Design Manual
Timing Belt

MITSUBOSHI
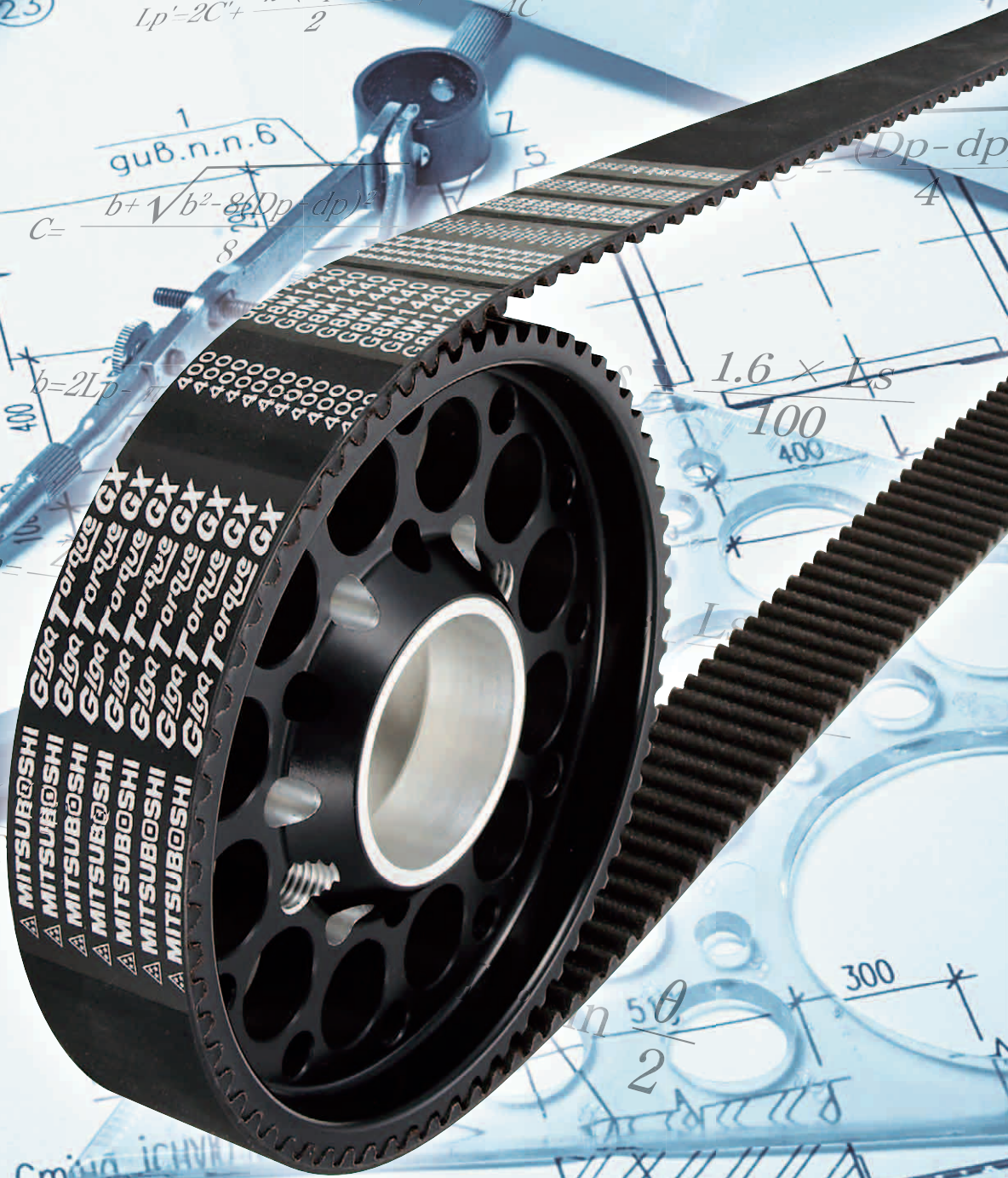
To give attentive consideration to both humanity and nature.

DongilGiup 053-604-4841

Safety Precautions

Please read all the warnings!

● Please take all necessary precautions when using our products. Also, please review relevant product catalogs 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.

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, 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 synchronous (toothed) 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 -10°C to 40°C. 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, make sure there is no foreign material between the pulley and the flange. Fasten the flange with a caulking tool. The flange may come off when it is not correctly installed.

Handling of Used items

⚠ **Caution**	● Do not burn belt, or hazardous gas could be produced.

MEGA TORQUE EX /GⅡ / GIGA TORQUE GX Properties

CONCEPT

GIGA TORQUE GX
Superior durability and noise reduction

MEGA TORQUE GⅡ
More compact design, enhanced operating silence and high durability

MEGA TORQUE G
Compact design and enhance operation silence

MEGA TORQUE EX
High positioning accuracy High speed drive

SUPER TORQUE
High power transmission and long operation life

Classical Type
JIS, ISO standards

Power Rating

Positioning accuracy

MEGA TORQUE GⅡ
GIGA TORQUE GX

▶ For compact design (narrower belt and pulley)

▶ For noise reduction

▶ For reduced maintenance

Application ● Injection molding machine ● Machine tool ● Pressing machine etc.

MEGA TORQUE EX

▶ For higher positioning accuracy

▶ To prevent jumping against sudden acceleration and deceleration

▶ For higher effectiveness through increasing the handling weight

▶ For cost saving on linear motor and ball screw

Application ● Semi-conductor or liquid crystal manufacturing ● Industrial robot ● Actuator etc.

Availability

Type	SUPER TORQUE	MEGA TORQUE G	MEGA TORQUE EX	MEGA TORQUE GⅡ	Type	GIGA TORQUE GX
(MT)S3M	○		○			
(MT)S5M	○	○	○			
(MT)S8M	○	○		○	G8M	○
(MT)S14M	○	○		○	G14M	○

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Giga Torque GX

GIGA TORQUE GX

● **Drop in Replacement**

Designed to run in competitor's belt sprockets.

● **Superior durability**

High-tensile strength Carbon fiber cord.
Abrasion resistant, low friction tooth fabric.
High elastic, high hardness HNBR rubber.
Increased durability.

● **Reduced noise**

Rubber construction for superior flexibility.
Special low friction fiber for the tooth fabric.
Reduced high frequency noise.

Durability

Improved by 20%

12	100	120
Competitor Polyurethane Aramid	Competitor Polyurethane Carbon	GIGA TORQUE GX

Noise

Improved by 16%

100	84
Competitor Polyurethane Carbon	GIGA TORQUE GX
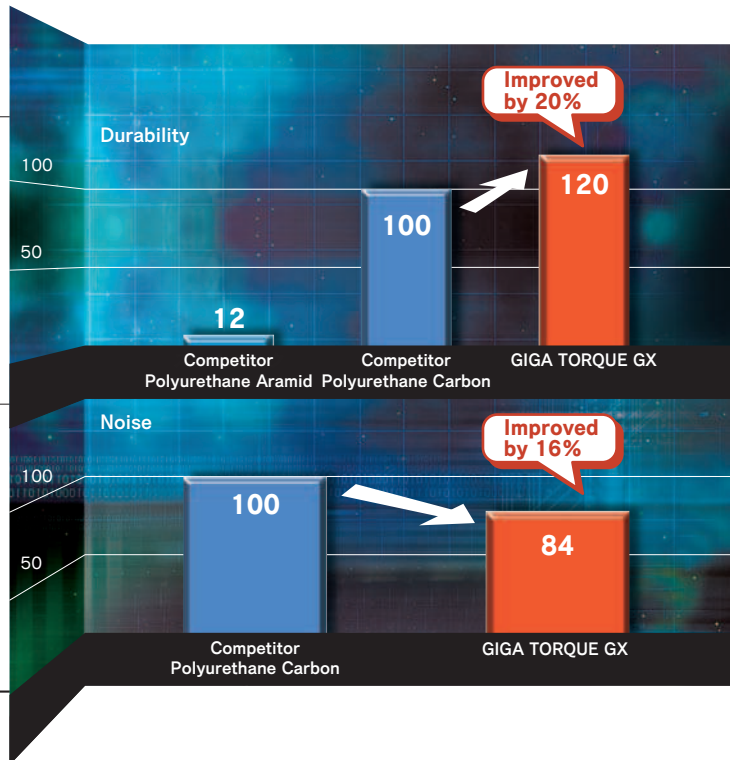
Stress strain curve

The stress strain curve shows higher tensile strength than the competitor's Polyurethane Carbon Cord belt.

Stress Strain Curve

Giga Torque GX

Competitor's Polyurethane Carbon

Construction Material

Rubber	High hardness compound rubber(HNBR)
Cord	High modulus carbon fiber
Tooth fabric	Nylon and special low friction fiber

Tension Decay

The GIGA TORQUE GX shows less tension decay than the competitor's Polyurethane Carbon Cord belt.

Index of Tension Decay

Giga Torque GX

Competitor's Polyurethane Carbon

Cord

Rubber

Tooth Fabric
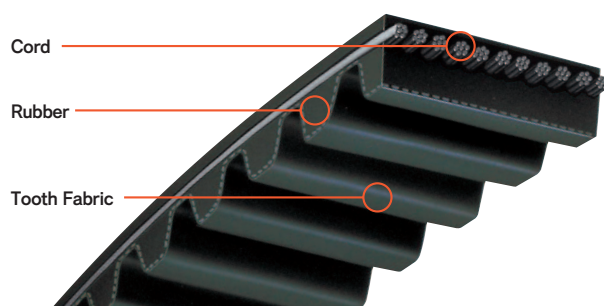
MEGA TORQUE EX

● Jumping resistance

By introducing extra high modulus cord, belt jumping torque extremely increase thus it prevents belt jumping against sudden acceleration and deceleration.
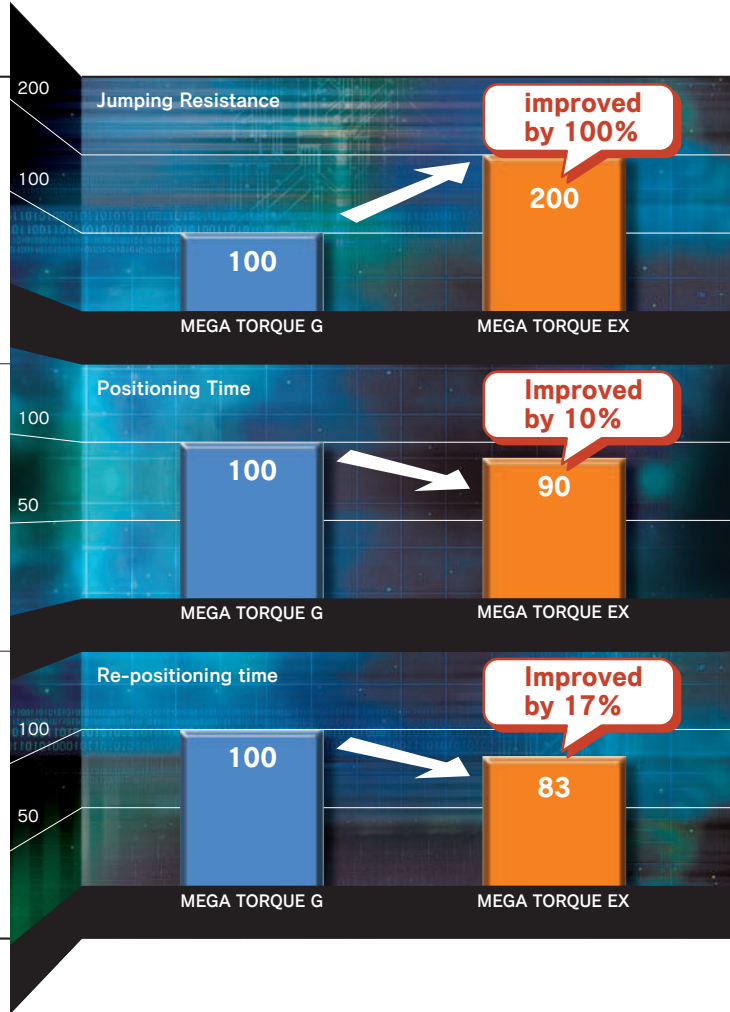
● High damping characteristics

With using extra high modulus cord, damping characteristic is improved. It shortens the time for stopping the belt vibration and makes better accurate positioning efficiency.

● High precision of positioning repeatability

Less stretch of the belt provides high accuracy of positioning repeatability. Belt positioning efficiency and repeatability are extremely increased by using special pulley for minimum backlash.

Jumping Resistance

MEGA TORQUE G	MEGA TORQUE EX
100	200

improved by 100%

Positioning Time

MEGA TORQUE G	MEGA TORQUE EX
100	90

Improved by 10%

Re-positioning time

MEGA TORQUE G	MEGA TORQUE EX
100	83

Improved by 17%

Examples of application and effect

Linear transmission

Faster transportation / increasing load

Speed-up of system

Accurate positioning

Reduced time of repositioning

Robot Arm

Reduced arm vibration

Speed-up of system

Accurate positioning
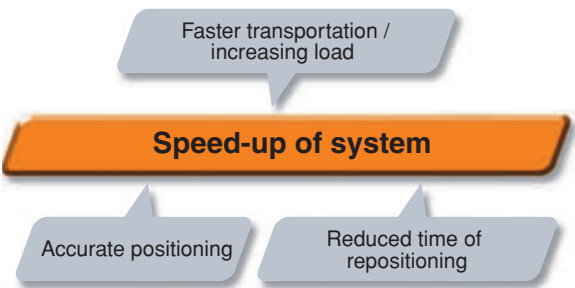
Reduction of the time to stop the robot arm
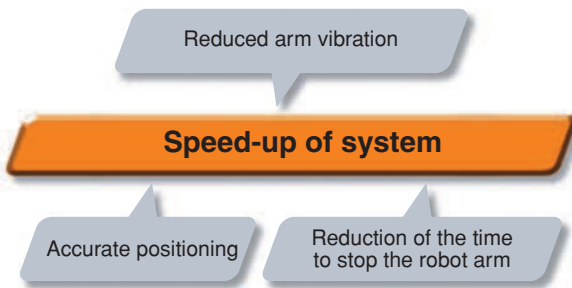
Construction Material

Rubber	Synthetic rubber
Cord	Extra high modulus cord
Fabric	High abrasion resistant nylon
Pulley tooth type	Anti backlash special pulley profile

Cord
Extra high modulus cord

Rubber
Synthetic rubber

Tooth Fabric
High abrasion resistant nylon
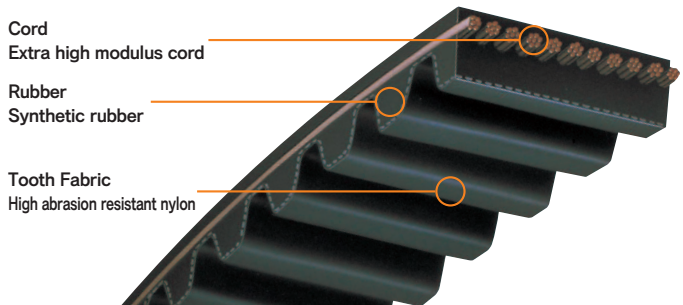
MEGA TORQUE GⅡ

● Extra large power transmission capacity

New material cord minimizes belt stretch and produces high power transmission capacity.

Power transmission capacity is 1.5 times of MEGA TORQUE G.
Ex) Belt width
MEGA TORQUE G 60mm width ▶ MEGA TORQUE GⅡ 40mm width

● Long operation life

Introducing anti-abrasive low friction fabric brings high durability at higher torque. Belt life is 2 times longer than MEGA TORQUE G.

● Reduced noise

Running noise is reduced by 12% from regular timing belt when you use specially designed pulley and narrower width belt.

Power Rating

Super Torque	MEGA TORQUE G	MEGA TORQUE GⅡ
50	100	150

Improved by 50%

Durability

Super Torque	MEGA TORQUE G	MEGA TORQUE GⅡ
50	100	200

Improved by 100%

Noise

MEGA TORQUE G	MEGA TORQUE GⅡ
100	88

Improved by 12%
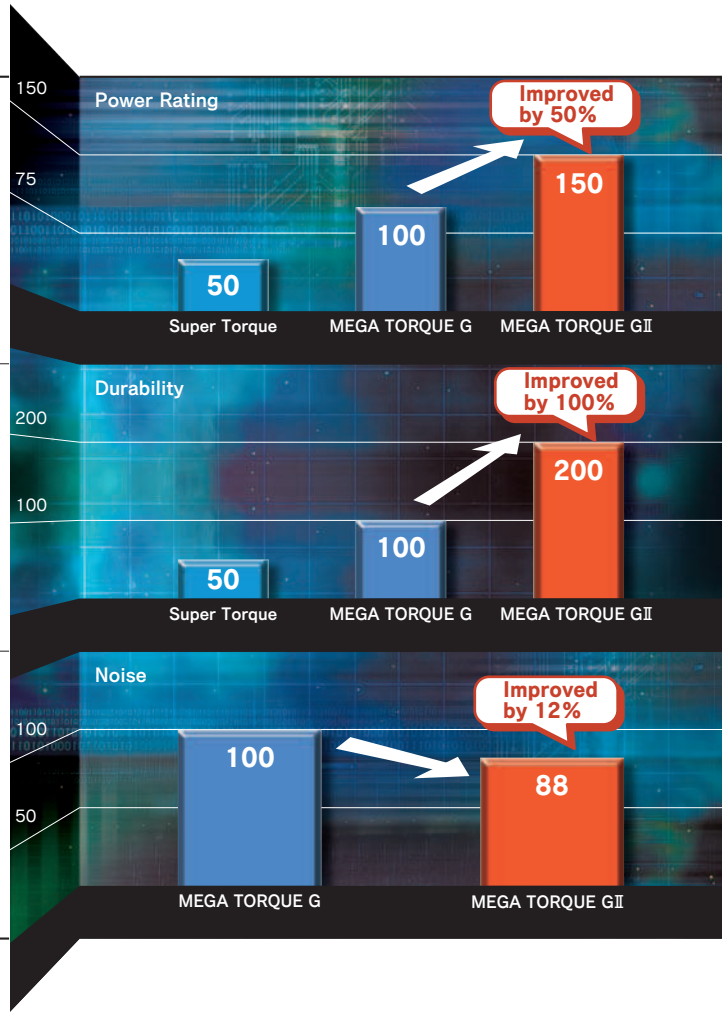
Techinical Data

Tension decay

- MEGA TORQUE GⅡ
- MEGA TORQUE G

Jumping Resistance

SUPER TORQUE	MEGA TORQUE G	MEGA TORQUE GⅡ
60	100	130
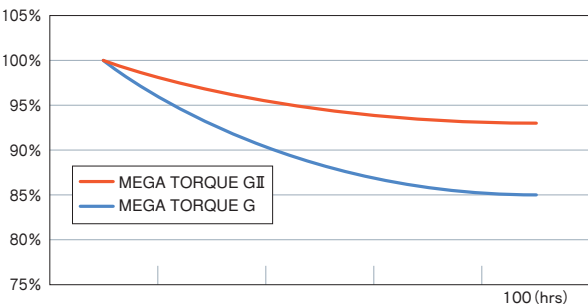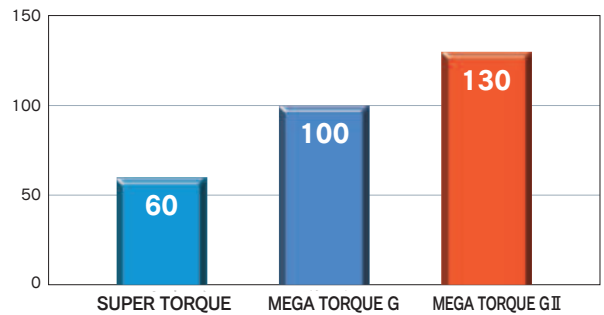
Construction Material

Rubber	High hardness synthetic rubber
Cord	MTS 8M: Extra high modulus special material cord MTS 14M: High strength glass
Fabric	High abrasion resistant nylon fabric
Pulley tooth profile	Special tooth

Cord
MTS 8M: Extra high modulus special material cord
MTS 14M: High strength glass

Rubber
High hardness synthetic rubber

Fabric
High abrasion resistant
nylon fabric

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Reference

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1. Properties

Timing Belt Structure

Cord

G

Rubber

Fig.1-1 — Fabric

GB

Cord

Rubber

Fig.1-2 — Fabric (reduce rubber dust)

Cord

U

Polyurethane

Fig.1-3

■Structural Features and Application Conditions

Backing: Chloroprene

Tooth: Chloroprene

Cord: Glass fiber/
Aramid fiber

Fig.1-4

G/GB Type (Rubber)

①Can be widely used for general industrial applications.

②Can be used with high loads.

③Standard belts can be used in temperature ranges of −30 to 80℃. For heat resistance up to 100℃, use a belt specified for heat resistance.

④Standard belts are electrically conductive (Electrical resistance: Max. 6 MΩ).

⑤To prevent side tracking, alternately uses S and Z tension member.

Backing: Polyurethane

Tooth: Polyurethane

Cord: Steel cord/
Polyester/
Aramid fiber

U Type (Polyurethane)

① Solid accuracy in low power transmission applications

②Good oil resistance

③Profiles can be customized as double timing belts or other.

④Visually attractive and generates minimal rubber dust. Excellent in clean drive applications.

⑤Use in temperatures of 80℃ and below.

Fig.1-5

1
Properties

1-3
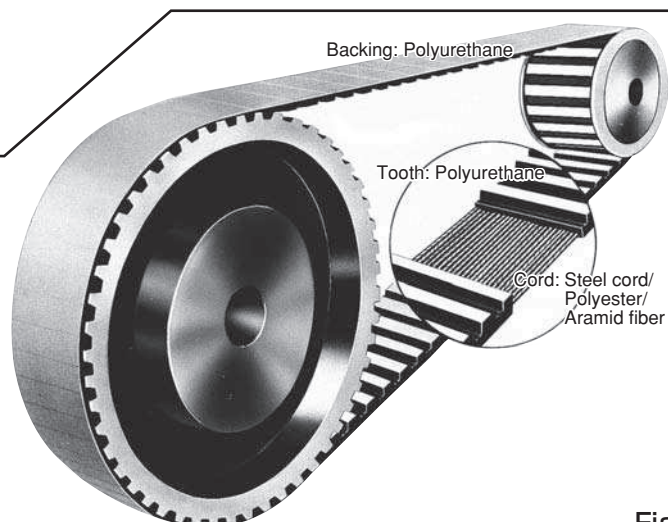
Timing Belt Model Tree

Fig.1-6

Rubber type

Classical Type
- MXL ┐ GB
- XL ┘
- L
- H
- XH
- XXH

Smooth engagement and high power transmission

SUPER TORQUE
- S2M ┐
- S3M │ GB
- S5M ┘
- S8M
- S14M

For higher power applications

MEGA TORQUE G
- MTS5M
- MTS8M
- MTS14M

→ **MEGA TORQUE EX**
- MTS3M
- MTS5M

High positioning accuracy High speed drive

Others

H series *
- H8M
- H14M

Compact design and enhanced operating silence

MEGA TORQUE GII
- MTS8M
- MTS14M

Superior durability and noise reduction

GIGA TORQUE GX
- G8M
- G14M

Polyurethane type

Thermoset type

Classical Type
- T80
- XL
- L
- T5
- T10
- AT5
- AT10

Smooth engagement and high power transmission

SUPER TORQUE
- S2M
- S3M

For higher power applications

MEGA TORQUE U
- MTS8M

Thermoplastic type

FREE SPAN™ BELT

*For low load transmission and transport applications ***
- T5
- T10
- L
- H
- AT5
- AT10
- HTD5M
- HTD8M
- HTD14M

●This catalogue does not contain the design manuals of * marked products.
 For more details of those products, contact us.

1 Properties

1-4

Description and Availability of Timing Belt Specifications

Rubber

Table 1-1

● : G Type available   ○ : GB (Bareback) Type available   - : Not available

Specification	Features	SUPER TORQUE									MEGA TORQUE G			MEGA TORQUE GII		MEGA TORQUE EX		GIGA TORQUE GX		H series		Classical Type									
		S2M	S3M	S5M	S8M	S14M	DS3M	DS5M	DS8M	DS14M	MTS5M	MTS8M	MTS14M	MTS8M	MTS14M	MTS3M	MTS5M	G8M	G14M	H8M	H14M	MXL	XL	L	H	XH	XXH	DMXL	DXL	DL	DH
Standard	Can be widely used for general industrial applications.	-	●	●	●	●	-	●	●	●	-	-	-	-	-	-	-	-	-	●	●	-	-	●	●	●	●	-	-	●	●
Bareback	Rubber dust dispersal is minimal, thus enabling clean operation.	○	○	○	○	-	○	○	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	-	-	-	○	○	-	-
Oil resistance	Products are of good oil resistance.	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat resistance	Products are of good heat resistance.	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil resistance and aramid	In addition to the oil resistance, a high modulus delivers products of good durability and bend resistance.	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Super heat resistance	Made of heat resistant H-NBR, belts can be used in temperatures of 100℃ and higher. These belts offer also good oil resistance.	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
White bareback	Rubber dust dispersal is minimal, thus enabling clean operation.	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-
Ecological (green eco)	These belts are made of environmental-friendly rubber that does not contain halogenated substances.	○	○	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-
Customized backing thickness	Belt backing is thicker than with standard belts, making them suited for transportation applications.	-	○	○	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	-	-	-
High torque (MEGA TORQUE G)	Large transmission capacity is achievable, at about 2 times that of SUPER TORQUE G. Belt width is approximately 40% smaller compared to SUPER TORQUE G.	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Extra high torque (MEGA TORQUE GII)	New material cord minimizes belt stretch and produce high power transmission capacity. Power transmission capacity is 1.5 times of MEGA TORQUE G.	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High modulus (MEGA TORQUE EX)	High jumping resistance, high damping characteristics, and high precision of positioning repeatability by introducing extra high modulus cord.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy duty (GIGA TORQUE GX)	High tenacity and flexibility by introducing high modulus carbon fiber cord. You may expect this belt to minimize space, weight, and noise of machinery, and replacement of chain drive system.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-

Polyurethane (Thermoset)

Table 1-2

○ : Available   - : Not available

Specification	Features	SUPER TORQUE		MEGA TORQUE U	Classical Type								
		S2M	S3M	MTS8M	T80	XL	L	T5	T10	DT5	DT10	AT5	AT10
Standard	Can be widely used for general industrial applications.	○	○	-	○	○	○	○	○	○	○	○	○
Antistatic	Electrical resistance of belt surfaces is 1 x $10^{11}\,\Omega$ or less, so they are effective in applications where belt charging can cause problems to nearby circuits.	○	○	-	○	○	-	○	○	○	○	-	-
Low noise	Made of low hardness polyurethane, these belts reduce flapping noise.	○	○	-	-	○	○	○	○	○	○	-	-
High strength	Belt strength and jumping load are higher than standard specification belts. Service-life is longer than standard belts under identical conditions of use.	-	-	-	-	○	○	○	○	○	○	-	-
High load	Belt strength and jumping load are higher than standard specification belts. Service-life is longer than standard belts under identical conditions of use.	-	○	○	-	-	-	-	-	-	-	-	-

● Available with aramid, steel or polyester cords. Contact us for belts and cords combination details.
● Belts of all specifications can be colored.
● Contact us for available sizes.

1
Properties

Belt Teeth (actual size)

●G/GB Type (Rubber)

Fig.1-7

Trapezoidal Tooth

MXL

DMXL

XL

DXL

L

DL

H

DH

XH

XXH

Round Tooth

S2M

S3M、MTS3M

DS3M

S5M、MTS5M

DS5M

S8M、MTS8M

DS8M

H8M

G8M

S14M、MTS14M

DS14M

H14M

G14M
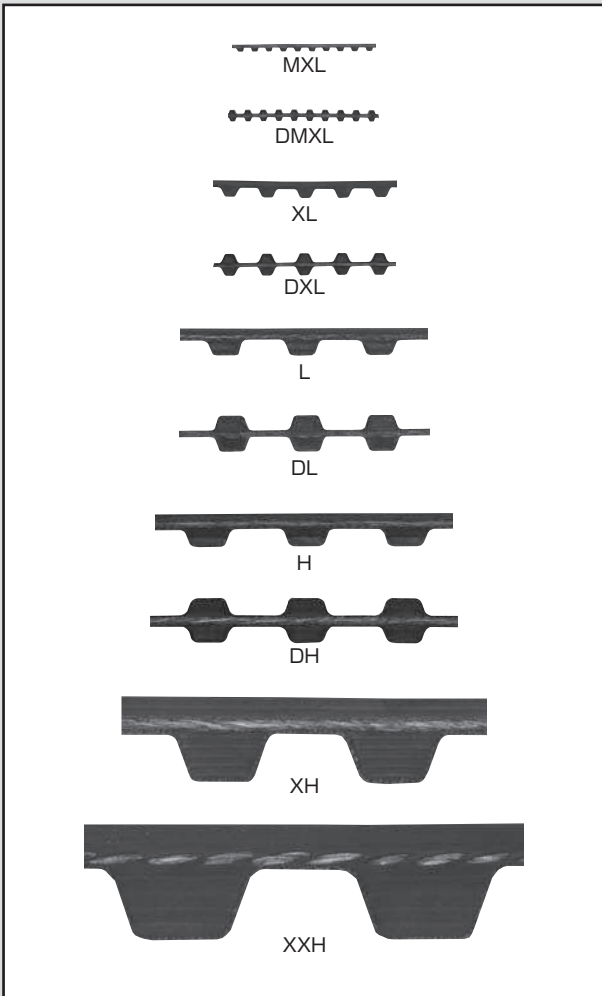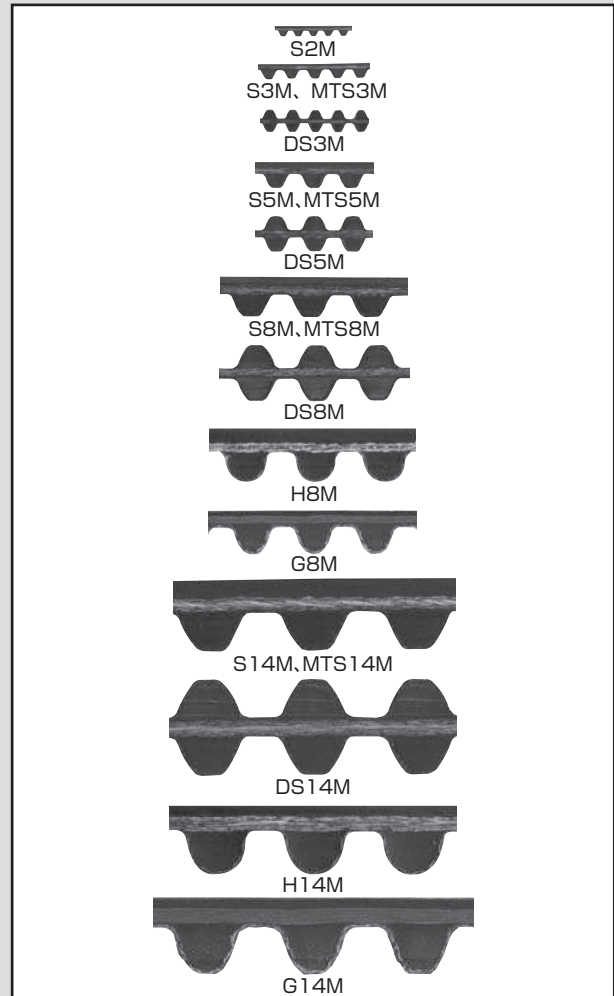
※Teeth for MTS3M, MTS5M, MTS8M and MTS14M are the same as for the S3M, S5M, S8M and S14M.

●U Type (Polyurethane)

Fig.1-8

Trapezoidal Tooth

T80

XL

L

T5

DT5

T10

DT10

Round Tooth

S2M

S3M
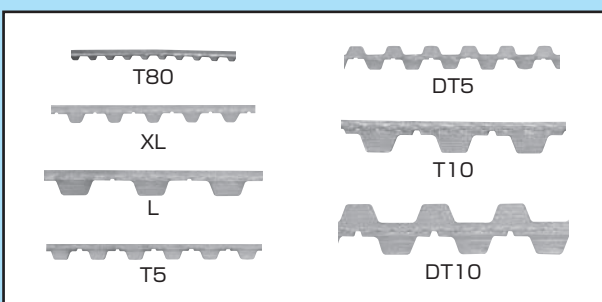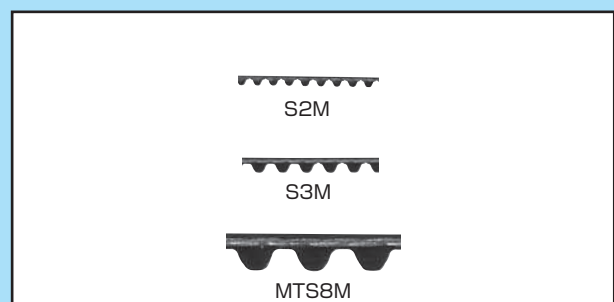
MTS8M

※All polyurethane products except MEGA TORQUE U (MTS8M) have noses.

1 Properties

Classical Type (D)MXL・T80

GB Type (Rubber)
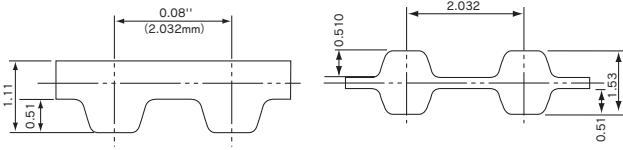
U Type (Polyurethane) ※Single-sided only
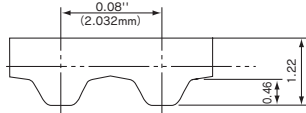
● Product Code

GB Type	B	125	(D)MXL	6.4	GB
	Belt identifier	Number of teeth	Belt type (DMXL for Double timing belt)	Width(mm)	GB Type (rubber)

U Type	125	T80	6.4	U
	Number of teeth	Belt type	Width(mm)	U Type (polyurethane)

Belt width lineup   Table 1-3

Nominal width	Width (mm)
3.2	3.2
4.8	4.8
6.4	6.4
9.5	9.5

Belt weight per unit (kg/10mm x 1m)   Table 1-4

Material	Belt type	Belt weight
rubber	MXL	0.011
	DMXL	0.026
polyurethane	T80	0.010

Standard belt size table

Table 1-5

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
30 MXL	30	60.96		S
34 MXL	34	69.09	S	
35 MXL	35	71.12	S	S
40 MXL	40	81.28	S	S
41 MXL	41	83.31	S	
45 MXL	45	91.44	S	S
46 MXL	46	93.47	S	S
48 MXL	48	97.54	S	S
49 MXL	49	99.57	S	
50 MXL	50	101.60	S	S
52 MXL	52	105.66	S	S
53 MXL	53	107.70	S	S
54 MXL	54	109.73	S	S
55 MXL	55	111.76	S	S
56 MXL	56	113.79	S	S
57 MXL	57	115.82	S	S
59 MXL	59	119.89	S	S
60 MXL	60	121.92	S	S
61 MXL	61	123.95	S	
63 MXL	63	128.02	S	S
65 MXL	65	132.08	S	S
66 MXL	66	134.11	S	
67 MXL	67	136.14	S	S
68 MXL	68	138.18	S	S
70 MXL	70	142.24	S	S
71 MXL	71	144.27	S	S
72 MXL	72	146.30	S	S
73 MXL	73	148.34	S	S
74 MXL	74	150.37	S	S
75 MXL	75	152.40	S	S
76 MXL	76	154.43	S	
77 MXL	77	156.46	S	S
78 MXL	78	158.50	S	S
79 MXL	79	160.53	S	
80 MXL	80	162.56	S	S
81 MXL	81	164.59	S	S
82 MXL	82	166.62	S	S
83 MXL	83	168.66	S	S
85 MXL	85	172.72	S	S
86 MXL	86	174.75	S	
87 MXL	87	176.78	S	S
88 MXL	88	178.82	S	S
89 MXL	89	180.85	S	S
90 MXL	90	182.88	S	S
91 MXL	91	184.91	S	S
92 MXL	92	186.94	S	
93 MXL	93	188.98	S	S
94 MXL	94	191.01	S	S
95 MXL	95	193.04	S	S
96 MXL	96	195.07	S	

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
97 MXL	97	197.10	S	S
98 MXL	98	199.14	S	S
100 MXL	100	203.20	S	S
101 MXL	101	205.23	S	
102 MXL	102	207.26	S	S
103 MXL	103	209.30	S	S
104 MXL	104	211.33	S	S
105 MXL	105	213.36	S	S
106 MXL	106	215.39	S	S
108 MXL	108	219.46	S	S
109 MXL	109	221.49	S	
110 MXL	110	223.52	S	S
112 MXL	112	227.58	S	S
114 MXL	114	231.65	S	S
115 MXL	115	233.68	S	S
118 MXL	118	239.78	S	S
120 MXL	120	243.84	S	S
121 MXL	121	245.87	S	S
122 MXL	122	247.90	S	S
123 MXL	123	249.94	S	S
124 MXL	124	251.97		S
125 MXL	125	254.00	S	S
126 MXL	126	256.03	S	S
127 MXL	127	258.06	S	
128 MXL	128	260.10	S	
130 MXL	130	264.16	S	S
131 MXL	131	266.19	S	S
132 MXL	132	268.22	S	S
134 MXL	134	272.29	S	
135 MXL	135	274.32	S	S
138 MXL	138	280.42	S	
140 MXL	140	284.48	S	S
142 MXL	142	288.54	S	S
144 MXL	144	292.61	S	S
145 MXL	145	294.64	S・D	S
146 MXL	146	296.67	S・D	
147 MXL	147	298.70	S・D	
148 MXL	148	300.74	S・D	S
150 MXL	150	304.80	S・D	S
152 MXL	152	308.86	S・D	
154 MXL	154	312.93	S・D	
155 MXL	155	314.96	S・D	S
156 MXL	156	316.99	S・D	S
157 MXL	157	319.02		S
158 MXL	158	321.06	S・D	
160 MXL	160	325.12	S・D	S
162 MXL	162	329.18	S・D	
165 MXL	165	335.28	S・D	S
170 MXL	170	345.44	S・D	S
171 MXL	171	347.47	S・D	

●S＝Single-sided   D＝Double timing belt   ●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts. ●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

Classical Type (D)MXL · T80

Standard belt size table

Table 1-5

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
175 MXL	175	355.60	S · D	S
180 MXL	180	365.76	S · D	S
184 MXL	184	373.89	S · D	S
185 MXL	185	375.92	S · D	S
186 MXL	186	377.95	S · D	
187 MXL	187	379.98	S · D	
188 MXL	188	382.02	S · D	
190 MXL	190	386.08	S · D	S
192 MXL	192	390.14	S · D	
194 MXL	194	394.21	S · D	
195 MXL	195	396.24	S · D	S
198 MXL	198	402.34	S · D	
200 MXL	200	406.40	S · D	S
203 MXL	203	412.50	S · D	
205 MXL	205	416.56	S · D	S
208 MXL	208	422.66		S
210 MXL	210	426.72	S · D	S
212 MXL	212	430.78	S · D	S
215 MXL	215	436.88		S
219 MXL	219	445.01	S · D	S
220 MXL	220	447.04	S · D	S
221 MXL	221	449.07	S · D	S
222 MXL	222	451.10	S · D	
224 MXL	224	455.17	S · D	S
225 MXL	225	457.20		S
226 MXL	226	459.23	S · D	
227 MXL	227	461.26	S · D	
228 MXL	228	463.30	S · D	S
230 MXL	230	467.36	S · D	S
232 MXL	232	471.42	S · D	S
235 MXL	235	477.52		S · D
236 MXL	236	479.55	S · D	S
239 MXL	239	485.65	S · D	S
240 MXL	240	487.68	S · D	S
245 MXL	245	497.84	S · D	S
248 MXL	248	503.94	S · D	S
249 MXL	249	505.97		S
250 MXL	250	508.00	S · D	S · D
255 MXL	255	518.16		S
256 MXL	256	520.19	S · D	S
260 MXL	260	528.32	S · D	S
262 MXL	262	532.38	S · D	
265 MXL	265	538.48	S · D	S
270 MXL	270	548.64	S · D	S
273 MXL	273	554.74	S · D	
275 MXL	275	558.80	S · D	S
277 MXL	277	562.86		S
278 MXL	278	564.90	S · D	
279 MXL	279	566.93		S
280 MXL	280	568.96	S · D	S
281 MXL	281	570.99	S · D	
285 MXL	285	579.12	S · D	S
288 MXL	288	585.22	S · D	S
290 MXL	290	589.28	S · D	S
295 MXL	295	599.44	S · D	S
296 MXL	296	601.47		S
297 MXL	297	603.50	S · D	
300 MXL	300	609.60	S · D	S
304 MXL	304	617.73		S
305 MXL	305	619.76	S · D	
310 MXL	310	629.92	S · D	S
312 MXL	312	633.98	S · D	S
315 MXL	315	640.08	S · D	S
318 MXL	318	646.18	S · D	S
320 MXL	320	650.24	S · D	S
324 MXL	324	658.37	S · D	S
330 MXL	330	670.56	S · D	S

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
332 MXL	332	674.62	S · D	
334 MXL	334	678.69	S · D	
336 MXL	336	682.75	S · D	S
337 MXL	337	684.78	S · D	
338 MXL	338	686.82	S · D	
339 MXL	339	688.85	S · D	
340 MXL	340	690.88		S
341 MXL	341	692.91		S
344 MXL	344	699.01	S · D	S
347 MXL	347	705.10	S · D	
348 MXL	348	707.14	S · D	
350 MXL	350	711.20	S · D	S
355 MXL	355	721.36	S · D	S
358 MXL	358	727.46		S
359 MXL	359	729.49	S · D	
360 MXL	360	731.52		S
364 MXL	364	739.65	S · D	
365 MXL	365	741.68	S · D	
367 MXL	367	745.74	S · D	
370 MXL	370	751.84		S
372 MXL	372	755.90	S · D	
380 MXL	380	772.16	S · D	S
386 MXL	386	784.35	S · D	
390 MXL	390	792.48		S
397 MXL	397	806.70	S · D	S
400 MXL	400	812.80	S · D	S
403 MXL	403	818.90		S
405 MXL	405	822.96	S · D	
411 MXL	411	835.15	S · D	
415 MXL	415	843.28	S · D	
419 MXL	419	851.41	S · D	
420 MXL	420	853.44	S · D	S
424 MXL	424	861.57	S · D	
434 MXL	434	881.89		S
435 MXL	435	883.92	S · D	
436 MXL	436	885.95	S · D	
438 MXL	438	890.02	S · D	
448 MXL	448	910.34	S · D	
453 MXL	453	920.50	S · D	
464 MXL	464	942.85	S · D	
473 MXL	473	961.14		S
474 MXL	474	963.17		S
475 MXL	475	965.20	S · D	
477 MXL	477	969.26	S · D	
478 MXL	478	971.30	S · D	
487 MXL	487	989.58	S · D	
500 MXL	500	1016.00	S · D	S
503 MXL	503	1022.10	S · D	
507 MXL	507	1030.22	S · D	
515 MXL	515	1046.48	S · D	S
516 MXL	516	1048.51	S · D	
520 MXL	520	1056.64	S · D	
525 MXL	525	1066.80	S · D	
535 MXL	535	1087.12	S · D	
537 MXL	537	1091.18	S · D	
548 MXL	548	1113.54	S · D	
550 MXL	550	1117.60	S · D	S
569 MXL	569	1156.21	S · D	
583 MXL	583	1184.66		S
591 MXL	591	1200.91	S · D	
650 MXL	650	1320.80	S · D	
705 MXL	705	1432.56	S · D	
772 MXL	772	1568.70	S · D	
916 MXL	916	1861.31		S
1369 MXL	1369	2781.81	S	

●S＝Single-sided　D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

1
Properties

Classical Type (D)XL

GB Type (Rubber)

U Type (Polyurethane)
※Single-sided only

● Product Code

| 160 | (D)XL | 037 | GB·(U) |

Belt nominal length
(inch) x 10 = 16 inch (406.40 mm)

Belt type
（DXL for Double timing belt）

Belt nominal width
(inch) x 100 = 0.37 inch (9.5 mm)

GB Type (rubber) U Type (polyurethane)

Belt width lineup   Table 1-6

Nominal width	Width (mm)
025	6.4
031	7.9
037	9.5
050	12.7

Belt weight per unit (kg/10mm x 1m)   Table 1-7

Material	Belt type	Belt weight
rubber	XL	0.022
	DXL	0.022
polyurethane	XL	0.020

Standard belt size table

Table 1-8

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	Manufacturable Size U
60 XL	30	152.40	S	S
64 XL	32	162.56	S	S
66 XL	33	167.64		S
68 XL	34	172.72	S	
70 XL	35	177.80	S	S
74 XL	37	187.96	S	
76 XL	38	193.04	S	S
78 XL	39	198.12	S	S
80 XL	40	203.20	S	S
82 XL	41	208.28	S	
84 XL	42	213.36	S	S
86 XL	43	218.44	S	
88 XL	44	223.52	S	
90 XL	45	228.60	S	S
92 XL	46	233.68	S	
94 XL	47	238.76	S	S
96 XL	48	243.84	S	
98 XL	49	248.92	S	
100 XL	50	254.00	S	S
102 XL	51	259.08	S	S
104 XL	52	264.16	S	S
106 XL	53	269.24	S	S
108 XL	54	274.32	S	S
110 XL	55	279.40	S	S
112 XL	56	284.48	S	
114 XL	57	289.56	S	S
116 XL	58	294.64	S	S
118 XL	59	299.72	S	
120 XL	60	304.80	S	S
122 XL	61	309.88	S	
124 XL	62	314.96	S	S
126 XL	63	320.04	S	S
128 XL	64	325.12	S	S
130 XL	65	330.20	S	S
134 XL	67	340.36	S	
136 XL	68	345.44	S	S
138 XL	69	350.52	S	
140 XL	70	355.60	S	S
142 XL	71	360.68	S	S
144 XL	72	365.76	S	
146 XL	73	370.84	S	S
148 XL	74	375.92	S	S
150 XL	75	381.00	S · D	S
152 XL	76	386.08	S · D	S
154 XL	77	391.16	S · D	S
156 XL	78	396.24	S · D	
158 XL	79	401.32	S · D	
160 XL	80	406.40	S · D	S
162 XL	81	411.48	S · D	
164 XL	82	416.56	S · D	

