6.614	8.124	11.624	16.124	19.213	4.750	7.620	12.184
10	7.323	8.999	12.874	17.874	21.280	5.250	8.432	13.496

■ V-Flat pulley drives

What V-Flat drive is to use a V-Grooved pulley and the other flat pulley with regard to V-Belt drive.

This type of drive is used when it is desirable to change a flat belt drive into a V-Belt drive, because it is often most economical to retain the flat pulley.

Classical V-belts are suitable for the drive.

The following prerequisites must be fulfilled to ensure the operating reliability of V-Belt drive:

- The small pulley must be a grooved pulley.
- Speed ratio must be $SR \geq 3$.
- Belt speed must be $V \leq 4900$ feet per minute
- The pitch diameter of flat pulley = Outside diameter + Value of table 3-11
- The pitch diameter of V pulley = Outside diameter — Value of table 3-11
- Relation between pulley diameter and Center distance must be fulfilled the following formula.

$$0.48 \leq \frac{D_p - d_p}{C} \leq 1.17$$

D_p : Pitch diameter of flat pulley (in)

d_p : Pitch diameter of V pulley (in)

C : Center distance (in)

Table 3-10
Arc of contact correction factor for V-Belt drives

$\frac{D_p - d_p}{C}$	Contact of small pulley $\theta (^\circ)$	Correction factor K_θ
0.00	180	0.75
0.10	174	0.76
0.20	169	0.78
0.30	163	0.79
0.40	157	0.80
0.50	151	0.81
0.60	145	0.83
0.70	139	0.84
0.80	133	0.85
0.90	127	0.85
1.00	120	0.82
1.10	113	0.80
1.20	106	0.77
1.30	99	0.73
1.40	91	0.70
1.50	83	0.65

Table 3-11
Difference between pulley pitch diameter and outside diameter

Belt Section	A	B	C	D	E
Difference between pitch diameter and outside diameter (in)	0.35	0.43	0.55	0.75	1.00



Multi V-Belts

▲ MITSUBOSHI MULTI (Banded) V-Belt is made up of two or more standard V-Belts connected together at the top as shown in the picture. No special pulleys are needed, as the individual belts have the same cross section and spacing as those which operate on standard pulleys. The top backing of Multi V-Belts does not come in contact with the top of the pulleys, so each multiple belt produces the same wedge effect as a single belt.

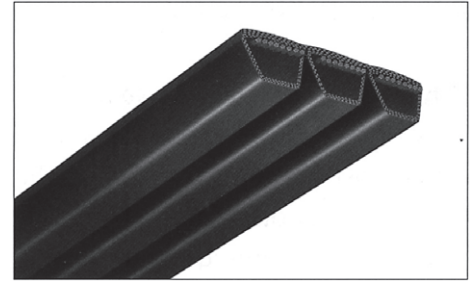


Fig. 3-7

Advantage of Multi (Banded) V-Belts

In most of the applications, V-Belts can meet the drive requirements. However, under certain operating conditions, belt whipping or vibration may become a critical problem, causing belts ultimately to come off the drive possible causes include the following:

- 1) Load vibration occurs periodically either on the driver side or at the drive unit, e.g. internal combustion engine, air compressor or piston pump.
- 2) There is excessively large load vibration or shock load, e.g. hoist or press.
- 3) Long span.
- 4) Vertical shaft length drives.

Belt vibration occurs laterally, as well as vertically. Under these conditions single matched sets of belts will be out of alignment in entering the pulley and will be damaged turned over or thrown off the drive. Multi V-Belts are recommended for use under these conditions as they can stand lateral stress, and belt vibration is virtually eliminated, resulting in longer belt life expectancy.

How to select Multi V-Belts

1) Size range

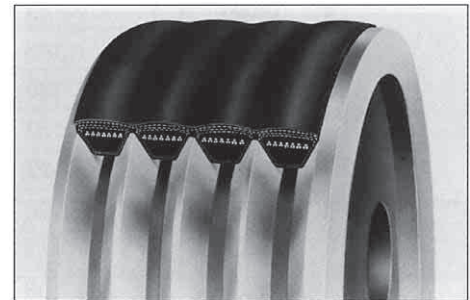
The available sizes are as follows.