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	Manufacturable Size U
166 XL	83	421.64	S · D	S
168 XL	84	426.72	S · D	S
170 XL	85	431.80	S · D	S
172 XL	86	436.88	S · D	
174 XL	87	441.96	S · D	
176 XL	88	447.04	S · D	S
178 XL	89	452.12	S · D	
180 XL	90	457.20	S · D	S
182 XL	91	462.28	S · D	
184 XL	92	467.36	S · D	
186 XL	93	472.44	S · D	S
188 XL	94	477.52	S · D	
190 XL	95	482.60	S · D	S
192 XL	96	487.68	S · D	
194 XL	97	492.76	S · D	
196 XL	98	497.84	S · D	
198 XL	99	502.92	S · D	
200 XL	100	508.00	S · D	S
202 XL	101	513.08	S · D	
204 XL	102	518.16	S · D	
206 XL	103	523.24	S · D	
210 XL	105	533.40	S · D	S
212 XL	106	538.48	S · D	S
216 XL	108	548.64	S · D	
218 XL	109	553.72	S · D	
220 XL	110	558.80	S · D	S
224 XL	112	568.96		S
228 XL	114	579.12	S · D	
230 XL	115	584.20	S · D	S
234 XL	117	594.36	S · D	
236 XL	118	599.44	S · D	
240 XL	120	609.60	S · D	S
250 XL	125	635.00	S · D	S
254 XL	127	645.16	S · D	S
260 XL	130	660.40	S · D	S
270 XL	135	685.80	S · D	S
276 XL	138	701.04	S · D	
280 XL	140	711.20	S · D	
282 XL	141	716.28	S · D	
290 XL	145	736.60	S · D	S
300 XL	150	762.00	S · D	S
310 XL	155	787.40	S · D	
314 XL	157	797.56	S · D	
320 XL	160	812.80	S · D	S
330 XL	165	838.20	S · D	S
332 XL	166	843.28	S · D	
340 XL	170	863.60	S · D	S
348 XL	174	883.92	S · D	S
352 XL	176	894.08	S · D	S
360 XL	180	914.40	S · D	S

●S＝Single-sided   D＝Double timing belt   ●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts. ●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

Classical Type (D)XL

Standard belt size table

Table 1-8

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size	
			GB	U
364 XL	182	924.56	S・D	
370 XL	185	939.80	S・D	
376 XL	188	955.04	S・D	S
380 XL	190	965.20	S・D	
384 XL	192	975.36	S・D	S
388 XL	194	985.52	S・D	
390 XL	195	990.60	S・D	S
396 XL	198	1005.84	S・D	S
414 XL	207	1051.56	S・D	S
424 XL	212	1076.96	S・D	
430 XL	215	1092.20		S
450 XL	225	1143.00	S・D	
460 XL	230	1168.40	S・D	S
478 XL	239	1214.12	S・D	
480 XL	240	1219.20	S・D	S
490 XL	245	1244.60	S・D	S
512 XL	256	1300.48		S
522 XL	261	1325.88	S	
540 XL	270	1371.60	S	S
544 XL	272	1381.76		S
552 XL	276	1402.08	S	
564 XL	282	1432.56	S	S
592 XL	296	1503.68	S	
600 XL	300	1524.00	S	
616 XL	308	1564.64	S	
630 XL	315	1600.20	S	S
670 XL	335	1701.80	S	S
690 XL	345	1752.60	S	
730 XL	365	1854.20		S
754 XL	377	1915.16	S	
828 XL	414	2103.12	S	
842 XL	421	2138.68		S
860 XL	430	2184.40	S	

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1

Properties

Classical Type (D)L

G Type (Rubber)

● Product Code

Belt nominal width
(inch) × 100 = 1 inch (25.4 mm)

| 510 | (D)L | 100 | G・(U) |

Belt nominal length
(inch) ×10 = 51 inch (1295.40 mm)

Belt type
（DL for Double timing belt）

G Type (rubber) U Type (polyurethane)

Belt width lineup   Table 1-9

Nominal width	Width (mm)
050	12.7
075	19.1
100	25.4
150	38.1

Belt weight per unit (kg/10mm x 1m) Table 1-10

Material	Belt type	Belt weight
rubber	L	0.032
	DL	0.033
polyurethane	L	0.030

U Type (Polyurethane) ※Single-sided only

Standard belt size table

Table 1-11

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size G	Manufacturable Size U
109 L	29	276.23	S	
124 L	33	314.33	S	S
135 L	36	342.90	S	
150 L	40	381.00	S	S
165 L	44	419.10	S	S
173 L	46	438.15	S	S
180 L	48	457.20	S	
187 L	50	476.25	S・D	S
210 L	56	533.40	S・D	S
217 L	58	552.45	S・D	
225 L	60	571.50	S・D	S
232 L	62	590.55	S・D	
240 L	64	609.60	S・D	S
255 L	68	647.70	S・D	S
265 L	71	676.28	S・D	
270 L	72	685.80	S・D	S
277 L	74	704.85	S・D	
285 L	76	723.90	S・D	S
300 L	80	762.00	S・D	S
304 L	81	771.53		S
315 L	84	800.10	S・D	
320 L	85	809.63	S・D	
322 L	86	819.15	S・D	S
334 L	89	847.73	S・D	
337 L	90	857.25	S・D	
345 L	92	876.30	S・D	S
360 L	96	914.40	S・D	

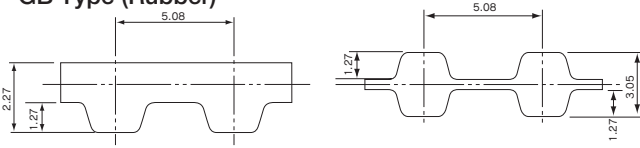| Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size G	Manufacturable Size U
367 L	98	933.45	S・D	S
375 L	100	952.50	S・D	S
382 L	102	971.55	S・D	
390 L	104	990.60	S・D	S
394 L	105	1000.13	S・D	
398 L	106	1009.65	S・D	
420 L	112	1066.80	S・D	S
427 L	114	1085.85	S・D	S
435 L	116	1104.90	S・D	
450 L	120	1143.00	S・D	S
454 L	121	1152.53	S・D	
480 L	128	1219.20	S・D	S
510 L	136	1295.40	S・D	S
525 L	140	1333.50	S・D	S
540 L	144	1371.60	S・D	S
548 L	146	1390.65	S・D	
581 L	155	1476.38	S・D	
600 L	160	1524.00	S・D	S
630 L	168	1600.20	S・D	
653 L	174	1657.35	S・D	
660 L	176	1676.40	S	
697 L	186	1771.65	S	
731 L	195	1857.37	S	
934 L	249	2371.72	S	
1174 L	313	2981.33	S	
1264 L	337	3209.93	S	

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● The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
● Some sizes may not be in stock. Please contact us for the stock status before placing an order.
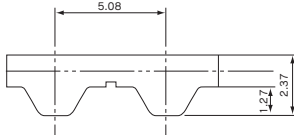
Classical Type (D)H

G Type (Rubber) only
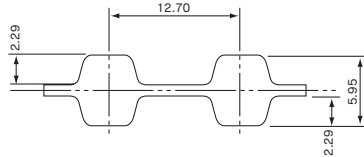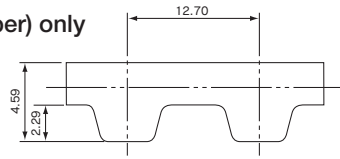
● Product Code

Belt nominal width
(inch) ✕ 100 = 1 inch (25.4 mm)

| 510 | (D)H | 100 | G |

Belt nominal length
(inch) ✕10 = 51 inch (1295.40 mm)

Belt type
（DH for Double timing belt）

G Type (rubber)

Belt width lineup Table 1-12

Nominal width	Width (mm)
075	19.1
100	25.4
150	38.1
200	50.8
300	76.2

Belt weight per unit (kg/10mm x 1m) Table 1-13

Material	Belt type	Belt weight
rubber	H	0.040
	DH	0.043

1

Properties

Standard belt size table

Table 1-14

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G Type)
225 H	45	571.50	S
230 H	46	584.20	S
240 H	48	609.60	S・D
245 H	49	622.30	S・D
255 H	51	647.70	S・D
270 H	54	685.80	S・D
280 H	56	711.20	S・D
300 H	60	762.00	S・D
310 H	62	787.40	S・D
315 H	63	800.10	S・D
320 H	64	812.80	S・D
330 H	66	838.20	S・D
340 H	68	863.60	S・D
350 H	70	889.00	S・D
360 H	72	914.40	S・D
370 H	74	939.80	S・D
375 H	75	952.50	S・D
390 H	78	990.60	S・D
400 H	80	1016.00	S・D
410 H	82	1041.40	S・D
420 H	84	1066.80	S・D
430 H	86	1092.20	S・D
450 H	90	1143.00	S・D
465 H	93	1181.10	S・D
480 H	96	1219.20	S・D
490 H	98	1244.60	S・D
510 H	102	1295.40	S・D
530 H	106	1346.20	S・D
540 H	108	1371.60	S・D
560 H	112	1422.40	S・D
565 H	113	1435.10	S・D
570 H	114	1447.80	S・D
580 H	116	1473.20	S・D
600 H	120	1524.00	S・D
605 H	121	1536.70	S・D

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G Type)
625 H	125	1587.50	S・D
630 H	126	1600.20	S・D
640 H	128	1625.60	S・D
650 H	130	1651.00	S・D
660 H	132	1676.40	S・D
680 H	136	1727.20	S・D
700 H	140	1778.00	S・D
730 H	146	1854.20	S・D
750 H	150	1905.00	S・D
770 H	154	1955.80	S・D
800 H	160	2032.00	S・D
810 H	162	2057.40	S・D
840 H	168	2133.60	S・D
850 H	170	2159.00	S・D
860 H	172	2184.40	S・D
880 H	176	2235.20	S・D
900 H	180	2286.00	S・D
950 H	190	2413.00	S・D
1000 H	200	2540.00	S・D
1020 H	204	2590.80	S・D
1100 H	220	2794.00	S・D
1120 H	224	2844.80	S・D
1130 H	226	2870.20	S・D
1140 H	228	2895.60	S・D
1150 H	230	2921.00	S・D
1160 H	232	2946.40	S・D
1250 H	250	3175.00	S・D
1285 H	257	3263.90	S・D
1325 H	265	3365.50	S・D
1345 H	269	3416.30	S・D
1350 H	270	3429.00	S・D
1360 H	272	3454.40	S・D
1400 H	280	3556.00	S・D
1700 H	340	4318.00	S・D
1765 H	353	4483.10	S・D

● S＝Single-sided　 D＝Double timing belt
● The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
● Some sizes may not be in stock. Please contact us for the stock status before placing an order.

Classical Type XH

● Product Code

| 1120 | XH | 300 | G |

Belt nominal length
(inch) × 10 = 112 inch (2844.80 mm)

Belt type

Belt nominal width
(inch) × 100 = 3 inch (76.2 mm)

G Type (rubber)

G Type (Rubber) only

22.225
11.20
6.35
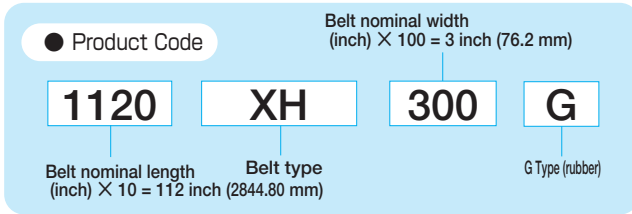
Belt width lineup   Table 1-15

Nominal width	Width (mm)
200	50.8
300	76.2
400	101.6
500	127.0
600	152.4

Belt weight per unit (kg/10mm x 1m) Table 1-16

Material	Belt type	Belt weight
rubber	XH	0.110

Standard belt size table   Table 1-17

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G type)
463 XH	53	1177.93	S
507 XH	58	1289.05	S
560 XH	64	1422.40	S
630 XH	72	1600.20	S
700 XH	80	1778.00	S
735 XH	84	1866.90	S
770 XH	88	1955.80	S
840 XH	96	2133.60	S
980 XH	112	2489.20	S
1260 XH	144	3200.40	S
1400 XH	160	3556.00	S
1540 XH	176	3911.60	S
1750 XH	200	4445.00	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock
status before placing an order.

Classical Type XXH

● Product Code

| 1200 | XXH | 500 | G |

Belt nominal length
(inch) × 10 = 120 inch (3048.00 mm)

Belt type

Belt nominal width
(inch) × 100 = 5 inch (127.0 mm)

G Type (rubber)

G Type (Rubber) only

31.75
15.70
9.53
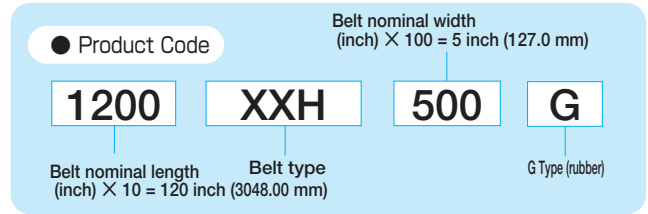
Belt width lineup   Table 1-18

Nominal width	Width (mm)
200	50.8
300	76.2
400	101.6
500	127.0
600	152.4

Belt weight per unit (kg/10mm x 1m) Table 1-19

Material	Belt type	Belt weight
rubber	XXH	0.160

Standard belt size table   Table 1-20

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G type)
700 XXH	56	1778.00	S
800 XXH	64	2032.00	S
900 XXH	72	2286.00	S
1000 XXH	80	2540.00	S
1200 XXH	96	3048.00	S
1400 XXH	112	3556.00	S
1600 XXH	128	4064.00	S
1800 XXH	144	4572.00	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock
status before placing an order.

1
Properties

Classical Type (D)T5

● Product Code

(D)T5 - 20 - 100 U

Belt type (DT5 for Double timing belt) | Width＝20mm | Number of teeth＝100 | U Type (polyurethane)

U Type (Polyurethane) only

Belt width lineup Table 1-21

Nominal width	Width (mm)
05	5.0
10	10.0
15	15.0
20	20.0

Belt weight per unit (kg/10mm x 1m) Table 1-22

Material	Belt type	Belt weight
polyurethane	T5	0.020
	DT5	0.023

Standard belt size table

Table 1-23

Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)	Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)
33	165	S	103	515	D
37	185	S	105	525	S
40	200	S	109	545	S
43	215	S	110	550	S・D
44	220	S	112	560	S
45	225	S	115	575	S
49	245	S	118	590	S・D
50	250	S	120	600	S・D
51	255	S	122	610	S
52	260	S	124	620	S・D
54	270	S	125	625	S
55	275	S	126	630	S
56	280	S	130	650	S・D
59	295	S	132	660	S
60	300	S・D	135	675	S
61	305	S	138	690	S
65	325	S	140	700	S・D
66	330	S	144	720	S
68	340	S	145	725	S
70	350	S・D	150	750	S・D
71	355	S	156	780	S
72	360	S	160	800	S・D
73	365	S	163	815	S・D
75	375	S	168	840	S
78	390	S	170	850	S・D
80	400	S・D	172	860	S・D
82	410	S・D	180	900	S・D
84	420	S	188	940	S・D
85	425	S	195	975	S
88	440	S	198	990	S
89	445	S	200	1000	S
90	450	S・D	215	1075	S
91	455	S	220	1100	S・D
92	460	S・D	228	1140	S・D
95	475	S	243	1215	S
96	480	S・D	276	1380	S
100	500	S・D	288	1440	S
102	510	S			

●S＝Single-sided　D＝Double timing belt
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

Classical Type (D)T10

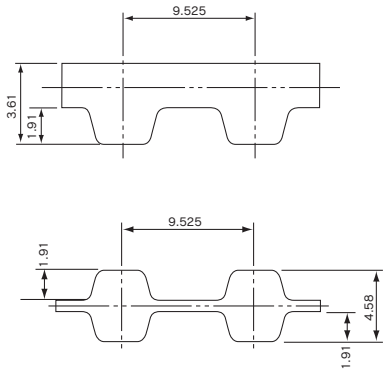● Product Code

(D)T10 - 20 - 100 U

Belt type (DT10 for Double timing belt) | Width＝20mm | Number of teeth＝100 | U Type (polyurethane)

U Type (Polyurethane) only
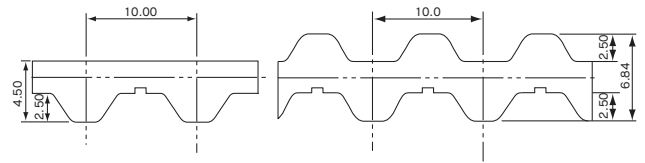
Belt width lineup Table 1-24

Nominal width	Width (mm)
15	15.0
20	20.0
25	25.0
30	30.0
40	40.0
50	50.0

Belt weight per unit (kg/10mm x 1m) Table 1-25

Material	Belt type	Belt weight
polyurethane	T10	0.042
	DT10	0.050

Standard belt size table

Table 1-26

Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)	Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)
26	260	S	105	1050	S
36	360	D	108	1080	S
37	370	S	110	1100	S・D
40	400	S	111	1110	S
41	410	S	114	1140	S
44	440	S	115	1150	S
45	450	S	120	1200	S・D
50	500	S	121	1210	S・D
53	530	S・D	124	1240	S・D
55	550	S	125	1250	S・D
56	560	S	130	1300	S・D
60	600	S・D	132	1320	S・D
61	610	S	135	1350	S・D
63	630	S・D	138	1380	S
65	650	S	139	1390	S
66	660	S・D	140	1400	S・D
69	690	S	142	1420	S・D
70	700	S・D	144	1440	S
72	720	S・D	145	1450	S
75	750	S・D	146	1460	S
78	780	S	150	1500	S・D
80	800	S・D	156	1560	S
81	810	S	160	1600	S・D
84	840	S・D	161	1610	S・D
85	850	S	170	1700	S・D
88	880	S	175	1750	S
89	890	S	178	1780	S
90	900	S・D	180	1800	S・D
91	910	S	188	1880	S・D
92	920	S	196	1960	S
94	940	S	216	2160	S
95	950	S	220	2200	S
96	960	S	221	2210	S
97	970	S	225	2250	S
98	980	S・D			
100	1000	S・D			
101	1010	S			

●S＝Single-sided　D＝Double timing belt
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

1
Properties

Classical Type AT5
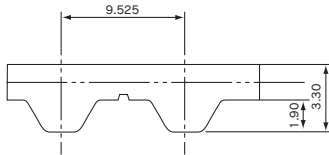
● Product Code

AT5	20	975	U
Belt Type	Width=20mm	Pitch length=975mm	U Type (polyurethane)

U Type (Polyurethane) only
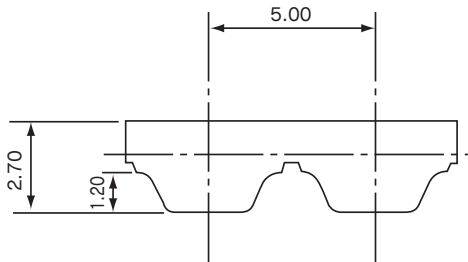
Belt width lineup Table 1-27

Nominal width	Width (mm)
10	10.0
20	20.0
30	30.0

Belt weight per unit (g/10 teeth·10mmW) Table 1-28

Material	Belt type	Belt weight
polyurethane	AT5	1.48

Standard belt size table Table 1-29

Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)
60	300	S
68	340	S
75	375	S
78	390	S
84	420	S
90	450	S
100	500	S
109	545	S
120	600	S
122	610	S
132	660	S
142	710	S
144	720	S
150	750	S
156	780	S
172	860	S
195	975	S
210	1050	S
300	1500	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

Classical Type AT10

● Product Code

AT10	20	1280	U
Belt Type	Width=20mm	Pitch length=1280mm	U Type (polyurethane)
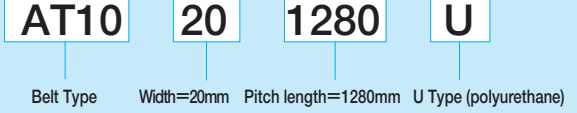
U Type (Polyurethane) only

Belt width lineup Table 1-30

Nominal width	Width (mm)
10	10.0
20	20.0
30	30.0

Belt weight per unit (g/10 teeth·20mmW) Table 1-31

Material	Belt type	Belt weight
polyurethane	AT10	11.23

Standard belt size table Table 1-32

Number of teeth	Pitch length(mm)	Manufacturable Size (U Type)
56	560	S
66	660	S
70	700	S
73	730	S
78	780	S
80	800	S
84	840	S
89	890	S
92	920	S
98	980	S
105	1050	S
108	1080	S
110	1100	S
115	1150	S
120	1200	S
121	1210	S
125	1250	S
128	1280	S
132	1320	S
140	1400	S
148	1480	S
160	1600	S
180	1800	S
186	1860	S
194	1940	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

SUPER TORQUE S2M

GB Type (Rubber) ※Single-sided only
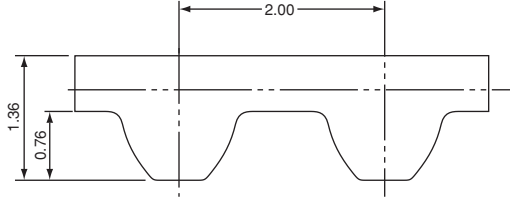
U Type (Polyurethane) ※Single-sided only
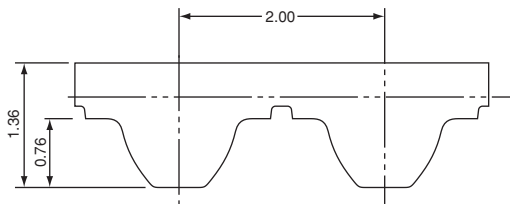
● Product Code

40	S2M	160	GB・(U)
Nominal width (mm)×10	Belt type	Nominal length(mm)	G Type (rubber)　U Type (polyurethane)

Belt width lineup Table 1-33

Nominal width	Width (mm)
40	4
60	6
100	10

Belt weight per unit (kg/10mm x 1m) Table 1-34

Material	Belt type	Belt weight
rubber	S2M	0.013
polyurethane		0.011

Properties (sidebar: 1 Properties)

Standard belt size table

Table 1-35

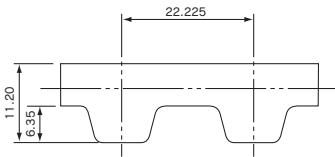| Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
S2M 66	33	66	S	
S2M 72	36	72	S	
S2M 74	37	74	S	
S2M 76	38	76	S	
S2M 78	39	78	S	
S2M 80	40	80	S	S
S2M 84	42	84	S	
S2M 86	43	86	S	
S2M 88	44	88	S	
S2M 90	45	90	S	S
S2M 98	49	98	S	S
S2M 100	50	100	S	S
S2M 102	51	102	S	
S2M 104	52	104	S	
S2M 106	53	106	S	
S2M 110	55	110	S	
S2M 112	56	112	S	S
S2M 114	57	114	S	S
S2M 116	58	116	S	
S2M 118	59	118	S	S
S2M 120	60	120	S	S
S2M 122	61	122	S	S
S2M 124	62	124	S	
S2M 126	63	126	S	S
S2M 128	64	128	S	
S2M 130	65	130	S	S
S2M 132	66	132	S	
S2M 134	67	134	S	
S2M 136	68	136	S	
S2M 138	69	138	S	S
S2M 140	70	140	S	S
S2M 142	71	142	S	
S2M 144	72	144	S	S
S2M 146	73	146	S	
S2M 148	74	148	S	
S2M 150	75	150	S	
S2M 152	76	152	S	S
S2M 156	78	156	S	
S2M 158	79	158	S	S
S2M 160	80	160	S	S
S2M 164	82	164	S	S
S2M 166	83	166	S	S
S2M 168	84	168	S	
S2M 170	85	170	S	
S2M 172	86	172	S	S
S2M 174	87	174	S	
S2M 176	88	176	S	
S2M 178	89	178	S	
S2M 180	90	180	S	
S2M 182	91	182	S	

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
S2M 184	92	184	S	
S2M 186	93	186	S	
S2M 188	94	188	S	
S2M 190	95	190	S	S
S2M 192	96	192	S	
S2M 194	97	194	S	S
S2M 196	98	196	S	
S2M 198	99	198	S	
S2M 200	100	200	S	S
S2M 202	101	202	S	
S2M 204	102	204	S	
S2M 206	103	206	S	
S2M 208	104	208	S	
S2M 210	105	210	S	S
S2M 212	106	212	S	S
S2M 214	107	214	S	
S2M 216	108	216	S	
S2M 218	109	218		S
S2M 220	110	220	S	S
S2M 224	112	224	S	S
S2M 226	113	226	S	
S2M 230	115	230	S	S
S2M 232	116	232	S	
S2M 234	117	234	S	
S2M 236	118	236	S	S
S2M 238	119	238	S	
S2M 240	120	240	S	S
S2M 242	121	242		S
S2M 244	122	244	S	S
S2M 246	123	246	S	S
S2M 248	124	248	S	
S2M 250	125	250	S	S
S2M 252	126	252	S	
S2M 254	127	254	S	
S2M 256	128	256	S	
S2M 258	129	258	S	
S2M 260	130	260	S	S
S2M 262	131	262	S	
S2M 264	132	264	S	
S2M 266	133	266	S	
S2M 268	134	268	S	
S2M 270	135	270	S	
S2M 272	136	272	S	
S2M 276	138	276	S	
S2M 278	139	278	S	
S2M 280	140	280	S	S
S2M 284	142	284	S	
S2M 286	143	286	S	
S2M 288	144	288	S	
S2M 290	145	290	S	S

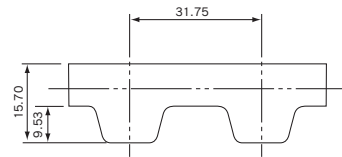●S＝Single-sided
●Some sizes may not be in stock.　Please contact us for the stock status before placing an order.

SUPER TORQUE S2M
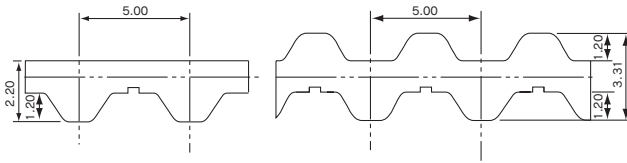
Standard belt size table

Table 1-35

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
S2M 292	146	292	S	
S2M 296	148	296	S	
S2M 300	150	300	S	
S2M 302	151	302	S	
S2M 304	152	304	S	
S2M 306	153	306	S	
S2M 308	154	308	S	
S2M 310	155	310	S	
S2M 312	156	312	S	
S2M 316	158	316	S	
S2M 318	159	318	S	
S2M 320	160	320	S	S
S2M 322	161	322	S	
S2M 324	162	324	S	
S2M 326	163	326	S	
S2M 328	164	328	S	
S2M 330	165	330	S	S
S2M 334	167	334	S	
S2M 338	169	338	S	
S2M 340	170	340	S	
S2M 342	171	342	S	
S2M 344	172	344	S	
S2M 350	175	350	S	
S2M 354	177	354	S	
S2M 360	180	360	S	S
S2M 364	182	364	S	
S2M 370	185	370	S	S
S2M 372	186	372	S	
S2M 374	187	374	S	
S2M 376	188	376	S	
S2M 380	190	380	S	
S2M 386	193	386	S	
S2M 390	195	390	S	
S2M 396	198	396	S	S
S2M 400	200	400	S	
S2M 402	201	402	S	
S2M 408	204	408	S	
S2M 410	205	410	S	
S2M 420	210	420	S	
S2M 426	213	426	S	
S2M 430	215	430	S	
S2M 434	217	434	S	
S2M 436	218	436	S	S
S2M 438	219	438	S	
S2M 440	220	440	S	
S2M 442	221	442	S	
S2M 444	222	444	S	
S2M 448	224	448	S	S
S2M 452	226	452	S	
S2M 456	228	456	S	
S2M 460	230	460	S	
S2M 464	232	464	S	
S2M 468	234	468	S	
S2M 474	237	474	S	
S2M 476	238	476	S	
S2M 480	240	480	S	
S2M 486	243	486	S	S
S2M 488	244	488		S
S2M 494	247	494	S	
S2M 500	250	500	S	
S2M 520	260	520	S	S
S2M 524	262	524	S	

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
S2M 530	265	530	S	
S2M 550	275	550	S	
S2M 560	280	560	S	S
S2M 572	286	572	S	S
S2M 580	290	580		S
S2M 586	293	586	S	
S2M 594	297	594	S	
S2M 600	300	600	S	
S2M 630	315	630	S	S
S2M 638	319	638	S	
S2M 648	324	648	S	
S2M 656	328	656	S	
S2M 660	330	660	S	
S2M 672	336	672	S	
S2M 676	338	676	S	
S2M 694	347	694	S	
S2M 710	355	710	S	
S2M 726	363	726	S	
S2M 740	370	740	S	
S2M 752	376	752	S	
S2M 772	386	772	S	
S2M 778	389	778	S	
S2M 796	398	796	S	
S2M 800	400	800	S	
S2M 810	405	810	S	
S2M 822	411	822	S	
S2M 826	413	826	S	
S2M 828	414	828	S	
S2M 848	424	848	S	
S2M 856	428	856	S	
S2M 862	431	862	S	
S2M 866	433	866	S	
S2M 880	440	880	S	
S2M 882	441	882	S	
S2M 898	449	898	S	
S2M 900	450	900	S	
S2M 910	455	910	S	
S2M 930	465	930	S	
S2M 944	472	944	S	
S2M 950	475	950	S	
S2M 976	488	976	S	
S2M 984	492	984	S	S
S2M 1032	516	1032		S
S2M 1062	531	1062	S	
S2M 1064	532	1064	S	
S2M 1066	533	1066	S	
S2M 1100	550	1100	S	
S2M 1136	568	1136	S	
S2M 1140	570	1140	S	
S2M 1148	574	1148	S	
S2M 1196	598	1196	S	S
S2M 1224	612	1224	S	
S2M 1250	625	1250	S	S
S2M 1274	637	1274	S	
S2M 1290	645	1290	S	
S2M 1330	665	1330	S	
S2M 1420	710	1420	S	
S2M 1516	758	1516	S	
S2M 1524	762	1524	S	
S2M 1878	939	1878	S	
S2M 2130	1065	2130	S	

● S＝Single-sided
● Some sizes may not be in stock. Please contact us for the stock status before placing an order.

SUPER TORQUE (D)S3M

● Product Code

| 100 | (D)S3M | 459 | GB・(U) |

Nominal width (mm)×10 — Belt type (DS3M for Double timing belt) — Nominal length(mm) — GB Type (rubber) U Type (polyurethane)

GB Type (Rubber)

3.00 / 1.14 / 1.94 / 1.14 / 3.04 / 1.14

U Type (Polyurethane) ※Single-sided only

3.00 / 1.94 / 1.14
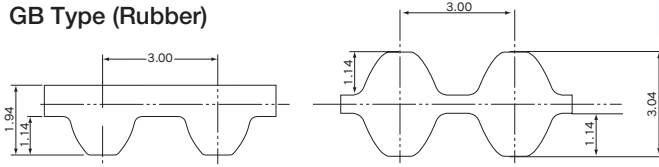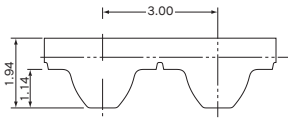
Belt width lineup Table 1-36

Nominal width	Width (mm)
60	6
100	10
150	15

Belt weight per unit (kg/10mm x 1m) Table 1-37

Material	Belt type	Belt weight
rubber	S3M	0.019
	DS3M	0.022
polyurethane	S3M	0.015

Standard belt size table

Table 1-38

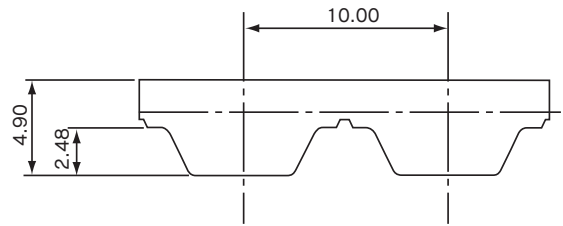| Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	Manufacturable Size U
S3M 96	32	96	S	
S3M 102	34	102	S	
S3M 114	38	114	S	
S3M 117	39	117	S	
S3M 120	40	120	S	
S3M 123	41	123	S	
S3M 129	43	129	S	
S3M 132	44	132	S	
S3M 135	45	135	S	
S3M 141	47	141	S	S
S3M 144	48	144	S	S
S3M 147	49	147	S	
S3M 150	50	150	S	
S3M 156	52	156	S	
S3M 159	53	159	S	
S3M 162	54	162	S	S
S3M 168	56	168	S	
S3M 171	57	171	S	
S3M 174	58	174	S	S
S3M 177	59	177	S	S
S3M 180	60	180	S	S
S3M 186	62	186	S	S
S3M 189	63	189	S	S
S3M 192	64	192	S	S
S3M 195	65	195	S	S
S3M 198	66	198	S	
S3M 201	67	201	S	S
S3M 204	68	204	S	
S3M 207	69	207	S	
S3M 210	70	210	S	S
S3M 213	71	213	S	S
S3M 216	72	216	S	
S3M 219	73	219	S	S
S3M 222	74	222	S	
S3M 225	75	225	S	S
S3M 228	76	228	S	
S3M 231	77	231	S	
S3M 234	78	234	S	
S3M 237	79	237	S	
S3M 246	82	246	S	S
S3M 249	83	249	S	S
S3M 252	84	252	S	S
S3M 255	85	255	S	S
S3M 258	86	258	S	
S3M 261	87	261	S	
S3M 264	88	264	S	S
S3M 267	89	267	S	
S3M 270	90	270	S	

| Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	Manufacturable Size U
S3M 273	91	273	S	
S3M 276	92	276	S	S
S3M 279	93	279	S	
S3M 282	94	282	S	
S3M 285	95	285	S	
S3M 288	96	288	S	S
S3M 291	97	291	S	
S3M 300	100	300	S・D	S
S3M 303	101	303	S・D	
S3M 306	102	306	S・D	
S3M 309	103	309	S・D	
S3M 312	104	312	S・D	S
S3M 315	105	315	S・D	
S3M 318	106	318	S・D	S
S3M 324	108	324	S・D	
S3M 327	109	327	S・D	S
S3M 330	110	330	S・D	
S3M 333	111	333	S・D	
S3M 339	113	339	S・D	
S3M 342	114	342	S・D	
S3M 345	115	345	S・D	S
S3M 348	116	348	S・D	
S3M 351	117	351	S・D	
S3M 354	118	354	S・D	
S3M 360	120	360	S・D	S
S3M 363	121	363	S・D	S
S3M 366	122	366	S・D	
S3M 369	123	369	S・D	S
S3M 372	124	372	S・D	
S3M 375	125	375	S・D	S
S3M 378	126	378		S
S3M 384	128	384	S・D	
S3M 387	129	387	S・D	S
S3M 393	131	393	S・D	
S3M 396	132	396	S・D	S
S3M 399	133	399	S・D	
S3M 402	134	402	S・D	S
S3M 405	135	405	S・D	S
S3M 408	136	408	S・D	S
S3M 414	138	414	S・D	
S3M 417	139	417	S・D	
S3M 420	140	420	S・D	S
S3M 423	141	423	S・D	
S3M 426	142	426	S・D	
S3M 432	144	432	S・D	S
S3M 435	145	435	S・D	
S3M 444	148	444	S・D	
S3M 447	149	447	S・D	

●S＝Single-sided   D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

1 Properties

SUPER TORQUE (D)S3M

Standard belt size table

Table 1-38

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U		Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size GB	U
S3M 453	151	453	S・D	S		S3M 762	254	762	S・D	
S3M 456	152	456	S・D			S3M 765	255	765	S・D	
S3M 459	153	459	S・D	S		S3M 771	257	771	S・D	
S3M 468	156	468	S・D			S3M 774	258	774	S・D	
S3M 471	157	471	S・D			S3M 786	262	786	S・D	
S3M 474	158	474	S・D	S		S3M 789	263	789	S・D	
S3M 480	160	480	S・D			S3M 804	268	804	S・D	
S3M 483	161	483	S・D	S		S3M 810	270	810	S・D	
S3M 486	162	486	S・D			S3M 819	273	819	S・D	
S3M 489	163	489	S・D			S3M 825	275	825	S・D	
S3M 492	164	492	S・D			S3M 831	277	831	S・D	
S3M 498	166	498	S・D			S3M 837	279	837	S・D	
S3M 501	167	501	S・D	S		S3M 852	284	852	S・D	
S3M 504	168	504	S・D			S3M 858	286	858	S・D	
S3M 507	169	507	S・D			S3M 882	294	882	S・D	
S3M 510	170	510	S・D			S3M 888	296	888	S・D	
S3M 513	171	513	S・D			S3M 894	298	894	S・D	
S3M 516	172	516	S・D			S3M 900	300	900	S・D	
S3M 519	173	519	S・D	S		S3M 909	303	909	S・D	
S3M 522	174	522	S・D			S3M 918	306	918	S・D	
S3M 525	175	525	S・D			S3M 927	309	927	S・D	
S3M 528	176	528	S・D			S3M 936	312	936	S・D	
S3M 537	179	537	S・D	S		S3M 954	318	954	S・D	
S3M 540	180	540	S・D	S		S3M 963	321	963	S・D	
S3M 543	181	543	S・D			S3M 999	333	999	S・D	
S3M 549	183	549	S・D			S3M 1005	335	1005	S・D	
S3M 552	184	552	S・D			S3M 1014	338	1014	S・D	
S3M 558	186	558	S・D			S3M 1017	339	1017	S・D	
S3M 561	187	561	S・D			S3M 1035	345	1035	S・D	
S3M 564	188	564	S・D	S		S3M 1050	350	1050	S・D	
S3M 570	190	570	S・D			S3M 1080	360	1080	S・D	
S3M 573	191	573	S・D			S3M 1113	371	1113	S・D	
S3M 576	192	576	S・D			S3M 1119	373	1119	S・D	
S3M 579	193	579	S・D			S3M 1146	382	1146	S・D	
S3M 582	194	582	S・D			S3M 1152	384	1152	S・D	
S3M 588	196	588	S・D			S3M 1170	390	1170	S・D	
S3M 591	197	591	S・D	S		S3M 1176	392	1176	S・D	
S3M 597	199	597	S・D			S3M 1188	396	1188	S・D	
S3M 600	200	600	S・D	S		S3M 1203	401	1203	S・D	
S3M 603	201	603	S・D			S3M 1221	407	1221	S・D	
S3M 609	203	609	S・D			S3M 1236	412	1236	S・D	
S3M 612	204	612	S・D			S3M 1245	415	1245	S・D	
S3M 621	207	621	S・D			S3M 1260	420	1260	S・D	
S3M 624	208	624	S・D			S3M 1290	430	1290	S・D	
S3M 633	211	633	S・D	S		S3M 1299	433	1299	S・D	
S3M 642	214	642	S・D			S3M 1305	435	1305	S・D	
S3M 645	215	645	S・D	S		S3M 1326	442	1326	S・D	
S3M 648	216	648	S・D			S3M 1332	444	1332	S・D	
S3M 657	219	657	S・D			S3M 1374	458	1374	S・D	
S3M 660	220	660	S・D			S3M 1401	467	1401	S・D	
S3M 663	221	663	S・D			S3M 1419	473	1419	S・D	
S3M 666	222	666	S・D			S3M 1422	474	1422	S・D	
S3M 669	223	669	S・D			S3M 1461	487	1461	S・D	
S3M 672	224	672	S・D			S3M 1521	507	1521	S・D	
S3M 681	227	681	S・D	S		S3M 1560	520	1560		S
S3M 687	229	687	S・D			S3M 1596	532	1596	S・D	
S3M 693	231	693	S・D			S3M 1650	550	1650	S・D	
S3M 699	233	699	S・D			S3M 1680	560	1680	S・D	
S3M 720	240	720	S・D			S3M 1788	596	1788	S・D	
S3M 726	242	726	S・D			S3M 2100	700	2100	S・D	
S3M 741	247	741	S・D	S		S3M 2115	705	2115	S・D	
S3M 744	248	744	S・D			S3M 2250	750	2250	S・D	
S3M 750	250	750	S・D	S						
S3M 753	251	753	S・D							
S3M 756	252	756	S・D							
S3M 759	253	759	S・D							

●S＝Single-sided   D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

1
Properties

SUPER TORQUE (D)S5M

GB Type (Rubber) only

● Product Code

250	(D)S5M	1125	GB
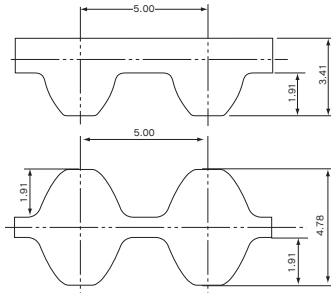
Nominal width (mm)×10

Belt type (DS5M for Double timing belt)

Nominal length(mm)

GB Type (rubber)

Belt width lineup Table 1-39

Nominal width	Width (mm)
100	10
150	15
250	25

Belt weight per unit (kg/10mm x 1m) Table 1-40

Material	Belt type	Belt weight
rubber	S5M	0.034
	DS5M	0.034

Standard belt size table

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (S: GB Type / D: G Type)
S5M 225	45	225	S
S5M 255	51	255	S
S5M 260	52	260	S
S5M 295	59	295	S
S5M 300	60	300	S
S5M 305	61	305	S
S5M 320	64	320	S
S5M 325	65	325	S
S5M 340	68	340	S
S5M 350	70	350	S
S5M 375	75	375	S
S5M 380	76	380	S
S5M 390	78	390	S
S5M 395	79	395	S
S5M 400	80	400	S・D
S5M 410	82	410	S・D
S5M 425	85	425	S・D
S5M 435	87	435	S・D
S5M 440	88	440	S・D
S5M 450	90	450	S・D
S5M 460	92	460	S・D
S5M 470	94	470	S・D
S5M 475	95	475	S・D
S5M 490	98	490	S・D
S5M 500	100	500	S・D
S5M 520	104	520	S・D
S5M 530	106	530	S・D
S5M 545	109	545	S・D
S5M 550	110	550	S・D
S5M 560	112	560	S・D
S5M 575	115	575	S・D
S5M 590	118	590	S・D
S5M 595	119	595	S・D
S5M 600	120	600	S・D
S5M 615	123	615	S・D
S5M 625	125	625	S・D
S5M 640	128	640	S・D
S5M 650	130	650	S・D
S5M 665	133	665	S・D
S5M 670	134	670	S・D
S5M 675	135	675	S・D
S5M 690	138	690	S・D
S5M 695	139	695	S・D
S5M 700	140	700	S・D
S5M 710	142	710	S・D
S5M 720	144	720	S・D
S5M 725	145	725	S・D
S5M 730	146	730	S・D
S5M 740	148	740	S・D
S5M 750	150	750	S・D
S5M 765	153	765	S・D
S5M 780	156	780	S・D
S5M 800	160	800	S・D
S5M 810	162	810	S・D
S5M 830	166	830	S・D

Standard belt size table Table 1-41

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (S: GB Type / D: G Type)
S5M 845	169	845	S・D
S5M 850	170	850	S・D
S5M 870	174	870	S・D
S5M 890	178	890	S・D
S5M 900	180	900	S・D
S5M 930	186	930	S・D
S5M 950	190	950	S・D
S5M 965	193	965	S・D
S5M 975	195	975	S・D
S5M 980	196	980	S・D
S5M 1000	200	1000	S・D
S5M 1025	205	1025	S・D
S5M 1050	210	1050	S・D
S5M 1055	211	1055	S・D
S5M 1085	217	1085	S・D
S5M 1090	218	1090	S・D
S5M 1100	220	1100	S・D
S5M 1105	221	1105	S・D
S5M 1115	223	1115	S・D
S5M 1120	224	1120	S・D
S5M 1125	225	1125	S・D
S5M 1135	227	1135	S・D
S5M 1145	229	1145	S・D
S5M 1160	232	1160	S・D
S5M 1165	233	1165	S・D
S5M 1195	239	1195	S・D
S5M 1200	240	1200	S・D
S5M 1225	245	1225	S・D
S5M 1250	250	1250	S・D
S5M 1270	254	1270	S・D
S5M 1290	258	1290	S・D
S5M 1295	259	1295	S・D
S5M 1350	270	1350	S・D
S5M 1420	284	1420	S・D
S5M 1475	295	1475	S・D
S5M 1500	300	1500	S・D
S5M 1505	301	1505	S・D
S5M 1530	306	1530	S・D
S5M 1595	319	1595	S・D
S5M 1605	321	1605	S・D
S5M 1615	323	1615	S・D
S5M 1680	336	1680	S・D
S5M 1690	338	1690	S・D
S5M 1715	343	1715	S・D
S5M 1800	360	1800	S・D
S5M 1945	389	1945	S・D
S5M 2000	400	2000	S・D
S5M 2145	429	2145	S・D
S5M 2255	451	2255	S・D
S5M 2480	496	2480	S・D
S5M 2525	505	2525	S・D
S5M 2980	596	2980	S・D
S5M 3090	618	3090	S・D

●S＝Single-sided　D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock.　Please contact us for the stock status before placing an order.