Available range of Multi V-Belts

Table 3-12

Cross section	Range of available size	Center to center of pulley grooves
B, BX	B60~B315	0.750"
C, CX	C76~C720	1.000"
D	D90~D600	1.438"
3V, 3VX	3V600~3V1400	0.406"
5V, 5VX	5V630~5V3550	0.688"
8V	8V1000~8V5000	1.125"
SPB	SPB2120~SPB10287	19.0mm
SPC	SPC2120~SPC10668	25.5mm

Fig. 3-8



2) Number of ribs

Multi V-Belts are available in 2,3,4 and 5 ribs.

They may be used in matched sets for drives requiring more than 5 belts, as shown in the following table.

Table 3-13

Number of belts	Recommended combination	Number of belts	Recommended combination	Number of belts	Recommended combination
2	2	9	5,4	16	4,4,4,4
3	3	10	5,5	17	4,4,5,4
4	4	11	4,3,4	18	4,4,5,5
5	5	12	4,4,4	19	5,4,5,5
6	3,3	13	4,5,4	20	5,5,5,5
7	3,4	14	5,4,5		
8	4,4	15	5,5,5		



Tensioning of Multi V-Belts

The usual tensioning method by Deflection load may not be usable for the accurate checking of tensioning of Multi V-Belts.

Initial tension can be alternatively checked by the elongation method as follows:

Step1

Find minimum static tension per a belt (T_o), using formula on page 2-20.

Then find the range of recommendation tension.

Minimum tension= T_o

Maximum tension $T_{max.} = 1.5 \times T_o$.

Step2

Find the amount of elongation for belt to obtain the above tensions.

·Measurement Outer length of the belt at no tension. This can be done with the belt either on or off the drive.

·Find the belt length multipliers from below table for the above tension.

·Multiply the measured Outer length of the belt by each belt length multiplier to obtain elongated outside circumference corresponding to each calculated tension.

Step3

Tense the drive until the measured outside circumference falls within the range of elongated minimum and maximum length values determined above.

Belt length multiplier for Classical V-belts for RMA / MPTA

Table 3-14

Calculated Tension T_o (lb)	Cross section			Calculated Tension T_o (lb)	Cross section		
	B	C	D		B	C	D
44	1.0026			199		1.009	1.0045
66	1.0039	1.003		221		1.010	1.0050
88	1.0053	1.004		265			1.0060
110	1.0067	1.005		308			1.0070
132	1.0080	1.006	1.0030	353			1.0080
154	1.0093	1.007	1.0035	398			1.0090
177	1.0107	1.008	1.0040	441			1.0100

Belt length multiplier for Maxstar Wedge V-Belts for RMA / MPTA

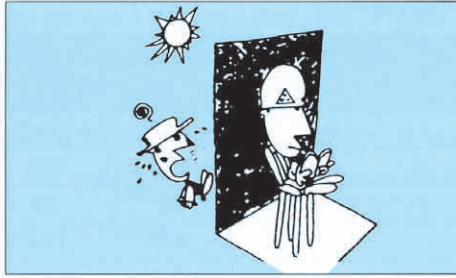
Table 3-15

Calculated Tension T_o (lb)	Cross section			Calculated Tension T_o (lb)	Cross section		
	B	C	D		B	C	D
40	1.00228			221		1.00648	1.00220
44	1.00265			265		1.00819	1.00275
49	1.00303			308		1.01003	1.00334
55	1.00361			353		1.01201	1.00397
60	1.00400			398		1.01412	1.00463
66	1.00459			441		1.01637	1.00532
71	1.00500			497		1.01937	1.00625
77	1.00561			551			1.00723
82	1.00603			607			1.00826
88	1.00667			661			1.00936
93	1.00710			718			1.01051
99	1.00775	1.00228		772			1.01172
104	1.00819	1.00261		828			1.01299
110	1.00887	1.00281		882			1.01431
132	1.01120	1.00347		938			1.01569
154	1.01365	1.00417		992			1.01713
177	1.01624	1.00491		1102			1.01863
199	1.01896	1.00568					



Storage and Handling of V-Belts

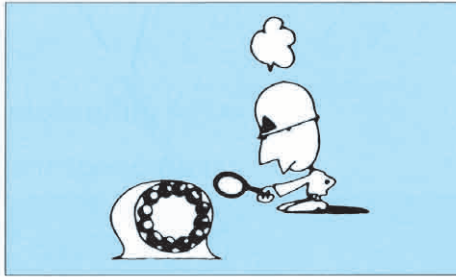
Storage of V-Belts



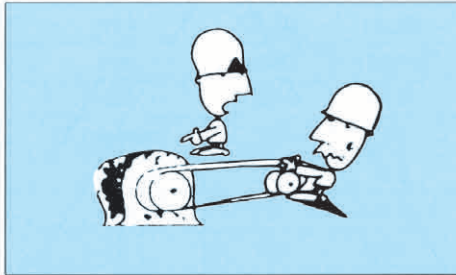
Do not expose belts direct to sunlight during storage. Store belts in shelves or hang belts on racks. Avoid placing belts on floor or ground. Avoid piling belts up. Avoid storing belts in heavily bent condition.

Keep belts away from oil and grease.

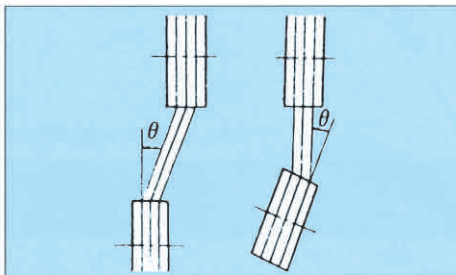
Installation of V-Belts



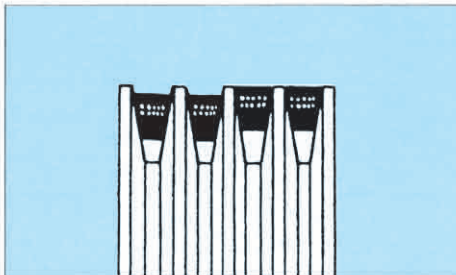
Check bearing for oil.



Slack off on take -up until belts can be placed in grooves without forcing. Never pry the belts into the pulley grooves to prevent cord break.



Check pulley alignment. Misalignment of pulley will shorten the belt life. Keep deflection angle less than $1/3^\circ$.

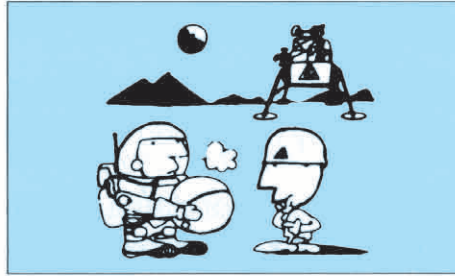


Make sure all pulley grooves are equal in dimensions. Uneven pulley grooves wear produces the same bad effect as mismatched belts.



Tension drive properly. See page 3-5~3-7 for belt tensioning method. Give belts a few day running time to become seated in pulley grooves, then readjust take-up if necessary

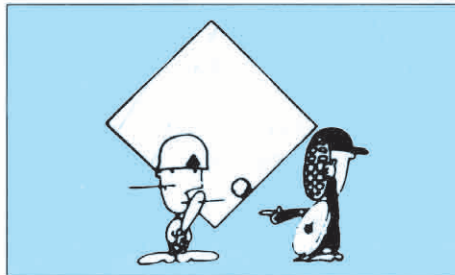
Maintenance



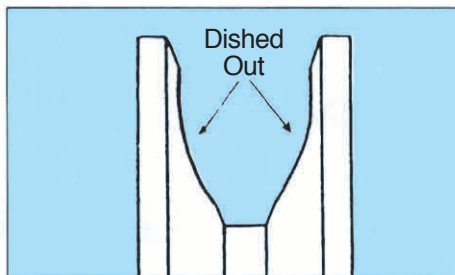
Make sure V-Belt drives are covered for safety before turning the machine on. An air tight cover shortens the belt life because it prevents heat radiation. Maintain proper ventilation.