SUPER TORQUE (D)S8M

G Type (Rubber) only

● Product Code

| 250 | (D)S8M | 2000 | G |
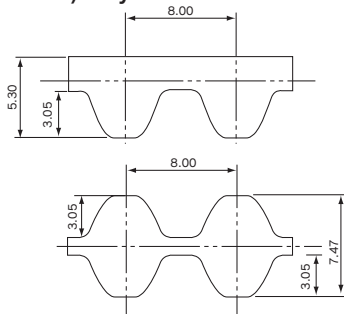
Nominal width (mm)×10   Belt type (DS8M for Double timing belt)   Nominal length(mm)   G Type (rubber)

Belt width lineup Table 1-42

Nominal width	Width (mm)
150	15
250	25
300	30
400	40
600	60

Belt weight per unit (kg/10mm x 1m) Table 1-43

Material	Belt type	Belt weight
rubber	S8M	0.052
	DS8M	0.060

1
Properties

Standard belt size table

Table 1-44

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G Type)
S8M 376	47	376	S
S8M 400	50	400	S
S8M 408	51	408	S
S8M 440	55	440	S
S8M 480	60	480	S・D
S8M 496	62	496	S・D
S8M 512	64	512	S・D
S8M 520	65	520	S・D
S8M 528	66	528	S・D
S8M 560	70	560	S・D
S8M 584	73	584	S・D
S8M 600	75	600	S・D
S8M 632	79	632	S・D
S8M 640	80	640	S・D
S8M 656	82	656	S・D
S8M 680	85	680	S・D
S8M 712	89	712	S・D
S8M 720	90	720	S・D
S8M 760	95	760	S・D
S8M 800	100	800	S・D
S8M 824	103	824	S・D
S8M 840	105	840	S・D
S8M 848	106	848	S・D
S8M 856	107	856	S・D
S8M 880	110	880	S・D
S8M 896	112	896	S・D
S8M 912	114	912	S・D
S8M 920	115	920	S・D
S8M 928	116	928	S・D
S8M 944	118	944	S・D
S8M 952	119	952	S・D
S8M 960	120	960	S・D
S8M 976	122	976	S・D
S8M 984	123	984	S・D
S8M 1000	125	1000	S・D
S8M 1024	128	1024	S・D
S8M 1040	130	1040	S・D
S8M 1056	132	1056	S・D
S8M 1080	135	1080	S・D
S8M 1120	140	1120	S・D
S8M 1128	141	1128	S・D
S8M 1136	142	1136	S・D
S8M 1152	144	1152	S・D
S8M 1160	145	1160	S・D
S8M 1184	148	1184	S・D
S8M 1200	150	1200	S・D
S8M 1216	152	1216	S・D
S8M 1224	153	1224	S・D
S8M 1248	156	1248	S・D
S8M 1256	157	1256	S・D
S8M 1280	160	1280	S・D
S8M 1296	162	1296	S・D
S8M 1304	163	1304	S・D

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G Type)
S8M 1312	164	1312	S・D
S8M 1320	165	1320	S・D
S8M 1352	169	1352	S・D
S8M 1360	170	1360	S・D
S8M 1384	173	1384	S・D
S8M 1400	175	1400	S・D
S8M 1424	178	1424	S・D
S8M 1440	180	1440	S・D
S8M 1480	185	1480	S・D
S8M 1488	186	1488	S・D
S8M 1520	190	1520	S・D
S8M 1600	200	1600	S・D
S8M 1640	205	1640	S・D
S8M 1648	206	1648	S・D
S8M 1680	210	1680	S・D
S8M 1696	212	1696	S・D
S8M 1728	216	1728	S・D
S8M 1760	220	1760	S・D
S8M 1776	222	1776	S・D
S8M 1792	224	1792	S・D
S8M 1800	225	1800	S・D
S8M 1816	227	1816	S・D
S8M 1832	229	1832	S・D
S8M 1912	239	1912	S・D
S8M 1960	245	1960	S・D
S8M 2000	250	2000	S・D
S8M 2040	255	2040	S・D
S8M 2048	256	2048	S・D
S8M 2064	258	2064	S・D
S8M 2104	263	2104	S・D
S8M 2120	265	2120	S・D
S8M 2160	270	2160	S・D
S8M 2240	280	2240	S・D
S8M 2272	284	2272	S・D
S8M 2304	288	2304	S・D
S8M 2376	297	2376	S・D
S8M 2400	300	2400	S・D
S8M 2496	312	2496	S・D
S8M 2600	325	2600	S・D
S8M 2800	350	2800	S・D
S8M 2920	365	2920	S・D
S8M 2944	368	2944	S・D
S8M 3048	381	3048	S・D
S8M 3200	400	3200	S・D
S8M 3248	406	3248	S・D
S8M 3272	409	3272	S・D
S8M 3440	430	3440	S・D
S8M 3680	460	3680	S・D
S8M 3720	465	3720	S・D
S8M 3904	488	3904	S・D
S8M 3928	491	3928	S・D
S8M 4400	550	4400	S・D

●S＝Single-sided　D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

SUPER TORQUE (D)S14M

G Type (Rubber) only

● Product Code

800	(D)S14M	3150	G
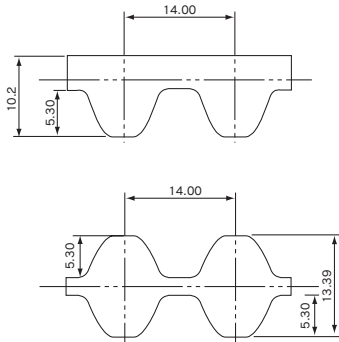
Nominal width (mm)×10   Belt type (DS14M for Double timing belt)   Nominal length(mm)   G Type (rubber)

Belt width lineup　Table 1-45

Nominal width	Width (mm)
400	40
600	60
800	80
1000	100
1200	120

Belt weight per unit (kg/10mm x 1m) Table 1-46

Material	Belt type	Belt weight
rubber	S14M	0.100
	DS14M	0.110

Standard belt size table　　　　　　　Table 1-47

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size (G Type)
S14M　1008	72	1008	S
S14M　1120	80	1120	S
S14M　1190	85	1190	S
S14M　1246	89	1246	S
S14M　1288	92	1288	S
S14M　1400	100	1400	S・D
S14M　1470	105	1470	S・D
S14M　1540	110	1540	S・D
S14M　1610	115	1610	S・D
S14M　1652	118	1652	S・D
S14M　1708	122	1708	S・D
S14M　1750	125	1750	S・D
S14M　1778	127	1778	S・D
S14M　1806	129	1806	S・D
S14M　1890	135	1890	S・D
S14M　1932	138	1932	S・D
S14M　2002	143	2002	S・D
S14M　2100	150	2100	S・D
S14M　2198	157	2198	S・D
S14M　2240	160	2240	S・D
S14M　2310	165	2310	S・D
S14M　2380	170	2380	S・D
S14M　2450	175	2450	S・D
S14M　2506	179	2506	S・D
S14M　2590	185	2590	S・D
S14M　2660	190	2660	S・D
S14M　2800	200	2800	S・D
S14M　3150	225	3150	S・D
S14M　3360	240	3360	S・D
S14M　3500	250	3500	S・D
S14M　3556	254	3556	S・D
S14M　3850	275	3850	S・D
S14M　4004	286	4004	S・D
S14M　4508	322	4508	S・D
S14M　5012	358	5012	S・D

●S＝Single-sided　D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock.　Please contact us for the stock status before placing an order.

MEGA TORQUE G MTS5M

● Belt Code

100	MT	S5M	1680	G
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(G)

Belt width lineup Table 1-48

Nominal width	Width (mm)
100	10
150	15
250	25

Belt weight per unit (kg/10mm x 1m) Table 1-49

Material	Belt type	Belt weight
rubber	MTS5M G	0.035

Standard belt size table

Table 1-50

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size	Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS5M 225 G	45	225	S	MTS5M 845 G	169	845	S
MTS5M 255 G	51	255	S	MTS5M 850 G	170	850	S
MTS5M 260 G	52	260	S	MTS5M 870 G	174	870	S
MTS5M 295 G	59	295	S	MTS5M 890 G	178	890	S
MTS5M 300 G	60	300	S	MTS5M 900 G	180	900	S
MTS5M 305 G	61	305	S	MTS5M 930 G	186	930	S
MTS5M 320 G	64	320	S	MTS5M 950 G	190	950	S
MTS5M 325 G	65	325	S	MTS5M 965 G	193	965	S
MTS5M 340 G	68	340	S	MTS5M 975 G	195	975	S
MTS5M 350 G	70	350	S	MTS5M 980 G	196	980	S
MTS5M 375 G	75	375	S	MTS5M 1000 G	200	1000	S
MTS5M 380 G	76	380	S	MTS5M 1025 G	205	1025	S
MTS5M 390 G	78	390	S	MTS5M 1050 G	210	1050	S
MTS5M 400 G	80	400	S	MTS5M 1055 G	211	1055	S
MTS5M 410 G	82	410	S	MTS5M 1085 G	217	1085	S
MTS5M 425 G	85	425	S	MTS5M 1090 G	218	1090	S
MTS5M 435 G	87	435	S	MTS5M 1100 G	220	1100	S
MTS5M 440 G	88	440	S	MTS5M 1105 G	221	1105	S
MTS5M 450 G	90	450	S	MTS5M 1115 G	223	1115	S
MTS5M 460 G	92	460	S	MTS5M 1120 G	224	1120	S
MTS5M 470 G	94	470	S	MTS5M 1125 G	225	1125	S
MTS5M 475 G	95	475	S	MTS5M 1135 G	227	1135	S
MTS5M 490 G	98	490	S	MTS5M 1145 G	229	1145	S
MTS5M 500 G	100	500	S	MTS5M 1160 G	232	1160	S
MTS5M 520 G	104	520	S	MTS5M 1165 G	233	1165	S
MTS5M 530 G	106	530	S	MTS5M 1195 G	239	1195	S
MTS5M 545 G	109	545	S	MTS5M 1200G	240	1200	S
MTS5M 550 G	110	550	S	MTS5M 1225 G	245	1225	S
MTS5M 560 G	112	560	S	MTS5M 1250 G	250	1250	S
MTS5M 575 G	115	575	S	MTS5M 1270 G	254	1270	S
MTS5M 590 G	118	590	S	MTS5M 1290 G	258	1290	S
MTS5M 595 G	119	595	S	MTS5M 1295 G	259	1295	S
MTS5M 600 G	120	600	S	MTS5M 1350 G	270	1350	S
MTS5M 615 G	123	615	S	MTS5M 1420 G	284	1420	S
MTS5M 625 G	125	625	S	MTS5M 1475 G	295	1475	S
MTS5M 640 G	128	640	S	MTS5M 1500 G	300	1500	S
MTS5M 650 G	130	650	S	MTS5M 1505 G	301	1505	S
MTS5M 665 G	133	665	S	MTS5M 1530 G	306	1530	S
MTS5M 670 G	134	670	S	MTS5M 1595 G	319	1595	S
MTS5M 675 G	135	675	S	MTS5M 1605 G	321	1605	S
MTS5M 690 G	138	690	S	MTS5M 1615 G	323	1615	S
MTS5M 695 G	139	695	S	MTS5M 1680 G	336	1680	S
MTS5M 700 G	140	700	S	MTS5M 1690 G	338	1690	S
MTS5M 710 G	142	710	S	MTS5M 1715 G	343	1715	S
MTS5M 720 G	144	720	S	MTS5M 1800 G	360	1800	S
MTS5M 725 G	145	725	S	MTS5M 1945G	389	1945	S
MTS5M 730 G	146	730	S	MTS5M 2000 G	400	2000	S
MTS5M 740 G	148	740	S	MTS5M 2145 G	429	2145	S
MTS5M 750 G	150	750	S	MTS5M 2255 G	451	2255	S
MTS5M 765 G	153	765	S	MTS5M 2480 G	496	2480	S
MTS5M 780 G	156	780	S	MTS5M 2525 G	505	2525	S
MTS5M 800 G	160	800	S	MTS5M 2980 G	596	2980	S
MTS5M 810 G	162	810	S	MTS5M 3090 G	618	3090	S
MTS5M 830 G	166	830	S				

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

1 Properties

MEGA TORQUE G MTS8M

● Belt Code

250	MT	S8M	1680	G
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(G)

8.00

5.3

3.05

1

Properties
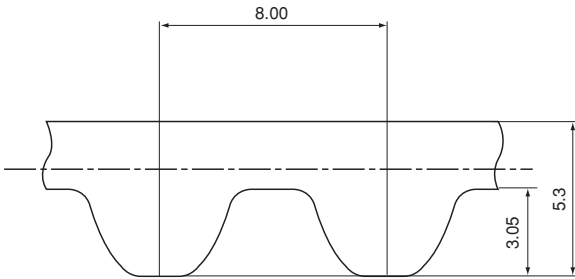
Belt width lineup Table 1-51

Nominal width	Width (mm)
150	15
250	25
300	30
400	40
600	60

Belt weight per unit (kg/10mm x 1m) Table 1-52

Material	Belt type	Belt weight
rubber	MTS8M G	0.045

Standard belt size table

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS8M 528 G	66	528	S
MTS8M 560 G	70	560	S
MTS8M 584 G	73	584	S
MTS8M 600 G	75	600	S
MTS8M 632 G	79	632	S
MTS8M 640 G	80	640	S
MTS8M 656 G	82	656	S
MTS8M 712 G	89	712	S
MTS8M 720 G	90	720	S
MTS8M 760 G	95	760	S
MTS8M 800 G	100	800	S
MTS8M 824 G	103	824	S
MTS8M 840 G	105	840	S
MTS8M 848 G	106	848	S
MTS8M 856 G	107	856	S
MTS8M 880 G	110	880	S
MTS8M 896 G	112	896	S
MTS8M 912 G	114	912	S
MTS8M 920 G	115	920	S
MTS8M 928 G	116	928	S
MTS8M 944 G	118	944	S
MTS8M 952 G	119	952	S
MTS8M 960 G	120	960	S
MTS8M 976 G	122	976	S
MTS8M 1000 G	125	1000	S
MTS8M 1024 G	128	1024	S
MTS8M 1040 G	130	1040	S
MTS8M 1056 G	132	1056	S
MTS8M 1080 G	135	1080	S
MTS8M 1120 G	140	1120	S
MTS8M 1128 G	141	1128	S
MTS8M 1136 G	142	1136	S
MTS8M 1152 G	144	1152	S
MTS8M 1160 G	145	1160	S
MTS8M 1184 G	148	1184	S
MTS8M 1200 G	150	1200	S
MTS8M 1216 G	152	1216	S
MTS8M 1224 G	153	1224	S
MTS8M 1248 G	156	1248	S
MTS8M 1256 G	157	1256	S
MTS8M 1280 G	160	1280	S
MTS8M 1296 G	162	1296	S
MTS8M 1304 G	163	1304	S
MTS8M 1312 G	164	1312	S
MTS8M 1320 G	165	1320	S
MTS8M 1352 G	169	1352	S
MTS8M 1360 G	170	1360	S
MTS8M 1384 G	173	1384	S
MTS8M 1400 G	175	1400	S

Standard belt size table

Table 1-53

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS8M 1424 G	178	1424	S
MTS8M 1440 G	180	1440	S
MTS8M 1480 G	185	1480	S
MTS8M 1488 G	186	1488	S
MTS8M 1520 G	190	1520	S
MTS8M 1552 G	194	1552	S
MTS8M 1600 G	200	1600	S
MTS8M 1640 G	205	1640	S
MTS8M 1648 G	206	1648	S
MTS8M 1680 G	210	1680	S
MTS8M 1696 G	212	1696	S
MTS8M 1728 G	216	1728	S
MTS8M 1760 G	220	1760	S
MTS8M 1776 G	222	1776	S
MTS8M 1792 G	224	1792	S
MTS8M 1800 G	225	1800	S
MTS8M 1816 G	227	1816	S
MTS8M 1832 G	229	1832	S
MTS8M 1880 G	235	1880	S
MTS8M 1912 G	239	1912	S
MTS8M 1960 G	245	1960	S
MTS8M 2000 G	250	2000	S
MTS8M 2040 G	255	2040	S
MTS8M 2048 G	256	2048	S
MTS8M 2064 G	258	2064	S
MTS8M 2104 G	263	2104	S
MTS8M 2120 G	265	2120	S
MTS8M 2160 G	270	2160	S
MTS8M 2240 G	280	2240	S
MTS8M 2272 G	284	2272	S
MTS8M 2304 G	288	2304	S
MTS8M 2376 G	297	2376	S
MTS8M 2400 G	300	2400	S
MTS8M 2496 G	312	2496	S
MTS8M 2600 G	325	2600	S
MTS8M 2800 G	350	2800	S
MTS8M 2920 G	365	2920	S
MTS8M 2944 G	368	2944	S
MTS8M 3048 G	381	3048	S
MTS8M 3200 G	400	3200	S
MTS8M 3248 G	406	3248	S
MTS8M 3272 G	409	3272	S
MTS8M 3440 G	430	3440	S
MTS8M 3680 G	460	3680	S
MTS8M 3720 G	465	3720	S
MTS8M 3904 G	488	3904	S
MTS8M 3928 G	491	3928	S
MTS8M 4400 G	550	4400	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

MEGA TORQUE G MTS14M

● Belt Code

600	MT	S14M	1652	G
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(G)

14.00

5.30   10.20
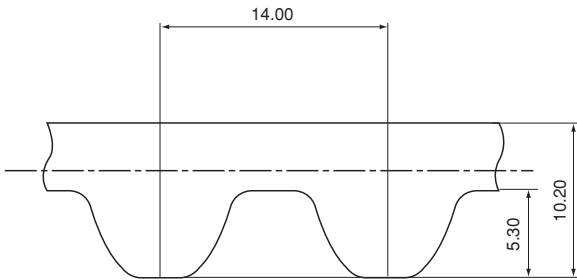
Belt width lineup Table 1-54

Nominal width	Width (mm)
400	40
600	60
800	80
1000	100
1200	120

Belt weight per unit (kg/10mm x 1m) Table 1-55

Material	Belt type	Belt weight
rubber	MTS14M G	0.089

Standard belt size table Table 1-56

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS14M 1008 G	72	1008	S
MTS14M 1120 G	80	1120	S
MTS14M 1190 G	85	1190	S
MTS14M 1246 G	89	1246	S
MTS14M 1288 G	92	1288	S
MTS14M 1400 G	100	1400	S
MTS14M 1470 G	105	1470	S
MTS14M 1540 G	110	1540	S
MTS14M 1610 G	115	1610	S
MTS14M 1652 G	118	1652	S
MTS14M 1708 G	122	1708	S
MTS14M 1736 G	124	1736	S
MTS14M 1750 G	125	1750	S
MTS14M 1778 G	127	1778	S
MTS14M 1806 G	129	1806	S
MTS14M 1890 G	135	1890	S
MTS14M 1932 G	138	1932	S
MTS14M 1960 G	140	1960	S
MTS14M 2002 G	143	2002	S
MTS14M 2100 G	150	2100	S
MTS14M 2198 G	157	2198	S
MTS14M 2240 G	160	2240	S
MTS14M 2310 G	165	2310	S
MTS14M 2380 G	170	2380	S
MTS14M 2450 G	175	2450	S
MTS14M 2506 G	179	2506	S
MTS14M 2590 G	185	2590	S
MTS14M 2660 G	190	2660	S
MTS14M 2800 G	200	2800	S
MTS14M 3150 G	225	3150	S
MTS14M 3360 G	240	3360	S
MTS14M 3500 G	250	3500	S
MTS14M 3556 G	254	3556	S
MTS14M 3850 G	275	3850	S
MTS14M 4004 G	286	4004	S
MTS14M 4508 G	322	4508	S
MTS14M 5012 G	358	5012	S

● S＝Single-sided
● Some sizes may not be in stock. Please contact us for the stock status before placing an order.

MEGA TORQUE U MTS8M
(Polyurethane type)

● Belt Code

250	MT	S8M	1600	U
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(U)

8.00

3.05   5.3
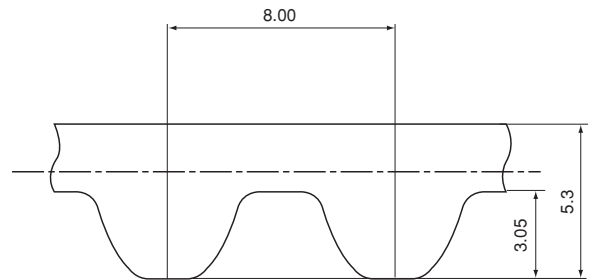
Belt width lineup Table 1-57

Nominal width	Width (mm)
150	15
250	25
300	30
400	40
600	60

Belt weight per unit (kg/10mm x 1m) Table 1-58

Material	Belt type	Belt weight
rubber	MTS8M U	0.038

Standard belt size table Table 1-59

	Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
	MTS8M 560 U	70	560	S
	MTS8M 600 U	75	600	S
	MTS8M 640 U	80	640	S
	MTS8M 680 U	85	680	S
	MTS8M 720 U	90	720	S
	MTS8M 760 U	95	760	S
*	MTS8M 800 U	100	800	S
	MTS8M 848 U	106	848	S
	MTS8M 896 U	112	896	S
	MTS8M 960 U	120	960	S
	MTS8M 1000 U	125	1000	S
	MTS8M 1056 U	132	1056	S
	MTS8M 1120 U	140	1120	S
	MTS8M 1200 U	150	1200	S
	MTS8M 1280 U	160	1280	S
*	MTS8M 1328 U	166	1328	S
	MTS8M 1360 U	170	1360	S
	MTS8M 1440 U	180	1440	S
	MTS8M 1520 U	190	1520	S
	MTS8M 1600 U	200	1600	S
	MTS8M 1696 U	212	1696	S
*	MTS8M 1792 U	224	1792	S
*	MTS8M 1888 U	236	1888	S

● Total thickness of belt sizes with *mark is 4.80mm.
● S＝Single-sided
● Some sizes may not be in stock. Please contact us for the stock status before placing an order.

MEGA TORQUE GⅡ MTS8M

1

Properties

5.30

3.05
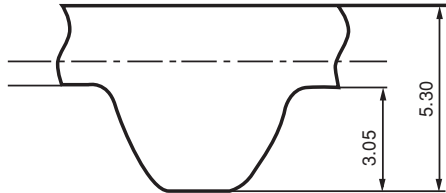
Belt tooth pitch 8mm

Belt width lineup Table 1-60

Nominal width	Width (mm)
150	15
250	25
300	30
400	40
600	60

Belt weight per unit (kg/10mm x 1m) Table 1-61

Material	Belt type	Belt weight
rubber	MTS8M G2	0.043

Standard belt size table

Table 1-62

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size	Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS8M 528 G2	66	528	S	MTS8M 1400 G2	175	1400	S
MTS8M 560 G2	70	560	S	MTS8M 1424 G2	178	1424	S
MTS8M 584 G2	73	584	S	MTS8M 1440 G2	180	1440	S
MTS8M 600 G2	75	600	S	MTS8M 1480 G2	185	1480	S
MTS8M 632 G2	79	632	S	MTS8M 1488 G2	186	1488	S
MTS8M 640 G2	80	640	S	MTS8M 1520 G2	190	1520	S
MTS8M 656 G2	82	656	S	MTS8M 1552 G2	194	1552	S
MTS8M 712 G2	89	712	S	MTS8M 1600 G2	200	1600	S
MTS8M 720 G2	90	720	S	MTS8M 1640 G2	205	1640	S
MTS8M 760 G2	95	760	S	MTS8M 1648 G2	206	1648	S
MTS8M 800 G2	100	800	S	MTS8M 1680 G2	210	1680	S
MTS8M 824 G2	103	824	S	MTS8M 1696 G2	212	1696	S
MTS8M 840 G2	105	840	S	MTS8M 1728 G2	216	1728	S
MTS8M 848 G2	106	848	S	MTS8M 1760 G2	220	1760	S
MTS8M 856 G2	107	856	S	MTS8M 1776 G2	222	1776	S
MTS8M 880 G2	110	880	S	MTS8M 1792 G2	224	1792	S
MTS8M 896 G2	112	896	S	MTS8M 1800 G2	225	1800	S
MTS8M 912 G2	114	912	S	MTS8M 1816 G2	227	1816	S
MTS8M 920 G2	115	920	S	MTS8M 1832 G2	229	1832	S
MTS8M 928 G2	116	928	S	MTS8M 1880 G2	235	1880	S
MTS8M 944 G2	118	944	S	MTS8M 1912 G2	239	1912	S
MTS8M 952 G2	119	952	S	MTS8M 1960 G2	245	1960	S
MTS8M 960 G2	120	960	S	MTS8M 2000 G2	250	2000	S
MTS8M 976 G2	122	976	S	MTS8M 2040 G2	255	2040	S
MTS8M 984 G2	123	984	S	MTS8M 2048 G2	256	2048	S
MTS8M 1000 G2	125	1000	S	MTS8M 2064 G2	258	2064	S
MTS8M 1024 G2	128	1024	S	MTS8M 2104 G2	263	2104	S
MTS8M 1040 G2	130	1040	S	MTS8M 2120 G2	265	2120	S
MTS8M 1056 G2	132	1056	S	MTS8M 2160 G2	270	2160	S
MTS8M 1080 G2	135	1080	S	MTS8M 2240 G2	280	2240	S
MTS8M 1120 G2	140	1120	S	MTS8M 2272 G2	284	2272	S
MTS8M 1128 G2	141	1128	S	MTS8M 2304 G2	288	2304	S
MTS8M 1136 G2	142	1136	S	MTS8M 2376 G2	297	2376	S
MTS8M 1152 G2	144	1152	S	MTS8M 2400 G2	300	2400	S
MTS8M 1160 G2	145	1160	S	MTS8M 2496 G2	312	2496	S
MTS8M 1184 G2	148	1184	S	MTS8M 2600 G2	325	2600	S
MTS8M 1200 G2	150	1200	S	MTS8M 2800 G2	350	2800	S
MTS8M 1216 G2	152	1216	S	MTS8M 2920 G2	365	2920	S
MTS8M 1224 G2	153	1224	S	MTS8M 2944 G2	368	2944	S
MTS8M 1248 G2	156	1248	S	MTS8M 3048 G2	381	3048	S
MTS8M 1256 G2	157	1256	S	MTS8M 3200 G2	400	3200	S
MTS8M 1280 G2	160	1280	S	MTS8M 3248 G2	406	3248	S
MTS8M 1296 G2	162	1296	S	MTS8M 3272 G2	409	3272	S
MTS8M 1304 G2	163	1304	S	MTS8M 3440 G2	430	3440	S
MTS8M 1312 G2	164	1312	S	MTS8M 3680 G2	460	3680	S
MTS8M 1320 G2	165	1320	S	MTS8M 3720 G2	465	3720	S
MTS8M 1352 G2	169	1352	S	MTS8M 3928 G2	491	3928	S
MTS8M 1360 G2	170	1360	S	MTS8M 3904 G2	488	3904	S
MTS8M 1384 G2	173	1384	S	MTS8M 4400 G2	550	4400	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

MEGA TORQUE GⅡ MTS14M

● Belt Code

600	MT	S14M	1652	G2

Belt Nominal width(mm)×10   MEGA TORQUE   Belt Type   Nominal length(mm)   Specification(GⅡ)

Belt tooth pitch 14mm

9.30

5.30
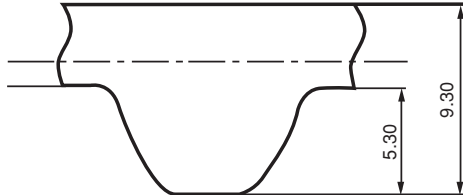
Belt width lineup   Table 1-63

Nominal width	Width (mm)
400	40
600	60
800	80
1000	100
1200	120

Belt weight per unit (kg/10mm x 1m)   Table 1-64

Material	Belt type	Belt weight
rubber	MTS14M G2	0.082

Standard belt size table

Table 1-65

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS14M 1008 G2	72	1008	S
MTS14M 1120 G2	80	1120	S
MTS14M 1190 G2	85	1190	S
MTS14M 1246 G2	89	1246	S
MTS14M 1288 G2	92	1288	S
MTS14M 1400 G2	100	1400	S
MTS14M 1470 G2	105	1470	S
MTS14M 1540 G2	110	1540	S
MTS14M 1610 G2	115	1610	S
MTS14M 1652 G2	118	1652	S
MTS14M 1708 G2	122	1708	S
MTS14M 1736 G2	124	1736	S
MTS14M 1750 G2	125	1750	S
MTS14M 1778 G2	127	1778	S
MTS14M 1806 G2	129	1806	S
MTS14M 1890 G2	135	1890	S
MTS14M 1932 G2	138	1932	S
MTS14M 1960 G2	140	1960	S
MTS14M 2002 G2	143	2002	S
MTS14M 2100 G2	150	2100	S
MTS14M 2198 G2	157	2198	S
MTS14M 2240 G2	160	2240	S
MTS14M 2310 G2	165	2310	S
MTS14M 2380 G2	170	2380	S
MTS14M 2450 G2	175	2450	S
MTS14M 2506 G2	179	2506	S
MTS14M 2590 G2	185	2590	S
MTS14M 2660 G2	190	2660	S
MTS14M 2800 G2	200	2800	S
MTS14M 3150 G2	225	3150	S
MTS14M 3360 G2	240	3360	S
MTS14M 3500 G2	250	3500	S
MTS14M 3556 G2	254	3556	S
MTS14M 3850 G2	275	3850	S
MTS14M 4004 G2	286	4004	S
MTS14M 4508 G2	322	4508	S
MTS14M 5012 G2	358	5012	S

●S＝Single-sided
●Some sizes may not be in stock.　Please contact us for the stock status before placing an order.

MEGA TORQUE EX MTS3M

3.00

2.14

1.14

● Belt Code

100	MT	S3M	600	EX
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(EX)
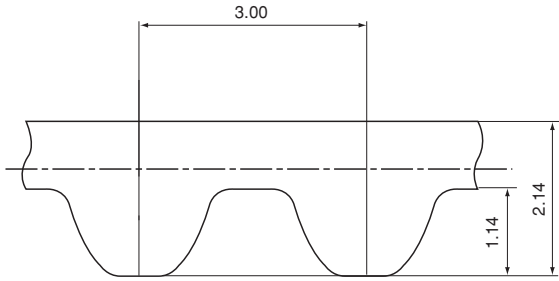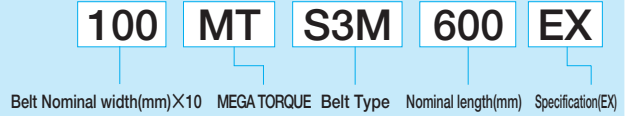
Belt width lineup Table 1-66

Nominal width	Width (mm)
60	6
100	10
150	15

Belt weight per unit (kg/10mm x 1m) Table 1-67

Material	Belt type	Belt weight
rubber	MTS3M EX	0.020

Standard belt size table

Table 1-68

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS3M 240 EX	80	240	S
MTS3M 270 EX	90	270	S
MTS3M 300 EX	100	300	S
MTS3M 324 EX	108	324	S
MTS3M 330 EX	110	330	S
MTS3M 360 EX	120	360	S
MTS3M 390 EX	130	390	S
MTS3M 420 EX	140	420	S
MTS3M 450 EX	150	450	S
MTS3M 480 EX	160	480	S
MTS3M 510 EX	170	510	S

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS3M 540 EX	180	540	S
MTS3M 570 EX	190	570	S
MTS3M 588 EX	196	588	S
MTS3M 600 EX	200	600	S
MTS3M 660 EX	220	660	S
MTS3M 720 EX	240	720	S
MTS3M 780 EX	260	780	S
MTS3M 1035 EX	345	1035	S
MTS3M 1521 EX	507	1521	S
MTS3M 1788 EX	596	1788	S
MTS3M 2538 EX	846	2538	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

MEGA TORQUE EX MTS5M

5.00

3.41

1.91

● Belt Code

100	MT	S5M	500	EX
Belt Nominal width(mm)×10	MEGA TORQUE	Belt Type	Nominal length(mm)	Specification(EX)
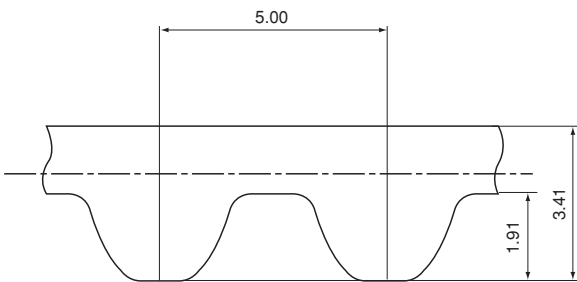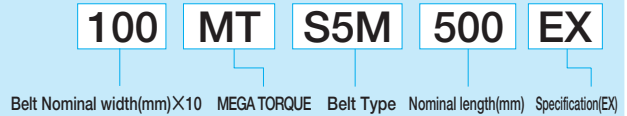
Belt width lineup Table 1-69

Nominal width	Width (mm)
100	10
150	15
250	25

Belt weight per unit (kg/10mm x 1m) Table 1-70

Material	Belt type	Belt weight
rubber	MTS5M EX	0.029

Standard belt size table

Table 1-71

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS5M 275 EX	55	275	S
MTS5M 300 EX	60	300	S
MTS5M 325 EX	65	325	S
MTS5M 350 EX	70	350	S
MTS5M 400 EX	80	400	S
MTS5M 435 EX	87	435	S
MTS5M 450 EX	90	450	S
MTS5M 500 EX	100	500	S
MTS5M 525 EX	105	525	S
MTS5M 550 EX	110	550	S
MTS5M 575 EX	115	575	S
MTS5M 600 EX	120	600	S
MTS5M 650 EX	130	650	S

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
MTS5M 690 EX	138	690	S
MTS5M 700 EX	140	700	S
MTS5M 720 EX	144	720	S
MTS5M 750 EX	150	750	S
MTS5M 800 EX	160	800	S
MTS5M 850 EX	170	850	S
MTS5M 880 EX	176	880	S
MTS5M 900 EX	180	900	S
MTS5M 950 EX	190	950	S
MTS5M 1000 EX	200	1000	S
MTS5M 1780 EX	356	1780	S
MTS5M 3835 EX	767	3835	S

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

GIGA TORQUE GX G8M

● Belt Code

360	G8M	2400	GX
Nominal width(mm)×10	Belt Type	Nominal length(mm)	GX Specification

Belt tooth pitch 8mm

(tooth dimensions: 5.60, 3.50)

Belt width lineup Table 1-72

Nominal width	Belt width (mm)
120	12
150	15
200	20
210	21
250	25
300	30
360	36
400	40
500	50
600	60
620	62
700	70
800	80

Belt weight per unit (kg/10mm x 1m) Table 1-73

Material	Belt type	Belt weight
rubber	G8M	0.049

Standard belt size table Table 1-74

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
G8M 640	80	640	S
G8M 720	90	720	S
G8M 800	100	800	S
G8M 896	112	896	S
G8M 960	120	960	S
G8M 1000	125	1000	S
G8M 1040	130	1040	S
G8M 1120	140	1120	S
G8M 1200	150	1200	S
G8M 1224	153	1224	S
G8M 1280	160	1280	S
G8M 1440	180	1440	S
G8M 1600	200	1600	S
G8M 1760	220	1760	S
G8M 1792	224	1792	S
G8M 2000	250	2000	S
G8M 2200	275	2200	S
G8M 2240	280	2240	S
G8M 2400	300	2400	S
G8M 2520	315	2520	S
G8M 2600	325	2600	S
G8M 2800	350	2800	S
G8M 2840	355	2840	S
G8M 3048	381	3048	S
G8M 3200	400	3200	S
G8M 3280	410	3280	S
G8M 3600	450	3600	S
G8M 4000	500	4000	S
G8M 4400	550	4400	S
G8M 4480	560	4480	S

GIGA TORQUE GX G14M

● Belt Code

370	G14M	2100	GX
Nominal width(mm)×10	Belt Type	Nominal length(mm)	GX Specification

Belt tooth pitch 14mm

(tooth dimensions: 9.80, 6.10)

Belt width lineup Table 1-75

Nominal width	Belt width (mm)
200	20
300	30
370	37
400	40
500	50
600	60
680	68
700	70
800	80
1000	100
1150	115
1250	125
1300	130

Belt weight per unit (kg/10mm x 1m) Table 1-76

Material	Belt type	Belt weight
rubber	G14M	0.083

Standard belt size table Table 1-77

Nominal length	Number of teeth	Pitch length(mm)	Manufacturable Size
G14M 994	71	994	S
G14M 1120	80	1120	S
G14M 1190	85	1190	S
G14M 1260	90	1260	S
G14M 1400	100	1400	S
G14M 1568	112	1568	S
G14M 1610	115	1610	S
G14M 1750	125	1750	S
G14M 1890	135	1890	S
G14M 1960	140	1960	S
G14M 2100	150	2100	S
G14M 2240	160	2240	S
G14M 2310	165	2310	S
G14M 2380	170	2380	S
G14M 2450	175	2450	S
G14M 2520	180	2520	S
G14M 2590	185	2590	S
G14M 2660	190	2660	S
G14M 2800	200	2800	S
G14M 3136	224	3136	S
G14M 3304	236	3304	S
G14M 3360	240	3360	S
G14M 3500	250	3500	S
G14M 3850	275	3850	S
G14M 3920	280	3920	S
G14M 4326	309	4326	S
G14M 4410	315	4410	S

1
Properties

●S＝Single-sided
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

H series H8M
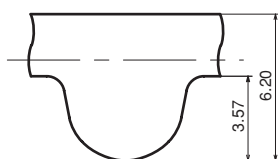
Belt tooth pitch 8mm
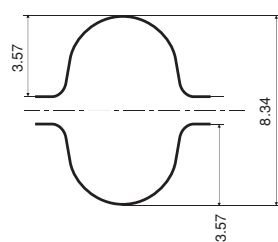
Belt tooth pitch 8mm

1
Properties

● Product Code

800	H8M	30
Belt pitch length(mm)	Belt type	Nominal width(mm)

Belt width lineup Table 1-78

Nominal width	Width (mm)
20	20.0
30	30.0
50	50.0
85	85.0

Belt weight per unit (kg/10mm x 1m) Table 1-79

Material	Belt type	Belt weight
rubber	H8M	0.064

Standard belt size table

Table 1-80

Product Code	Number of teeth	Belt Pitch length(mm)	Manufacturable Size	Product Code	Number of teeth	Belt Pitch length(mm)	Manufacturable Size
424H8M	53	424	S	1248H8M	156	1248	S・D
480H8M	60	480	S	1280H8M	160	1280	S・D
536H8M	67	536	S・D	1304H8M	163	1304	S・D
560H8M	70	560	S・D	1320H8M	165	1320	S・D
592H8M	74	592	S・D	1360H8M	170	1360	S・D
600H8M	75	600	S・D	1392H8M	174	1392	S・D
624H8M	78	624	S・D	1400H8M	175	1400	S・D
632H8M	79	632	S・D	1424H8M	178	1424	S・D
640H8M	80	640	S・D	1432H8M	179	1432	S・D
656H8M	82	656	S・D	1440H8M	180	1440	S・D
680H8M	85	680	S・D	1480H8M	185	1480	S・D
720H8M	90	720	S・D	1520H8M	190	1520	S・D
760H8M	95	760	S・D	1600H8M	200	1600	S・D
776H8M	97	776	S・D	1680H8M	210	1680	S・D
800H8M	100	800	S・D	1696H8M	212	1696	S・D
840H8M	105	840	S・D	1728H8M	216	1728	S・D
856H8M	107	856	S・D	1760H8M	220	1760	S・D
880H8M	110	880	S・D	1800H8M	225	1800	S・D
896H8M	112	896	S・D	1896H8M	237	1896	S・D
912H8M	114	912	S・D	1904H8M	238	1904	S・D
920H8M	115	920	S・D	1936H8M	242	1936	S・D
936H8M	117	936	S・D	2000H8M	250	2000	S・D
960H8M	120	960	S・D	2080H8M	260	2080	S・D
968H8M	121	968	S・D	2104H8M	263	2104	S・D
1000H8M	125	1000	S・D	2160H8M	270	2160	S・D
1040H8M	130	1040	S・D	2240H8M	280	2240	S・D
1056H8M	132	1056	S・D	2272H8M	284	2272	S・D
1064H8M	133	1064	S・D	2400H8M	300	2400	S・D
1080H8M	135	1080	S・D	2504H8M	313	2504	S・D
1120H8M	140	1120	S・D	2600H8M	325	2600	S・D
1128H8M	141	1128	S・D	2800H8M	350	2800	S・D
1152H8M	144	1152	S・D	3048H8M	381	3048	S・D
1160H8M	145	1160	S・D	3200H8M	400	3200	S・D
1200H8M	150	1200	S・D	3280H8M	410	3280	S・D
1224H8M	153	1224	S・D	3600H8M	450	3600	S・D

●S＝Single-sided　D＝Double timing belt
●The design procedure and the defined drive capacity of single-sided timing belts are applied to the equivalent double-sided timing belts.
●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

H series H14M
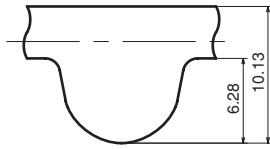
Belt tooth pitch 14mm

● Product Code

1610	H14M	40
Belt pitch length(mm)	Belt type	Nominal width(mm)

Belt width lineup Table 1-81

Nominal width	Width (mm)
40	40.0
55	55.0
85	85.0
115	115.0

Belt weight per unit (kg/10mm x 1m) Table 1-82

Material	Belt type	Belt weight
rubber	H14M	0.100

1 Properties

Standard belt size table Table 1-83

Product Code	Number of teeth	Belt Pitch length(mm)
784H14M	56	784
826H14M	59	826
924H14M	66	924
966H14M	69	966
1148H14M	82	1148
1190H14M	85	1190
1344H14M	96	1344
1400H14M	100	1400
1456H14M	104	1456
1512H14M	108	1512
1540H14M	110	1540
1568H14M	112	1568
1610H14M	115	1610
1638H14M	117	1638
1652H14M	118	1652
1680H14M	120	1680
1736H14M	124	1736
1778H14M	127	1778
1890H14M	125	1890
1932H14M	138	1932
1946H14M	139	1946
2002H14M	143	2002
2100H14M	150	2100
2198H14M	157	2198
2310H14M	165	2310
2450H14M	175	2450
2590H14M	185	2590
2940H14M	210	2940
3150H14M	225	3150
3500H14M	250	3500
4578H14M	327	4578

●Some sizes may not be in stock. Please contact us for the stock status before placing an order.

LONG-SPAN Timing Belts
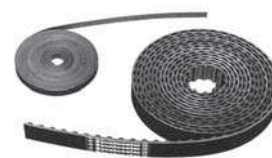
■LONG-SPAN Timing Belts

These belts were developed to meet the needs of industries that have pursued automation and energy conservation in production processes in recent years. These long-span timing belts come into two types: open-end belts that are used for reciprocating motion and endless belts that are used for rotary motion.

■Features of Open-end Belts (For Reciprocating Motion)

■Long spans
Belt length can be freely set as shown in the below table and long spans are possible.

■Applicable for accurate reciprocating motions
Belts accurately engage pulleys to properly transmit reciprocating motion without slipping.

■Quiet operation
Because metal engages rubber or resin, the level of noise emission is low.

■Clean and oil-free
Oiling is unnecessary in timing belt applications. This minimizes contamination of nearby machinery and products.

■Maintenance-free
Belt elongation is very small and tension rarely needs adjusting if properly installed.

[Note] Use open-end belts only for reciprocating motion.

■Available Open-End Belt Ranges (Max. Belt Length)

G Type (Rubber)　Table 1-84 (Unit: m)

Nominal width / Width (mm) / Belt type	025 / 6.4	037 / 9.5	050 / 12.7	075 / 19.1	100 / 25.4	150 / 38.1
MXL	67	44	34	—	—	—
XL	129	86	64	—	—	—
L	—	—	72	47	34	—
H	—	—	129	86	63	41

Example indication for order

Ex.　**OTG　86　XL　037**

Open-end belt / Belt length (m) / Belt type / Nominal width (inch×100)

* Nominal width is given in mm for MXL belts.
* Order open-end belts by the roll (max. belt length).

Table 1-85 (Unit: m)

Belt type / Nominal width	40	60	100	150	200	250	300	400	500	600
S2M	89	58	35							
S3M		110	65	43						
S5M			78	50	87	68	—	40		
S8M			124	82	60	48	55	39	30	24
S14M					58	48	34	27	—	

* Order belts by the above lengths.
Note: Use open-end belts only for reciprocating motion.

Example indication for order

OTG　250　S8M　48

Open-end belt / Nominal width (mm×10) / Belt type / Belt length (m)

U Type (Polyurethane)　Table 1-86

Nominal width / Width (mm) / Belt type	3.2 / 3.2	019 (4.8) / 4.8	025 (6.4) / 6.4	037 (9.5) / 9.5	050 / 12.7	075 / 19.1
T80	99	68	52	35	—	—
XL	—	94	71	48	36	17
L	—	—	—	51	38	10

Nominal width for T80 given in ( ). Unit: m

U Type (Polyurethane) Metric　Table 1-87　Unit: m

Belt type / Nominal width	5	10	15	20	25
T5	87	44	29	—	—
T10	—	49	32	17	13

Example indication for order

Ex.　**UKOTG　T80　6.4　52**

Open-end belt / Belt type / Nominal width (mm) / Belt length (m)

* Belt widths for XL and L belts are given as inch x 100.
* Order open-end belts by the roll (max. belt length).

Round Tooth (S2M,S3M)　Table 1-88　Unit: m

Belt type / Nominal width (mm)	40	50	60	100	150	200	250
S2M	99	80	67	—	—	—	—
S3M	—	98	82	50	33	—	—

Example indication for order

Ex.　**UKOTG　S2M　60　67**

Open-End / Belt type / Nominal width (mm×10) / Belt length(m)

■Features of Endless Belts (For Rotary Motion)

■High degree of freedom in long span design
Belt length can be designed within the ranges shown in the table below, therefore rotary motion is possible with long spans.

■Low power (synchronized) transmission for long spans
As long as distances between motors and followers are within the ranges shown in the table below, synchronized motion is possible.

■Synchronized transport possible without slipping
Synchronized transport is possible because the belt properly engages pulleys.

■Available endless belt ranges (G Type)　Table 1-89

Belt type	Belt width				Max. Belt Length (m)
	Min. width (mm)	Min.Nominal width (inch×100)	Max. width (mm)	Max.Nominal width (inch×100)	
L	12.7	050	355	1400	20
H	19.1	075	343	1350	20
XH	50.8	200	406	1600	20
XXH	50.8	200	406	1600	20

Note: Allowed tension is 1/2 that of short timing belts.

Example indication for order

Ex.　**GLTG　2000　H　300**

Endless belt / Belt length (inch×10) / Belt type / Nominal width (inch×100)

Table 1-90

Belt type	Belt width				Belt Length(m)
	Min. width (mm)	Min.Nominal width (mm×10)	Max. width (mm)	Max.Nominal width (mm×10)	
S8M	19.1	191	342	3420	20
S14M	50.0	500	406	4060	20

Note: Allowed tension is 1/2 that of short SUPER TORQUE Timing Belts.

Example indication for order

Ex.　**GLTG　400　S8M　5600**

Endless belt / Belt Nominal width (mm×10) / Belt type / Belt length (mm)

Polyurethane Conveyor Belts with Special Backing Profiles

Features

1. Various varieties of backing profiles are available.
The profile can be customized with a specially-designed mold to meet every transporting needs. (Molds are to be prepared upon requests.)

2. Tough against separation.
Backing profiles are molded and tough against separation.

3. Available in any color
Polyurethane material can be colored in any color. Belts are available in any color on request.

4. We welcome high-volume orders!
Manufacturing the belts by molding, we are relatively flexible to meet your delivery requirements, even with high-volume orders.

◆For amusement application   Fig.1-9
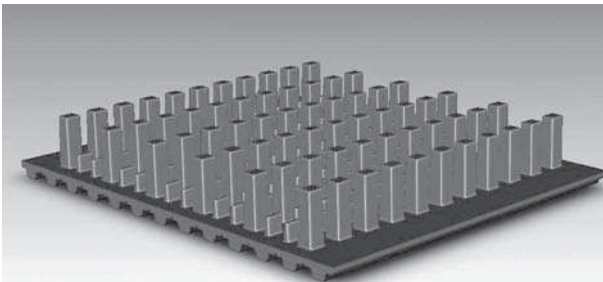
◆For film transport (Dual-layered belt)   Fig.1-10
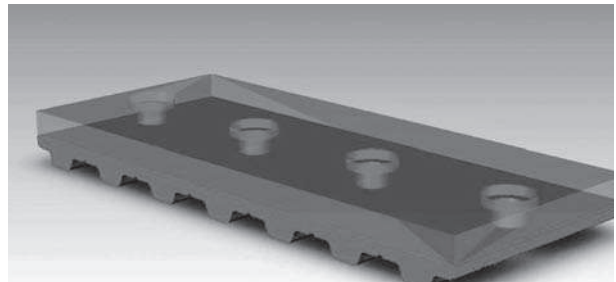
◆For paper feeder of copying machine   Fig.1-11
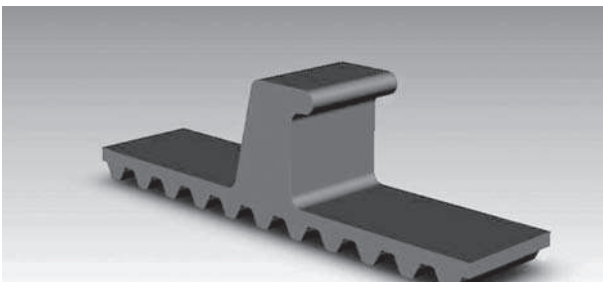
◆For coin conveyor system   Fig.1-12
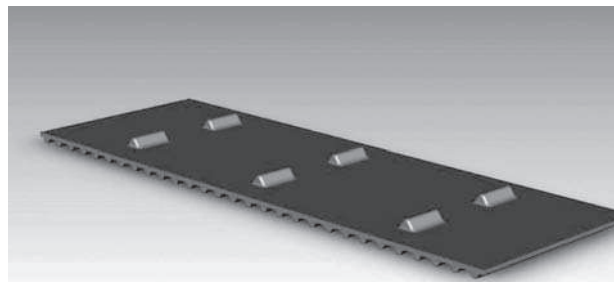
◆For paper feeder of dot impact printer   Fig.1-13

1
Properties
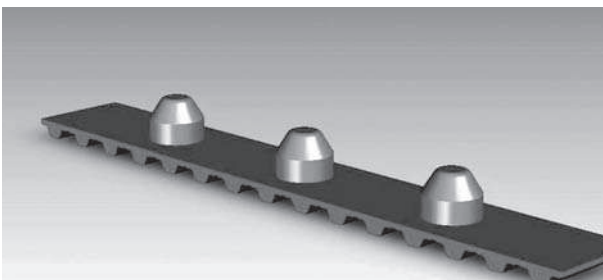
SUPER TORQUE

Pulley Types

O.D	O.D	O.D	O.D
A Type	**B Type**	**C Type**	**W Type**

● Pulley Code

P	32	S2M	0100	A
Pulley identifier	Number of teeth	Belt type	Nominal width (Belt width mm × 10)	Pulley type (A)
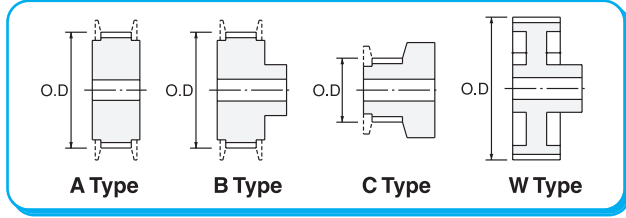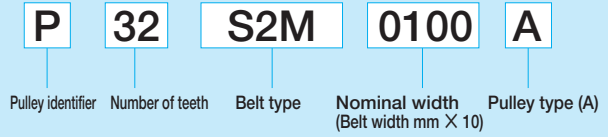
Table 1-91

☆ We add aluminum as a standard pulley for S3M and S5M

Belt type		S2M			S3M			S5M		
	No. of Teeth	Product Code	PD	OD	Product Code	PD	OD	Product Code	PD	OD
	14	P 14S2M	8.91	8.40	P 14S3M	13.37	12.61	P 14S5M	22.28	21.32
	15	P 15S2M	9.55	9.04	P 15S3M	14.32	13.56	P 15S5M	23.87	22.91
	16	P 16S2M	10.19	9.68	P 16S3M	15.28	14.52	P 16S5M	25.46	24.50
	18	P 18S2M	11.46	10.95	P 18S3M	17.19	16.43	P 18S5M	28.65	27.69
	20	P 20S2M	12.73	12.22	P 20S3M	19.10	18.34	P 20S5M	31.83	30.87
	22	P 22S2M	14.01	13.50	P 22S3M	21.01	20.25	P 22S5M	35.01	34.05
	24	P 24S2M	15.28	14.77	P 24S3M	22.92	22.16	P 24S5M	38.20	37.24
	25	P 25S2M	15.92	15.41	P 25S3M	23.87	23.11	P 25S5M	39.79	38.83
Size	26	P 26S2M	16.55	16.04	P 26S3M	24.83	24.07	P 26S5M	41.38	40.42
	28	P 28S2M	17.83	17.32	P 28S3M	26.74	25.98	P 28S5M	44.56	43.60
	30	P 30S2M	19.10	18.59	P 30S3M	28.65	27.89	P 30S5M	47.75	46.79
	32	P 32S2M	20.37	19.86	P 32S3M	30.56	29.80	P 32S5M	50.93	49.97
	36	P 36S2M	22.92	22.41	P 36S3M	34.38	33.62	P 36S5M	57.30	56.34
	40	P 40S2M	25.46	24.96	P 40S3M	38.20	37.44	P 40S5M	63.66	62.70
	44	P 44S2M	28.01	27.50	P 44S3M	42.02	41.25	P 44S5M	70.03	69.07
	48	P 48S2M	30.56	30.05	P 48S3M	45.84	45.07	P 48S5M	76.39	75.43
	50	P 50S2M	31.83	31.32	P 50S3M	47.75	46.98	P 50S5M	79.58	78.62
	60	P 60S2M	38.20	37.69	P 60S3M	57.30	56.53	P 60S5M	95.49	94.53

Standard Sizes   Table 1-92

Type	10mm	15mm	25mm	Rod Shape
S2M	—	—	—	○
S3M	A·B·C	A·B·C	—	○
S5M	A·B	A·B	A·B	○

Materials   Table 1-93

Type	A·B	C	Rod Shape
S2M	-	-	Aluminum
S3M	Aluminum	Aluminum	Aluminum
S5M	Aluminum/Steel	-	Steel

● Shape is a 100mm long round cylinder product.
● 22 teeth and below sizes of S3M are available only in rod shape and C type. Also, 24 teeth and above sizes are available only in A or B type.
● Only steel one is available for 25mm width S5M type.
● Flange is not sold separately as a single item.

Table1-94

Belt type		S8M						S14M					
	No. of Teeth	Product Code	PD	OD	A/B Type Standard Width	W Type Standard Width	No. of Teeth	Product Code	PD	OD	A Type Standard Width	B Type Standard Width	W Type Standard Width
	18	18S8M	45.84	44.46		-	28	P 28S14M	124.78	121.98			-
	19	19S8M	48.38	47.01		-	30	P 30S14M	133.69	130.90			-
	20	20S8M	50.93	49.56	15·25·30·40	-	32	P 32S14M	142.60	139.81			-
	21	21S8M	53.48	52.10		-	34	P 34S14M	151.52	148.72			-
	22	22S8M	56.02	54.65		-	36	P 36S14M	160.43	157.63			-
	24	24S8M	61.12	59.74		-	40	P 40S14M	178.25	175.46	40·60·80	40·60	-
	25	25S8M	63.66	62.29		-	42	P 42S14M	187.17	184.37			-
	26	26S8M	66.21	64.84		-	44	P 44S14M	196.08	193.29			-
	28	28S8M	71.30	69.93		-	48	P 48S14M	213.90	211.11			-
	30	30S8M	76.39	75.02		-	50	P 50S14M	222.82	220.02			-
Size	32	32S8M	81.49	80.12		-	56	P 56S14M	249.55	246.76			-
	34	34S8M	86.58	85.21		-	(60)	P 60S14M	267.38	264.59	-	-	
	36	36S8M	91.67	90.30	15·25·30·40·60	-	(64)	P 64S14M	285.21	282.41	-	-	40·60
	38	38S8M	96.77	95.39		-	(72)	P 72S14M	320.86	318.06	-	-	
	40	40S8M	101.86	100.49		-							
	44	44S8M	112.05	110.67		-							
	48	48S8M	122.23	120.86		-							
	50	50S8M	127.32	125.95		-							
	60	60S8M	152.79	151.42		-							
	72	72S8M	183.35	181.97	-	15·25·40·60							
	84	84S8M	213.90	212.53	-								
	96	96S8M	244.46	243.09	-	25·40·60							
	120	120S8M	305.58	304.21	-								

● No. of teeth in ( ) is nonstocked item.
● Flange is not sold separately as a single item.
● A and B types are made from steel whereas W type is made from cast metal.

※Contact us for the details of MEGA TORQUE GⅡ, MEGA TORQUE EX and GIGA TORQUE GX pulleys.

1 Properties

Classical Type

Pulley Types

| A Type | B Type | C Type | W Type |
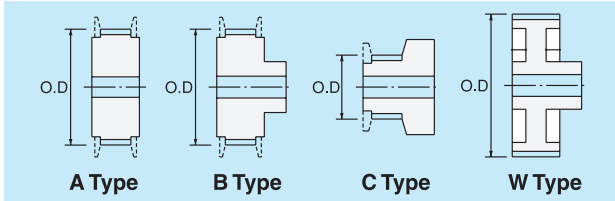
● Pulley Code

| P | 32 | XL | 037 | A |

Pulley identifier　Number of teeth　Belt type　Nominal width (Belt width inch × 100)　Pulley type

Table 1-95

Belt Type	MXL-Rod shape				
No. of teeth	Length (mm)	Material	OD (mm)	PD (mm)	Product Code
10			5.96	6.47	P10 MXL 100
12			7.25	7.76	P12 MXL 100
13			7.90	8.41	P13 MXL 100
14			8.55	9.06	P14 MXL 100
15			9.19	9.70	P15 MXL 100
16			9.84	10.35	P16 MXL 100
17			10.49	11.00	P17 MXL 100
18			11.13	11.64	P18 MXL 100
19			11.78	12.29	P19 MXL 100
20			12.43	12.94	P20 MXL 100
21			13.07	13.58	P21 MXL 100
22			13.72	14.23	P22 MXL 100
23			14.37	14.88	P23 MXL 100
24			15.02	15.52	P24 MXL 100
25			15.66	16.17	P25 MXL 100
26			16.31	16.82	P26 MXL 100
27			16.96	17.46	P27 MXL 100
28			17.60	18.11	P28 MXL 100
30		High-Strength Aluminum Alloy	18.90	19.40	P30 MXL 100
32	100		20.19	20.70	P32 MXL 100
34			21.48	21.99	P34 MXL 100
36			22.78	23.29	P36 MXL 100
38			24.07	24.58	P38 MXL 100
40			25.36	25.87	P40 MXL 100
42			26.66	27.17	P42 MXL 100
44			27.95	28.46	P44 MXL 100
48			30.54	31.05	P48 MXL 100
50			31.83	32.34	P50 MXL 100
52			33.13	33.63	P52 MXL 100
54			34.42	34.93	P54 MXL 100
56			35.71	36.22	P56 MXL 100
60			38.30	38.81	P60 MXL 100
64			40.89	41.40	P64 MXL 100
70			44.77	45.28	P70 MXL 100
72			46.06	46.57	P72 MXL 100
80			51.24	51.74	P80 MXL 100
84			53.82	54.33	P84 MXL 100
96			61.59	62.09	P96 MXL 100
100			64.17	64.68	P100 MXL 100
120			77.11	77.62	P120 MXL 100

Table 1-96

Belt Type	MXL for Belt Width - 6.4mm				
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code
20	B		12.43	12.94	P20 MXL 6.4
21	B		13.07	13.58	P21 MXL 6.4
22	B		13.72	14.23	P22 MXL 6.4
23	B		14.37	14.88	P23 MXL 6.4
24	B		15.02	15.52	P24 MXL 6.4
25	B		15.66	16.17	P25 MXL 6.4
26	B		16.31	16.82	P26 MXL 6.4
27	B	High-Strength Aluminum Alloy	16.96	17.46	P27 MXL 6.4
28	B		17.60	18.11	P28 MXL 6.4
30	B		18.90	19.40	P30 MXL 6.4
32	B		20.19	20.70	P32 MXL 6.4
36	B		22.78	23.29	P36 MXL 6.4
40	B		25.36	25.87	P40 MXL 6.4
48	B		30.54	31.05	P48 MXL 6.4
60	B		38.30	38.81	P60 MXL 6.4
72	B		46.06	46.57	P72 MXL 6.4
84	B		53.82	54.33	P84 MXL 6.4
96	B		61.59	62.09	P96 MXL 6.4
120	B		77.11	77.62	P120 MXL 6.4

Classical Type

Table 1-97

Belt Type			XL		
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code
10	C		15.66	16.17	10 XL 037
11	C		17.28	17.79	11 XL 037
12	C		18.90	19.40	12 XL 037
14	C		22.13	22.64	14 XL 037
15	C		23.75	24.46	15 XL 037
16	B		25.36	25.87	16 XL 037
18	B		28.60	29.11	18 XL 037
19	B	Sintered	30.22	30.72	19 XL 037
20	B	Metal	31.83	32.34	20 XL 037
21	B		33.45	33.96	21 XL 037
22	B		35.07	35.57	22 XL 037
24	B		38.30	38.81	24 XL 037
25	B		39.92	40.43	25 XL 037
26	B		41.53	42.04	26 XL 037
28	B		44.77	45.28	28 XL 037
30	B		48.00	48.51	30 XL 037
32	A・B		51.24	51.74	32 XL 037
34	A・B		54.47	54.98	34 XL 037
36	A・B		57.70	58.21	36 XL 037
38	A・B	Steel	60.94	61.45	38 XL 037
40	A・B		64.17	64.68	40 XL 037
42	A・B		67.41	67.91	42 XL 037
44	A・B		70.64	71.15	44 XL 037
48	W		77.11	77.62	48 XL 037
50	W	Cast	80.34	80.85	50 XL 037
60	W	Metal	96.51	97.02	60 XL 037
72	W		115.92	116.43	72 XL 037

Table 1-99

Belt Type			H				
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code		
14	A・B		55.22	56.60	14H100	14H150	14H200
15	A・B		59.27	60.64	15H100	15H150	15H200
16	A・B		63.31	64.68	16H100	16H150	16H200
18	A・B		71.39	72.77	18H100	18H150	18H200
19	A・B		75.44	76.81	19H100	19H150	19H200
20	A・B		79.48	80.85	20H100	20H150	20H200
21	A・B		83.52	84.89	21H100	21H150	21H200
22	A・B		87.56	88.94	22H100	22H150	22H200
24	A・B	Steel	95.65	97.02	24H100	24H150	24H200
25	A・B		99.69	101.06	25H100	25H150	25H200
26	A・B		103.73	105.11	26H100	26H150	26H200
28	A・B		111.82	113.19	28H100	28H150	28H200
30	A・B		119.90	121.28	30H100	30H150	30H200
32	A・B		127.99	129.36	32H100	32H150	32H200
34	A・B		136.07	137.45	34H100	34H150	34H200
36	A・B		144.16	145.53	36H100	36H150	36H200
40	A・B		160.33	161.70	40H100	40H150	40H200
44	W		176.50	177.87	44H100	44H150	44H200
48	W	Cast	192.67	194.04	48H100	48H150	48H200
50	W	Metal	200.76	202.13	50H100	50H150	50H200
60	W		241.18	242.55	60H100	60H150	60H200
72	W		289.69	291.06	72H100	72H150	72H200

Table 1-98

Belt Type			L				
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code		
10	A・B		29.56	30.32	10 L 050		
12	A・B		35.62	36.38	12 L 050	12 L 075	
14	A・B		41.68	42.45	14 L 050	14 L 075	14 L 100
15	A・B		44.72	45.48	15 L 050	15 L 075	15 L 100
16	A・B		47.75	48.51	16 L 050	16 L 075	16 L 100
17	A・B		50.78	51.54	17 L 050	17 L 075	17 L 100
18	A・B		53.81	54.57	18 L 050	18 L 075	18 L 100
19	A・B		56.84	57.61	19 L 050	19 L 075	19 L 100
20	A・B		59.88	60.64	20 L 050	20 L 075	20 L 100
21	A・B		62.91	63.67	21 L 050	21 L 075	21 L 100
22	A・B	Steel	65.94	66.70	22 L 050	22 L 075	22 L 100
24	A・B		72.00	72.77	24 L 050	24 L 075	24 L 100
25	A・B		75.04	75.80	25 L 050	25 L 075	25 L 100
26	A・B		78.07	78.83	26 L 050	26 L 075	26 L 100
28	A・B		84.13	84.89	28 L 050	28 L 075	28 L 100
30	A・B		90.20	90.96	30 L 050	30 L 075	30 L 100
32	A・B		96.26	97.02	32 L 050	32 L 075	32 L 100
34	A・B		102.32	103.08	34 L 050	34 L 075	34 L 100
36	A・B		108.39	109.15	36 L 050	36 L 075	36 L 100
38	A・B		114.45	115.21	38 L 050	38 L 075	38 L 100
40	A・B		120.51	121.28	40 L 050	40 L 075	40 L 100
44	A・B		132.64	133.40	44 L 050	44 L 075	44 L 100
48	W		144.77	145.53	48 L 050	48 L 075	48 L 100
50	W	Cast	150.83	151.60	50 L 050	50 L 075	50 L 100
60	W	Metal	181.15	181.91	60 L 050	60 L 075	60 L 100
72	W		217.53	218.30	72 L 050	72 L 075	72 L 100

Classical Type

Table 1-100

Belt Type			T5		
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code
12	C		18.25	19.10	PT5-10-12
14	C		21.45	22.28	PT5-10-14
15	C		23.05	23.87	PT5-10-15
16	B		24.60	25.46	PT5-10-16
18	B		27.80	28.65	PT5-10-18
20	B	Sintered Metal	31.00	31.83	PT5-10-20
22	B		34.25	35.01	PT5-10-22
24	B		37.40	38.20	PT5-10-24
25	B		39.00	39.79	PT5-10-25
26	B		40.60	41.38	PT5-10-26
28	B		43.75	44.56	PT5-10-28
30	B		46.95	47.75	PT5-10-30
32	A・B		50.10	50.93	PT5-10-32
36	A・B	Steel	56.45	57.30	PT5-10-36
40	A・B		62.85	63.66	PT5-10-40
44	W		69.20	70.03	PT5-10-44
48	W	Cast Metal	75.55	76.39	PT5-10-48
50	W		78.75	79.58	PT5-10-50
60	W		94.65	95.49	PT5-10-60

Table 1-101

Belt Type			T10			
No. of teeth	Pulley Type	Material	OD (mm)	PD (mm)	Product Code	
12	A・B		36.35	38.20	PT10-15-12	PT10-25-12
14	A・B		42.70	44.56	PT10-15-14	PT10-25-14
15	A・B		45.90	47.75	PT10-15-15	PT10-25-15
16	A・B		49.05	50.93	PT10-15-16	PT10-25-16
18	A・B		55.45	57.30	PT10-15-18	PT10-25-18
20	A・B		61.80	63.66	PT10-15-20	PT10-25-20
22	A・B		68.15	70.03	PT10-15-22	PT10-25-22
24	A・B	Steel	74.55	76.39	PT10-15-24	PT10-25-24
25	A・B		77.70	79.58	PT10-15-25	PT10-25-25
26	A・B		80.90	82.76	PT10-15-26	PT10-25-26
28	A・B		87.25	89.13	PT10-15-28	PT10-25-28
30	A・B		93.65	95.49	PT10-15-30	PT10-25-30
32	A・B		100.00	101.86	PT10-15-32	PT10-25-32
36	A・B		112.75	114.59	PT10-15-36	PT10-25-36
40	A・B		125.45	127.32	PT10-15-40	PT10-25-40
44	W		138.20	140.06	PT10-15-44	PT10-25-44
48	W	Cast Metal	150.95	152.79	PT10-15-48	PT10-25-48
50	W		157.30	159.15	PT10-15-50	PT10-25-50
60	W		189.10	190.99	PT10-15-60	PT10-25-60

Recommended Flange Sizes

* Refer to the below table if interested in customized (made to order) pulleys.

● Flange Code

F - 23 100 80

Thickness (mm)×10   Outer diameter (mm)   Inner diameter (mm)

①Pressed flanges (Thickness: 1.0mm)

Table 1-102

Flange code	Flange dimensions (mm)		Applicable pulleys and number of teeth							
	Outer diameter (F)	Inner diameter (M)	MXL	XL	L	T5	T10	S2M	S3M	S5M
F-101306	13	6	13 14 15					14　15	10 11	
F-101508	15	8	16 17 18					16~19	12 13	
F-101610	16	10	19					20	14	
F-101811	18	11	20 21 22			10		21 22 23	15	
F-102012	20	12	23 24					24	16　17	
F-102312	23	12	25 26	10		11 12		25 26	18	11
F-102313	23	13	27~30					27~30	19 20	12
F-102513	25	13		11						
F-102514	25	14	31	12		13		31 32	21 22	13
F-102616	26	16	32~35	13		14		33~36	23 24	14
F-102818	28	18	36 37 38	14 15		15 16		37 38 39	25 26	15
F-103120	31	20	39 40	16		18		40 41	27 28	16
F-103221	32	21	41 42	17		17		42 43	29	17
F-103322	33	22	43~46	18				44~47	30 31	18 19
F-103522	35	22	47 48 49	19	10	19 20	10	48 49 50	32 33	20
F-103826	38	26	50 51 52	20 21	11	21	11	51 52	34 35	21
F-104028	40	28	53~56			22 23		53~57	36 37 38	22 23
F-104328	43	28	62	22 23	12	24 25	12	63 64		
F-104432	44	32	57~61	24 25	13		13	58~62	39~42	24 25
F-104734	47	34	63~67	26	14	26 27	14	65~68	43~46	26 27
F-104836	48	36	68 69	27 28		28		69 70	47 48	28
F-105136	51	36	70~74	29		29 30		71~75	49 50 51	29
F-105441	54	41	75~79			31 32		76~80	52 53 54	
F-105539	55	39		30	For pulleys with 15 teeth or more, use 1.6 mm thickness.		For pulleys with 15 teeth or more, use 1.6 mm thickness.			For pulleys with 30 teeth or more, use 1.6 mm thickness.
F-105741	57	41	80 81	31 32		33		81 82	55	
F-105941	59	41	82 83 85	33		34 35		83~87	56 57 58	
F-106141	61	41	84・86~90	34 35 36		36		88~92	59~62	
F-106550	65	50	91~94	37 38		37 38		93~96	63 64	
F-106950	69	50	95~101	39 40		39 40 41		97~103	65~69	
F-107453	74	53	102~107	41 42		42 43		104~109	70~73	
F-107858	78	58	108~113	43~46		44 45 46		110~116	74~77	
F-108363	83	63	114~118			47		117~121	78~81	
F-108666	86	66	119~126					122~129	82~86	

・Allow 2 mm flange engagement on pulleys. However, use 2.5 mm for S5M, L and T10.
・Flange is not sold separately as a single item.

②Pressed flanges (Thickness: 1.6mm)

Table 1-103

Flange code	Flange dimensions (mm)		Applicable pulleys and number of teeth			
	Outer diameter (F)	Inner diameter (M)	L	H	T10	S5M
F-165136	51	36	15		15	30
F-165441	54	41				31 32
F-165539	55	39	16			
F-165741	57	41	17		16	33
F-165941	59	41			17	34 35
F-166141	61	41	18	14	18	36
F-166550	65	50	19 20	15	19	37 38
F-166950	69	50	21	16	20	39 40 41
F-167453	74	53	22	17	21 22	42 43 44
F-167858	78	58	23 24	18	23	45 46
F-168363	83	63	25	19	24	47 48
F-168666	86	66	26 27	20	25 26	49 50 51
F-169073	90	73		21	27	52 53
F-169375	93	75	28 29	22	28	54 55 56
F-169978	99	78	30 31	23	29 30	57~60
F-1610584	105	84	32	24	31 32	61~64
F-1610884	108	84	33	25		
F-1611290	112	90	34	26	33	65 66
F-1611590	115	90	35 36	27	34	67 68 69
F-1611890	118	90	37	28	35 36	70 71
F-1612296	122	96		29	37	72 73
F-16126100	126	100	38 39 40	30	38	74 75 76
F-16131101	131	101	41 42	31	39 40	77 78 79
F-16136118	136	118		32	41	80 81
F-16138125	138	125	43 44	33	42	82 83 84
F-16146128	146	128	45 46	34	43 44	85~88
F-16152134	152	134	47 48	35 36	45 46	89~92
F-16159141	159	141	49 50	37 38	47 48	93~96
F-16168150	168	150	52 53	39 40	50	99 100 101

・Allow 2.5 mm flange engagement on pulleys.
・Flange is not sold separately as a single item.

1
Properties

③Pressed flanges (Thickness: 2.3mm)

Table 1-104

Flange code	Flange dimensions (mm)		Applicable pulleys and number of teeth
	Outer diameter (F)	Inner diameter (M)	S8M
F-235436	54	36	18
F-235739	57	39	19
F-236040	60	40	20
F-236244	62	44	21
F-236545	65	45	22
F-237050	70	50	23 24
F-237252	72	52	25
F-237555	75	55	26
F-238060	80	60	27 28
F-238565	85	65	29 30
F-239070	90	70	31 32
F-239575	95	75	33 34
F-2310080	100	80	35 36
F-2310585	105	85	37 38
F-2311090	110	90	39 40
F-2311696	116	96	41 42
F-23121101	121	101	43 44
F-23126103	126	103	45 46
F-23131111	131	111	47 48

・ Allow 3.5 mm flange engagement on pulleys.
・ Flange is not sold separately as a single item.

Flange code	Flange dimensions (mm)		Applicable pulleys and number of teeth	
	Outer diameter (F)	Inner diameter (M)	S8M	S14M
F-23136101	136	101		28
F-23136116	136	116	49 50	
F-23143123	143	123	53	
F-23144111	144	111	51 52	29 30
F-23151130	151	130	56	
F-23152121	152	121	54 55	31 32
F-23154131	154	131	57	
F-23161131	161	131	58 59	33 34
F-23161141	161	141	60	
F-23172141	172	141	61 62	35 36
F-23182149	182	149	65 66	37 38
F-23186155	186	155	67 68	39
F-23190161	190	161	69	40
F-23200164	200	164	72 73	41 42
F-23208173	208	173	75 76	43 44
F-23217182	217	182	79 80	45 46
F-23224190	224	190	82 83	47 48
F-23235200	235	200	86 87	49 50
F-23244208	244	208	89 90	51 52
F-23253217	253	217	93 94	53 54
F-23260224	260	224	96 97	55 56

Pitch Diameter and Outer Diameter Calculations

Use the following formulas to calculate pitch diameters and outer diameters not appearing in this catalog.

Pitch diameter (PD) = Pitch $\times$ Number of teeth $/\pi$
Outer diameter (OD) = Pitch diameter $-$2 PLD

* For T5 and T10, see the table 1-107.

Table 1-107
(mm)

Type	Pitch	2PLD
MXL	2.032	0.508
XL	5.080	0.508
L	9.525	0.762
H	12.700	1.372
XH	22.225	2.794
XXH	31.750	3.048
S2M	2.0	0.508
S3M	3.0	0.762
S5M	5.0	0.96
S8M	8.0	1.372
S14M	14.0	2.794

Table 1-106

Belt type	Tooth Profile	Pitch(mm)	2PLD(mm)
MEGA TORQUE EX	S3M	3.0	0.762
MEGA TORQUE G, EX	S5M	5.0	0.96
MEGA TORQUE G	S8M	8.0	1.372
MEGA TORQUE GII	S8M	8.0	1.54
MEGA TORQUE G, GII	S14M	14.0	2.794
GIGA TORQUE GX	G8M	8.0	1.600
GIGA TORQUE GX	G14M	14.0	2.800

Table 1-107
(mm)

Number of teeth	T5		T10		Number of teeth	T5		T10	
	PD	OD	PD	OD		PD	OD	PD	OD
10	15.92	15.05	31.83	30.00	56	89.13	88.30	178.25	176.40
11	17.51	16.65	35.01	33.15	57	90.72	89.90	181.44	179.60
12	19.10	18.25	38.20	36.35	58	92.31	91.50	184.62	182.75
13	20.69	19.85	41.38	39.50	59	93.90	93.05	187.80	185.95
14	22.28	21.45	44.56	42.70	60	95.49	94.65	190.99	189.10
15	23.87	23.05	47.75	45.90	61	97.08	96.25	194.17	192.30
16	25.46	24.60	50.93	49.05	62	98.68	97.85	197.35	195.50
17	27.06	26.20	54.11	52.25	63	100.27	99.45	200.54	198.65
18	28.65	27.80	57.30	55.45	64	101.86	101.05	203.72	201.85
19	30.24	29.40	60.48	58.60	65	103.45	102.65	206.90	205.05
20	31.83	31.00	63.66	61.80	66	105.04	104.20	210.08	208.20
21	33.42	32.70	66.85	65.00	67	106.63	105.80	213.27	211.40
22	35.01	34.25	70.03	68.15	68	108.23	107.40	216.45	214.60
23	36.61	35.85	73.21	71.35	69	109.82	109.00	219.63	217.75
24	38.20	37.40	76.39	74.55	70	111.41	110.60	222.82	220.95
25	39.79	39.00	79.58	77.70	71	113.00	112.20	226.00	224.15
26	41.38	40.60	82.76	80.90	72	114.59	113.75	229.18	227.30
27	42.97	42.20	85.94	84.10	73	116.18	115.35	232.37	230.50
28	44.56	43.75	89.13	87.25	74	117.77	116.95	235.55	233.70
29	46.15	45.35	92.31	90.45	75	119.37	118.55	238.73	236.90
30	47.75	46.95	95.49	93.65	76	120.96	120.15	241.92	240.05
31	49.34	48.55	98.68	96.80	77	122.55	121.75	245.10	243.25
32	50.93	50.10	101.86	100.00	78	124.14	123.30	248.28	246.40
33	52.52	51.70	105.04	103.20	79	125.73	124.90	251.46	249.60
34	54.11	53.25	108.23	106.40	80	127.32	126.50	254.65	252.80
35	55.70	54.85	111.41	109.55	81	128.92	128.10	257.83	255.95
36	57.30	56.45	114.59	112.75	82	130.51	129.70	261.01	259.15
37	58.89	58.05	117.77	115.90	83	132.10	131.30	264.20	262.35
38	60.48	59.65	120.96	119.10	84	133.69	132.85	267.38	265.50
39	62.07	61.25	124.14	122.30	85	135.28	134.45	270.56	268.70
40	63.66	62.85	127.32	125.45	86	136.87	136.05	273.75	271.90
41	65.25	64.40	130.51	128.65	87	138.46	137.65	276.93	275.05
42	66.85	66.00	133.69	131.85	88	140.06	139.25	280.11	278.25
43	68.44	67.60	136.87	135.00	89	141.65	140.85	283.30	281.45
44	70.03	69.20	140.06	138.20	90	143.24	142.45	286.48	284.60
45	71.62	70.80	143.24	141.40	91	144.83	144.00	289.66	287.80
46	73.21	72.40	146.42	144.55	92	146.42	145.60	292.85	291.00
47	74.80	73.95	149.61	147.75	93	148.01	147.20	296.03	294.15
48	76.39	75.55	152.79	150.95	94	149.61	148.80	299.21	297.35
49	77.99	77.15	155.97	154.10	95	151.20	150.40	302.39	300.55
50	79.58	78.75	159.15	157.30	96	152.79	152.00	305.58	303.70
51	81.17	80.35	162.34	160.50	97	154.38	153.55	308.76	306.90
52	82.76	81.95	165.52	163.65	98	155.97	155.15	311.94	310.10
53	84.35	83.50	168.70	166.85	99	157.56	156.75	315.13	313.25
54	85.94	85.10	171.89	170.05	100	159.15	158.35	318.31	316.45
55	87.54	86.70	175.07	173.20					

Design

2

2.Design

GIGA TORQUE GX Timing Belt Design Manual

Design process

1 Set conditions required in design work.

1.Type of machine

2.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.

3.Degree of load fluctuation (magnitude and speed)

Contact us for the case of using a brake or forward/reverse rotation.

4.Running hours in a single day

5.Small pulley speed

6.Speed ratio

$$\text{Speed ratio} = \frac{\text{Number of teeth on large pulley}}{\text{Number of teeth on small pulley}}$$

7.Interim center distance

8.Restrictions on pulley diameters

9.Special uses and environmental conditions

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

2 Set the design power.

1.How to obtain the service factor (Ks)

$$Ks=Ko+Kr+Ki$$

Wherein, Ks : Service factor
Ko : Service correction factor (table 2-1)
Kr : Speed ratio correction factor (table 2-2)
Ki : Idler correction factor (table 2-3)

2.How to calculate the design power (Pd)

(1)Calculation from the transmission power(Pt)

$$Pd=Pt\times Ks$$

Wherein, Pd : Design power (kW)
Pt : Transmission power (kW)
Ks : Service factor

(2)Calculation from the transmission torque(tq)

$$Tq=tq\times Ks$$

Wherein, Tq : Design torque (N·m)
tq : Transmission torque (N·m)
Ks : Service factor

If it is required to convert the transmission torque (tq) into the transmission power (Pt), apply below formula.

$$Pt=\frac{tq\times n}{9.55\times 10^{3}}$$

Wherein, Pt : Transmission power (kW)
tq : Transmission torque (N·m)
n : Shaft speed (rpm)

2

Design

Service correction factor：Ko

Table 2 -1

Application	Motor					
	Rated max. output of 300% or less			Rated max. output of more than 300%		
	AC motor (standard motor, synchronized motor) DC motor (Shunt) 2 or higher cylinder engine			Special motor (High torque) DC motor (Series coil) 1-cylinder engine Operation by line shaft or clutch		
	Running time (hr/day)			Running time (hr/day)		
	3～5	8～12	16～24	3～5	8～12	16～24
● Carpenter's lathe ● Band saw ● Packaging machine ● Light load belt conveyor	1.2	1.3	1.4	1.4	1.5	1.6
● Screen ● Liquid stirring machine ● Drilling machine ● Lathe ● Threading machine ● Circular saw	1.2	1.4	1.6	1.4	1.6	1.8
● Planer ● Grinder ● Boring machine ● Milling machine ● Centrifugal compressor ● Mixer (cement/viscous medium) ● Vibrating screen ● Shaping machine ● Textile machine ● Belt conveyor (ore, coal or sand)	1.3	1.5	1.7	1.5	1.7	1.9
● Rotary compressor	1.4	1.5	1.6	1.6	1.7	1.8
● Reciprocating compressor ● Injection molding machine ● Extraction pump ● Industrial robots ● Hoist ● Elevator ● Washer ● Rubber processing machine (calender, roll, extrusion machine) ● Fan ● Blower（centrifugal、suction、ventilation） ● Conveyor (apron, pan, bucket elevator)	1.4	1.6	1.8	1.6	1.8	2.0
● Centrifugal separator ● Hammer mill ● Conveyor (flight or screw) ● Papermaking machine (pulper and beater)	1.5	1.7	1.9	1.7	1.9	2.1
● Kiln machinery (brick or kneading machine) ● Fan, blower（mine, roots）	1.6	1.8	2.0	1.8	2.0	2.2

Speed ratio correction factor：Kr

Table 2 -2

Speed ratio	Correction factor Kr
1.00～1.24	0.00
1.25～1.74	0.10
1.75～2.49	0.20
2.50～3.49	0.30
over 3.50	0.40

Idler correction factor：Ki

Table 2 -3

Idler position	Correction factor(Ki)
When used on belt inner, slack side of belt	0
When used on belt outer, slack side of belt	0.1
When used on belt inner, tight side of belt	0.1
When used on belt outer, tight side of belt	0.2

Design flow

3 Select the belt type.

Select the belt type from the quick selection chart according to design power and small pulley revolution.
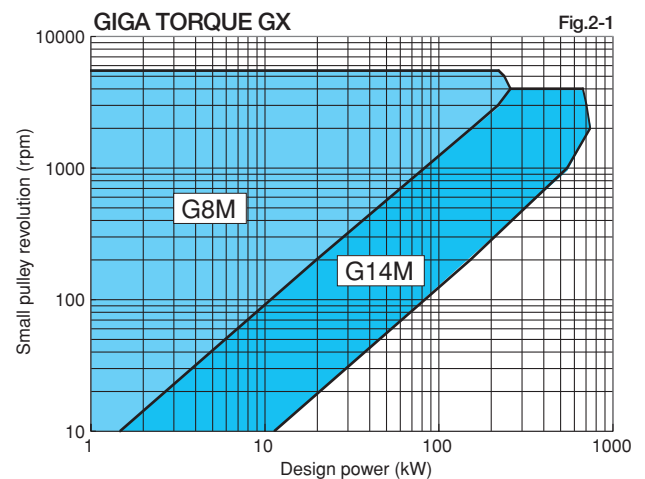
Fig.2-1 GIGA TORQUE GX

2
Design

4 Determine the belt length.

1. Determine the large and small pulleys.

Determine the combination of the large and small pulleys from the already obtained speed ratio.

$$Speed\ ratio = \frac{Number\ of\ teeth\ on\ large\ pulley}{Number\ of\ teeth\ on\ small\ pulley}$$

Use small pulleys that have the number of teeth given in the Table 2-4 or more.

Allowable minimum number of teeth   Table 2 -4

Belt type	Number of teeth	Pitch diameter (mm)	Pitch diameter (inch)
G8M	22 teeth	56.02	2.206
G14M	28 teeth	124.78	4.912

2. Determine the belt length.

Obtain an interim belt length using the below formula from the design center distance, and pitch diameters of large and small pulleys.

$$Lp' = 2C' + \frac{\pi(Dp+dp)}{2} + \frac{(Dp-dp)^2}{4C'}$$

Wherein,
C' : Interim center distance (mm)   **Dp** : Large pulley pitch diameter (mm)
dp : Small pulley pitch diameter (mm)   **Lp'** : Belt pitch length (mm)

Select the belt length closest to the interim belt length obtained here.

3. Determine the correct center distance.

Obtain the correct center distance from the selected belt length using the below formula.

$$C = \frac{b + \sqrt{b^2 - 8(Dp-dp)^2}}{8}$$
$$b = 2Lp - \pi(Dp+dp)$$

Wherein,
Dp : Large pulley pitch diameter (mm)   **dp** : Small pulley pitch diameter (mm)
Lp : Belt pitch length (mm)   **C** : Center distance (mm)

【Concern G8M type tooth pitch】

The belt tooth pitch of G8M type is 7.995mm. Use this tooth pitch when determine the belt length. Pulley tooth pitch is 8.00mm, that must be used for pulley calculations.

Both the belt tooth pitch and pulley tooth pitch of G14M are 14.00mm.

5 Determine the belt width.

1. Determine the interim belt width.

$$Bw' = \frac{Pd}{Ps \times Km \times KL} \times Wp$$

Wherein:
Pd : Design power (kW)
Ps : Basic power rating (kW)
Km : Teeth in mesh correction factor
KL : Length correction factor
Wp : Standard belt width (mm)

Standard belt width Wp (mm)   Table 2 -5

Type	Wp(mm)
G8M	12
G14M	20

2. Obtain the belt width.

Select the belt width closest to the interim belt width (Bw'), but not less than Bw', from Table 2-8.

【Determination of basic power rating : Ps】
The basic power rating for the standard belt width can be obtained from the basic power rating table, using the number of teeth and revolutions of the small pulley.

【Determination of teeth in mesh correction factor : Km】
(Table 2-6)
Calculate the number of teeth in mesh

$$Zm = \frac{Zd \times \theta}{360°}$$

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

Wherein:
Zm : Number of teeth in mesh
Zd : Number of teeth on small pulley
θ : Contact angle(°)
Dp : Large pulley pitch diameter (mm)
dp : Small pulley pitch diameter (mm)
C : Center distance (mm)

【Length correction factor : KL】 (Table2-7)
The power rating can increase by factor 1.00 -1.53 depending on the belt length.

【Width correction factor : Kb】 (Table 2-8)
Width correction factor is used to calculate the power rating of the necessary belt width from the basic power rating table (power rating of the optional standard width).

Teeth in mesh correction factor (Km)   Table 2 -6

Number of teeth in mesh	6 or more	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

2
Design

Length correction factor：KL

（1）8mm tooth pitch

Length	mm	640	720	800	896	960	1000	1040	1120	1200	1224	1280	1440	1600	1760	1792
Teeth number	T	80	90	100	112	120	125	130	140	150	153	160	180	200	220	224
KL		1	1	1	1	1	1	1	1	1.03	1.03	1.05	1.1	1.14	1.17	1.18

Length	mm	2000	2200	2240	2400	2520	2600	2800	2840	3048	3200	3280	3600	4000	4400	4480
Teeth number	T	250	275	280	300	315	325	350	355	381	400	410	450	500	550	560
KL		1.22	1.26	1.26	1.29	1.31	1.32	1.35	1.36	1.38	1.4	1.41	1.45	1.49	1.52	1.53

（2）14mm tooth pitch

Length	mm	994	1120	1190	1260	1400	1568	1610	1750	1890	1960	2100	2240	2310	2380
Teeth number	T	71	80	85	90	100	112	115	125	135	140	150	160	165	170
KL		1	1	1	1	1	1	1	1	1	1	1	1	1	1.01

Length	mm	2450	2520	2590	2660	2800	3136	3304	3360	3500	3850	3920	4326	4410
Teeth number	T	175	180	185	190	200	224	236	240	250	275	280	309	315
KL		1.02	1.03	1.04	1.05	1.07	1.12	1.14	1.14	1.16	1.19	1.2	1.24	1.25

Width correction factor：Kb

（1）8mm tooth pitch

Belt width	mm	12	15	20	21	25	30	36	40	50	60	62	70	80
Kb		1.00	1.25	1.67	1.75	2.08	2.50	3.00	3.33	4.17	5.00	5.17	5.83	6.67

（2）14mm tooth pitch

Belt width	mm	20	30	37	40	50	60	68	70	80	100	115	125	130
Kb		1.00	1.50	1.85	2.00	2.50	3.00	3.40	3.50	4.00	5.00	5.75	6.25	6.50

Design flow

6 Check the center distance adjustment allowance.

Depending upon the selected belt length, take the adjustment allowance from appropriate point to the inner side (installation allowance) and to the outer side (elongation allowance) from table 2-9.

Center distance adjustment allowance

Belt length (mm)	Center distance adjustment allowance	
	Installation (mm)	Elongation(mm)
640～761	15	3
762～1269	15	5
1270～4480	15	10

Design flow

7 **Check the belt tension.**

Without proper tension, power transmission capability and durability can not be maintained at satisfactory levels.
Moreover, if the belt is loose, the slack side vibrates. If it is tight, the tight side vibrates.

For belt installation, draw the belt to the installation tension and then rotate the belt 10 times and adjust the installation tension.
After the belt is installed in proper tension, the retension of the belt is usually unnecessary.
Retensioning a timing belt can actually worsen engagement and shorten belt service life.

Use the installation tension from table 2-10 for belt installation.

Installation tension Table 2-10

Width (mm)	G8M		G14M	
	Min(N)	Max(N)	Min(N)	Max(N)
12	191	260		
15	239	325		
20	320	434	821	1111
21	336	456		
25	401	543		
30	482	652	1230	1666
36	579	782		
37			1517	2054
40	644	868	1640	2221
50	805	1084	2050	2776
60	967	1300	2460	3331
62	999	1342		
68			2788	3775
70	1128	1514	2870	3886
80	1289	1728	3281	4441
100			4101	5551
115			4717	6384
125			5127	6940
130			5333	7217

To measure static tension, use sonic type tension gauge. Belt weight per unit of GIGA TORQUE GX is shown in Table 2-11.