Never use a belt dressing. Be careful not to expose belts to water, oil or chemicals.



Always use a set of new belts from one manufacture to replace a set of belts. Mixing new and used belts in a set will shorten the belt life due to unequal stretch of belts.



Check pulley for groove wear. If more than 1/32 inch (0.794mm) of "Dished Out" can be seen, short belt life may be expected.



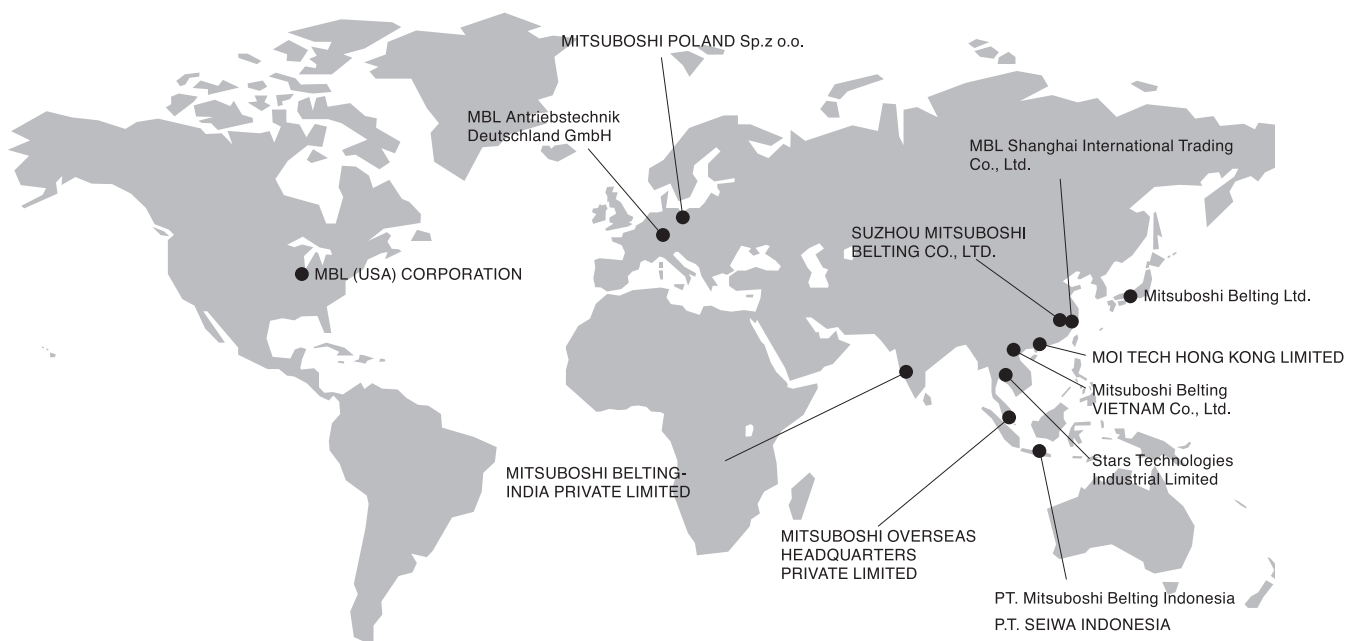
Request for belt design

Date: _____

Customer's Name							
OEM/Replacement							
Purpose							
Model Name							
Drawing	available	not available	availability: yes / no (Date:)				
Specification of Belt							
Belt Size							
Number of Belts	pcs.						
Annual Quantity	pcs./year						
Operating Conditions	Type of Prime Mover	Power		HP		lb-in	maximum torque
	Speed	Drive		rpm	Driven		rpm
	Pulley datum diameter	Drive		inch	Driven		inch
	Center distance		±		inch	Speed ratio	
	Operational Hours per day		hrs./day		Idler Pulley:		
	Other Special Conditions						
	Ambient Conditions						

Other Information

Information for designing	
Information for price	



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