Belt weight per unit Table 2-11

Belt width	G8M	G14M
10mm (kg/m)	0.049	0.083
1mm (g/m)	4.9	8.3

Belt width tolerance

Belt width tolerance (GIGA TORQUE GX) Table 2-12

Belt width Bw(mm)	Belt length Lp (mm)			
	Lp≦351	351<Lp≦840	840<Lp≦1680	1680<Lp
Bw≦40	±0.60	±0.60	±0.60	±0.60
40<Bw≦50	±0.60	±0.60	±1.00	+1.00 −1.30
50<Bw≦75	+1.00 −1.30	+1.00 −1.30	±1.30	+1.30 −1.60
75<Bw≦100	±1.30	±1.30	+1.30 −1.60	±1.60
100<Bw	+1.30 −1.60	±2.00	+2.00 −2.30	+2.00 −2.60

Belt length tolerance

Belt length tolerance (GIGA TORQUE GX) Table 2-13

Belt length Lp (mm)	Length tolerance (mm)	Center distance tolerance (mm)
Lp≦ 254	±0.40	±0.20
254 <Lp≦ 381	±0.46	±0.23
381 <Lp≦ 508	±0.50	±0.25
508 <Lp≦ 762	±0.60	±0.30
762 <Lp≦1016	±0.66	±0.33
1016 <Lp≦1270	±0.76	±0.38
1270 <Lp≦1524	±0.82	±0.41
1524 <Lp≦1778	±0.86	±0.43
1778 <Lp≦2032	±0.92	±0.46
2032 <Lp≦2286	±0.98	±0.49
2286 <Lp≦2540	±1.04	±0.52
2540 <Lp≦2794	±1.08	±0.54
2794 <Lp≦3048	±1.12	±0.56
3048 <Lp≦3302	±1.16	±0.58
3302 <Lp≦3556	±1.20	±0.60
3556 <Lp≦3810	±1.26	±0.63
3810 <Lp≦4064	±1.32	±0.66
4064 <Lp≦4318	±1.38	±0.69
4318 <Lp≦4572	±1.44	±0.72

2
Design

GIGA TORQUE GX G8M Basic power rating

(For12mm belt width)

kW G8M(GX) / 12mm

Table 2-14a

Number of Teeth	22	25	26	27	28	29	30	31	32	33	34	35	36	37	38
φ (inch)	2.206	2.506	2.607	2.707	2.807	2.907	3.008	3.108	3.208	3.308	3.409	3.509	3.609	3.709	3.810
Revolution (rpm) φ (mm)	56.02	63.66	66.21	68.75	71.30	73.85	76.39	78.94	81.49	84.03	86.58	89.13	91.67	94.22	96.77
10	0.12	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.23
20	0.18	0.21	0.22	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.36
30	0.23	0.28	0.30	0.31	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.45	0.47	0.48
40	0.29	0.35	0.37	0.39	0.41	0.43	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.60
50	0.34	0.41	0.43	0.46	0.48	0.51	0.53	0.55	0.58	0.60	0.62	0.64	0.67	0.69	0.71
60	0.39	0.47	0.50	0.53	0.56	0.58	0.61	0.64	0.66	0.69	0.72	0.75	0.77	0.80	0.83
70	0.44	0.53	0.57	0.60	0.63	0.66	0.69	0.72	0.75	0.78	0.81	0.85	0.88	0.91	0.94
80	0.49	0.59	0.63	0.66	0.70	0.73	0.77	0.80	0.84	0.87	0.91	0.94	0.98	1.01	1.05
90	0.54	0.65	0.69	0.73	0.77	0.81	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.15
100	0.58	0.71	0.75	0.80	0.84	0.88	0.92	0.97	1.01	1.05	1.09	1.13	1.18	1.22	1.26
200	1.03	1.26	1.34	1.42	1.50	1.58	1.66	1.74	1.81	1.89	1.97	2.05	2.13	2.20	2.28
300	1.44	1.78	1.90	2.01	2.12	2.24	2.35	2.46	2.58	2.69	2.80	2.91	3.02	3.14	3.25
400	1.83	2.28	2.43	2.58	2.72	2.87	3.02	3.16	3.31	3.46	3.60	3.75	3.89	4.04	4.18
500	2.21	2.76	2.94	3.13	3.31	3.49	3.67	3.85	4.03	4.20	4.38	4.56	4.74	4.92	5.09
600	2.58	3.23	3.45	3.66	3.87	4.09	4.30	4.51	4.72	4.94	5.15	5.36	5.57	5.78	5.99
700	2.94	3.69	3.94	4.18	4.43	4.68	4.92	5.17	5.41	5.65	5.90	6.14	6.38	6.62	6.86
800	3.30	4.14	4.42	4.70	4.98	5.26	5.53	5.81	6.08	6.36	6.63	6.91	7.18	7.45	7.73
900	3.64	4.58	4.90	5.21	5.52	5.83	6.13	6.44	6.75	7.05	7.36	7.67	7.97	8.27	8.58
1000	3.98	5.02	5.36	5.70	6.05	6.39	6.73	7.07	7.40	7.74	8.08	8.41	8.75	9.08	9.42
1100	4.32	5.45	5.82	6.20	6.57	6.94	7.31	7.68	8.05	8.42	8.79	9.15	9.52	9.88	10.25
1200	4.65	5.87	6.28	6.68	7.09	7.49	7.89	8.29	8.69	9.09	9.49	9.88	10.28	10.67	11.07
1300	4.97	6.29	6.73	7.16	7.60	8.03	8.46	8.89	9.32	9.75	10.18	10.61	11.03	11.46	11.88
1400	5.30	6.71	7.17	7.64	8.10	8.57	9.03	9.49	9.95	10.41	10.87	11.32	11.78	12.23	12.69
1500	5.61	7.12	7.61	8.11	8.60	9.10	9.59	10.08	10.57	11.06	11.55	12.03	12.52	13.00	13.49
1600	5.93	7.52	8.05	8.57	9.10	9.63	10.15	10.67	11.19	11.70	12.22	12.74	13.25	13.77	14.28
1700	6.24	7.92	8.48	9.04	9.59	10.15	10.70	11.25	11.80	12.34	12.89	13.44	13.98	14.52	15.06
1800	6.54	8.32	8.91	9.49	10.08	10.66	11.24	11.82	12.40	12.98	13.55	14.13	14.70	15.27	15.84
1900	6.85	8.71	9.33	9.95	10.56	11.18	11.78	12.39	13.00	13.61	14.21	14.82	15.42	16.02	16.62
2000	7.15	9.10	9.75	10.40	11.04	11.68	12.32	12.96	13.60	14.23	14.87	15.50	16.13	16.76	17.38
2200	7.74	9.88	10.58	11.29	11.99	12.69	13.39	14.08	14.78	15.47	16.16	16.85	17.53	18.22	18.90
2400	8.32	10.64	11.40	12.16	12.92	13.68	14.43	15.19	15.94	16.68	17.43	18.18	18.92	19.66	20.40
2600	8.90	11.38	12.21	13.02	13.84	14.66	15.47	16.28	17.08	17.89	18.69	19.49	20.28	21.08	21.87
2800	9.46	12.12	13.00	13.87	14.75	15.62	16.49	17.35	18.21	19.07	19.93	20.78	21.63	22.48	23.33
3000	10.02	12.85	13.78	14.71	15.64	16.57	17.49	18.41	19.33	20.24	21.15	22.06	22.96	23.87	24.77
3500	11.37	14.62	15.70	16.77	17.83	18.90	19.95	21.01	22.06	23.10	24.15	25.19	26.22	27.25	28.28
4000	12.68	16.34	17.55	18.76	19.96	21.15	22.34	23.53	24.71	25.88	27.05	28.22	29.37	30.53	31.68
4500	13.94	18.01	19.35	20.69	22.02	23.34	24.66	25.97	27.27	28.57	29.86	31.15	32.43	33.70	34.97
5000	15.17	19.63	21.10	22.56	24.02	25.47	26.90	28.34	29.76	31.18	32.59	33.99	35.38	36.77	38.15
5500	16.35	21.19	22.79	24.37	25.95	27.52	29.08	30.63	32.17	33.70	35.22	36.74	38.24	39.73	41.22

If the revolution is less than 10 rpm, calculate power rating proportionally with 10 rpm.

2
Design

GIGA TORQUE GX G8M Basic power rating

(For12mm belt width)

kW G8M(GX) / 12mm

Table 2-14a

Number of Teeth	39	40	41	42	45	48	50	53	56	60	63	67	71	75	80
φ (inch)	3.910	4.010	4.110	4.211	4.511	4.812	5.013	5.314	5.614	6.015	6.316	6.717	7.118	7.519	8.020
Revolution (rpm) φ (mm)	99.31	101.86	104.41	106.95	114.59	122.23	127.32	134.96	142.60	152.79	160.43	170.61	180.80	190.99	203.72
10	0.24	0.24	0.25	0.26	0.28	0.30	0.31	0.33	0.35	0.38	0.40	0.43	0.45	0.48	0.51
20	0.37	0.38	0.39	0.40	0.44	0.47	0.49	0.53	0.56	0.60	0.63	0.68	0.72	0.77	0.82
30	0.50	0.51	0.53	0.54	0.59	0.63	0.66	0.71	0.75	0.81	0.86	0.92	0.98	1.04	1.11
40	0.62	0.64	0.66	0.68	0.73	0.79	0.83	0.89	0.94	1.02	1.07	1.15	1.22	1.30	1.39
50	0.74	0.76	0.78	0.81	0.88	0.94	0.99	1.06	1.13	1.22	1.28	1.37	1.46	1.55	1.66
60	0.85	0.88	0.91	0.93	1.01	1.09	1.15	1.23	1.31	1.41	1.49	1.59	1.70	1.80	1.93
70	0.97	1.00	1.03	1.06	1.15	1.24	1.30	1.39	1.48	1.60	1.69	1.81	1.93	2.05	2.20
80	1.08	1.12	1.15	1.18	1.29	1.39	1.46	1.56	1.66	1.79	1.89	2.03	2.16	2.29	2.46
90	1.19	1.23	1.27	1.31	1.42	1.53	1.61	1.72	1.83	1.98	2.09	2.24	2.39	2.53	2.72
100	1.30	1.34	1.39	1.43	1.55	1.68	1.76	1.88	2.00	2.17	2.29	2.45	2.61	2.77	2.97
200	2.36	2.43	2.51	2.59	2.82	3.05	3.20	3.43	3.65	3.95	4.18	4.48	4.77	5.07	5.44
300	3.36	3.47	3.58	3.69	4.02	4.35	4.57	4.90	5.22	5.66	5.98	6.41	6.84	7.27	7.80
400	4.33	4.47	4.62	4.76	5.19	5.62	5.90	6.32	6.75	7.31	7.73	8.29	8.84	9.40	10.08
500	5.27	5.45	5.62	5.80	6.33	6.85	7.20	7.72	8.24	8.92	9.44	10.12	10.80	11.48	12.32
600	6.19	6.40	6.61	6.82	7.44	8.06	8.47	9.08	9.70	10.51	11.11	11.92	12.72	13.52	14.51
700	7.10	7.34	7.58	7.82	8.54	9.25	9.72	10.43	11.13	12.07	12.76	13.69	14.61	15.53	16.67
800	8.00	8.27	8.54	8.81	9.62	10.42	10.95	11.75	12.55	13.60	14.39	15.43	16.47	17.51	18.79
900	8.88	9.18	9.48	9.78	10.68	11.58	12.17	13.06	13.94	15.12	15.99	17.15	18.31	19.46	20.89
1000	9.75	10.08	10.41	10.74	11.74	12.72	13.37	14.35	15.32	16.61	17.58	18.85	20.13	21.39	22.96
1100	10.61	10.97	11.34	11.70	12.78	13.85	14.56	15.63	16.69	18.10	19.15	20.54	21.92	23.30	25.01
1200	11.46	11.85	12.25	12.64	13.81	14.97	15.74	16.89	18.04	19.56	20.70	22.20	23.70	25.19	27.04
1300	12.30	12.73	13.15	13.57	14.83	16.08	16.91	18.14	19.38	21.01	22.23	23.85	25.46	27.05	29.04
1400	13.14	13.59	14.04	14.49	15.84	17.17	18.06	19.38	20.70	22.45	23.75	25.48	27.20	28.90	31.02
1500	13.97	14.45	14.93	15.41	16.84	18.26	19.20	20.61	22.02	23.87	25.26	27.09	28.92	30.73	32.98
1600	14.79	15.30	15.81	16.31	17.83	19.34	20.34	21.83	23.32	25.29	26.75	28.69	30.62	32.54	34.92
1700	15.60	16.14	16.68	17.21	18.82	20.41	21.46	23.04	24.61	26.68	28.23	30.28	32.31	34.33	36.84
1800	16.41	16.98	17.54	18.11	19.79	21.47	22.58	24.24	25.89	28.07	29.70	31.85	33.99	36.11	38.74
1900	17.21	17.81	18.40	18.99	20.76	22.52	23.69	25.43	27.16	29.45	31.15	33.41	35.65	37.87	40.62
2000	18.01	18.63	19.25	19.87	21.73	23.57	24.79	26.61	28.41	30.81	32.59	34.95	37.29	39.61	42.48
2200	19.58	20.26	20.94	21.61	23.63	25.63	26.96	28.94	30.90	33.50	35.44	37.99	40.53	43.04	46.14
2400	21.13	21.87	22.60	23.33	25.50	27.67	29.10	31.23	33.35	36.15	38.23	40.98	43.70	46.40	49.72
2600	22.66	23.45	24.24	25.02	27.35	29.67	31.20	33.49	35.76	38.75	40.98	43.91	46.82	49.69	53.23
2800	24.17	25.01	25.85	26.68	29.18	31.65	33.28	35.72	38.13	41.31	43.68	46.79	49.87	52.91	56.65
3000	25.66	26.55	27.45	28.33	30.98	33.60	35.33	37.91	40.46	43.83	46.33	49.61	52.86	56.06	59.98
3500	29.30	30.32	31.34	32.35	35.36	38.34	40.31	43.23	46.12	49.92	52.73	56.41	—	—	—
4000	32.82	33.97	35.10	36.23	39.59	42.91	45.10	48.34	51.53	55.72	—	—	—	—	—
4500	36.23	37.49	38.74	39.98	43.67	47.30	49.69	53.22	—	—	—	—	—	—	—
5000	39.52	40.88	42.24	43.59	47.58	51.50	—	—	—	—	—	—	—	—	—
5500	42.69	44.16	45.61	47.05	51.33	—	—	—	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, calculate power rating proportionally with 10 rpm.

2 Design

GIGA TORQUE GX G8M Basic power rating (torque)

(For 12mm belt width)

N·m G8M(GX) / 12mm

Table 2-14b

Number of Teeth	22	25	26	27	28	29	30	31	32	33	34	35	36	37	38
φ (inch)	2.206	2.506	2.607	2.707	2.807	2.907	3.008	3.108	3.208	3.308	3.409	3.509	3.609	3.709	3.810
Revolution (rpm) \ φ (mm)	56.02	63.66	66.21	68.75	71.30	73.85	76.39	78.94	81.49	84.03	86.58	89.13	91.67	94.22	96.77
10	112	132	139	145	152	159	165	172	178	185	192	198	205	211	218
20	85	102	107	112	118	123	129	134	139	145	150	155	161	166	171
30	75	90	95	99	104	109	114	119	124	129	134	139	144	148	153
40	69	83	88	92	97	102	106	111	115	120	125	129	134	139	143
50	65	79	83	87	92	96	101	105	110	114	119	123	128	132	136
60	62	75	80	84	88	93	97	101	106	110	114	119	123	127	132
70	60	73	77	81	86	90	94	98	103	107	111	115	119	124	128
80	58	71	75	79	83	88	92	96	100	104	108	113	117	121	125
90	57	69	73	78	82	86	90	94	98	102	106	110	114	118	122
100	56	68	72	76	80	84	88	92	96	100	104	108	112	116	120
200	49	60	64	68	72	75	79	83	87	90	94	98	101	105	109
300	46	57	60	64	68	71	75	78	82	86	89	93	96	100	103
400	44	54	58	62	65	69	72	76	79	83	86	89	93	96	100
500	42	53	56	60	63	67	70	73	77	80	84	87	91	94	97
600	41	51	55	58	62	65	68	72	75	79	82	85	89	92	95
700	40	50	54	57	60	64	67	70	74	77	80	84	87	90	94
800	39	49	53	56	59	63	66	69	73	76	79	82	86	89	92
900	39	49	52	55	59	62	65	68	72	75	78	81	85	88	91
1000	38	48	51	54	58	61	64	67	71	74	77	80	84	87	90
1100	37	47	51	54	57	60	63	67	70	73	76	79	83	86	89
1200	37	47	50	53	56	60	63	66	69	72	76	79	82	85	88
1300	37	46	49	53	56	59	62	65	68	72	75	78	81	84	87
1400	36	46	49	52	55	58	62	65	68	71	74	77	80	83	87
1500	36	45	48	52	55	58	61	64	67	70	74	77	80	83	86
1600	35	45	48	51	54	57	61	64	67	70	73	76	79	82	85
1700	35	45	48	51	54	57	60	63	66	69	72	75	79	82	85
1800	35	44	47	50	53	57	60	63	66	69	72	75	78	81	84
1900	34	44	47	50	53	56	59	62	65	68	71	74	77	81	84
2000	34	43	47	50	53	56	59	62	65	68	71	74	77	80	83
2200	34	43	46	49	52	55	58	61	64	67	70	73	76	79	82
2400	33	42	45	48	51	54	57	60	63	66	69	72	75	78	81
2600	33	42	45	48	51	54	57	60	63	66	69	72	75	77	80
2800	32	41	44	47	50	53	56	59	62	65	68	71	74	77	80
3000	32	41	44	47	50	53	56	59	62	64	67	70	73	76	79
3500	31	40	43	46	49	52	54	57	60	63	66	69	72	74	77
4000	30	39	42	45	48	51	53	56	59	62	65	67	70	73	76
4500	30	38	41	44	47	50	52	55	58	61	63	66	69	72	74
5000	29	37	40	43	46	49	51	54	57	60	62	65	68	70	73
5500	28	37	40	42	45	48	50	53	56	59	61	64	66	69	72

If the revolution is less than 10 rpm, use power rating of 10 rpm.

GIGA TORQUE GX G8M Basic power rating (torque)
(For12mm belt width)

Table 2-14b

Number of Teeth	39	40	41	42	45	48	50	53	56	60	63	67	71	75	80
φ (inch)	3.910	4.010	4.110	4.211	4.511	4.812	5.013	5.314	5.614	6.015	6.316	6.717	7.118	7.519	8.020
φ (mm) / Revolution (rpm)	99.31	101.86	104.41	106.95	114.59	122.23	127.32	134.96	142.60	152.79	160.43	170.61	180.80	190.99	203.72
10	224	231	238	244	264	283	296	316	335	361	380	406	432	457	489
20	177	182	187	193	209	224	235	251	267	288	303	324	345	366	391
30	158	163	168	173	187	202	211	226	240	259	273	292	311	330	353
40	148	152	157	161	175	189	198	211	225	243	256	274	292	310	332
50	141	145	150	154	167	180	189	202	215	232	245	262	280	297	318
60	136	140	144	149	161	174	183	195	208	225	237	254	270	287	308
70	132	136	140	145	157	169	178	190	202	219	231	247	264	280	300
80	129	133	137	141	154	166	174	186	198	214	226	242	258	274	294
90	126	131	135	139	151	163	171	183	194	210	222	238	253	269	288
100	124	128	132	136	148	160	168	180	191	207	219	234	249	265	284
200	113	116	120	124	135	145	153	164	174	189	199	214	228	242	260
300	107	110	114	118	128	139	145	156	166	180	190	204	218	231	248
400	103	107	110	114	124	134	141	151	161	175	185	198	211	224	241
500	101	104	107	111	121	131	137	147	157	170	180	193	206	219	235
600	99	102	105	109	118	128	135	145	154	167	177	190	202	215	231
700	97	100	103	107	116	126	133	142	152	165	174	187	199	212	227
800	95	99	102	105	115	124	131	140	150	162	172	184	197	209	224
900	94	97	101	104	113	123	129	139	148	160	170	182	194	207	222
1000	93	96	99	103	112	121	128	137	146	159	168	180	192	204	219
1100	92	95	98	102	111	120	126	136	145	157	166	178	190	202	217
1200	91	94	97	101	110	119	125	134	144	156	165	177	189	200	215
1300	90	93	97	100	109	118	124	133	142	154	163	175	187	199	213
1400	90	93	96	99	108	117	123	132	141	153	162	174	186	197	212
1500	89	92	95	98	107	116	122	131	140	152	161	172	184	196	210
1600	88	91	94	97	106	115	121	130	139	151	160	171	183	194	208
1700	88	91	94	97	106	115	121	129	138	150	159	170	182	193	207
1800	87	90	93	96	105	114	120	129	137	149	158	169	180	192	206
1900	87	90	92	95	104	113	119	128	136	148	157	168	179	190	204
2000	86	89	92	95	104	113	118	127	136	147	156	167	178	189	203
2200	85	88	91	94	103	111	117	126	134	145	154	165	176	187	200
2400	84	87	90	93	101	110	116	124	133	144	152	163	174	185	198
2600	83	86	89	92	100	109	115	123	131	142	151	161	172	183	196
2800	82	85	88	91	100	108	114	122	130	141	149	160	170	180	193
3000	82	85	87	90	99	107	112	121	129	140	147	158	168	178	191
3500	80	83	86	88	96	105	110	118	126	136	144	154	—	—	—
4000	78	81	84	86	95	102	108	115	123	133	—	—	—	—	—
4500	77	80	82	85	93	100	105	113	—	—	—	—	—	—	—
5000	75	78	81	83	91	98	—	—	—	—	—	—	—	—	—
5500	74	77	79	82	89	—	—	—	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, use power rating of 10 rpm.

GIGA TORQUE GX G14M Basic power rating
(For 20mm belt width)

kW G14M(GX) / 20mm

Table 2-15a

Number of Teeth	28	29	30	31	32	33	34	35	36	37	38	39	40	43	45
ϕ (inch)	4.912	5.088	5.263	5.439	5.614	5.790	5.965	6.141	6.316	6.492	6.667	6.842	7.018	7.544	7.895
Revolution (rpm) ϕ (mm)	124.78	129.23	133.69	138.15	142.60	147.06	151.52	155.97	160.43	164.88	169.34	173.80	178.25	191.62	200.54
10	0.91	0.94	0.98	1.02	1.05	1.09	1.12	1.16	1.19	1.23	1.27	1.30	1.34	1.44	1.51
20	1.40	1.46	1.52	1.57	1.63	1.69	1.74	1.80	1.86	1.91	1.97	2.02	2.08	2.25	2.36
30	1.86	1.94	2.01	2.09	2.17	2.24	2.32	2.39	2.47	2.54	2.62	2.69	2.77	2.99	3.14
40	2.29	2.39	2.48	2.58	2.67	2.77	2.86	2.96	3.05	3.15	3.24	3.33	3.43	3.71	3.89
50	2.71	2.83	2.94	3.05	3.17	3.28	3.39	3.51	3.62	3.73	3.84	3.95	4.06	4.40	4.62
60	3.12	3.25	3.38	3.51	3.65	3.78	3.91	4.04	4.17	4.30	4.43	4.55	4.68	5.07	5.32
70	3.52	3.67	3.82	3.97	4.11	4.26	4.41	4.56	4.70	4.85	5.00	5.14	5.29	5.73	6.02
80	3.91	4.07	4.24	4.41	4.57	4.74	4.90	5.07	5.23	5.39	5.56	5.72	5.88	6.37	6.69
90	4.29	4.47	4.66	4.84	5.02	5.21	5.39	5.57	5.75	5.93	6.11	6.29	6.47	7.00	7.36
100	4.67	4.87	5.07	5.27	5.47	5.67	5.87	6.06	6.26	6.46	6.65	6.85	7.05	7.63	8.02
200	8.21	8.58	8.94	9.30	9.65	10.01	10.37	10.72	11.08	11.43	11.79	12.14	12.49	13.54	14.23
300	11.50	12.01	12.52	13.03	13.54	14.05	14.55	15.06	15.56	16.06	16.56	17.06	17.56	19.04	20.03
400	14.62	15.27	15.93	16.59	17.24	17.89	18.54	19.18	19.83	20.47	21.11	21.75	22.39	24.29	25.55
500	17.61	18.41	19.21	20.00	20.79	21.58	22.37	23.15	23.93	24.71	25.49	26.27	27.04	29.34	30.87
600	20.51	21.44	22.38	23.31	24.24	25.16	26.08	27.00	27.92	28.83	29.74	30.64	31.55	34.24	36.03
700	23.32	24.39	25.46	26.53	27.59	28.64	29.70	30.74	31.79	32.83	33.87	34.90	35.94	39.01	41.05
800	26.07	27.27	28.47	29.67	30.85	32.04	33.22	34.40	35.57	36.74	37.90	39.07	40.22	43.67	45.96
900	28.75	30.08	31.41	32.73	34.05	35.36	36.67	37.97	39.27	40.56	41.85	43.14	44.41	48.23	50.76
1000	31.38	32.84	34.29	35.74	37.18	38.62	40.05	41.47	42.90	44.31	45.72	47.12	48.52	52.70	55.46
1100	33.96	35.54	37.12	38.69	40.25	41.81	43.37	44.91	46.45	47.98	49.51	51.04	52.55	57.08	60.07
1160	35.48	37.14	38.79	40.44	42.07	43.70	45.33	46.94	48.56	50.16	51.76	53.35	54.94	59.67	62.79
1200	36.49	38.19	39.90	41.59	43.27	44.95	46.63	48.29	49.95	51.60	53.24	54.88	56.51	61.38	64.59
1300	38.98	40.80	42.63	44.44	46.24	48.04	49.83	51.61	53.38	55.15	56.91	58.66	60.40	65.60	69.04
1400	41.42	43.37	45.31	47.24	49.16	51.07	52.98	54.87	56.76	58.64	60.51	62.38	64.23	69.76	73.41
1500	43.83	45.90	47.95	50.00	52.03	54.06	56.08	58.09	60.09	62.07	64.06	66.03	68.00	73.84	77.70
1600	46.21	48.38	50.56	52.72	54.86	57.00	59.14	61.25	63.36	65.46	67.55	69.63	71.70	77.86	81.92
1700	48.54	50.84	53.12	55.40	57.65	59.90	62.14	64.37	66.59	68.79	70.99	73.17	75.35	81.81	86.07
1800	50.85	53.25	55.65	58.03	60.40	62.76	65.11	67.44	69.76	72.07	74.37	76.66	78.94	85.70	90.16
1900	53.12	55.64	58.14	60.64	63.11	65.58	68.03	70.47	72.89	75.30	77.71	80.10	82.47	89.53	94.17
2000	55.36	57.99	60.60	63.20	65.78	68.35	70.91	73.45	75.98	78.49	80.99	83.48	85.95	93.29	98.12
2200	59.75	62.59	65.42	68.23	71.01	73.79	76.55	79.29	82.01	84.72	87.41	90.09	92.75	100.63	105.82
2400	64.03	67.07	70.10	73.12	76.10	79.08	82.03	84.96	87.87	90.76	93.64	96.50	99.34	107.74	113.25
2600	68.19	71.44	74.67	77.88	81.05	84.22	87.36	90.47	93.56	96.63	99.68	102.71	105.71	114.60	120.42
2800	72.25	75.69	79.11	82.50	85.87	89.21	92.53	95.82	99.08	102.32	105.53	108.72	111.88	121.22	127.32
3000	76.20	79.83	83.43	87.01	90.55	94.06	97.55	101.00	104.43	107.83	111.20	114.54	117.84	127.59	133.95
3500	85.62	89.69	93.72	97.71	101.66	105.57	109.45	113.27	117.06	120.81	124.52	128.19	131.81	—	—
4000	94.40	98.86	103.27	107.63	111.93	116.19	120.39	124.52	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, calculate power rating proportionally with 10 rpm.

2
Design

GIGA TORQUE GX G14M Basic power rating

(For 20mm belt width)

kW G14M(GX) / 20mm

Table 2-15a

Number of Teeth	48	50	53	56	60	63	67	71	75	80
φ (inch)	8.421	8.772	9.299	9.825	10.527	11.053	11.755	12.457	13.158	14.036
Revolution (rpm) φ (mm)	213.90	222.82	236.19	249.55	267.38	280.75	298.57	316.40	334.23	356.51
10	1.62	1.69	1.79	1.90	2.04	2.14	2.28	2.41	2.55	2.72
20	2.53	2.64	2.80	2.97	3.18	3.35	3.56	3.78	4.00	4.26
30	3.37	3.51	3.74	3.96	4.25	4.47	4.76	5.05	5.34	5.70
40	4.17	4.35	4.63	4.90	5.27	5.54	5.90	6.26	6.62	7.06
50	4.95	5.17	5.49	5.82	6.25	6.58	7.01	7.43	7.86	8.39
60	5.71	5.96	6.34	6.71	7.21	7.59	8.08	8.58	9.07	9.68
70	6.45	6.73	7.16	7.59	8.15	8.58	9.14	9.70	10.25	10.94
80	7.17	7.49	7.97	8.45	9.08	9.55	10.17	10.80	11.41	12.18
90	7.89	8.24	8.77	9.29	9.99	10.51	11.19	11.88	12.56	13.40
100	8.60	8.98	9.56	10.13	10.88	11.45	12.20	12.94	13.69	14.61
200	15.27	15.96	16.99	18.01	19.36	20.37	21.71	23.04	24.36	26.01
300	21.49	22.47	23.92	25.36	27.27	28.70	30.59	32.46	34.33	36.64
400	27.43	28.67	30.53	32.37	34.82	36.64	39.05	41.45	43.83	46.78
500	33.14	34.65	36.90	39.13	42.09	44.29	47.21	50.10	52.98	56.54
600	38.69	40.45	43.08	45.69	49.14	51.71	55.11	58.49	61.83	65.98
700	44.09	46.10	49.09	52.07	56.00	58.93	62.79	66.63	70.44	75.15
800	49.36	51.61	54.96	58.29	62.69	65.96	70.28	74.57	78.81	84.07
900	54.51	57.00	60.70	64.37	69.22	72.83	77.59	82.31	86.98	92.75
1000	59.56	62.28	66.32	70.32	75.62	79.54	84.73	89.86	94.94	101.20
1100	64.51	67.45	71.82	76.15	81.87	86.11	91.71	97.24	102.71	109.45
1160	67.43	70.51	75.08	79.60	85.56	89.99	95.82	101.58	107.28	114.29
1200	69.37	72.53	77.22	81.87	88.00	92.54	98.53	104.45	110.29	117.48
1300	74.13	77.51	82.52	87.47	94.00	98.84	105.20	111.48	117.68	125.30
1400	78.82	82.40	87.71	92.96	99.88	105.00	111.73	118.36	124.89	132.90
1500	83.42	87.20	92.81	98.35	105.64	111.02	118.10	125.07	131.91	140.30
1600	87.94	91.92	97.82	103.63	111.28	116.92	124.33	131.61	138.75	147.49
1700	92.39	96.55	102.73	108.81	116.80	122.69	130.41	137.99	145.41	154.46
1800	96.75	101.10	107.55	113.89	122.21	128.33	136.35	144.20	151.87	—
1900	101.04	105.57	112.27	118.86	127.49	133.84	142.13	150.24	—	—
2000	105.26	109.96	116.91	123.73	132.66	139.22	147.77	—	—	—
2200	113.46	118.49	125.90	133.17	142.64	149.57	—	—	—	—
2400	121.36	126.69	134.53	142.18	—	—	—	—	—	—
2600	128.96	134.56	142.77	—	—	—	—	—	—	—
2800	136.26	142.09	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, calculate power rating proportionally with 10 rpm.

2 Design

GIGA TORQUE GX G14M Basic power rating (torque)
(For 20mm belt width)

N·m G14M(GX) / 20mm

Table 2-15b

Number of Teeth	28	29	30	31	32	33	34	35	36	37	38	39	40	43	45
φ (inch)	4.912	5.088	5.263	5.439	5.614	5.790	5.965	6.141	6.316	6.492	6.667	6.842	7.018	7.544	7.895
Revolution (rpm) φ (mm)	124.78	129.23	133.69	138.15	142.60	147.06	151.52	155.97	160.43	164.88	169.34	173.80	178.25	191.62	200.54
10	868	902	936	970	1004	1039	1073	1106	1140	1174	1208	1242	1276	1377	1444
20	670	697	725	752	779	806	833	860	886	913	940	967	993	1073	1126
30	592	616	641	665	689	714	738	762	786	810	834	858	882	953	1001
40	548	570	593	616	639	661	684	706	729	751	774	796	818	885	930
50	518	540	562	583	605	626	648	669	691	712	734	755	776	840	882
60	497	518	539	559	580	601	622	643	663	684	704	725	745	807	847
70	480	500	521	541	561	581	602	622	642	662	682	702	722	781	821
80	466	486	506	526	546	566	585	605	625	644	664	683	702	760	799
90	455	475	494	514	533	552	572	591	610	629	648	667	686	743	781
100	446	465	484	503	522	541	560	579	598	617	635	654	673	729	766
200	392	409	427	444	461	478	495	512	529	546	563	580	596	646	680
300	366	382	399	415	431	447	463	479	495	511	527	543	559	606	637
400	349	365	380	396	412	427	443	458	473	489	504	519	534	580	610
500	336	352	367	382	397	412	427	442	457	472	487	502	516	560	590
600	326	341	356	371	386	400	415	430	444	459	473	488	502	545	573
700	318	333	347	362	376	391	405	419	434	448	462	476	490	532	560
800	311	326	340	354	368	382	397	411	425	439	452	466	480	521	549
900	305	319	333	347	361	375	389	403	417	430	444	458	471	512	539
1000	300	314	327	341	355	369	382	396	410	423	437	450	463	503	530
1100	295	309	322	336	349	363	377	390	403	417	430	443	456	496	521
1160	292	306	319	333	346	360	373	386	400	413	426	439	452	491	517
1200	290	304	318	331	344	358	371	384	397	411	424	437	450	488	514
1300	286	300	313	326	340	353	366	379	392	405	418	431	444	482	507
1400	283	296	309	322	335	348	361	374	387	400	413	426	438	476	501
1500	279	292	305	318	331	344	357	370	383	395	408	420	433	470	495
1600	276	289	302	315	327	340	353	366	378	391	403	416	428	465	489
1700	273	286	298	311	324	337	349	362	374	386	399	411	423	460	484
1800	270	283	295	308	320	333	345	358	370	382	395	407	419	455	478
1900	267	280	292	305	317	330	342	354	366	379	391	403	415	450	473
2000	264	277	289	302	314	326	339	351	363	375	387	399	410	445	469
2200	259	272	284	296	308	320	332	344	356	368	379	391	403	437	459
2400	255	267	279	291	303	315	326	338	350	361	373	384	395	429	451
2600	250	262	274	286	298	309	321	332	344	355	366	377	388	421	442
2800	246	258	270	281	293	304	316	327	338	349	360	371	382	413	434
3000	243	254	266	277	288	299	311	322	332	343	354	365	375	406	426
3500	234	245	256	267	277	288	299	309	319	330	340	350	360	—	—
4000	225	236	247	257	267	277	287	297	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, use power rating of 10 rpm.

2
Design

GIGA TORQUE GX G14M Basic power rating (torque)

(For 20mm belt width)

N·m G14M(GX) / 20mm

Table 2-15b

Number of Teeth	48	50	53	56	60	63	67	71	75	80
φ (inch)	8.421	8.772	9.299	9.825	10.527	11.053	11.755	12.457	13.158	14.036
Revolution (rpm) \ φ (mm)	213.90	222.82	236.19	249.55	267.38	280.75	298.57	316.40	334.23	356.51
10	1544	1611	1711	1811	1944	2043	2175	2306	2437	2601
20	1206	1258	1337	1416	1520	1598	1702	1805	1908	2036
30	1072	1119	1189	1260	1353	1422	1515	1607	1699	1813
40	996	1040	1105	1171	1258	1323	1409	1495	1580	1686
50	945	987	1050	1112	1194	1256	1338	1420	1501	1602
60	908	948	1009	1069	1148	1208	1287	1365	1443	1540
70	880	919	977	1035	1113	1170	1247	1323	1399	1493
80	856	895	952	1008	1084	1140	1214	1289	1363	1454
90	837	875	931	986	1060	1115	1188	1260	1333	1422
100	821	858	913	967	1039	1093	1165	1236	1307	1395
200	729	762	811	860	924	973	1037	1100	1163	1242
300	684	715	761	807	868	914	974	1033	1093	1166
400	655	685	729	773	831	875	932	990	1046	1117
500	633	662	705	747	804	846	902	957	1012	1080
600	616	644	686	727	782	823	877	931	984	1050
700	601	629	670	710	764	804	857	909	961	1025
800	589	616	656	696	748	787	839	890	941	1004
900	578	605	644	683	735	773	823	873	923	984
1000	569	595	633	672	722	760	809	858	907	967
1100	560	586	624	661	711	748	796	844	892	950
1160	555	580	618	655	704	741	789	836	883	941
1200	552	577	615	652	700	736	784	831	878	935
1300	545	569	606	643	691	726	773	819	864	920
1400	538	562	598	634	681	716	762	807	852	907
1500	531	555	591	626	673	707	752	796	840	893
1600	525	549	584	619	664	698	742	786	828	880
1700	519	542	577	611	656	689	733	775	817	868
1800	513	536	571	604	648	681	723	765	806	—
1900	508	531	564	597	641	673	714	755	—	—
2000	503	525	558	591	633	665	706	—	—	—
2200	493	514	547	578	619	649	—	—	—	—
2400	483	504	535	566	—	—	—	—	—	—
2600	474	494	524	—	—	—	—	—	—	—
2800	465	485	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—

If the revolution is less than 10 rpm, use power rating of 10 rpm.

2

Design

Classical Type/SUPER TORQUE/MEGA TORQUE Timing Belt Design Manual

Design process

Design flow

① Set conditions required in design work.

1.Type of machine

2.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.

3.Degree of load fluctuation (Magnitude and speed)

Contact us for the case of using a brake or forward/reverse rotation.

4.Running hours in a single day

5.Small pulley speed

6.Speed ratio

$$\text{Speed ratio} = \frac{\text{Number of teeth on large pulley}}{\text{Number of teeth on small pulley}}$$

7.Interim center distance

8.Restrictions on pulley diameters

9.Special uses and environmental conditions

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

* If to be used at low speed and high torque, it is recommended to design the belt using MEGA TORQUE.

Design flow

② Set the design power.

1.How to calculate the service factor (Ks)

$$Ks = Ko + Kr + Ki$$

Wherein, Ks : Service factor
Ko : Service correction factor >> (Table 2-16)
Kr : Speed ratio correction factor >> (Table 2-17)
Ki : Idler correction factor >> (Table 2-18)

2.How to calculate the design power (Pd)

(1)Calculation from the transmission power (Pt)

$$Pd = Pt \times Ks$$

Wherein, Pd : Design power (kW)
Pt : Transmission power (kW)
Ks : Service factor

(2)Calculation from the transmission torque (tq)

$$Tq = tq \times Ks$$

Wherein, Tq : Design torque (N·m)
tq : Transmission torque (N·m)
Ks : Service factor

If it is required to convert the transmission torque (tq) into the transmission power (Pt), apply the below formula.

$$Pt = \frac{tq \times n}{9.55 \times 10^3}$$

Wherein, Pt : Transmission power (kW)
tq : Transmission torque (N·m)
n : Shaft speed (rpm)

①If using servomotors

i. If using the maximum torque at a frequency of several turns/day
· Use the design power obtained by multiplying the service factor (Ks) by the maximum torque for a service correction factor (Ko) of 1.0.

ii. If using the maximum torque very often
· Use the design power obtained by multiplying the service factor (Ks) obtained in 1 by the maximum torque.

②If using spindle motors

Use the design power obtained by multiplying the service factor (Ks) by the motor's power at the base speed.

③If using linear drives

Calculate the design power with the below formula.

$$Te = m \times \alpha$$
$$Pt = \frac{Te \times V}{1000}$$
$$Pd = Pt \times Ks$$

Wherein,
Te : Effective tension (N)
m : Weight (kg)
α : Acceleration (m/sec²)
V : Belt speed (m/sec)
Pt : Transmission power (kW)
Pd : Design power (kW)
Ks : Service factor

2
Design

1.Ko

Service correction factor (Ko) Table 2 -16

Driven machine	Driving unit / Motor					
	Rated max. output of 300% or less			Rated max. output of more than 300%		
	AC motor (standard motor, synchronized motor) DC motor (Shunt) 2 or higher cylinder engine			Special motor (High torque) DC motor (Series coil) 1-cylinder engine Operation by line shaft or clutch		
	Running time (hr/day)			Running time (hr/day)		
	3～5	8～12	16～24	3～5	8～12	16～24
● Display equipment ● Medical equipment	1.0	1.2	1.4	1.2	1.4	1.6
● Carpenter's lathe ● Band saw	1.2	1.4	1.6	1.4	1.6	1.8
● Packaging machine ● Light load belt conveyor ● Screen	1.3	1.5	1.7	1.5	1.7	1.9
● Liquid stirring machine ● Drilling machine ● Lathe ●Threading machine ● Circular saw ● Planer	1.4	1.6	1.8	1.6	1.8	2.0
● Grinder ● Mixer (Cement/Viscous medium) ● Boring machine ● Milling machine ● Centrifugal compressor ● Vibrating screen ● Rotary compressor ● Injection molding machine ● Shaping machine ● Belt conveyor (ore, coal or sand)	1.5	1.7	1.9	1.7	1.9	2.1
● Extraction pump ● Hoist ● Elevator ● Washer ● Rubber processing machine (Calender, roll, extrusion machine) ● Fan ● Blower ● Conveyor (Apron, pan, bucket elevator) ● Textile machine	1.6	1.8	2.0	1.8	2.0	2.2
● Centrifugal separator ● Conveyor (Flight or screw) ● Hammer mill ● Papermaking machine (Pulper and beater)	1.7	1.9	2.1	1.9	2.1	2.3
● Kiln machinery (Brick or kneading machine) ● Mine propeller ● Air circulator	1.8	2.0	2.2	2.0	2.2	2.4

2.Kr

Speed ratio correction factor (Kr) Table 2 -17

Speed ratio	Correction factor Kr
1.00～1.24	0
1.25～1.74	0.1
1.75～2.49	0.2
2.50～3.49	0.3
3.50 and higher	0.4

3.Ki

Idler correction factor (Ki) Table 2 -18

Idler position	Correction factor(Ki)
When used on belt inner side on slack side of belt	0
When used on belt outer side on slack side of belt	0.1
When used on belt inner side on tight side of belt	0.1
When used on belt outer side on tight side of belt	0.2

* The idler correction factor is Ki × n when using n number of idler pulleys.

2
Design

Design flow

3 Select the belt type.

Select the belt type from the quick selection charts according to design power and small pulley revolution.

Quick selection charts
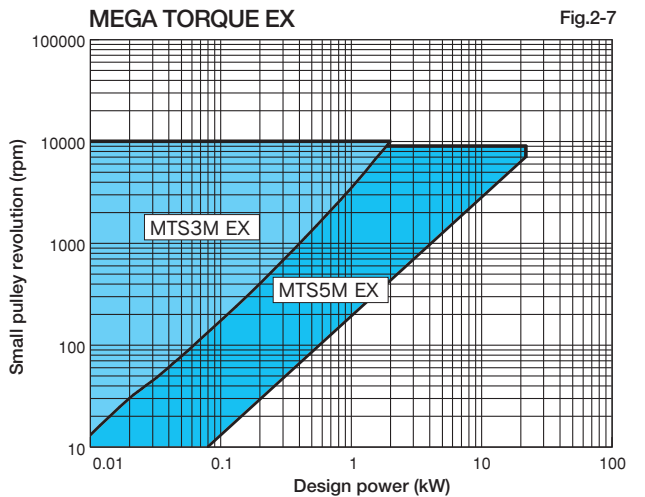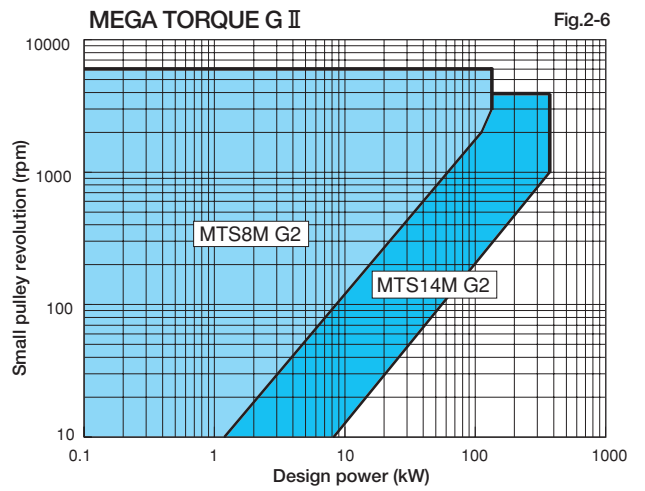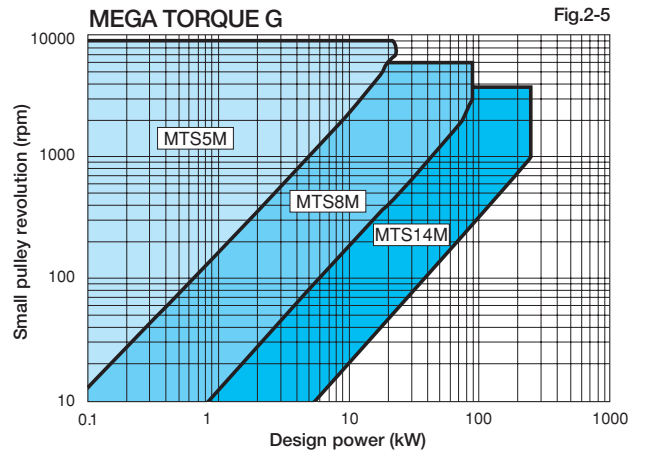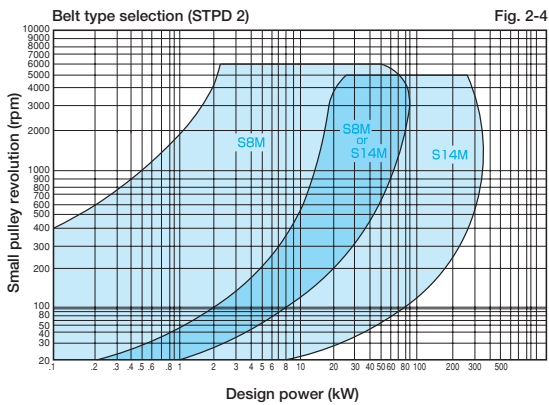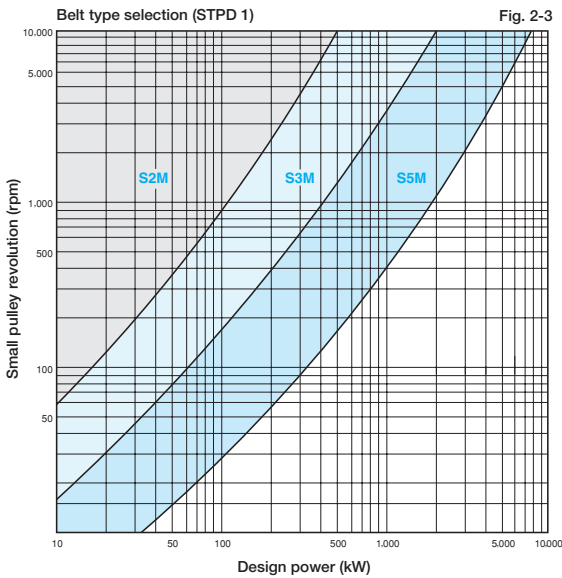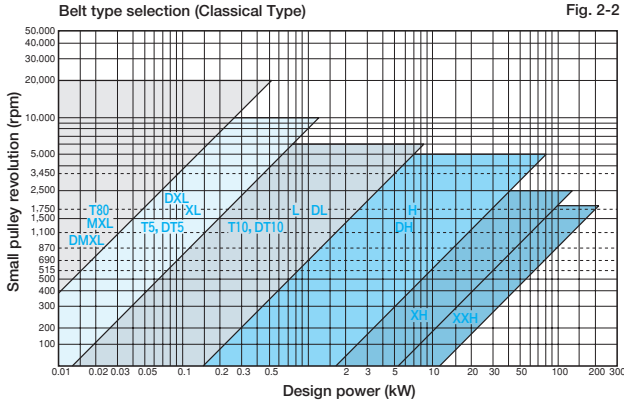
Belt type selection (Classical Type)　　Fig. 2-2

Belt type selection (STPD 1)　　Fig. 2-3

Belt type selection (STPD 2)　　Fig. 2-4

MEGA TORQUE G　　Fig.2-5

MTS5M
MTS8M
MTS14M

MEGA TORQUE G II　　Fig.2-6

MTS8M G2
MTS14M G2

MEGA TORQUE EX　　Fig.2-7

MTS3M EX
MTS5M EX

4 Determine the belt length.

1. Determine the large and small pulleys.

Determine the combination of large and small pulleys from the already obtained speed ratio.

$$\text{Speed ratio}=\frac{\text{Number of teeth on large pulley}}{\text{Number of teeth on small pulley}}$$

Use small pulleys that have the minimum number of teeth given in the Table 2-19 or more.

Allowable minimum number of teeth　　Table 2-19

Revolution (rpm)	S2M	S3M DS3M	S5M DS5M	S8M DS8M	S14M DS14M	T80 MXL DMXL	XL DXL	L DL	H DH	XH	XXH	T5 DT5	T10 DT10
Over 3,500	20	20	—	30	—	—	16	20	24	—	—	20	22
3,500	18	18	24	28	48	16	12	16	20	30	—	16	20
1,750	16	16	20	26	40	14	11	14	18	26	26	14	18
1,160	14	14	16	24	38	12	10	12	16	24	24	12	16
870	14	14	14	22	34	—	10	12	14	22	22	12	14
690	—	—	—	—	—	—	10	12	14	20	20	12	14
575	—	—	—	—	—	—	10	12	14	18	18	12	14

Type	Tooth number	Pitch diameter (mm)
MTS3M	24	22.92
MTS5M	14	22.28
MTS8M	24	61.12
MTS14M	28	124.78

2. Determine the belt length.

Obtain an interim belt pitch length using the below formula from the design center distance, and pitch diameters of large and small pulleys. Select the belt length closest (standard belt pitch length) to the interim belt pitch length obtained here.

$$\text{Lp'}=2\text{C'}+\frac{\pi\,(\text{Dp}+\text{dp})}{2}+\frac{(\text{Dp}-\text{dp})^2}{4\text{C'}}$$

Wherein,
Lp' : Interim belt pitch length (mm)　　C' : Interim center distance (mm)
Dp : Large pulley pitch diameter (mm)　dp : Small pulley pitch diameter (mm)

Ref. Interim belt pitch length can be calculated expediently with below formula.

$$\text{Lp'}=2\text{C'}+1.57\times(\text{Dp}+\text{dp})$$

Wherein,
Lp' : Interim belt pitch length (mm)　　C' : Interim center distance (mm)
Dp : Large pulley pitch diameter (mm)　dp : Small pulley pitch diameter (mm)

3. Determine the correct center distance.

Obtain the correct center distance from the selected belt length (standard belt pitch length)using the below formula.
○How to obtain the correct center distance (C)

$$\text{C}=\frac{b+\sqrt{b^2-8(\text{Dp}-\text{dp})^2}}{8}$$
$$b=2\text{Lp}-\pi\,(\text{Dp}+\text{dp})$$

Wherein,
C : Center distance (mm)　　　　Lp : Selected belt pitch length (mm)
Dp : Large pulley pitch diameter (mm)　dp : Small pulley pitch diameter (mm)

【Concern MEGA TORQUE GⅡ S14M type tooth pitch】
The belt tooth pitch of MEGA TORQUE GⅡ S14M type is 13.98mm.
Use this tooth pitch when determine the belt length.
Pulley tooth pitch is 14.00mm, that must be used for pulley calculations.

5 Determine the belt width.

1. Determine the interim belt width.

○How to obtain teeth in mesh correction factor (Km)
Calculate the number of teeth in mesh (Zm) using the following formula and then obtain the teeth in mesh correction factor (Km) from Table 2-20.

$$\text{Zm}=\frac{\text{Zd}\times\theta}{360°}$$

$$\theta=180-\frac{57.3\times(\text{Dp}-\text{dp})}{\text{C}}$$

Wherein,
Zm : Number of teeth in mesh　　　Zd : Number of teeth on small pulley
θ : Contact angle(°)　　　　　　　Dp : Large pulley pitch diameter (mm)
dp : Small pulley pitch diameter(mm)　C : Center distance (mm)

Teeth in mesh correction factor (Km)　　Table 2-20

Number of teeth in mesh	6 or more	5	4	3	2
Factor Km	1.0	0.8	0.6	0.4	0.2

○How to obtain the interim belt width (Bw')

$$\text{Bw'}=\frac{\text{Pd}}{\text{Ps}\times\text{Km}}\times\text{Wp}$$

Wherein,
Bw' : Interim belt width (mm)　　　Pd : Design power (kW)
Ps : Basic power rating (kW) →Pg. 2-33 to 2-74
Km : Teeth in mesh correction factor→Table 2-20
Wp : Standard belt width (Wp)→Table 2-21

Standard belt width (Wp)　　Table 2-21

Type	Wp	Type	Wp
S2M	4.0mm	MXL、DMXL	6.4mm
S3M、DS3M、MTS3M	6.0mm	XL、DXL	25.4mm(1 inch)
S5M、DS5M、MTS5M	10.0mm	L、DL	25.4mm(1 inch)
S8M、DS8M、MTS8M	60.0mm	H、DH	25.4mm(1 inch)
S14M、DS14M、MTS14M	120.0mm	XH、DXH	25.4mm(1 inch)
		XXH	25.4mm(1 inch)
		T5、DT5	10.0mm
		T10、DT10	10.0mm
		T80	6.4mm

○How to obtain the basic power rating (Ps)
The basic power rating for the standard belt width can be obtained from the basic power rating table, using the number of teeth and revolution of the small pulley.

2. Obtain the belt width.

Select the belt width closest to the interim belt width (Bw') from amongst the belt widths (Bw) lineup. (Table 2-22)

Belt width (Bw)　　Table 2-22

Type	Nominal width (Belt width, mm)
S2M	40(4)、60(6)、100(10)
S3M(DS3M)、MTS3M	60(6)、100(10)、150(15)
S5M(DS5M)、MTS5M	100(10)、150(15)、250(25)
S8M(DS8M)、MTS8M	150(15)、250(25)、300(30)、400(40)、600(60)
S14M(DS14M)、MTS14M	400(40)、600(60)、800(80)、1000(100)、1200(120)
MXL(DMXL)	3.2(3.2)、4.8(4.8)、6.4(6.4)、9.5(9.5)、12.7(12.7)
XL(DXL)	025(6.4)、031(7.9)、037(9.5)、050(12.7)
L(DL)	050(12.7)、075(19.1)、100(25.4)、150(38.1)
H(DH)	075(19.1)、100(25.4)、150(38.1)、200(50.8)、300(76.2)
XH	200(50.8)、300(76.2)、400(101.6)、500(127.0)、600(152.4)
XXH	200(50.8)、300(76.2)、400(101.6)、500(127.0)、600(152.4)
T5(DT5)	05(5.0)、10(10.0)、15(15)、20(20)
T10(DT10)	15(15.0)、20(20.0)、25(25.0)、30(30.0)、40(40.0)、50(50.0)
T80	3.2(3.2)、4.8(4.8)、6.4(6.4)、9.5(9.5)

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Design

3. Check that the width correction factor (Kb) obtained from the belt width satisfies the following formula.

If the formula does not work, choose the next highest belt width and check again.

$$Pd < Ps \times Km \times Kb$$

Wherein,
Pd : Design power (kW)   Ps : Basic power rating (kW)
Km : Teeth in mesh correction factor   Kb : Width correction factor

Width correction factor Kb (1)   Table 2 -23a

Nominal width	Width(mm)	S2M	S3M(DS3M) MTS3M	S5M(DS5M) MTS5M	S8M(DS8M) MTS8M	S14M(DS14M) MTS14M
40	4.0	1.00				
60	6.0	1.59	1.00			
100	10.0	2.84	1.79	1.00		
150	15.0		2.84	1.59	0.21	
200	20.0				0.29	
250	25.0			2.84	0.37	
300	30.0				0.45	0.21
400	40.0				0.63	0.29
500	50.0				0.81	0.37
600	60.0				1.00	0.45
700	70.0				1.19	
800	80.0				1.39	0.63
1000	100.0				1.79	0.81
1200	120.0					1.00
1400	140.0					1.19

Width correction factor Kb (2)   Table 2 -23b

Nominal width	Width(mm)	MXL,T80	XL	L	H	XH	XXH
3.2	3.2	0.45					
4.8	4.8	0.72					
025(6.4)	6.4	1.00	0.15				
031(7.9)	7.9		0.21				
037(9.5)	9.5	1.57	0.28				
050(12.7)	12.7	2.18	0.42	0.42			
075	19.1			0.71	0.71		
100	25.4		1.00	1.00	1.00	1.00	1.00
150	38.1			1.56	1.56		
200	50.8				2.14	2.14	2.14
300	76.2				3.36	3.36	3.36
400	101.6					4.76	4.76
500	127.0					6.15	6.15
600	152.4					7.50	7.50

Width correction factor Kb (3)   Table 2 -23c

Nominal width	Width (mm)	T5 (DT5)	T10 (DT10)
05	5.0	0.35	
10	10.0	1.0	1.0
15	15.0	1.6	1.6
20	20.0	2.3	2.3
25	25.0		2.9
30	30.0		3.5
40	40.0		4.6
50	50.0		5.8

Design flow

6

Check the center distance adjustment allowance.

According to the selected belt length, take the adjustment allowance from an appropriate point to the inner side (installation allowance) and to the outer side (elongation allowance) as the guaranteed adjustment allowance of the center distance.
Obtain the adjustment allowance to the inner side from Tables 2-24a and b.
Obtain the adjustment allowance to the outer side from Tables 2-25a to d.

Inner adjustment allowance (1)   Table 2 -24a

Belt type	MXL,T80 DMXL	XL DXL	L DL	H DH
Adjustment allowance (mm)	3	5	10	15

Belt type	XH DXH	XXH	T5 DT5	T10 DT10
Adjustment allowance (mm)	40	50	5	10

Inner adjustment allowance (2)   Table 2 -24b

Belt type	S2M	S3M DS3M MTS3M	S5M DS5M MTS5M	S8M DS8M MTS8M	S14M DS14M MTS14M
Adjustment allowance (mm)	10	10	10	15	15

Outer adjustment allowance (1)   Table 2 -25a

S2M, S3M, S5M, DS3M, DS5M, MTS3M, MTS5M	
Belt length Lp （mm）	Outer adjustment allowance (mm)
Lp ≦ 508.0	2
508.0 < Lp ≦ 1016.0	3
1016.0 < Lp ≦ 2032.0	5
2032.0 < Lp ≦ 2540.0	10

Outer adjustment allowance (2)   Table 2 -25b

S8M, S14M, DS8M, DS14M, MTS8M, MTS14M	
Belt length Lp （mm）	Outer adjustment allowance (mm)
Lp ≦ 508.0	3
508.0 < Lp ≦ 1016.0	5
1016.0 < Lp ≦ 2032.0	10
2032.0 < Lp ≦ 4572.0	15
4572.0 < Lp ≦ 5080.0	20

Outer adjustment allowance (3)   Table 2 -25c

MXL、DMXL、T80	
Belt length Lp （mm）	Outer adjustment allowance (mm)
Lp ≦ 254.00	3
254.00 < Lp ≦ 379.99	5
379.99 < Lp ≦ 508.00	10
508.00 < Lp ≦ 1016.00	15
1016.00 < Lp ≦ 1524.00	25
1524.00 < Lp ≦ 1778.00	30

Outer adjustment allowance (4)   Table 2 -25d

XL,L,H,XH,XXH,T5,T10,DXL,DL,DH,DT5,DT10	
Belt length Lp （mm）	Outer adjustment allowance (mm)
Lp ≦ 254.0	3
254.0 < Lp ≦ 381.0	5
381.0 < Lp ≦ 762.0	10
762.0 < Lp ≦ 1270.0	15
1270.0 < Lp ≦ 1778.0	25
1778.0 < Lp ≦ 4572.0	30

2
Design

7 Belt tension

Without proper tension, power transmissivity and durability cannot be maintained at satisfactory levels. When the tension is insufficient, the slack side of the belt vibrates, and when the belt is set too tightly, the tight side vibrates.

1. Simple belt tensioning

Press on the center of the belt span with a finger and draw the belt taut until it feels elastic. Generally, this simple tensioning method is used, but greater accuracy is obtained from the following method.

2. Correct belt tensioning

❶ Obtain the span length (Ls).

Obtain the length without the belt contacting the pulleys. Though the center distance can be taken as the span length (Ls) when there is minimal difference in diameter between the two pulleys, span length should be obtained with the following formula.

○ How to obtain the span length (Ls)

$$Ls = \sqrt{C^2 - \frac{(Dp - dp)^2}{4}}$$

Wherein, Ls：Span length (mm)
　　　　　C：Center distance (mm)
　　　　　Dp：Large pulley pitch diameter (mm)
　　　　　dp：Small pulley pitch diameter (mm)

❷ Obtain the deflection (δ).

○ How to obtain the deflection (δ)

$$\delta = \frac{1.6 \times Ls}{100}$$

Wherein, δ：Deflection (mm)
　　　　　Ls：Span length (mm)

❸ Obtain the deflection force (Tδ) to apply to the deflection (δ).

○ How to obtain the deflection force (Tδ)

$$T\delta = \frac{To + \dfrac{Ls \times Y}{Lp}}{16}$$

Wherein, Tδ：deflection force (N)
　　　　　To：Required initial tension (N). See Table 2-26, Pg.2-22~24.
　　　　　　　（Obtain both Tomin and Tomax.）
　　　　　L s：Span length (mm)
　　　　　Y：Obtain from Table 2-26.
　　　　　Lp：Belt length (mm)

❹ Tension the belt.

Draw the belt taut so that the deflection force at the amount of deflection (δ) is Tδmin to Tδmax.

8 Shaft load

The shaft load is the load applied to the shaft on which the pulley is mounted, when the belt is tensioned.

○ How to obtain static shaft load (Fs)

$$Fs = 2To \cdot \sin\frac{\theta}{2}$$

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

Wherein, Fs：Static shaft load (N)
　　　　　To：Initial tension (N)
　　　　　θ：Contact angle of small pulley (°)
　　　　　Dp：Large pulley pitch diameter (mm)
　　　　　dp：Small pulley pitch diameter (mm)
　　　　　C：Center distance (mm)

Initial tension To and Y (SUPER TORQUE) Table 2 -26a Unit: N

Belt type	Belt width (mm)		4	6	10	15	25
S2M	To	min	5.88	9.34	16.7		
		max	7.85	12.5	22.3		
	Y		9.8	15.7	27.5		
S3M	To	min	12.4	19.6	35.1	55.7	
		max	16.7	26.5	47.4	75.3	
	Y		14.7	26.5	48.1	75.5	
S5M	To	min			57.9	91.9	164
		max			77.5	123	220
	Y				52.8	85.5	151

2 Design

Initial tension To and Y (SUPER TORQUE)
Table 2 -26b Unit: N

Belt type	Belt width (mm)		15	20	25	30	35	40	45	50	55	60	80	100	120	140
S8M	To	min	214	297	383	472	562	655	749	844	941	1040				
		max	285	395	510	627	748	871	996	1123	1252	1383				
	Y		98	147	196	235	284	333	382	422	471	520				
S14M	To	min					785	1090	1406			1731	2403	3099	3815	4548
		max					872	1211	1562			1922	2668	3441	4236	5050
	Y						461	667	883			1089	1500	1922	2334	2756

Initial tension To and Y(Classical Type, rubber)
Table 2 -26c Unit: N

Belt type	Nominal width				025	031	037	050	075	100	150	200	300	400	500	600
	Belt width (mm)		3.2	4.8	6.4	7.9	9.5	12.7	19.1	25.4	38.1	50.8	76.2	101.6	127.0	152.4
MXL	To	min	3.74	5.93	8.24		12.9	18.0								
		max	6.23	9.89	13.7		21.5	30.0								
	Y															
XL	To	min			17.3	25.1	33.6	50.7	85.9	122						
		max			28.5	37.0	46.4	65.8	107	152						
	Y				3.43	5.49	7.65	11.8	20.6	29.4						
L	To	min					34.1	51.5	86.4	121	192	264	411			
		max					51.9	76.0	125	173	273	375	587			
	Y						32.4	47.1	77.5	107	167	228	347			
H	To	min						136	221	306	484	669	1059	1476	1920	
		max						175	292	408	650	900	1424	1983	2575	
	Y							73.5	135	196	319	441	685	931	1176	
XH	To	min										906	1439	2011	2622	3188
		max										1005	1596	2229	2903	3529
	Y											825	1391	1956	2522	3088
XXH	To	min										1112	1763	2463	3213	3903
		max										2460	3918	5472	7121	8656
	Y											1352	2261	3170	4080	4989

Initial tension To and Y (Classical Type, polyurethane)
Table 2 -26d Unit: N

Belt type	Belt width (mm)		3.2	4.8	5.0	6.4	8.0	9.5	10.0	12.7	15.0	20.0	25.0	30.0	40.0	50.0
T80	To	min	3.74	5.93		8.24		12.9		18.0						
		max	6.23	9.89		13.7		21.5		30.0						
	Y															
T5	To	min			10.0		18.2		24.1		39.7	56.7				
		max			15.0		27.6		36.4		59.7	85.0				
	Y				6.86		12.7		16.7		27.5	37.3				
T10	To	min							66.9		111	155	199	243	333	422
		max							101		166	232	298	364	496	629
	Y								44.1		73.5	104	133	163	222	281

Initial tension To and Y (MEGA TORQUE EX)
Table 2 -26e Unit: N

Belt type	Belt width (mm)		6	10	15	20	25	30
MTS3M EX	To	min	19.6	35.1	55.7	77.4	99.8	
		max	26.5	47.4	75.3	104	135	
	Y		129	213	338	470	606	
MTS5M EX	To	min		86.8	138	191	247	304
		max		116	184	256	330	407
	Y			394	626	867	1119	1379

Initial tension To and Y (MEGA TORQUE G)
Table 2 -26f Unit: N

Belt type	Belt width (mm)		10	15	25	30	40	60	80	100	120
MTS5M	To	min	86.8	138	247						
		max	116	184	330						
	Y		52.8	85.5	151						
MTS8M	To	min		214	383	472	655	1040			
		max		285	510	627	871	1383			
	Y			100	194	240	334	521			
MTS14M	To	min					1090	1731	2403	3099	3815
		max					1211	1922	2668	3441	4236
	Y						659	1085	1512	1939	2365

Revolution correction factor Kf for MEGA TORQUE G　Table 2 -26g

Revolution of small pulley (rpm)	Kf
～200	1.5
201～500	1.3
501～1000	1.15
1001～	1

Initial tension To and Y (MEGA TORQUE GⅡ)　Table 2 -26h　Unit: N

Belt type	Belt width (mm)		15	25	30	40	60	80	100	120
MTS8M G2	To	min	278	498	613	851	1351			
		max	370	663	816	1132	1798			
	Y		179	342	424	587	913			
MTS14M G2	To	min				1417	2250	3124	4029	4959
		max				1574	2499	3469	4474	5507
	Y					686	1126	1566	2006	2446

Initial tension To as 60mm wide belt for MEGA TORQUE U (MTS8M)　Table 2 -26i　Unit: N

Teeth number of pulley	30		40		50		60	
Pulley diameter (mm)	76.39		101.86		127.32		152.79	
Revolution of small pulley	To		To		To		To	
	min	max	min	max	min	max	min	max
50	3300	4400	3150	4200	3053	4070	2993	3990
500	2333	3110	2213	2950	2123	2830	2048	2730
1000	2048	2730	1935	2580	1845	2460	1763	2350
2000	1763	2350	1643	2190	1545	2060	1463	1950
3000	1598	2130	1463	1950	1358	1810	1260	1680
4000	1463	1950	1328	1770	1208	1610	-	-
5500	1313	1750	1148	1530	-	-	-	-

Constant Y for MEGA TORQUE U (MTS8M)　Table 2 -26j　Unit: N

Belt width (mm)	15	25	40	60
Y	150	260	460	730

Example design calculations

1 Set conditions required in design work.

a. Type of machine : Textile machine
b. Transmission power : 3.7 kW
c. Degree of load fluctuation : High, no brake, no forward-reverse turning.
d. Running hours : 16 hr/day
e. Small pulley revolution : 900 min^{-1} (900 rpm)
f. Speed ratio : 1.10 (Deceleration)
g. Interim center distance : about 380mm

Design flow

2 Select the type of belt.

Belt type can be obtained from Quick selection charts.
Vertical axis scale: Small pulley speed under design conditions of calculation step ①
900 rpm
Horizontal axis scale: Design power calculated in calculation step ②
7.4 kW
Obtain the belt type from the intersection of the vertical and horizontal axes.

● Selected belt type: S8M
Note: Belt H can be selected from Fig. 2-1, but the belt width is narrow, therefore S8M was chosen from the STPD of Fig. 2-4.

Quick selection chart Fig. 2-4 (STPD 2)
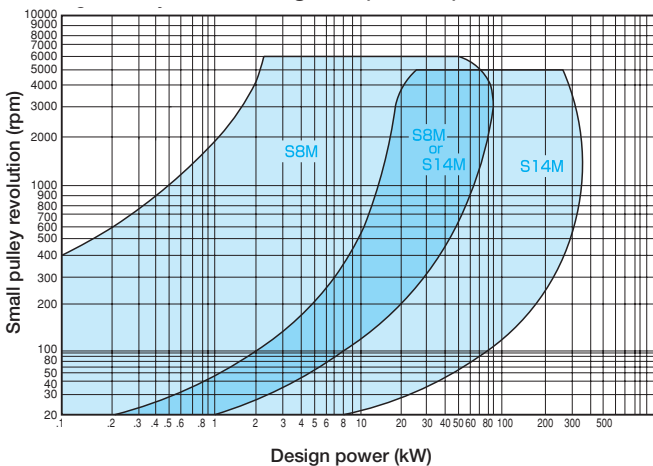
Design flow

3 Set the design power.

● Service factor (Ks)
Service correction factor (Ko)=2.0 → (Table 2-16, pg. 2-18)
Speed ratio correction factor (Kr)=0 → (Table 2-17, pg. 2-18)
Idler correction factor (Ki)=0 → (Table 2-18, pg. 2-18)
Ks=Ko+Kr+Ki
=2.0+0+0
=2.0
● Design power (Pd)
Transmission power (Pt)=3.7kW
Service factor (Ks)=2.0
Pd=Pt×Ks
=3.7×2.0
=7.4

4 Determine the large and small pulley diameters, belt length and center distance.

1. Pulley diameter (Number of teeth)

It is recommended to take price, volume of distribution and other such factors into consideration and form combinations with standard pulleys. These factors will affect durability via belt bend fatigue, etc., therefore select a small pulley diameter (number of teeth) that is larger than the smallest pulley (Table 2-4 Allowable minimum number of teeth, pg. 2-5) of each belt.

The following are used in this example.
40-tooth small pulley (Pitch diameter: ϕ101.86 mm)
44-tooth large pulley (Pitch diameter: ϕ112.05 mm)

> Note: Both standard pulleys can be selected for the large and small pulleys.

2. Belt length

Calculate the standard belt length (Lp).
With a 380 mm interim center distance (C'), 101.86 mm small pulley pitch diameter (dp) and 112.05 mm large pulley pitch diameter (Dp), the calculated interim belt pitch length (Lp') can be obtained using the below formula. Select the standard belt length (Lp) closest to the calculated length.

$$Lp'=2C'+\frac{\pi(Dp+dp)}{2}+\frac{(Dp-dp)^2}{4C'}$$

$$Lp'=2\times380$$
$$+\frac{\pi(112.05+101.86)}{2}$$
$$+\frac{(112.05-101.86)^2}{4\times380}$$

$$Lp'=760+336.01+0.07$$
$$=1096.08$$
$$Lp=1080mm\,(135\ teeth)$$

3. Center distance

Calculate the center distance (C).
The center distance (C) can be calculated from the belt length (Lp = 1080 mm) with the below formula.

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

$$b=2Lp-\pi(Dp+dp)$$

$$b=2\times1080-\pi(112.05+101.86)$$
$$=1487.98mm$$

> Note: Use π=3.1416 in calculations.

$$C=\frac{1487.98+\sqrt{(1487.98)^2-8\times(112.05-101.86)^2}}{8}$$

$$C=371.96mm\ (372mm)$$

> Note: For a belt length of 1120 mm, the center distance is 391.97 mm (392 mm).

5 Determine the belt width.

1. Calculate the contact angle.

Calculate the contact angle (θ) from the large pulley diameter (Dp, pitch diameter: ϕ112.05 mm), small pulley diameter (dp, pitch diameter: ϕ101.86 mm), and center distance (C, 371.96 mm).

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

$$=180-\frac{57.3\times(112.05-101.86)}{371.96}$$

$$=178.4$$

Contact angle（θ）=178.4°

2 Design

2. Calculate the number of teeth in mesh of the small pulley.

Number of teeth on small pulley: 40
Contact angle (θ) : 178.4°
Number of teeth in mesh (Zm): $(178.4 \div 360) \times 40 = 19.8$ teeth
Values below the decimal are rounded down, therefore the number of teeth in mesh is 19.

3. Obtain the teeth in mesh correction factor.

Obtain the teeth in mesh correction factor (Km) from the number of teeth in mesh (Zm). From Table 2-20, the teeth in mesh factor (Km) is 1.0.

Teeth in mesh correction factor (Km)　　Table 2-20

Number of teeth in mesh	6 or more	5	4	3	2
Factor Km	1.0	0.8	0.6	0.4	0.2

4. Calculate the interim belt width.

Calculate the interim belt width (Bw') with the below formula.

Design power (Pd) : 7.4 kW
Basic power rating (Ps) : 13.17 kW
Teeth in mesh correction factor (Km) : 1.0
Standard belt width (Wp) of S8M : 60 mm

(See Table 2-6, pg. 2-6.)

$$Bw' = \frac{Pd}{Ps \times Km} \times Wp$$

$$Bw' = \frac{7.4}{13.17 \times 1.0} \times 60$$

$$= 33.7$$

The interim belt width (Bw') is 33.7 mm.

5. Obtain the standard belt width.

Select the belt width closest to the 33.7 mm interim belt width (Bw') from the belt widths (Bw) lineup. From Table 2-22, Pg.2-20 it is 40 mm for the 400 nominal width.

6. Check the accuracy of the belt width.

First obtain the width correction factor (Kb) from Table 2-23a (pg. 2-21) using the belt width.
Check that the width correction factor (Kb) obtained from the belt width satisfies the below formula.
If the equation is not satisfied, choose a larger belt width.

Design power (Pd) : 7.4 kW
Basic power rating (Ps) : 13.17 kW
Teeth in mesh correction factor (Km) : 1.0
Width correction factor (Kb) : 0.63

$$Pd < Ps \times Km \times Kb$$
$$7.4 < 13.17 \times 1.0 \times 0.63$$
$$7.4 < 8.29$$

Accordingly, the selected belt width is correct.
　　Note: If the equation is not satisfied, choose a still larger belt width and check again.

Design flow

6 Check the center distance adjustment allowance.

From the selected 1080 mm belt length, the following are matched up on Tables 2-24b and 2-25b (pg.2-21).
　　Inner adjustment allowance : 15 mm
　　Outer adjustment allowance : 10 mm

Design summary

Belt 　　: 400S8M1080
Pulley : Drive (Small pulley)
　　　　40S8M0400
　　　　Driven (Large pulley)
　　　　44S8M0400
Center distance : $372.0 \, {}^{+10}_{-15}$ mm

Design flow

7 Belt tension

Belt : 400S8M1080
Pulley : Drive (Small pulley)　40S8M0400
　　　　Driven (Large pulley) 44S8M0400

Using a center distance of 371.96 mm as an example, calculate the deflection and deflection force when the belt is taut.

●Deflection

Calculate the deflection (δ) from the span length (Ls), with the below formula.

$$\delta = \frac{1.6 \times Ls}{100}$$

$$Ls = \sqrt{C^2 - \frac{(Dp-dp)^2}{4}}$$

$$Ls = \sqrt{(371.96)^2 - \frac{(112.05-101.86)^2}{4}}$$

$$Ls = 371.93$$

The span length (Ls) is 371.93 mm.

$$\delta = 1.6 \times 371.93 \div 100$$

$$= 5.95$$

Accordingly, the deflection (δ) is 6 mm.

●Deflection force

Calculate the deflection force (Tδ) from To min and To max of the required initial tension, using the span length (Ls), belt length (Lp) and Y value of Table 2-11.

$$T\delta = \frac{To + \dfrac{Ls \times Y}{Lp}}{16}$$

Calculate Tδ min and Tδ max from a 371.93 mm span length (Ls) and 1080 mm belt length (Lp), using Tomin = 655 N, Tomax = 871 N and Y = 333 from Table 2-26b, pg. 2-23 for the 40 mm width of the S8M.

$$T\delta\,min = \frac{655 + 371.93 \times 333 \div 1080}{16}$$

$$= 48.1$$

$$T\delta\,max = \frac{871 + 371.93 \times 333 \div 1080}{16}$$

$$= 61.6$$

Accordingly, Tδ min is 48 N, and Tδ max is 62 N.

●Apply tension to the belt.

Tension the belt so that the deflection force at the deflection (δ) is between Tδ min to Tδ max. Tension the belt with 48 to 62 N so that the force when the center of the span is depressed to the 6 mm deffection, in other words, when the deflection force is between Tδ min to Tδ max is obtained. The belt tension in that moment is 655 to 871 N.
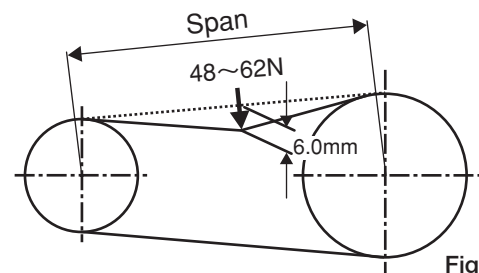
Fig. 2-8

The belt tension is 655 to 871 N when the force pressing the center of the span to 6.0 mm is 48 to 62 N.

Design flow

8 Shaft load

Calculate static shaft load with below formula. Static shaft load is the load applied to the shaft on which the pulley is mounted, when the belt is tensioned.

$$Fs = 2Tp \cdot \sin\frac{\theta}{2} \qquad \theta = 180 - \frac{57.3(Dp-dp)}{C}$$

$$= 2 \times 871 \times \sin\frac{178.4}{2} \qquad = 180 - \frac{57.3(112.05-101.86)}{371.96}$$

$$= 1741.83N \qquad = 178.4$$

Tp : Static tension (N)

Calculation formulas used in power transmission design

Table 2-27

Item	Formula	Remarks
Design power	$Pd=Pt\times Ks$	**Pd :** Design power (kW) **Pt :** Transmission power (kW) **Ks :** Service factor
Service factor	$Ks=Ko+Ki+Kr$	**Ks :** Service factor **Kr :** Speed ratio correction factor **Ko :** Service correction factor **Ki :** Idler correction factor
Corrected power rating	$Pc=Ps\times Km\times Kb$	**Pc :** Corrected power rating (kW) **Kb :** Width correction factor **Ps :** Basic power rating (kW) **Km :** Teeth in mesh correction factor
Interim belt pitch length	$Lp'=2C+\dfrac{\pi}{2}\times(Dp+dp)+\dfrac{(Dp-dp)^2}{4C}$	**Lp :** Interim belt pitch length (mm) **Dp :** Large pulley pitch diameter (mm) **C :** Center distance (mm) **dp :** Small pulley pitch diameter (mm) π **:** 3.1416
Interim belt pitch length (for expedient calculation)	$Lp'=2C'+1.57\times(Dp+dp)$	**Lp':** Interim belt pitch length (mm) **Dp :** Large pulley pitch diameter (mm) **C' :** Interim center distance (mm) **dp :** Small pulley pitch diameter (mm)
Center distance	$C=\dfrac{b+\sqrt{b^2-8(Dp-dp)^2}}{8}$ $b=2Lp-\pi(Dp+dp)$	**C :** Center distance (mm) **Lp :** Belt pitch length (mm) **Dp :** Large pulley pitch diameter (mm) π **:** 3.1416 **dp :** Small pulley pitch diameter (mm)
Contact angle	$\theta=180°-\dfrac{57.3\times(Dp-dp)}{C}$	θ **:** Small pulley contact angle(°) **C :** Center distance (mm) **Dp :** Large pulley pitch diameter (mm) **dp :** Small pulley pitch diameter (mm)
Number of teeth in mesh	$Zm=Zd\times\dfrac{\theta}{360}$	**Zm:** Number of teeth in mesh **Zd :** Number of teeth on small pulley θ **:** Small pulley contact angle(°)
Interim belt width	$Bw'=\dfrac{Pd}{Ps\times Km}\times Wp$ $Pd<Ps\times Km\times Kb$	**Bw':** Interim belt width (mm) **Km:** Teeth in mesh correction factor **Pd :** Design power (kW) **Kb:** Width correction factor **Wp:** Standard belt width **Ps :** Basic power rating (kW)
Belt speed	$V=\dfrac{\pi\times dp\times nd}{60\times 1000}=\dfrac{dp\times nd}{19100}$	**V :** Belt speed (m/sec) **dp :** Small pulley pitch diameter (mm) **nd :** Small pulley speed (rpm)
Transmission power	$Pt=\dfrac{Te\times V}{1000}$	**Pt :** Transmission power (kW) **Te :** Effective tension (N) **V :** Belt speed (m/sec)
Transmission power	$Pt=\dfrac{tq\times n}{9.55\times 10^3}$	**Pt :** Transmission power (kW) **tq :** Transmission torque (N·m) **n :** Shaft speed (rpm)
Effective tension	$Te=\dfrac{2tq}{dp}\times 1000$	**Te :** Effective tension (N) **tq :** Transmission torque (N·m) **dp :** Pulley pitch diameter (mm)
Effective tension	$Te=\dfrac{Pt\times 1000}{V}$	**Te :** Effective tension (N) **Pt :** Transmission power (kW) **V :** Belt speed (m/sec)
Transmission torque	$tq=Te\times\dfrac{dp}{2}\times\dfrac{1}{1000}$	**tq :** Transmission torque (N·m) **Te :** Effective tension (N) **dp :** Pulley pitch diameter (mm)
Static shaft load	$Fs=2To\times\sin\dfrac{\theta}{2}$ $\theta=180°-\dfrac{57.3\times(Dp-dp)}{C}$	**Fs :** Static shaft load(N) **dp :** Small pulley pitch diameter (mm) **To :** Initial tension (N) **C :** Center distance (mm) **Dp :** Large pulley pitch diameter (mm) θ **:** Small pulley contact angle(°)
Span length	$Ls=\sqrt{C^2-\dfrac{(Dp-dp)^2}{4}}$	**Ls :** Span length (mm) **dp :** Small pulley pitch diameter (mm) **C :** Center distance (mm) **Dp :** Large pulley pitch diameter (mm)
Torque by flywheel	$Tq=\dfrac{GD^2\times(n_2-n_1)\times 9.8}{375\times t}$	**GD²:** GD²(kgf·m²) **Tq :**Torque (N·m) **n₂ :** Speed after time t (rpm) **t :**Time to change speed from n₁ to n₂(sec) **n₁ :** Initial speed (rpm)

2

Design

Relationship between belt width and pulley width

Table 2-28

Belt type	Belt width		Pulley tooth width (mm)	
	Nominal	Width (mm)	Flanged (W)	Unflanged (LA)
S2M	40	4	5	9
	60	6	7	11
	100	10	11	15
S3M DS3M MTS3M	60	6	7	11
	100	10	11	15
	150	15	17	21
S5M DS5M MTS5M	100	10	11	16
	150	15	17	22
	250	25	27	32
S8M DS8M MTS8M	150	15	17	24
	250	25	28	35
	300	30	33	40
	400	40	44	51
	600	60	65	72
S14M DS14M MTS14M	400	40	46	53
	600	60	67	74
	800	80	88	95
	1000	100	109	116
	1200	120	130	137
MXL DMXL T80	3.2	3.2	4	8
	4.8	4.8	5.5	9.5
	6.4	6.4	7	11
	9.5	9.5	10.5	14.5
	12.7	12.7	14	18
XL DXL L DL H DH	025	6.4	7.5	11.5
	037	9.5	11	15
	050	12.7	14	18
	075	19.1	21	26
	100	25.4	28	33
	150	38.1	40	45
	200	50.8	54	59
	300	76.2	80	85
T5 DT5 T10 DT10	5	5	6	10
	10	10	11	15
	15	15	17	21
	20	20	22	26
	25	25	27	32
	30	30	32	37
	40	40	43	48
	50	50	53	58

Flanged pulley — W

Unflanged pulley — LA
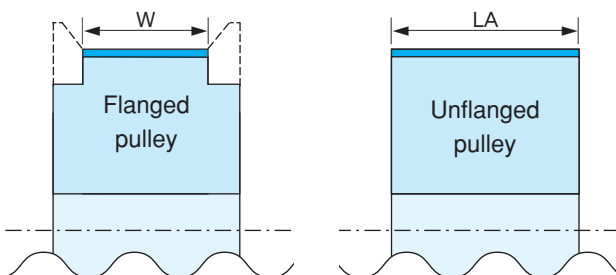
Belt width tolerance

Belt width tolerance (SUPER TORQUE, MEGA TORQUE G / GII / EX)   Table 2-29a

Belt width Bw (mm)	Belt length Lp (mm)			
	Lp ≦ 351	351 < Lp ≦ 840	840 < Lp ≦ 1680	1680 < Lp
Bw≦10	+0.3 −0.6	+0.3 −0.6	+0.3 −0.6	±0.6
10<Bw≦40	±0.6	±0.6	±0.6	±0.6
40<Bw≦50	±0.6	±0.6	±1.0	+1.0 −1.3
50<Bw≦75	+1.0 −1.3	+1.0 −1.3	±1.3	+1.3 −1.6
75<Bw≦100	±1.3	±1.3	+1.3 −1.6	±1.6
100<Bw	+1.3 −1.6	±2.0	+2.0 −2.3	+2.0 −2.6

Belt width tolerance (Classical Type)   Table 2-29b

Belt width Bw (mm)	Belt nominal width	Belt length Lp		
		Lp ≦840mm (Lp≦33")	840mm<Lp≦1670mm (33"<Lp≦66")	1670mm<Lp (66"<Lp)
Bw≦10	025,031 037	+0.4 −0.8	+0.4 −0.8	
10<Bw≦38	050,075 100,150	±0.8	+0.8 −1.2	+0.8 −1.2
38<Bw≦50	200	+0.8 −1.2	+1.2 −1.2	+1.2 −1.6
50<Bw≦75	300	+1.2 −1.6	+1.6 −1.6	+1.6 −2.0

Not applicable with MXL, XH and XXH belts.
The width tolerance of XH and XXH belts is ±4.8 mm.

Belt width tolerance (MEGA TORQUE U)   Table 2-29c

Belt width (mm) \ Belt length (mm)	640〜840	841〜1680	1681〜2300
8.0〜 10.0	+0.3 −0.6	±0.6	±0.6
10.1〜 40.0	±0.6	±0.6	±0.6
40.1〜 50.0	±0.6	±1.0	+1.0 −1.3
50.1〜 75.0	+1.0 −1.3	±1.3	+1.3 −1.6
75.1〜100.0	±1.3	+1.3 −1.6	±1.6
100.1〜200.0	±1.6	±1.6	±1.9

2

Design

Belt length tolerance and center distance adjustment allowance

SUPER TORQUE, MEGA TORQUE G /GII / EX　　　　　Table 2-30a

Belt length Lp (mm)	Length tolerance (mm)	Center distance tolerance (mm)	S2M、S3M、S5M、MTS5M Inner adjustment allowance	S2M、S3M、S5M、MTS5M Outer adjustment allowance	S8M、S14M、MTS8M、MTS14M Inner adjustment allowance	S8M、S14M、MTS8M、MTS14M Outer adjustment allowance
Lp ≦ 254.0	±0.40	±0.20	10	2	15	3
254.0 ＜ Lp ≦ 381.0	±0.46	±0.23	10	2	15	3
381.0 ＜ Lp ≦ 508.0	±0.50	±0.25	10	2	15	3
508.0 ＜ Lp ≦ 762.0	±0.60	±0.30	10	3	15	5
762.0 ＜ Lp ≦ 1016.0	±0.66	±0.33	10	3	15	5
1016.0 ＜ Lp ≦ 1270.0	±0.76	±0.38	10	5	15	10
1270.0 ＜ Lp ≦ 1524.0	±0.81	±0.40	10	5	15	10
1524.0 ＜ Lp ≦ 1778.0	±0.86	±0.43	10	5	15	10
1778.0 ＜ Lp ≦ 2032.0	±0.92	±0.46	10	5	15	10
2032.0 ＜ Lp ≦ 2286.0	±0.96	±0.48	10	10	15	15
2286.0 ＜ Lp ≦ 2540.0	±1.02	±0.51	10	10	15	15
2540.0 ＜ Lp ≦ 2794.0	±1.06	±0.53	-	-	15	15
2794.0 ＜ Lp ≦ 3048.0	±1.12	±0.56	-	-	15	15
3048.0 ＜ Lp ≦ 3302.0	±1.17	±0.58	-	-	15	15
3302.0 ＜ Lp ≦ 3556.0	±1.22	±0.61	-	-	15	15
3556.0 ＜ Lp ≦ 3810.0	±1.27	±0.63	-	-	15	15
3810.0 ＜ Lp ≦ 4064.0	±1.32	±0.66	-	-	15	15
4064.0 ＜ Lp ≦ 4318.0	±1.37	±0.68	-	-	15	15
4318.0 ＜ Lp ≦ 4572.0	±1.42	±0.71	-	-	15	15
4572.0 ＜ Lp ≦ 5080.0	-	-	-	-	20	20

Classical Type (Other than MXL and T80)　　Table 2-30b

Belt length Lp (mm)	Length tolerance (mm)	Center distance tolerance (mm)	Outer adjustment allowance other than MXL and T80
Lp ≦ 254.0	±0.41	±0.20	3
254.0 ＜ Lp ≦ 381.0	±0.46	±0.23	5
381.0 ＜ Lp ≦ 508.0	±0.51	±0.25	10
508.0 ＜ Lp ≦ 762.0	±0.61	±0.30	10
762.0 ＜ Lp ≦ 1016.0	±0.66	±0.33	15
1016.0 ＜ Lp ≦ 1270.0	±0.76	±0.38	15
1270.0 ＜ Lp ≦ 1524.0	±0.81	±0.40	25
1524.0 ＜ Lp ≦ 1778.0	±0.86	±0.43	25
1778.0 ＜ Lp ≦ 2032.0	±0.91	±0.45	30
2032.0 ＜ Lp ≦ 2286.0	±0.97	±0.48	30
2286.0 ＜ Lp ≦ 2540.0	±1.02	±0.51	30
2540.0 ＜ Lp ≦ 2794.0	±1.07	±0.53	30
2794.0 ＜ Lp ≦ 3048.0	±1.12	±0.56	30
3048.0 ＜ Lp ≦ 3302.0	±1.17	±0.58	30
3302.0 ＜ Lp ≦ 3556.0	±1.22	±0.61	30
3556.0 ＜ Lp ≦ 3810.0	±1.28	±0.64	30
3810.0 ＜ Lp ≦ 4064.0	±1.32	±0.66	30
4064.0 ＜ Lp ≦ 4318.0	±1.37	±0.68	30
4318.0 ＜ Lp ≦ 4572.0	±1.42	±0.71	30

Classical Type （MXL, T80）　　Table 2-30c

Belt length Lp (mm)	Length tolerance (mm)	Center distance tolerance (mm)	Outer adjustment allowance
Lp ≦ 254.00	±0.41	±0.20	3
254.00 ＜ Lp ≦ 379.99	±0.46	±0.23	5
379.99 ＜ Lp ≦ 404.37	±0.51	±0.25	10
404.37 ＜ Lp ≦ 508.00	+1.02/-0	+0.51/-0	10
508.00 ＜ Lp ≦ 762.00	+1.22/-0	+0.61/-0	15
762.00 ＜ Lp ≦ 1016.00	+1.32/-0	+0.66/-0	15
1016.00 ＜ Lp ≦ 1270.00	+1.52/-0	+0.76/-0	25
1270.00 ＜ Lp ≦ 1524.00	+1.62/-0	+0.81/-0	25
1524.00 ＜ Lp ≦ 1778.00	+1.72/-0	+0.86/-0	30

Classical Type　　Table 2-30d

Belt type	Inner adjustment allowance
MXL、DMXL、T80	3
XL、DXL	5
L、DL	10
H、DH	15
XH	40
XXH	50
T5、DT5	5
T10、DT10	10

Center distance adjustment allowance

MEGA TORQUE U　　Table 2-30e

Belt length	Length tolerance (mm)	Center distance tolerance (mm)	Inner adjustment allowance	Outer adjustment allowance
600〜 762	+1.60/−0.26	+0.80/−0.13	15	3
763〜1016	+1.74/−0.26	+0.87/−0.13	15	5
1017〜1270	+2.00/−0.28	+1.00/−0.14	15	10
1271〜1524	+2.20/−0.28	+1.10/−0.14	15	10
1525〜1778	+2.32/−0.28	+1.16/−0.14	15	10
1779〜2032	+2.48/−0.28	+1.24/−0.14	15	10
2033〜2300	+2.60/−0.28	+1.30/−0.14	15	10

Center distance adjustment allowance

Center distance minimum adjustment range

Adjustment allowance from an appropriate point to inner side
(Inner adjustment allowance for installation)

Center distance

Adjustment allowance from an appropriate point to outer side
(Outer adjustment allowance for take up)

Fig.2-9

* Belt length tolerance and center distance adjustment allowance for U Type (Polyurethane) differ by cords. Contact us for designing advice.

2
Design
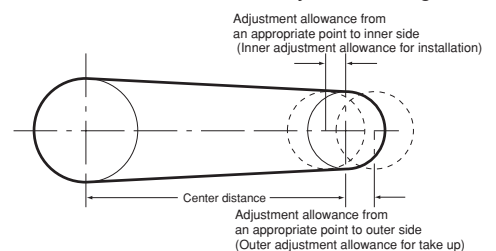
Classical Type MXL Basic power rating

(For 6.4 mm belt width)

W | MXL | 6.4mm

Table 2-31a

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
	6.47	7.76	9.06	10.35	11.65	12.94	14.23	15.53	16.82	18.12	19.41	20.70	22.00	23.29	24.59	25.88
100	0.8	1.0	1.1	1.3	1.4	1.6	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.0	3.2
200	1.6	1.9	2.2	2.5	2.9	3.2	3.5	3.8	4.1	4.4	4.8	5.1	5.4	5.7	6.0	6.3
300	2.4	2.9	3.3	3.8	4.3	4.8	5.2	5.7	6.2	6.7	7.1	7.6	8.1	8.6	9.0	9.5
400	3.2	3.8	4.4	5.1	5.7	6.3	7.0	7.6	8.2	8.9	9.5	10.1	10.8	11.4	12.1	12.7
500	4.0	4.8	5.5	6.3	7.1	7.9	8.7	9.5	10.3	11.1	11.9	12.7	13.5	14.3	15.1	15.9
600	4.8	5.7	6.7	7.6	8.6	9.5	10.5	11.4	12.4	13.3	14.3	15.2	16.2	17.1	18.1	19.0
700	5.5	6.7	7.8	8.9	10.0	11.1	12.2	13.3	14.4	15.5	16.6	17.7	18.9	20.0	21.1	22.2
800	6.3	7.6	8.9	10.1	11.4	12.7	13.9	15.2	16.5	17.8	19.0	20.3	21.6	22.8	24.1	25.4
900	7.1	8.6	10.0	11.4	12.8	14.3	15.7	17.1	18.5	20.0	21.4	22.8	24.3	25.7	27.1	28.5
1000	7.9	9.5	11.1	12.7	14.3	15.8	17.4	19.0	20.6	22.2	23.8	25.3	26.9	28.5	30.1	31.7
1100	8.7	10.5	12.2	13.9	15.7	17.4	19.2	20.9	22.7	24.4	26.1	27.9	29.6	31.4	33.1	34.9
1200	9.5	11.4	13.3	15.2	17.1	19.0	20.9	22.8	24.7	26.6	28.5	30.4	32.3	34.2	36.1	38.0
1300	10.3	12.4	14.4	16.5	18.6	20.6	22.7	24.7	26.8	28.8	30.9	32.9	35.0	37.1	39.1	41.2
1400	11.1	13.3	15.5	17.7	20.0	22.2	24.4	26.6	28.8	31.1	33.3	35.5	37.7	39.9	42.1	44.3
1500	11.9	14.3	16.6	19.0	21.4	23.8	26.1	28.5	30.9	33.3	35.6	38.0	40.4	42.7	45.1	47.5
1600	12.7	15.2	17.7	20.3	22.8	25.3	27.9	30.4	32.9	35.5	38.0	40.5	43.1	45.6	48.1	50.6
1700	13.5	16.2	18.9	21.5	24.3	26.9	29.6	32.3	35.0	37.7	40.4	43.1	45.8	48.4	51.1	53.8
1800	14.3	17.1	20.0	22.8	25.7	28.5	31.4	34.2	37.1	39.9	42.8	45.6	48.4	51.3	54.1	57.0
1900	15.1	18.1	21.1	24.1	27.1	30.1	33.1	36.1	39.1	42.1	45.1	48.1	51.1	54.1	57.1	60.1
2000	15.8	19.0	22.2	25.3	28.5	31.7	34.8	38.0	41.2	44.3	47.5	50.6	53.8	56.9	60.1	63.3
2100	16.6	20.0	23.3	26.6	30.0	33.3	36.6	39.9	43.2	46.6	49.9	53.2	56.5	59.8	63.1	66.4
2200	17.4	20.9	24.4	27.9	31.4	34.8	38.3	41.8	45.3	48.8	52.2	55.7	59.2	62.6	66.1	69.5
2300	18.2	21.9	25.5	29.1	32.8	36.4	40.1	43.7	47.3	51.0	54.6	58.2	61.8	65.4	69.1	72.7
2400	19.0	22.8	26.6	30.4	34.2	38.0	41.8	45.6	49.4	53.2	57.0	60.7	64.5	68.3	72.1	75.8
2500	19.8	23.8	27.7	31.7	35.7	39.6	43.5	47.5	51.4	55.4	59.3	63.2	67.2	71.1	75.0	78.9
2600	20.6	24.7	28.8	32.9	37.1	41.2	45.3	49.4	53.5	57.6	61.7	65.7	69.9	73.9	78.0	82.1
2700	21.4	25.7	29.9	34.2	38.5	42.7	47.0	51.3	55.5	59.8	64.0	68.3	72.5	76.7	81.0	85.2
2800	22.2	26.6	31.0	35.5	39.9	44.3	48.7	53.2	57.6	62.0	66.4	70.8	75.2	79.5	84.0	88.3
2900	23.0	27.6	32.2	36.7	41.3	45.9	50.5	55.1	59.6	64.2	68.8	73.3	77.9	82.4	86.9	91.4
3000	23.8	28.5	33.3	38.0	42.8	47.5	52.2	57.0	61.7	66.4	71.1	75.8	80.5	85.2	89.9	94.6
3100	—	—	—	39.3	44.2	49.1	53.9	58.9	63.7	68.6	73.5	78.3	83.2	88.0	92.9	97.7
3200	—	—	—	40.5	45.6	50.6	55.7	60.7	65.7	70.8	75.8	80.8	85.8	90.8	95.8	100.8
3300	—	—	—	41.8	47.0	52.2	57.4	62.6	67.8	73.0	78.2	83.3	88.5	93.6	98.8	103.9
3400	—	—	—	43.1	48.5	53.8	59.1	64.5	69.8	75.2	80.5	85.8	91.1	96.4	101.7	107.0
3500	—	—	—	44.3	49.9	55.4	60.9	66.4	71.9	77.4	82.9	88.3	93.8	99.2	104.7	110.1
3600	—	—	—	45.6	51.3	56.9	62.6	68.3	73.9	79.6	85.2	90.8	96.4	102.0	107.6	113.2
3700	—	—	—	46.8	52.7	58.5	64.3	70.2	75.9	81.8	87.5	93.3	99.1	104.8	110.6	116.3
3800	—	—	—	48.1	54.1	60.1	66.1	72.1	78.0	84.0	89.9	95.8	101.7	107.6	113.5	119.3
3900	—	—	—	49.4	55.6	61.7	67.8	73.9	80.0	86.2	92.2	98.3	104.4	110.4	116.4	122.4
4000	—	—	—	50.6	57.0	63.2	69.5	75.8	82.1	88.3	94.6	100.8	107.0	113.1	119.4	125.5
4100	—	—	—	51.9	58.4	64.8	71.2	77.7	84.1	90.5	96.9	103.2	109.6	115.9	122.3	128.6
4200	—	—	—	53.2	59.8	66.4	73.0	79.6	86.1	92.7	99.2	105.7	112.3	118.7	125.2	131.6
4300	—	—	—	54.4	61.2	67.9	74.7	81.5	88.1	94.9	101.6	108.2	114.9	121.5	128.1	134.7
4400	—	—	—	55.7	62.6	69.5	76.4	83.3	90.2	97.1	103.9	110.7	117.5	124.2	131.0	137.7
4500	—	—	—	56.9	64.1	71.1	78.1	85.2	92.2	99.3	106.2	113.1	120.1	127.0	133.9	140.8
4600	—	—	—	58.2	65.5	72.7	79.9	87.1	94.2	101.4	108.5	115.6	122.7	129.8	136.8	143.8
4700	—	—	—	59.5	66.9	74.2	81.6	89.0	96.2	103.6	110.9	118.1	125.4	132.5	139.7	146.9
4800	—	—	—	60.7	68.3	75.8	83.3	90.8	98.3	105.8	113.2	120.5	128.0	135.3	142.6	149.9
4900	—	—	—	62.0	69.7	77.4	85.0	92.7	100.3	107.9	115.5	123.0	130.6	138.0	145.5	152.9
5000	—	—	—	63.2	71.1	78.9	86.7	94.6	102.3	110.1	117.8	125.5	133.2	140.7	148.4	155.9

Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb) Table 2-32

Belt width (mm)	3.2	4.8	6.4	9.5	12.7
Factor Kb	0.45	0.72	1.00	1.57	2.18

2 Design

Classical Type MXL Basic power rating (torque)
(For 6.4 mm belt width)

N·cm MXL / 6.4mm

Table 2-31b

Number of teeth (T)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Pitch diameter (mm) Revolution (rpm)	6.47	7.76	9.06	10.35	11.65	12.94	14.23	15.53	16.82	18.12	19.41	20.70	22.00	23.29	24.59	25.88
100	7.6	9.1	10.6	12.1	13.6	15.1	16.7	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
200	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
300	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
400	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
500	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
600	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
700	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
800	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
900	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
1000	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
1100	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.8	30.3
1200	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.3
1300	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1400	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1500	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1600	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1700	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1800	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
1900	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2000	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2100	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2200	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.2	19.7	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2300	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2400	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2500	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.2	22.7	24.2	25.7	27.2	28.7	30.2
2600	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.2	22.7	24.1	25.7	27.1	28.7	30.1
2700	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.2	22.7	24.1	25.7	27.1	28.6	30.1
2800	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
2900	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3000	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3100	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3200	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3300	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3400	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.1
3500	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.0
3600	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6	30.0
3700	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.0	28.5	30.0
3800	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.0	28.5	30.0
3900	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.0	28.5	30.0
4000	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.1	25.5	27.0	28.5	30.0
4100	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.0	25.5	27.0	28.5	29.9
4200	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.0	25.5	27.0	28.5	29.9
4300	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.6	24.0	25.5	27.0	28.5	29.9
4400	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.5	24.0	25.5	27.0	28.4	29.9
4500	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.5	24.0	25.5	27.0	28.4	29.9
4600	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.5	24.0	25.5	26.9	28.4	29.9
4700	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.5	24.0	25.5	26.9	28.4	29.8
4800	—	—	—	12.1	13.6	15.1	16.6	18.1	19.6	21.0	22.5	24.0	25.5	26.9	28.4	29.8
4900	—	—	—	12.1	13.6	15.1	16.6	18.1	19.5	21.0	22.5	24.0	25.4	26.9	28.4	29.8
5000	—	—	—	12.1	13.6	15.1	16.6	18.1	19.5	21.0	22.5	24.0	25.4	26.9	28.3	29.8

■ Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-32

Belt width (mm)	3.2	4.8	6.4	9.5	12.7
Factor Kb	0.45	0.72	1.00	1.57	2.18

Classical Type XL Basic power rating
(For 25.4 mm belt width)

kW XL 25.4mm

Table 2-33a

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	10	11	12	14	15	16	18	19	20	21	22	24	25	26	28	30
	16.17	17.79	19.40	22.64	24.25	25.87	29.11	30.72	32.34	33.96	35.57	38.81	40.42	42.04	45.28	48.51
950	0.15	0.16	0.18	0.20	0.22	0.23	0.26	0.28	0.29	0.31	0.32	0.35	0.37	0.38	0.41	0.44
1160	0.18	0.20	0.21	0.25	0.27	0.29	0.32	0.34	0.36	0.37	0.39	0.43	0.45	0.46	0.50	0.53
1425	0.22	0.24	0.26	0.31	0.33	0.35	0.39	0.42	0.44	0.46	0.48	0.53	0.55	0.57	0.61	0.66
1750	0.27	0.30	0.32	0.38	0.40	0.43	0.48	0.51	0.54	0.56	0.59	0.64	0.67	0.70	0.75	0.80
2850	0.44	0.48	0.53	0.61	0.66	0.70	0.79	0.83	0.87	0.91	0.96	1.04	1.08	1.12	1.21	1.29
3450	0.53	0.58	0.63	0.74	0.79	0.84	0.95	1.00	1.05	1.10	1.15	1.25	1.30	1.35	1.45	1.55
100	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05
200	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09
300	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.09	0.10	0.10	0.11	0.12	0.12	0.13	0.14
400	0.06	0.07	0.07	0.09	0.09	0.10	0.11	0.12	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.18
500	0.08	0.08	0.09	0.11	0.12	0.12	0.14	0.15	0.15	0.16	0.17	0.18	0.19	0.20	0.22	0.23
600	0.09	0.10	0.11	0.13	0.14	0.15	0.17	0.18	0.18	0.19	0.20	0.22	0.23	0.24	0.26	0.28
700	0.11	0.12	0.13	0.15	0.16	0.17	0.19	0.20	0.22	0.23	0.24	0.26	0.27	0.28	0.30	0.32
800	0.12	0.14	0.15	0.17	0.18	0.20	0.22	0.23	0.25	0.26	0.27	0.30	0.31	0.32	0.34	0.37
900	0.14	0.15	0.17	0.19	0.21	0.22	0.25	0.26	0.28	0.29	0.30	0.33	0.35	0.36	0.39	0.42
1000	0.15	0.17	0.18	0.22	0.23	0.25	0.28	0.29	0.31	0.32	0.34	0.37	0.38	0.40	0.43	0.46
1100	0.17	0.19	0.20	0.24	0.25	0.27	0.30	0.32	0.34	0.36	0.37	0.41	0.42	0.44	0.47	0.51
1200	0.18	0.20	0.22	0.26	0.28	0.30	0.33	0.35	0.37	0.39	0.41	0.44	0.46	0.48	0.52	0.55
1300	0.20	0.22	0.24	0.28	0.30	0.32	0.36	0.38	0.40	0.42	0.44	0.48	0.50	0.52	0.56	0.60
1400	0.22	0.24	0.26	0.30	0.32	0.34	0.39	0.41	0.43	0.45	0.47	0.52	0.54	0.56	0.60	0.64
1500	0.23	0.25	0.28	0.32	0.35	0.37	0.42	0.44	0.46	0.48	0.51	0.55	0.58	0.60	0.64	0.69
1600	0.25	0.27	0.30	0.34	0.37	0.39	0.44	0.47	0.49	0.52	0.54	0.59	0.61	0.64	0.69	0.74
1700	0.26	0.29	0.31	0.37	0.39	0.42	0.47	0.50	0.52	0.55	0.57	0.63	0.65	0.68	0.73	0.78
1800	0.28	0.30	0.33	0.39	0.42	0.44	0.50	0.53	0.55	0.58	0.61	0.66	0.69	0.72	0.77	0.83
2000	0.31	0.34	0.37	0.43	0.46	0.49	0.55	0.58	0.61	0.64	0.67	0.74	0.77	0.80	0.86	0.92
2200	0.34	0.37	0.41	0.47	0.51	0.54	0.61	0.64	0.67	0.71	0.74	0.81	0.84	0.87	0.94	1.01
2400	0.37	0.41	0.44	0.52	0.55	0.59	0.66	0.70	0.74	0.77	0.81	0.88	0.92	0.95	1.02	1.09
2600	0.40	0.44	0.48	0.56	0.60	0.64	0.72	0.76	0.80	0.83	0.87	0.95	0.99	1.03	1.11	1.18
2800	0.43	0.47	0.52	0.60	0.64	0.69	0.77	0.81	0.86	0.90	0.94	1.02	1.06	1.11	1.19	1.27
3000	0.46	0.51	0.55	0.64	0.69	0.74	0.83	0.87	0.92	0.96	1.01	1.09	1.14	1.18	1.27	1.36
3200	0.49	0.54	0.59	0.69	0.73	0.78	0.88	0.93	0.98	1.02	1.07	1.16	1.21	1.26	1.35	1.44
3400	0.52	0.57	0.63	0.73	0.78	0.83	0.93	0.98	1.03	1.09	1.14	1.24	1.28	1.33	1.43	1.53
3600	0.55	0.61	0.66	0.77	0.83	0.88	0.99	1.04	1.09	1.15	1.20	1.30	1.36	1.41	1.51	1.61
3800	0.58	0.64	0.70	0.81	0.87	0.93	1.04	1.10	1.15	1.21	1.26	1.37	1.43	1.48	1.59	1.70
4000	0.61	0.67	0.73	0.86	0.92	0.98	1.09	1.15	1.21	1.27	1.33	1.44	1.50	1.56	1.67	1.78
4200	0.64	0.71	0.77	0.90	0.96	1.02	1.15	1.21	1.27	1.33	1.39	1.51	1.57	1.63	1.75	1.86
4400	0.67	0.74	0.81	0.94	1.00	1.07	1.20	1.26	1.33	1.39	1.45	1.58	1.64	1.70	1.82	1.94
4600	0.70	0.77	0.84	0.98	1.05	1.12	1.25	1.32	1.39	1.45	1.52	1.65	1.71	1.77	1.90	2.02
4800	0.74	0.81	0.88	1.02	1.09	1.16	1.30	1.37	1.44	1.51	1.58	1.71	1.78	1.84	1.97	2.10
5000	0.77	0.84	0.92	1.06	1.14	1.21	1.36	1.43	1.50	1.57	1.64	1.78	1.85	1.91	2.04	2.17
5500	—	—	—	—	1.25	1.33	1.49	1.56	1.64	1.72	1.79	1.94	2.01	2.08	2.22	2.36
6000	—	—	—	—	1.36	1.44	1.61	1.70	1.78	1.86	1.94	2.10	2.17	2.25	2.39	2.53
6500	—	—	—	—	1.46	1.56	1.74	1.83	1.91	2.00	2.08	2.25	2.33	2.40	2.56	2.70
7000	—	—	—	—	1.57	1.67	1.86	1.95	2.04	2.13	2.22	2.39	2.48	2.56	2.71	2.85
7500	—	—	—	—	1.67	1.78	1.98	2.08	2.17	2.27	2.36	2.53	2.62	2.70	2.85	3.00
8000	—	—	—	—	—	—	2.10	2.20	2.30	2.39	2.49	2.67	2.75	2.83	2.99	3.13
8500	—	—	—	—	—	—	2.21	2.31	2.42	2.52	2.61	2.79	2.88	2.96	3.11	3.25
9000	—	—	—	—	—	—	2.32	2.43	2.53	2.63	2.73	2.91	3.00	3.08	3.22	3.35
9500	—	—	—	—	—	—	2.43	2.54	2.64	2.75	2.84	3.02	3.11	3.18	3.32	3.44
10000	—	—	—	—	—	—	2.53	2.64	2.75	2.85	2.95	3.13	3.21	3.28	3.41	3.51

■ Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb) Table 2-34

Belt width (mm)	6.4	7.9	9.5	12.7	25.4
Factor Kb	0.15	0.21	0.28	0.42	1.00

2
Design

Classical Type XL Basic power rating (torque)
(For 25.4 mm belt width)

N·m XL / 25.4mm

Table 2-33b

Number of teeth (T)	10	11	12	14	15	16	18	19	20	21	22	24	25	26	28	30
Pitch diameter (mm) / Revolution (rpm)	16.17	17.79	19.40	22.64	24.25	25.87	29.11	30.72	32.34	33.96	35.57	38.81	40.42	42.04	45.28	48.51
950	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.53	3.67	3.82	4.11	4.41
1160	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.52	3.67	3.82	4.11	4.40
1425	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.94	3.08	3.23	3.52	3.67	3.81	4.10	4.39
1750	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.93	3.08	3.22	3.52	3.66	3.80	4.09	4.38
2850	1.47	1.61	1.76	2.05	2.20	2.34	2.63	2.77	2.92	3.06	3.20	3.49	3.63	3.77	4.05	4.33
3450	1.47	1.61	1.76	2.05	2.19	2.34	2.62	2.76	2.91	3.05	3.19	3.47	3.61	3.74	4.02	4.29
100	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.80	2.94	3.09	3.24	3.53	3.68	3.83	4.12	4.41
200	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.80	2.94	3.09	3.24	3.53	3.68	3.83	4.12	4.41
300	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.80	2.94	3.09	3.24	3.53	3.68	3.83	4.12	4.41
400	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.80	2.94	3.09	3.24	3.53	3.68	3.82	4.12	4.41
500	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.80	2.94	3.09	3.24	3.53	3.68	3.82	4.12	4.41
600	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.24	3.53	3.68	3.82	4.12	4.41
700	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.24	3.53	3.68	3.82	4.12	4.41
800	1.47	1.62	1.77	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.53	3.67	3.82	4.12	4.41
900	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.53	3.67	3.82	4.11	4.41
1000	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.53	3.67	3.82	4.11	4.40
1100	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.53	3.67	3.82	4.11	4.40
1200	1.47	1.62	1.76	2.06	2.21	2.35	2.65	2.79	2.94	3.09	3.23	3.52	3.67	3.82	4.11	4.40
1300	1.47	1.62	1.76	2.06	2.20	2.35	2.65	2.79	2.94	3.08	3.23	3.52	3.67	3.81	4.11	4.40
1400	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.94	3.08	3.23	3.52	3.67	3.81	4.10	4.39
1500	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.94	3.08	3.23	3.52	3.66	3.81	4.10	4.39
1600	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.94	3.08	3.23	3.52	3.66	3.81	4.10	4.39
1700	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.93	3.08	3.22	3.52	3.66	3.81	4.10	4.38
1800	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.79	2.93	3.08	3.22	3.51	3.66	3.80	4.09	4.38
2000	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.78	2.93	3.08	3.22	3.51	3.65	3.80	4.09	4.37
2200	1.47	1.62	1.76	2.06	2.20	2.35	2.64	2.78	2.93	3.07	3.22	3.51	3.65	3.79	4.08	4.36
2400	1.47	1.62	1.76	2.05	2.20	2.35	2.64	2.78	2.93	3.07	3.21	3.50	3.64	3.79	4.07	4.35
2600	1.47	1.62	1.76	2.05	2.20	2.34	2.63	2.78	2.92	3.07	3.21	3.50	3.64	3.78	4.06	4.34
2800	1.47	1.61	1.76	2.05	2.20	2.34	2.63	2.77	2.92	3.06	3.20	3.49	3.63	3.77	4.05	4.33
3000	1.47	1.61	1.76	2.05	2.19	2.34	2.63	2.77	2.91	3.06	3.20	3.48	3.62	3.76	4.04	4.32
3200	1.47	1.61	1.76	2.05	2.19	2.34	2.63	2.77	2.91	3.05	3.19	3.48	3.62	3.76	4.03	4.31
3400	1.47	1.61	1.76	2.05	2.19	2.34	2.62	2.76	2.91	3.05	3.19	3.47	3.61	3.75	4.02	4.29
3600	1.47	1.61	1.76	2.05	2.19	2.33	2.62	2.76	2.90	3.04	3.18	3.46	3.60	3.74	4.01	4.28
3800	1.47	1.61	1.76	2.04	2.19	2.33	2.62	2.76	2.90	3.04	3.18	3.45	3.59	3.73	4.00	4.26
4000	1.47	1.61	1.75	2.04	2.19	2.33	2.61	2.75	2.89	3.03	3.17	3.44	3.58	3.72	3.98	4.24
4200	1.46	1.61	1.75	2.04	2.18	2.33	2.61	2.75	2.89	3.03	3.16	3.44	3.57	3.70	3.97	4.23
4400	1.46	1.61	1.75	2.04	2.18	2.32	2.60	2.74	2.88	3.02	3.16	3.43	3.56	3.69	3.95	4.21
4600	1.46	1.61	1.75	2.04	2.18	2.32	2.60	2.74	2.88	3.01	3.15	3.42	3.55	3.68	3.94	4.19
4800	1.46	1.61	1.75	2.04	2.18	2.32	2.60	2.73	2.87	3.01	3.14	3.41	3.54	3.67	3.92	4.17
5000	1.46	1.61	1.75	2.03	2.17	2.31	2.59	2.73	2.86	3.00	3.13	3.40	3.52	3.65	3.90	4.15
5500	—	—	—	—	2.17	2.31	2.58	2.71	2.85	2.98	3.11	3.37	3.49	3.62	3.86	4.09
6000	—	—	—	—	2.16	2.30	2.57	2.70	2.83	2.96	3.09	3.34	3.46	3.58	3.81	4.03
6500	—	—	—	—	2.15	2.29	2.55	2.68	2.81	2.94	3.06	3.30	3.42	3.53	3.76	3.97
7000	—	—	—	—	2.14	2.28	2.54	2.66	2.79	2.91	3.03	3.26	3.38	3.49	3.70	3.89
7500	—	—	—	—	2.13	2.26	2.52	2.64	2.77	2.89	3.00	3.23	3.33	3.44	3.63	3.82
8000	—	—	—	—	—	—	2.50	2.62	2.74	2.86	2.97	3.18	3.28	3.38	3.57	3.73
8500	—	—	—	—	—	—	2.48	2.60	2.72	2.83	2.93	3.14	3.23	3.33	3.50	3.65
9000	—	—	—	—	—	—	2.46	2.58	2.69	2.79	2.90	3.09	3.18	3.26	3.42	3.55
9500	—	—	—	—	—	—	2.44	2.55	2.66	2.76	2.86	3.04	3.12	3.20	3.34	3.45
10000	—	—	—	—	—	—	2.42	2.53	2.63	2.73	2.82	2.99	3.06	3.13	3.26	3.35

▮ Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-34

Belt width (mm)	6.4	7.9	9.5	12.7	25.4
Factor Kb	0.15	0.21	0.28	0.42	1.00

2
Design

Classical Type L Basic power rating

(For 25.4 mm belt width)

kW / L 25.4mm

Table 2-35a

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	10 / 30.32	12 / 36.38	14 / 42.45	15 / 45.48	16 / 48.51	18 / 54.58	20 / 60.64	22 / 66.70	24 / 72.77	26 / 78.83	28 / 84.90	32 / 97.02	36 / 109.15	40 / 121.28	44 / 133.41	48 / 145.54
725	0.28	0.34	0.39	0.42	0.45	0.50	0.56	0.62	0.67	0.73	0.78	0.89	1.00	1.11	1.22	1.33
870	0.34	0.40	0.47	0.50	0.54	0.61	0.67	0.74	0.81	0.87	0.94	1.07	1.20	1.33	1.46	1.59
950	0.37	0.44	0.51	0.55	0.59	0.66	0.73	0.81	0.88	0.95	1.02	1.17	1.31	1.45	1.59	1.73
1160	0.45	0.54	0.63	0.67	0.72	0.81	0.89	0.98	1.07	1.16	1.25	1.42	1.59	1.76	1.93	2.09
1425	0.55	0.66	0.77	0.82	0.88	0.99	1.10	1.20	1.31	1.42	1.52	1.73	1.94	2.14	2.33	2.53
1750	0.68	0.81	0.94	1.01	1.08	1.21	1.34	1.47	1.60	1.73	1.85	2.10	2.34	2.58	2.81	3.03
2850	—	1.31	1.52	1.63	1.73	1.94	2.14	2.33	2.53	2.71	2.90	3.24	3.56	3.85	4.10	4.32
3450	—	—	1.83	1.95	2.07	2.31	2.55	2.77	2.99	3.20	3.40	3.76	4.08	4.34	4.54	4.67
100	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.14	0.15	0.17	0.19
200	0.08	0.09	0.11	0.12	0.12	0.14	0.15	0.17	0.19	0.20	0.22	0.25	0.28	0.31	0.34	0.37
300	0.12	0.14	0.16	0.17	0.19	0.21	0.23	0.26	0.28	0.30	0.33	0.37	0.42	0.46	0.51	0.56
400	0.15	0.19	0.22	0.23	0.25	0.28	0.31	0.34	0.37	0.40	0.43	0.49	0.56	0.62	0.68	0.74
500	0.19	0.23	0.27	0.29	0.31	0.35	0.39	0.43	0.46	0.50	0.54	0.62	0.70	0.77	0.85	0.92
600	0.23	0.28	0.33	0.35	0.37	0.42	0.46	0.51	0.56	0.60	0.65	0.74	0.83	0.92	1.02	1.11
700	0.27	0.33	0.38	0.41	0.43	0.49	0.54	0.60	0.65	0.70	0.76	0.86	0.97	1.08	1.18	1.29
800	0.31	0.37	0.43	0.46	0.49	0.56	0.62	0.68	0.74	0.80	0.86	0.99	1.11	1.23	1.35	1.47
900	0.35	0.42	0.49	0.52	0.56	0.63	0.70	0.76	0.83	0.90	0.97	1.11	1.24	1.38	1.51	1.64
1000	0.39	0.46	0.54	0.58	0.62	0.70	0.77	0.85	0.92	1.00	1.08	1.23	1.38	1.52	1.67	1.82
1100	0.43	0.51	0.60	0.64	0.68	0.76	0.85	0.93	1.02	1.10	1.18	1.35	1.51	1.67	1.83	1.99
1200	0.46	0.56	0.65	0.70	0.74	0.83	0.92	1.02	1.11	1.20	1.29	1.47	1.64	1.82	1.99	2.16
1300	0.50	0.60	0.70	0.75	0.80	0.90	1.00	1.10	1.20	1.29	1.39	1.58	1.77	1.96	2.14	2.32
1400	0.54	0.65	0.76	0.81	0.86	0.97	1.08	1.18	1.29	1.39	1.50	1.70	1.90	2.10	2.30	2.49
1500	0.58	0.69	0.81	0.87	0.92	1.04	1.15	1.26	1.38	1.49	1.60	1.82	2.03	2.24	2.45	2.65
1600	0.62	0.74	0.86	0.92	0.99	1.11	1.23	1.35	1.47	1.58	1.70	1.93	2.16	2.38	2.59	2.80
1700	0.66	0.79	0.92	0.98	1.05	1.17	1.30	1.43	1.55	1.68	1.80	2.05	2.28	2.51	2.74	2.95
1800	0.70	0.83	0.97	1.04	1.11	1.24	1.38	1.51	1.64	1.77	1.90	2.16	2.41	2.65	2.88	3.10
1900	—	0.88	1.02	1.10	1.17	1.31	1.45	1.59	1.73	1.87	2.00	2.27	2.53	2.78	3.01	3.24
2000	—	0.92	1.08	1.15	1.23	1.38	1.52	1.67	1.82	1.96	2.10	2.38	2.65	2.90	3.15	3.38
2100	—	0.97	1.13	1.21	1.29	1.44	1.60	1.75	1.90	2.05	2.20	2.49	2.76	3.03	3.28	3.51
2200	—	1.02	1.18	1.26	1.35	1.51	1.67	1.83	1.99	2.14	2.30	2.59	2.88	3.15	3.40	3.64
2300	—	1.06	1.23	1.32	1.41	1.58	1.74	1.91	2.07	2.23	2.39	2.70	2.99	3.26	3.52	3.76
2400	—	1.11	1.29	1.38	1.47	1.64	1.82	1.99	2.16	2.32	2.49	2.80	3.10	3.38	3.64	3.88
2500	—	1.15	1.34	1.43	1.52	1.71	1.89	2.07	2.24	2.41	2.58	2.90	3.21	3.49	3.75	3.98
2600	—	1.20	1.39	1.49	1.58	1.77	1.96	2.14	2.32	2.50	2.67	3.00	3.31	3.60	3.86	4.09
2700	—	1.24	1.44	1.54	1.64	1.84	2.03	2.22	2.41	2.59	2.76	3.10	3.41	3.70	3.96	4.18
2800	—	1.29	1.50	1.60	1.70	1.90	2.10	2.30	2.49	2.67	2.85	3.19	3.51	3.80	4.05	4.27
2900	—	1.33	1.55	1.65	1.76	1.97	2.17	2.37	2.57	2.76	2.94	3.29	3.61	3.89	4.14	4.36
3000	—	1.38	1.60	1.71	1.82	2.03	2.24	2.45	2.65	2.84	3.03	3.38	3.70	3.98	4.23	4.43
3200	—	1.47	1.70	1.82	1.93	2.16	2.38	2.59	2.80	3.00	3.19	3.55	3.88	4.15	4.38	4.56
3400	—	—	1.80	1.92	2.05	2.28	2.51	2.74	2.95	3.16	3.36	3.72	4.04	4.30	4.51	4.65
3600	—	—	1.90	2.03	2.16	2.41	2.65	2.88	3.10	3.31	3.51	3.88	4.18	4.43	4.61	4.71
3800	—	—	2.00	2.14	2.27	2.53	2.78	3.01	3.24	3.46	3.66	4.02	4.32	4.54	4.68	4.73
4000	—	—	2.10	2.24	2.38	2.65	2.90	3.15	3.38	3.60	3.80	4.15	4.43	4.62	4.72	4.72
4200	—	—	—	2.34	2.49	2.76	3.03	3.28	3.51	3.73	3.93	4.27	4.53	4.69	4.73	4.66
4400	—	—	—	2.45	2.59	2.88	3.15	3.40	3.64	3.86	4.05	4.38	4.61	4.72	4.71	4.56
4600	—	—	—	2.55	2.70	2.99	3.26	3.52	3.76	3.98	4.17	4.48	4.67	4.73	4.66	4.42
5000	—	—	—	2.74	2.90	3.21	3.49	3.75	3.98	4.19	4.37	4.62	4.73	4.67	4.43	3.99
5200	—	—	—	2.84	3.00	3.31	3.60	3.86	4.09	4.29	4.45	4.68	4.73	4.60	4.26	3.70
5600	—	—	—	3.03	3.19	3.51	3.80	4.05	4.27	4.45	4.59	4.73	4.66	4.36	3.80	2.95
6000	—	—	—	3.21	3.38	3.70	3.98	4.23	4.43	4.58	4.69	4.72	4.50	3.99	3.16	1.98

▮ Endurance time decreases.

▮ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-36

Belt width (mm)	12.7	19.1	25.4	38.1
Factor Kb	0.42	0.71	1.00	1.56

2 Design

Classical Type L Basic power rating (torque)
(For 25.4 mm belt width)

N·m L / 25.4mm

Table 2-35b

Number of teeth (T)	10	12	14	15	16	18	20	22	24	26	28	32	36	40	44	48
Pitch diameter (mm) Revolution (rpm)	30.32	36.38	42.45	45.48	48.51	54.58	60.64	66.70	72.77	78.83	84.90	97.02	109.15	121.28	133.41	145.54
725	3.70	4.44	5.17	5.54	5.91	6.65	7.38	8.12	8.85	9.58	10.32	11.77	13.23	14.67	16.11	17.54
870	3.70	4.43	5.17	5.54	5.91	6.64	7.38	8.11	8.84	9.57	10.30	11.75	13.19	14.62	16.04	17.45
950	3.70	4.43	5.17	5.54	5.91	6.64	7.37	8.10	8.83	9.56	10.29	11.73	13.16	14.59	16.00	17.39
1160	3.69	4.43	5.17	5.53	5.90	6.63	7.36	8.09	8.81	9.53	10.25	11.68	13.09	14.48	15.86	17.21
1425	3.69	4.43	5.16	5.52	5.89	6.62	7.34	8.06	8.78	9.49	10.20	11.59	12.97	14.32	15.64	16.93
1750	3.69	4.42	5.15	5.51	5.87	6.59	7.31	8.02	8.72	9.42	10.11	11.47	12.79	14.08	15.32	16.51
2850	—	4.39	5.10	5.45	5.80	6.49	7.16	7.82	8.47	9.09	9.70	10.86	11.93	12.89	13.74	14.46
3450	—	—	5.06	5.40	5.74	6.40	7.05	7.67	8.27	8.85	9.40	10.41	11.28	12.00	12.56	12.93
100	3.70	4.44	5.18	5.55	5.92	6.66	7.40	8.14	8.88	9.62	10.36	11.84	13.32	14.79	16.27	17.75
200	3.70	4.44	5.18	5.55	5.92	6.66	7.40	8.14	8.88	9.62	10.36	11.83	13.31	14.79	16.26	17.74
300	3.70	4.44	5.18	5.55	5.92	6.66	7.40	8.13	8.87	9.61	10.35	11.83	13.30	14.78	16.25	17.72
400	3.70	4.44	5.18	5.55	5.92	6.66	7.39	8.13	8.87	9.61	10.35	11.82	13.29	14.76	16.23	17.69
500	3.70	4.44	5.18	5.55	5.91	6.65	7.39	8.13	8.87	9.60	10.34	11.81	13.27	14.74	16.20	17.66
600	3.70	4.44	5.18	5.54	5.91	6.65	7.39	8.12	8.86	9.59	10.33	11.79	13.26	14.71	16.16	17.61
700	3.70	4.44	5.17	5.54	5.91	6.65	7.38	8.12	8.85	9.59	10.32	11.78	13.23	14.68	16.12	17.56
800	3.70	4.43	5.17	5.54	5.91	6.65	7.38	8.11	8.85	9.58	10.31	11.76	13.21	14.65	16.08	17.50
900	3.70	4.43	5.17	5.54	5.91	6.64	7.37	8.11	8.84	9.57	10.29	11.74	13.18	14.61	16.02	17.43
1000	3.70	4.43	5.17	5.54	5.90	6.64	7.37	8.10	8.83	9.55	10.28	11.72	13.15	14.56	15.96	17.35
1100	3.69	4.43	5.17	5.53	5.90	6.63	7.36	8.09	8.82	9.54	10.26	11.69	13.11	14.51	15.90	17.27
1200	3.69	4.43	5.16	5.53	5.90	6.63	7.36	8.08	8.81	9.53	10.24	11.66	13.07	14.46	15.83	17.17
1300	3.69	4.43	5.16	5.53	5.89	6.62	7.35	8.07	8.79	9.51	10.22	11.63	13.03	14.40	15.75	17.07
1400	3.69	4.43	5.16	5.52	5.89	6.62	7.34	8.06	8.78	9.49	10.20	11.60	12.98	14.34	15.66	16.96
1500	3.69	4.42	5.16	5.52	5.88	6.61	7.33	8.05	8.76	9.47	10.18	11.57	12.93	14.27	15.57	16.84
1600	3.69	4.42	5.15	5.52	5.88	6.60	7.32	8.04	8.75	9.45	10.15	11.53	12.88	14.20	15.48	16.72
1700	3.69	4.42	5.15	5.51	5.88	6.60	7.31	8.03	8.73	9.43	10.13	11.49	12.82	14.12	15.37	16.58
1800	3.69	4.42	5.15	5.51	5.87	6.59	7.30	8.01	8.71	9.41	10.10	11.45	12.76	14.04	15.26	16.44
1900	—	4.42	5.14	5.50	5.86	6.58	7.29	8.00	8.70	9.39	10.07	11.40	12.70	13.95	15.15	16.29
2000	—	4.41	5.14	5.50	5.86	6.57	7.28	7.98	8.68	9.36	10.04	11.36	12.63	13.86	15.03	16.13
2100	—	4.41	5.13	5.49	5.85	6.56	7.27	7.97	8.65	9.33	10.00	11.31	12.56	13.76	14.90	15.97
2200	—	4.41	5.13	5.49	5.85	6.56	7.26	7.95	8.63	9.31	9.97	11.26	12.49	13.66	14.76	15.79
2300	—	4.41	5.13	5.48	5.84	6.55	7.24	7.93	8.61	9.28	9.93	11.20	12.41	13.56	14.62	15.61
2400	—	4.40	5.12	5.48	5.83	6.54	7.23	7.91	8.59	9.25	9.89	11.15	12.33	13.45	14.48	15.42
2500	—	4.40	5.12	5.47	5.82	6.53	7.22	7.89	8.56	9.22	9.86	11.09	12.25	13.33	14.32	15.22
2600	—	4.40	5.11	5.47	5.82	6.51	7.20	7.87	8.54	9.18	9.81	11.02	12.16	13.21	14.16	15.01
2700	—	4.39	5.11	5.46	5.81	6.50	7.18	7.85	8.51	9.15	9.77	10.96	12.07	13.09	14.00	14.80
2800	—	4.39	5.10	5.45	5.80	6.49	7.17	7.83	8.48	9.11	9.73	10.90	11.98	12.96	13.83	14.58
2900	—	4.39	5.09	5.44	5.79	6.48	7.15	7.81	8.45	9.08	9.68	10.83	11.88	12.82	13.65	14.35
3000	—	4.38	5.09	5.44	5.78	6.47	7.13	7.79	8.42	9.04	9.63	10.76	11.78	12.68	13.46	14.11
3200	—	4.37	5.08	5.42	5.76	6.44	7.10	7.74	8.36	8.96	9.53	10.61	11.56	12.39	13.08	13.60
3400	—	—	5.06	5.41	5.75	6.41	7.06	7.69	8.29	8.87	9.43	10.45	11.34	12.08	12.66	13.07
3600	—	—	5.05	5.39	5.72	6.38	7.02	7.63	8.22	8.78	9.31	10.28	11.10	11.75	12.23	12.50
3800	—	—	5.03	5.37	5.70	6.35	6.97	7.57	8.15	8.69	9.20	10.10	10.85	11.41	11.76	11.90
4000	—	—	5.02	5.35	5.68	6.32	6.93	7.51	8.07	8.59	9.07	9.91	10.58	11.04	11.28	11.27
4200	—	—	—	5.33	5.65	6.28	6.88	7.45	7.98	8.48	8.94	9.72	10.30	10.66	10.76	10.60
4400	—	—	—	5.31	5.63	6.25	6.83	7.38	7.90	8.37	8.80	9.51	10.00	10.25	10.23	9.90
4600	—	—	—	5.29	5.60	6.21	6.78	7.31	7.81	8.25	8.65	9.29	9.70	9.83	9.66	9.17
5000	—	—	—	5.24	5.54	6.12	6.66	7.16	7.61	8.01	8.35	8.83	9.04	8.93	8.47	7.61
5200	—	—	—	5.21	5.51	6.08	6.61	7.08	7.51	7.87	8.18	8.59	8.69	8.45	7.83	6.79
5600	—	—	—	5.16	5.45	5.99	6.48	6.91	7.29	7.60	7.83	8.07	7.95	7.43	6.48	5.03
6000	—	—	—	5.10	5.38	5.89	6.34	6.73	7.05	7.30	7.46	7.51	7.16	6.35	5.03	3.15

Endurance time decreases.

Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-36

Belt width (mm)	12.7	19.1	25.4	38.1
Factor Kb	0.42	0.71	1.00	1.56

2

Design

Classical Type H Basic power rating

(For 25.4 mm belt width)

kW H / 25.4mm

Table 2-37a

Number of teeth (T) Pitch diameter (mm) Revolution (rpm)	14 56.60	16 64.68	18 72.76	19 76.81	20 80.85	21 84.89	22 88.93	24 97.02	26 105.10	28 113.19	30 121.27	32 129.36	36 145.53	40 161.70	44 177.87	48 194.04
725	1.34	1.53	1.72	1.81	1.91	2.00	2.10	2.29	2.48	2.67	2.86	3.04	3.42	3.79	4.17	4.54
870	1.60	1.83	2.06	2.17	2.29	2.40	2.51	2.74	2.97	3.19	3.42	3.64	4.09	4.54	4.98	5.41
950	1.75	2.00	2.25	2.37	2.50	2.62	2.74	2.99	3.24	3.48	3.73	3.97	4.46	4.94	5.42	5.89
1160	2.14	2.44	2.74	2.89	3.04	3.19	3.34	3.64	3.94	4.24	4.54	4.83	5.41	5.99	6.56	7.12
1425	—	2.99	3.36	3.55	3.73	3.91	4.09	4.46	4.82	5.18	5.54	5.89	6.59	7.28	7.96	8.62
1750	—	3.66	4.11	4.34	4.56	4.78	5.00	5.44	5.88	6.31	6.74	7.16	7.99	8.80	9.58	10.33
2850	—	—	6.59	6.94	7.28	7.62	7.96	8.62	9.26	9.88	10.49	11.07	12.17	13.16	14.05	14.81
3450	—	—	7.89	8.29	8.68	9.07	9.46	10.20	10.92	11.60	12.25	12.86	13.96	14.88	15.61	16.11
100	0.18	0.21	0.24	0.25	0.26	0.28	0.29	0.32	0.34	0.37	0.40	0.42	0.47	0.53	0.58	0.63
200	0.37	0.42	0.47	0.50	0.53	0.55	0.58	0.63	0.69	0.74	0.79	0.84	0.95	1.05	1.16	1.26
300	0.55	0.63	0.71	0.75	0.79	0.83	0.87	0.95	1.03	1.11	1.19	1.26	1.42	1.58	1.74	1.90
400	0.74	0.84	0.95	1.00	1.05	1.11	1.16	1.26	1.37	1.48	1.58	1.69	1.90	2.10	2.31	2.52
500	0.92	1.05	1.19	1.25	1.32	1.38	1.45	1.58	1.71	1.84	1.97	2.10	2.37	2.63	2.89	3.15
600	1.11	1.26	1.42	1.50	1.58	1.66	1.74	1.90	2.05	2.21	2.37	2.52	2.84	3.15	3.46	3.77
700	1.29	1.48	1.66	1.75	1.84	1.93	2.03	2.21	2.39	2.58	2.76	2.94	3.30	3.66	4.02	4.38
800	1.48	1.69	1.89	2.00	2.10	2.21	2.31	2.52	2.73	2.94	3.15	3.35	3.77	4.18	4.59	4.99
900	1.66	1.90	2.13	2.25	2.37	2.48	2.60	2.84	3.07	3.30	3.54	3.77	4.23	4.69	5.14	5.59
1000	1.84	2.10	2.37	2.50	2.63	2.76	2.89	3.15	3.41	3.66	3.92	4.18	4.69	5.19	5.69	6.19
1100	2.03	2.31	2.60	2.74	2.89	3.03	3.17	3.46	3.74	4.02	4.31	4.59	5.14	5.69	6.24	6.78
1200	2.21	2.52	2.84	2.99	3.15	3.30	3.46	3.77	4.08	4.38	4.69	4.99	5.59	6.19	6.78	7.35
1300	—	2.73	3.07	3.24	3.41	3.57	3.74	4.08	4.41	4.74	5.07	5.39	6.04	6.68	7.31	7.92
1400	—	2.94	3.30	3.48	3.66	3.84	4.02	4.38	4.74	5.09	5.44	5.79	6.48	7.16	7.83	8.48
1500	—	3.15	3.54	3.73	3.92	4.11	4.31	4.69	5.07	5.44	5.82	6.19	6.92	7.64	8.34	9.02
1600	—	3.35	3.77	3.97	4.18	4.38	4.59	4.99	5.39	5.79	6.19	6.58	7.35	8.11	8.84	9.56
1700	—	3.56	4.00	4.22	4.43	4.65	4.87	5.29	5.72	6.14	6.56	6.97	7.78	8.57	9.34	10.08
1800	—	3.77	4.23	4.46	4.69	4.92	5.14	5.59	6.04	6.48	6.92	7.35	8.20	9.02	9.82	10.58
1900	—	3.97	4.46	4.70	4.94	5.18	5.42	5.89	6.36	6.83	7.28	7.73	8.62	9.47	10.29	11.07
2000	—	4.18	4.69	4.94	5.19	5.44	5.69	6.19	6.68	7.16	7.64	8.11	9.02	9.90	10.74	11.54
2100	—	—	4.92	5.18	5.44	5.71	5.97	6.48	6.99	7.50	7.99	8.48	9.42	10.33	11.19	12.00
2200	—	—	5.14	5.42	5.69	5.97	6.24	6.78	7.31	7.83	8.34	8.84	9.82	10.74	11.62	12.44
2300	—	—	5.37	5.66	5.94	6.23	6.51	7.07	7.62	8.16	8.68	9.20	10.20	11.15	12.04	12.86
2400	—	—	5.59	5.89	6.19	6.48	6.78	7.35	7.92	8.48	9.02	9.56	10.58	11.54	12.44	13.26
2500	—	—	5.82	6.13	6.44	6.74	7.04	7.64	8.22	8.80	9.36	9.90	10.95	11.93	12.83	13.64
2600	—	—	6.04	6.36	6.68	6.99	7.31	7.92	8.52	9.11	9.69	10.24	11.31	12.30	13.20	14.01
2700	—	—	6.26	6.59	6.92	7.25	7.57	8.20	8.82	9.42	10.01	10.58	11.66	12.65	13.55	14.34
2800	—	—	6.48	6.83	7.16	7.50	7.83	8.48	9.11	9.73	10.33	10.91	12.00	13.00	13.89	14.66
2900	—	—	6.70	7.06	7.40	7.75	8.09	8.75	9.40	10.03	10.64	11.23	12.33	13.33	14.21	14.95
3000	—	—	6.92	7.28	7.64	7.99	8.34	9.02	9.69	10.33	10.95	11.54	12.65	13.64	14.51	15.22
3200	—	—	7.35	7.73	8.11	8.48	8.84	9.56	10.24	10.91	11.54	12.15	13.26	14.23	15.05	15.68
3400	—	—	7.78	8.18	8.57	8.96	9.34	10.08	10.79	11.47	12.11	12.72	13.83	14.76	15.50	16.04
3600	—	—	—	—	9.02	9.42	9.82	10.58	11.31	12.00	12.65	13.26	14.34	15.22	15.88	16.28
3800	—	—	—	—	9.47	9.88	10.29	11.07	11.81	12.51	13.16	13.77	14.81	15.61	16.15	16.40
4000	—	—	—	—	9.90	10.33	10.74	11.54	12.30	13.00	13.64	14.23	15.22	15.93	16.33	16.39
4400	—	—	—	—	10.74	11.19	11.62	12.44	13.20	13.89	14.51	15.05	15.88	16.33	16.38	15.97
4800	—	—	—	—	11.54	12.00	12.44	13.26	14.01	14.66	15.22	15.68	16.28	16.39	15.97	14.96
5000	—	—	—	—	11.93	12.39	12.83	13.64	14.37	15.00	15.52	15.93	16.38	16.28	15.58	—
5400	—	—	—	—	12.65	13.11	13.55	14.34	15.02	15.58	16.00	16.28	16.37	15.77	—	—
5600	—	—	—	—	13.00	13.46	13.89	14.66	15.31	15.81	16.17	16.37	16.25	15.36	—	—
5800	—	—	—	—	13.33	13.78	14.21	14.95	15.56	16.01	16.30	16.41	16.05	14.84	—	—
6000	—	—	—	—	13.64	14.09	14.51	15.22	15.78	16.17	16.38	16.39	15.77	—	—	—

☐ Endurance time decreases.

☐ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-38

Belt width (mm)	19.1	25.4	38.1	50.8	76.2
Factor Kb	0.71	1.00	1.56	2.14	3.36

Classical Type H Basic power rating (torque)
(For 25.4 mm belt width)

N·m / H / 25.4mm

Table 2-37b

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	14 / 56.60	16 / 64.68	18 / 72.76	19 / 76.81	20 / 80.85	21 / 84.89	22 / 88.93	24 / 97.02	26 / 105.10	28 / 113.19	30 / 121.27	32 / 129.36	36 / 145.53	40 / 161.70	44 / 177.87	48 / 194.04
725	17.6	20.1	22.6	23.9	25.1	26.4	27.6	30.1	32.6	35.1	37.6	40.1	45.0	50.0	54.9	59.7
870	17.6	20.1	22.6	23.9	25.1	26.4	27.6	30.1	32.6	35.1	37.5	40.0	44.9	49.8	54.6	59.4
950	17.6	20.1	22.6	23.9	25.1	26.3	27.6	30.1	32.6	35.0	37.5	39.9	44.8	49.7	54.5	59.2
1160	17.6	20.1	22.6	23.8	25.1	26.3	27.5	30.0	32.5	34.9	37.3	39.8	44.6	49.3	54.0	58.7
1425	—	20.0	22.5	23.8	25.0	26.2	27.4	29.9	32.3	34.7	37.1	39.5	44.2	48.8	53.3	57.7
1750	—	20.0	22.5	23.7	24.9	26.1	27.3	29.7	32.1	34.5	36.8	39.1	43.6	48.0	52.3	56.4
2850	—	—	22.1	23.3	24.4	25.5	26.7	28.9	31.0	33.1	35.1	37.1	40.8	44.1	47.1	49.6
3450	—	—	21.8	22.9	24.0	25.1	26.2	28.2	30.2	32.1	33.9	35.6	38.6	41.2	43.2	44.6
100	17.6	20.1	22.7	23.9	25.2	26.4	27.7	30.2	32.7	35.3	37.8	40.3	45.3	50.4	55.4	60.4
200	17.6	20.1	22.7	23.9	25.2	26.4	27.7	30.2	32.7	35.3	37.8	40.3	45.3	50.3	55.4	60.4
300	17.6	20.1	22.7	23.9	25.2	26.4	27.7	30.2	32.7	35.2	37.7	40.3	45.3	50.3	55.3	60.3
400	17.6	20.1	22.7	23.9	25.2	26.4	27.7	30.2	32.7	35.2	37.7	40.2	45.2	50.3	55.2	60.2
500	17.6	20.1	22.6	23.9	25.2	26.4	27.7	30.2	32.7	35.2	37.7	40.2	45.2	50.2	55.2	60.1
600	17.6	20.1	22.6	23.9	25.2	26.4	27.7	30.2	32.7	35.2	37.7	40.2	45.1	50.1	55.0	60.0
700	17.6	20.1	22.6	23.9	25.1	26.4	27.6	30.1	32.6	35.1	37.6	40.1	45.1	50.0	54.9	59.8
800	17.6	20.1	22.6	23.9	25.1	26.4	27.6	30.1	32.6	35.1	37.6	40.0	45.0	49.9	54.8	59.6
900	17.6	20.1	22.6	23.9	25.1	26.4	27.6	30.1	32.6	35.0	37.5	40.0	44.9	49.7	54.6	59.4
1000	17.6	20.1	22.6	23.8	25.1	26.3	27.6	30.1	32.5	35.0	37.5	39.9	44.8	49.6	54.4	59.1
1100	17.6	20.1	22.6	23.8	25.1	26.3	27.5	30.0	32.5	34.9	37.4	39.8	44.7	49.4	54.2	58.8
1200	17.6	20.1	22.6	23.8	25.0	26.3	27.5	30.0	32.4	34.9	37.3	39.7	44.5	49.3	53.9	58.5
1300	—	20.1	22.5	23.8	25.0	26.3	27.5	29.9	32.4	34.8	37.2	39.6	44.4	49.1	53.7	58.2
1400	—	20.1	22.5	23.8	25.0	26.2	27.5	29.9	32.3	34.7	37.1	39.5	44.2	48.9	53.4	57.8
1500	—	20.0	22.5	23.7	25.0	26.2	27.4	29.8	32.3	34.7	37.0	39.4	44.1	48.6	53.1	57.5
1600	—	20.0	22.5	23.7	24.9	26.2	27.4	29.8	32.2	34.6	36.9	39.3	43.9	48.4	52.8	57.0
1700	—	20.0	22.5	23.7	24.9	26.1	27.3	29.7	32.1	34.5	36.8	39.2	43.7	48.1	52.4	56.6
1800	—	20.0	22.4	23.7	24.9	26.1	27.3	29.7	32.1	34.4	36.7	39.0	43.5	47.9	52.1	56.1
1900	—	20.0	22.4	23.6	24.8	26.0	27.2	29.6	32.0	34.3	36.6	38.9	43.3	47.6	51.7	55.6
2000	—	20.0	22.4	23.6	24.8	26.0	27.2	29.6	31.9	34.2	36.5	38.7	43.1	47.3	51.3	55.1
2100	—	—	22.4	23.6	24.8	26.0	27.1	29.5	31.8	34.1	36.3	38.6	42.9	47.0	50.9	54.6
2200	—	—	22.3	23.5	24.7	25.9	27.1	29.4	31.7	34.0	36.2	38.4	42.6	46.6	50.4	54.0
2300	—	—	22.3	23.5	24.7	25.9	27.0	29.3	31.6	33.9	36.1	38.2	42.4	46.3	50.0	53.4
2400	—	—	22.3	23.5	24.6	25.8	27.0	29.3	31.5	33.7	35.9	38.0	42.1	45.9	49.5	52.8
2500	—	—	22.2	23.4	24.6	25.7	26.9	29.2	31.4	33.6	35.7	37.8	41.8	45.6	49.0	52.1
2600	—	—	22.2	23.4	24.5	25.7	26.8	29.1	31.3	33.5	35.6	37.6	41.5	45.2	48.5	51.4
2700	—	—	22.2	23.3	24.5	25.6	26.8	29.0	31.2	33.3	35.4	37.4	41.2	44.8	47.9	50.7
2800	—	—	22.1	23.3	24.4	25.6	26.7	28.9	31.1	33.2	35.2	37.2	40.9	44.3	47.4	50.0
2900	—	—	22.1	23.2	24.4	25.5	26.6	28.8	31.0	33.0	35.0	37.0	40.6	43.9	46.8	49.2
3000	—	—	22.0	23.2	24.3	25.4	26.5	28.7	30.8	32.9	34.9	36.7	40.3	43.4	46.2	48.5
3200	—	—	21.9	23.1	24.2	25.3	26.4	28.5	30.6	32.6	34.4	36.3	39.6	42.5	44.9	46.8
3400	—	—	21.9	23.0	24.1	25.2	26.2	28.3	30.3	32.2	34.0	35.7	38.8	41.5	43.5	45.0
3600	—	—	—	—	23.9	25.0	26.0	28.1	30.0	31.8	33.6	35.2	38.1	40.4	42.1	43.2
3800	—	—	—	—	23.8	24.8	25.9	27.8	29.7	31.4	33.1	34.6	37.2	39.2	40.6	41.2
4000	—	—	—	—	23.6	24.7	25.7	27.6	29.4	31.0	32.6	34.0	36.3	38.0	39.0	39.1
4400	—	—	—	—	23.3	24.3	25.2	27.0	28.6	30.1	31.5	32.7	34.5	35.4	35.5	34.7
4800	—	—	—	—	23.0	23.9	24.7	26.4	27.9	29.2	30.3	31.2	32.4	32.6	31.8	29.8
5000	—	—	—	—	22.8	23.7	24.5	26.1	27.4	28.7	29.6	30.4	31.3	31.1	29.8	—
5400	—	—	—	—	22.4	23.2	24.0	25.4	26.6	27.6	28.3	28.8	28.9	27.9	—	—
5600	—	—	—	—	22.2	22.9	23.7	25.0	26.1	27.0	27.6	27.9	27.7	26.2	—	—
5800	—	—	—	—	21.9	22.7	23.4	24.6	25.6	26.4	26.8	27.0	26.4	24.4	—	—
6000	—	—	—	—	21.7	22.4	23.1	24.2	25.1	25.7	26.1	26.1	25.1	—	—	—

Endurance time decreases.

Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-38

Belt width (mm)	19.1	25.4	38.1	50.8	76.2
Factor Kb	0.71	1.00	1.56	2.14	3.36

2
Design

Classical Type XH Basic power rating

(For 25.4 mm belt width)

kW XH 25.4mm

Table 2-39a

Number of teeth (T) Pitch diameter (mm) Revolution (rpm)	18 127.34	20 141.49	22 155.64	24 169.79	25 176.86	26 183.94	28 198.09	30 212.23	32 226.38	36 254.68	40 282.98					
480	2.71	3.01	3.30	3.60	3.75	3.89	4.19	4.48	4.77	5.35	5.93	—	—	—	—	—
510	2.87	3.19	3.51	3.82	3.98	4.13	4.44	4.75	5.06	5.68	6.28	—	—	—	—	—
575	3.24	3.59	3.95	4.30	4.47	4.65	5.00	5.34	5.69	6.37	7.04	—	—	—	—	—
690	3.88	4.30	4.72	5.14	5.34	5.55	5.96	6.37	6.77	7.57	8.35	—	—	—	—	—
725	4.07	4.51	4.95	5.39	5.61	5.82	6.25	6.68	7.10	7.93	8.73	—	—	—	—	—
870	4.86	5.39	5.91	6.42	6.68	6.93	7.43	7.93	8.41	9.36	10.28	—	—	—	—	—
1160	6.42	7.10	7.76	8.41	8.73	9.05	9.67	10.28	10.86	11.98	13.01	—	—	—	—	—
1425	—	8.60	9.37	10.12	10.49	10.85	11.54	12.21	12.84	13.99	14.99	—	—	—	—	—
1750	—	10.33	11.20	12.03	12.43	12.82	13.54	14.22	14.83	15.85	16.57	—	—	—	—	—
2850	—	—	—	16.44	16.67	16.85	17.04	16.98	16.65	15.14	12.36	—	—	—	—	—
3450	—	—	—	17.04	16.95	16.76	16.08	14.97	—	—	—	—	—	—	—	—
100	0.57	0.63	0.69	0.75	0.79	0.82	0.88	0.94	1.01	1.13	1.26	—	—	—	—	—
200	1.13	1.26	1.38	1.51	1.57	1.63	1.76	1.88	2.01	2.26	2.51	—	—	—	—	—
300	1.70	1.88	2.07	2.26	2.35	2.45	2.63	2.82	3.00	3.38	3.75	—	—	—	—	—
400	2.26	2.51	2.76	3.01	3.13	3.25	3.50	3.75	3.99	4.48	4.97	—	—	—	—	—
500	2.82	3.13	3.44	3.75	3.90	4.05	4.36	4.66	4.97	5.57	6.16	—	—	—	—	—
600	3.38	3.75	4.11	4.48	4.66	4.85	5.21	5.57	5.93	6.63	7.33	—	—	—	—	—
700	3.93	4.36	4.79	5.21	5.42	5.63	6.04	6.46	6.87	7.67	8.46	—	—	—	—	—
800	4.48	4.97	5.45	5.93	6.16	6.40	6.87	7.33	7.78	8.68	9.54	—	—	—	—	—
900	5.03	5.57	6.10	6.63	6.90	7.16	7.67	8.18	8.68	9.65	10.58	—	—	—	—	—
1000	5.57	6.16	6.75	7.33	7.61	7.90	8.46	9.01	9.54	10.58	11.56	—	—	—	—	—
1100	6.10	6.75	7.39	8.01	8.32	8.62	9.22	9.81	10.38	11.47	12.49	—	—	—	—	—
1200	—	7.33	8.01	8.68	9.01	9.33	9.97	10.58	11.18	12.31	13.34	—	—	—	—	—
1300	—	7.90	8.62	9.33	9.68	10.02	10.68	11.32	11.94	13.09	14.12	—	—	—	—	—
1400	—	8.46	9.22	9.97	10.33	10.68	11.37	12.03	12.66	13.82	14.83	—	—	—	—	—
1500	—	9.01	9.81	10.58	10.96	11.32	12.03	12.71	13.34	14.49	15.44	—	—	—	—	—
1600	—	9.54	10.38	11.18	11.56	11.94	12.66	13.34	13.97	15.08	15.97	—	—	—	—	—
1700	—	10.07	10.93	11.75	12.15	12.53	13.26	13.94	14.56	15.61	16.40	—	—	—	—	—
1800	—	—	11.47	12.31	12.71	13.09	13.82	14.49	15.08	16.06	16.72	—	—	—	—	—
1900	—	—	11.99	12.84	13.24	13.62	14.34	14.99	15.56	16.44	16.94	—	—	—	—	—
2000	—	—	12.49	13.34	13.74	14.12	14.83	15.44	15.97	16.72	17.04	—	—	—	—	—
2100	—	—	12.97	13.82	14.22	14.59	15.27	15.85	16.32	16.92	17.02	—	—	—	—	—
2200	—	—	13.42	14.27	14.66	15.02	15.67	16.20	16.61	17.03	16.87	—	—	—	—	—
2300	—	—	13.86	14.69	15.07	15.42	16.02	16.49	16.82	17.04	16.58	—	—	—	—	—
2400	—	—	14.27	15.08	15.44	15.77	16.32	16.72	16.97	16.94	16.16	—	—	—	—	—
2500	—	—	—	15.44	15.78	16.09	16.58	16.90	17.04	16.74	15.59	—	—	—	—	—
2600	—	—	—	15.77	16.09	16.36	16.78	17.00	17.03	16.43	14.87	—	—	—	—	—
2700	—	—	—	16.06	16.35	16.59	16.92	17.05	16.94	16.01	—	—	—	—	—	—
2800	—	—	—	16.32	16.57	16.78	17.01	17.02	16.77	15.46	—	—	—	—	—	—
2900	—	—	—	16.54	16.76	16.91	17.05	16.92	16.51	14.79	—	—	—	—	—	—
3000	—	—	—	16.72	16.90	17.00	17.02	16.74	16.16	—	—	—	—	—	—	—
3200	—	—	—	16.97	17.04	17.03	16.77	16.16	15.18	—	—	—	—	—	—	—
3400	—	—	—	17.05	16.99	16.85	16.26	15.25	13.79	—	—	—	—	—	—	—
3600	—	—	—	16.94	16.74	16.43	15.46	13.99	—	—	—	—	—	—	—	—
3800	—	—	—	16.65	16.28	15.78	14.36	—	—	—	—	—	—	—	—	—
4000	—	—	—	16.16	15.59	14.87	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	15.46	14.66	13.69	—	—	—	—	—	—	—	—	—	—
4400	—	—	—	14.54	13.49	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—					
	—	—	—	—	—	—	—	—	—	—	—					

Endurance time decreases.

Belt speed exceeds 33 m/sec.

Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-40

Belt width (mm)	25.4	50.8	76.2	101.6	127	152.4
Factor Kb	1.00	2.14	3.36	4.76	6.15	7.5

2
Design

Classical Type XH Basic power rating (torque)

(For 25.4 mm belt width)

N·m XH / 25.4mm

Table 2-39b

Number of teeth (T) Revolution (rpm) / Pitch diameter (mm)	18 127.34	20 141.49	22 155.64	24 169.79	25 176.86	26 183.94	28 198.09	30 212.23	32 226.38	36 254.68	40 282.98					
480	53.9	59.8	65.7	71.6	74.5	77.5	83.3	89.2	95.0	106.5	117.9	—	—	—	—	—
510	53.8	59.8	65.7	71.5	74.5	77.4	83.2	89.0	94.8	106.3	117.6	—	—	—	—	—
575	53.8	59.7	65.5	71.4	74.3	77.2	83.0	88.7	94.5	105.8	116.9	—	—	—	—	—
690	53.6	59.5	65.3	71.1	74.0	76.8	82.5	88.2	93.7	104.8	115.5	—	—	—	—	—
725	53.6	59.4	65.2	71.0	73.8	76.7	82.3	87.9	93.5	104.4	115.0	—	—	—	—	—
870	53.4	59.2	64.9	70.5	73.3	76.1	81.6	87.0	92.3	102.8	112.8	—	—	—	—	—
1160	52.9	58.4	63.9	69.3	71.9	74.5	79.6	84.6	89.4	98.6	107.1	—	—	—	—	—
1425	—	57.6	62.8	67.8	70.3	72.7	77.3	81.8	86.0	93.8	100.5	—	—	—	—	—
1750	—	56.4	61.1	65.7	67.8	69.9	73.9	77.6	80.9	86.5	90.5	—	—	—	—	—
2850	—	—	—	55.1	55.9	56.5	57.1	56.9	55.8	50.7	41.4	—	—	—	—	—
3450	—	—	—	47.2	46.9	46.4	44.5	41.4	—	—	—	—	—	—	—	—
100	54.1	60.1	66.1	72.1	75.1	78.1	84.1	90.1	96.1	108.0	120.0	—	—	—	—	—
200	54.0	60.0	66.0	72.0	75.0	78.0	84.0	89.9	95.9	107.8	119.7	—	—	—	—	—
300	54.0	60.0	65.9	71.9	74.9	77.8	83.8	89.7	95.7	107.5	119.3	—	—	—	—	—
400	53.9	59.9	65.8	71.7	74.7	77.7	83.6	89.4	95.3	107.0	118.6	—	—	—	—	—
500	53.8	59.8	65.7	71.6	74.5	77.4	83.3	89.1	94.9	106.4	117.7	—	—	—	—	—
600	53.7	59.6	65.5	71.3	74.2	77.1	82.9	88.6	94.3	105.6	116.6	—	—	—	—	—
700	53.6	59.5	65.3	71.1	73.9	76.8	82.5	88.1	93.7	104.7	115.4	—	—	—	—	—
800	53.5	59.3	65.0	70.7	73.6	76.4	82.0	87.5	92.9	103.6	113.9	—	—	—	—	—
900	53.3	59.1	64.8	70.4	73.2	75.9	81.4	86.8	92.1	102.4	112.3	—	—	—	—	—
1000	53.2	58.9	64.5	70.0	72.7	75.4	80.8	86.0	91.1	101.1	110.4	—	—	—	—	—
1100	53.0	58.6	64.1	69.5	72.2	74.9	80.1	85.2	90.1	99.6	108.4	—	—	—	—	—
1200	—	58.3	63.8	69.1	71.7	74.3	79.3	84.2	89.0	97.9	106.2	—	—	—	—	—
1300	—	58.0	63.3	68.5	71.1	73.6	78.5	83.2	87.7	96.2	103.8	—	—	—	—	—
1400	—	57.7	62.9	68.0	70.4	72.9	77.6	82.1	86.4	94.3	101.1	—	—	—	—	—
1500	—	57.3	62.4	67.4	69.8	72.1	76.6	80.9	84.9	92.2	98.3	—	—	—	—	—
1600	—	57.0	61.9	66.7	69.0	71.3	75.6	79.6	83.4	90.0	95.3	—	—	—	—	—
1700	—	56.6	61.4	66.0	68.2	70.4	74.5	78.3	81.8	87.7	92.1	—	—	—	—	—
1800	—	—	60.9	65.3	67.4	69.4	73.3	76.9	80.0	85.2	88.7	—	—	—	—	—
1900	—	—	60.3	64.5	66.5	68.5	72.1	75.3	78.2	82.6	85.1	—	—	—	—	—
2000	—	—	59.6	63.7	65.6	67.4	70.8	73.7	76.3	79.8	81.4	—	—	—	—	—
2100	—	—	59.0	62.8	64.7	66.3	69.4	72.1	74.2	76.9	77.4	—	—	—	—	—
2200	—	—	58.3	61.9	63.6	65.2	68.0	70.3	72.1	73.9	73.2	—	—	—	—	—
2300	—	—	57.5	61.0	62.6	64.0	66.5	68.5	69.8	70.8	68.8	—	—	—	—	—
2400	—	—	56.8	60.0	61.4	62.8	64.9	66.5	67.5	67.4	64.3	—	—	—	—	—
2500	—	—	—	59.0	60.3	61.5	63.3	64.6	65.1	63.9	59.6	—	—	—	—	—
2600	—	—	—	57.9	59.1	60.1	61.6	62.4	62.6	60.3	54.6	—	—	—	—	—
2700	—	—	—	56.8	57.8	58.7	59.8	60.3	59.9	56.6	—	—	—	—	—	—
2800	—	—	—	55.7	56.5	57.2	58.0	58.1	57.2	52.7	—	—	—	—	—	—
2900	—	—	—	54.5	55.2	55.7	56.1	55.7	54.4	48.7	—	—	—	—	—	—
3000	—	—	—	53.2	53.8	54.1	54.2	53.3	51.4	—	—	—	—	—	—	—
3200	—	—	—	50.6	50.9	50.8	50.0	48.2	45.3	—	—	—	—	—	—	—
3400	—	—	—	47.9	47.7	47.3	45.7	42.8	38.7	—	—	—	—	—	—	—
3600	—	—	—	44.9	44.4	43.6	41.0	37.1	—	—	—	—	—	—	—	—
3800	—	—	—	41.8	40.9	39.7	36.1	—	—	—	—	—	—	—	—	—
4000	—	—	—	38.6	37.2	35.5	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	35.2	33.3	31.1	—	—	—	—	—	—	—	—	—	—
4400	—	—	—	31.6	29.3	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Endurance time decreases.

Belt speed exceeds 33 m/sec.

Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-40

Belt width (mm)	25.4	50.8	76.2	101.6	127	152.4
Factor Kb	1.00	2.14	3.36	4.76	6.15	7.5

2 Design

Classical Type XXH Basic power rating

(For 25.4 mm belt width)

kW	XXH / 25.4mm

Table 2-41a

Number of teeth (T) Pitch diameter (mm) Revolution (rpm)	18 181.92	20 202.13	22 222.34	24 242.56	25 252.66	26 262.77	28 282.98	30 303.19	32 323.41	34 343.62	36 363.83	40 404.26				
480	4.72	5.23	5.74	6.25	6.50	6.75	7.25	7.75	8.24	8.72	9.20	10.14	—	—	—	—
510	5.01	5.55	6.09	6.63	6.89	7.16	7.69	8.21	8.72	9.23	9.74	10.72	—	—	—	—
575	5.63	6.24	6.84	7.44	7.73	8.03	8.61	9.19	9.76	10.31	10.86	11.93	—	—	—	—
690	6.72	7.44	8.15	8.84	9.19	9.53	10.20	10.86	11.51	12.14	12.76	13.94	—	—	—	—
725	7.05	7.80	8.54	9.26	9.62	9.98	10.67	11.36	12.02	12.67	13.30	14.51	—	—	—	—
870	8.39	9.26	10.12	10.95	11.36	11.76	12.55	13.30	14.04	14.74	15.41	16.64	—	—	—	—
950	9.11	10.05	10.96	11.84	12.27	12.70	13.52	14.31	15.06	15.77	16.44	17.64	—	—	—	—
1160	10.95	12.02	13.05	14.04	14.51	14.96	15.83	16.64	17.38	18.05	18.64	19.59	—	—	—	—
1425	—	14.31	15.42	16.44	16.91	17.36	18.17	18.87	19.45	19.89	20.19	20.34	—	—	—	—
1750	—	16.71	17.79	18.70	19.09	19.43	19.96	20.27	20.36	20.20	19.78	18.09	—	—	—	—
2850	—	20.34	19.82	18.58	17.67	16.54	—	—	—	—	—	—	—	—	—	—
100	0.99	1.10	1.21	1.32	1.37	1.43	1.54	1.65	1.76	1.87	1.98	2.20	—	—	—	—
200	1.98	2.20	2.42	2.64	2.74	2.85	3.07	3.29	3.51	3.72	3.94	4.37	—	—	—	—
300	2.96	3.29	3.62	3.94	4.10	4.26	4.59	4.91	5.23	5.55	5.87	6.50	—	—	—	—
400	3.94	4.37	4.80	5.23	5.44	5.66	6.08	6.50	6.92	7.33	7.75	8.56	—	—	—	—
500	4.91	5.44	5.97	6.50	6.76	7.02	7.54	8.05	8.56	9.06	9.56	10.53	—	—	—	—
600	5.87	6.50	7.13	7.75	8.05	8.36	8.96	9.56	10.15	10.72	11.29	12.38	—	—	—	—
700	6.82	7.54	8.26	8.96	9.31	9.66	10.34	11.01	11.66	12.30	12.92	14.10	—	—	—	—
800	7.75	8.56	9.36	10.15	10.53	10.91	11.66	12.38	13.09	13.77	14.43	15.66	—	—	—	—
900	8.66	9.56	10.43	11.29	11.70	12.11	12.92	13.69	14.43	15.13	15.80	17.03	—	—	—	—
1000	9.56	10.53	11.47	12.38	12.83	13.26	14.10	14.90	15.66	16.37	17.03	18.20	—	—	—	—
1100	10.43	11.47	12.47	13.43	13.90	14.35	15.21	16.02	16.77	17.47	18.09	19.14	—	—	—	—
1200	—	12.38	13.43	14.43	14.90	15.36	16.23	17.03	17.76	18.41	18.97	19.83	—	—	—	—
1300	—	13.26	14.35	15.36	15.84	16.30	17.16	17.93	18.61	19.18	19.65	20.24	—	—	—	—
1400	—	14.10	15.21	16.23	16.71	17.16	17.99	18.70	19.30	19.77	20.11	20.36	—	—	—	—
1500	—	14.90	16.02	17.03	17.50	17.93	18.70	19.34	19.83	20.17	20.34	20.15	—	—	—	—
1600	—	15.66	16.77	17.76	18.20	18.61	19.30	19.83	20.18	20.35	20.32	19.61	—	—	—	—
1700	—	16.37	17.47	18.41	18.82	19.18	19.77	20.17	20.35	20.31	20.03	18.69	—	—	—	—
1800	—	17.03	18.09	18.97	19.34	19.65	20.11	20.34	20.32	20.03	19.45	17.39	—	—	—	—
1900	—	17.64	18.65	19.45	19.76	20.01	20.31	20.34	20.07	19.49	18.58	—	—	—	—	—
2000	—	18.20	19.14	19.83	20.07	20.24	20.36	20.15	19.61	18.69	—	—	—	—	—	—
2100	—	18.70	19.55	20.11	20.27	20.35	20.25	19.78	18.91	17.61	—	—	—	—	—	—
2200	—	19.14	19.88	20.29	20.36	20.33	19.98	19.20	17.96	16.24	—	—	—	—	—	—
2300	—	19.52	20.13	20.36	20.32	20.17	19.53	18.40	16.76	—	—	—	—	—	—	—
2400	—	19.83	20.29	20.32	20.15	19.87	18.91	17.39	15.28	—	—	—	—	—	—	—
2500	—	20.07	20.36	20.15	19.85	19.41	18.09	—	—	—	—	—	—	—	—	—
2600	—	20.24	20.33	19.87	19.41	18.80	17.08	—	—	—	—	—	—	—	—	—
2800	—	20.36	19.98	18.91	18.09	17.08	14.44	—	—	—	—	—	—	—	—	—
3000	—	20.15	19.20	17.39	16.15	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.
■ Belt speed exceeds 33 m/sec.
■ Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)　　Table 2-42

Belt width (mm)	25.4	50.8	76.2	101.6	127	152.4
Factor Kb	1.00	2.14	3.36	4.76	6.15	7.5

2
Design

Classical Type XXH Basic power rating (torque)
(For 25.4 mm belt width)

N•m XXH / 25.4mm

Table 2-41b

Number of teeth (T)	18	20	22	24	25	26	28	30	32	34	36	40				
Pitch diameter (mm) Revolution (rpm)	181.92	202.13	222.34	242.56	252.66	262.77	282.98	303.19	323.41	343.62	363.83	404.26				
480	93.8	104.1	114.2	124.3	129.3	134.3	144.3	154.1	163.9	173.5	183.1	201.8	—	—	—	—
510	93.7	103.9	114.1	124.1	129.1	134.1	143.9	153.7	163.3	172.9	182.3	200.8	—	—	—	—
575	93.5	103.6	113.6	123.5	128.5	133.3	143.0	152.6	162.0	171.3	180.4	198.2	—	—	—	—
690	93.0	102.9	112.7	122.4	127.2	131.9	141.2	150.4	159.3	168.1	176.6	192.9	—	—	—	—
725	92.9	102.7	112.4	122.0	126.7	131.4	140.6	149.6	158.4	166.9	175.3	191.1	—	—	—	—
870	92.1	101.7	111.0	120.2	124.7	129.1	137.7	146.0	154.1	161.8	169.1	182.7	—	—	—	—
950	91.6	101.0	110.2	119.0	123.4	127.6	135.9	143.8	151.4	158.5	165.3	177.4	—	—	—	—
1160	90.1	99.0	107.5	115.6	119.4	123.2	130.4	137.0	143.1	148.6	153.5	161.2	—	—	—	—
1425	—	95.9	103.3	110.2	113.3	116.3	121.8	126.5	130.3	133.3	135.3	136.3	—	—	—	—
1750	—	91.2	97.1	102.1	104.2	106.0	108.9	110.6	111.1	110.2	107.9	98.7	—	—	—	—
2850	—	68.1	66.4	62.3	59.2	55.4	—	—	—	—	—	—	—	—	—	—
100	94.6	105.1	115.6	126.1	131.3	136.6	147.0	157.5	168.0	178.5	188.9	209.9	—	—	—	—
200	94.5	104.9	115.4	125.8	131.0	136.3	146.7	157.1	167.4	177.8	188.1	208.8	—	—	—	—
300	94.3	104.7	115.1	125.4	130.6	135.8	146.0	156.3	166.5	176.7	186.8	207.0	—	—	—	—
400	94.1	104.4	114.7	124.9	130.0	135.1	145.2	155.2	165.2	175.1	185.0	204.4	—	—	—	—
500	93.8	104.0	114.1	124.2	129.2	134.2	144.0	153.8	163.5	173.1	182.6	201.1	—	—	—	—
600	93.4	103.5	113.4	123.3	128.2	133.1	142.7	152.1	161.5	170.6	179.7	197.1	—	—	—	—
700	93.0	102.9	112.7	122.3	127.0	131.8	141.0	150.1	159.1	167.7	176.2	192.4	—	—	—	—
800	92.5	102.2	111.7	121.1	125.7	130.3	139.2	147.8	156.3	164.4	172.2	186.9	—	—	—	—
900	91.9	101.4	110.7	119.8	124.2	128.6	137.0	145.2	153.1	160.6	167.7	180.7	—	—	—	—
1000	91.3	100.6	109.6	118.3	122.5	126.7	134.7	142.3	149.5	156.3	162.7	173.8	—	—	—	—
1100	90.6	99.6	108.3	116.6	120.6	124.6	132.1	139.1	145.6	151.6	157.1	166.2	—	—	—	—
1200	—	98.6	106.9	114.8	118.6	122.3	129.2	135.6	141.3	146.5	151.0	157.8	—	—	—	—
1300	—	97.4	105.4	112.8	116.4	119.8	126.1	131.7	136.7	140.9	144.4	148.7	—	—	—	—
1400	—	96.2	103.8	110.7	114.0	117.1	122.7	127.6	131.6	134.9	137.2	138.9	—	—	—	—
1500	—	94.9	102.0	108.4	111.4	114.2	119.1	123.1	126.2	128.4	129.5	128.3	—	—	—	—
1600	—	93.5	100.1	106.0	108.6	111.1	115.2	118.4	120.5	121.5	121.3	117.0	—	—	—	—
1700	—	92.0	98.1	103.4	105.7	107.8	111.1	113.3	114.3	114.1	112.5	105.0	—	—	—	—
1800	—	90.4	96.0	100.7	102.6	104.3	106.7	107.9	107.8	106.3	103.2	92.3	—	—	—	—
1900	—	88.7	93.8	97.7	99.3	100.6	102.1	102.2	100.9	98.0	93.4	—	—	—	—	—
2000	—	86.9	91.4	94.7	95.8	96.7	97.2	96.2	93.6	89.3	—	—	—	—	—	—
2100	—	85.0	88.9	91.5	92.2	92.6	92.1	89.9	86.0	80.1	—	—	—	—	—	—
2200	—	83.1	86.3	88.1	88.4	88.3	86.7	83.3	78.0	70.5	—	—	—	—	—	—
2300	—	81.0	83.6	84.5	84.4	83.8	81.1	76.4	69.6	—	—	—	—	—	—	—
2400	—	78.9	80.7	80.8	80.2	79.1	75.2	69.2	60.8	—	—	—	—	—	—	—
2500	—	76.7	77.8	77.0	75.8	74.2	69.1	—	—	—	—	—	—	—	—	—
2600	—	74.4	74.7	73.0	71.3	69.1	62.7	—	—	—	—	—	—	—	—	—
2800	—	69.4	68.1	64.5	61.7	58.3	49.3	—	—	—	—	—	—	—	—	—
3000	—	64.2	61.1	55.4	51.4	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.

■ Belt speed exceeds 33 m/sec.

■ Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-42

Belt width (mm)	25.4	50.8	76.2	101.6	127	152.4
Factor Kb	1.00	2.14	3.36	4.76	6.15	7.5

Classical Type T5 Basic power rating
(For 10 mm belt width)

W | T5 / 10mm

Table 2-43a

Number of teeth (T) Revolution (rpm) \ Pitch diameter (mm)	12 19.10	14 22.28	16 25.46	18 28.65	20 31.83	22 35.01	24 38.20	28 44.56	30 47.75							
1160	98	115	131	148	164	180	197	230	246	—	—	—	—	—	—	—
1750	134	157	179	201	224	246	268	313	336	—	—	—	—	—	—	—
3500	222	259	296	333	371	408	445	519	556	—	—	—	—	—	—	—
100	11	12	14	16	18	20	21	25	27	—	—	—	—	—	—	—
200	21	24	28	31	35	38	42	49	52	—	—	—	—	—	—	—
300	30	36	41	46	51	56	61	71	76	—	—	—	—	—	—	—
400	40	46	53	60	66	73	79	93	99	—	—	—	—	—	—	—
500	49	57	65	73	81	89	97	113	121	—	—	—	—	—	—	—
600	57	66	76	85	95	104	114	133	142	—	—	—	—	—	—	—
700	65	76	87	98	108	119	130	152	163	—	—	—	—	—	—	—
800	73	85	97	109	121	134	146	170	182	—	—	—	—	—	—	—
900	80	94	107	120	134	147	161	187	201	—	—	—	—	—	—	—
1000	87	102	117	131	146	160	175	204	219	—	—	—	—	—	—	—
1100	94	110	126	142	157	173	189	220	236	—	—	—	—	—	—	—
1200	101	118	135	152	168	185	202	236	253	—	—	—	—	—	—	—
1300	107	125	143	161	179	197	215	251	269	—	—	—	—	—	—	—
1400	114	133	152	171	190	208	227	265	284	—	—	—	—	—	—	—
1500	120	140	160	180	200	220	240	279	299	—	—	—	—	—	—	—
1600	126	147	168	189	209	230	251	293	314	—	—	—	—	—	—	—
1700	131	153	175	197	219	241	263	307	329	—	—	—	—	—	—	—
1800	137	160	183	206	228	251	274	320	343	—	—	—	—	—	—	—
1900	143	166	190	214	238	261	285	333	356	—	—	—	—	—	—	—
2000	148	173	197	222	247	271	296	345	370	—	—	—	—	—	—	—
2200	158	185	211	238	264	290	317	370	396	—	—	—	—	—	—	—
2400	169	197	225	253	281	309	337	394	422	—	—	—	—	—	—	—
2600	179	208	238	268	298	328	357	417	447	—	—	—	—	—	—	—
2800	189	220	251	283	314	346	377	440	471	—	—	—	—	—	—	—
3000	198	231	264	297	331	364	397	463	496	—	—	—	—	—	—	—
3200	208	243	277	312	347	381	416	485	520	—	—	—	—	—	—	—
3400	218	254	290	326	363	399	435	508	544	—	—	—	—	—	—	—
3600	227	265	303	341	378	416	454	530	568	—	—	—	—	—	—	—
3800	236	276	315	355	394	433	473	552	591	—	—	—	—	—	—	—
4000	246	287	327	368	409	450	491	573	614	—	—	—	—	—	—	—
4200	255	297	339	382	424	467	509	594	636	—	—	—	—	—	—	—
4400	263	307	351	395	439	483	527	614	658	—	—	—	—	—	—	—
4600	272	317	362	407	453	498	543	634	679	—	—	—	—	—	—	—
4800	279	326	373	419	466	512	559	652	699	—	—	—	—	—	—	—
5000	287	335	382	430	478	526	573	669	717	—	—	—	—	—	—	—
5500	—	—	402	452	502	552	603	703	753	—	—	—	—	—	—	—
6000	—	—	412	463	515	566	617	720	772	—	—	—	—	—	—	—
6500	—	—	408	459	510	561	612	713	764	—	—	—	—	—	—	—
7000	—	—	385	433	481	529	577	673	722	—	—	—	—	—	—	—
7500	—	—	337	379	421	464	506	590	632	—	—	—	—	—	—	—
8000	—	—	—	290	322	355	387	451	484	—	—	—	—	—	—	—
8500	—	—	—	157	175	192	210	244	262	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

▮ Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-44

Belt width (mm)	5	10	15	20
Factor Kb	0.35	1.00	1.6	2.3

2

Design

Classical Type T5 Basic power rating (torque)
(For 10 mm belt width)

N·m T5 / 10mm

Table 2-43b

Number of teeth (T) → Pitch diameter (mm) → Revolution (rpm) ↓	12 19.10	14 22.28	16 25.46	18 28.65	20 31.83	22 35.01	24 38.20	28 44.56	30 47.75						
1160	0.81	0.95	1.08	1.22	1.35	1.49	1.62	1.89	2.03	—	—	—	—	—	—	—
1750	0.73	0.85	0.98	1.10	1.22	1.34	1.47	1.71	1.83	—	—	—	—	—	—	—
3500	0.61	0.71	0.81	0.91	1.01	1.11	1.21	1.42	1.52	—	—	—	—	—	—	—
100	1.02	1.19	1.36	1.53	1.69	1.86	2.03	2.37	2.54	—	—	—	—	—	—	—
200	0.99	1.16	1.32	1.49	1.66	1.82	1.99	2.32	2.48	—	—	—	—	—	—	—
300	0.97	1.13	1.29	1.46	1.62	1.78	1.94	2.26	2.43	—	—	—	—	—	—	—
400	0.95	1.11	1.26	1.42	1.58	1.74	1.90	2.21	2.37	—	—	—	—	—	—	—
500	0.93	1.08	1.24	1.39	1.55	1.70	1.85	2.16	2.32	—	—	—	—	—	—	—
600	0.91	1.06	1.21	1.36	1.51	1.66	1.81	2.12	2.27	—	—	—	—	—	—	—
700	0.89	1.04	1.18	1.33	1.48	1.63	1.78	2.07	2.22	—	—	—	—	—	—	—
800	0.87	1.01	1.16	1.30	1.45	1.59	1.74	2.03	2.17	—	—	—	—	—	—	—
900	0.85	0.99	1.14	1.28	1.42	1.56	1.70	1.99	2.13	—	—	—	—	—	—	—
1000	0.84	0.97	1.11	1.25	1.39	1.53	1.67	1.95	2.09	—	—	—	—	—	—	—
1100	0.82	0.96	1.09	1.23	1.37	1.50	1.64	1.91	2.05	—	—	—	—	—	—	—
1200	0.80	0.94	1.07	1.21	1.34	1.47	1.61	1.88	2.01	—	—	—	—	—	—	—
1300	0.79	0.92	1.05	1.18	1.32	1.45	1.58	1.84	1.97	—	—	—	—	—	—	—
1400	0.78	0.90	1.03	1.16	1.29	1.42	1.55	1.81	1.94	—	—	—	—	—	—	—
1500	0.76	0.89	1.02	1.14	1.27	1.40	1.53	1.78	1.91	—	—	—	—	—	—	—
1600	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.75	1.88	—	—	—	—	—	—	—
1700	0.74	0.86	0.98	1.11	1.23	1.35	1.48	1.72	1.85	—	—	—	—	—	—	—
1800	0.73	0.85	0.97	1.09	1.21	1.33	1.45	1.70	1.82	—	—	—	—	—	—	—
1900	0.72	0.84	0.96	1.07	1.19	1.31	1.43	1.67	1.79	—	—	—	—	—	—	—
2000	0.71	0.82	0.94	1.06	1.18	1.30	1.41	1.65	1.77	—	—	—	—	—	—	—
2200	0.69	0.80	0.92	1.03	1.15	1.26	1.38	1.60	1.72	—	—	—	—	—	—	—
2400	0.67	0.78	0.89	1.01	1.12	1.23	1.34	1.57	1.68	—	—	—	—	—	—	—
2600	0.66	0.77	0.88	0.98	1.09	1.20	1.31	1.53	1.64	—	—	—	—	—	—	—
2800	0.64	0.75	0.86	0.96	1.07	1.18	1.29	1.50	1.61	—	—	—	—	—	—	—
3000	0.63	0.74	0.84	0.95	1.05	1.16	1.26	1.47	1.58	—	—	—	—	—	—	—
3200	0.62	0.72	0.83	0.93	1.03	1.14	1.24	1.45	1.55	—	—	—	—	—	—	—
3400	0.61	0.71	0.81	0.92	1.02	1.12	1.22	1.43	1.53	—	—	—	—	—	—	—
3600	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.41	1.51	—	—	—	—	—	—	—
3800	0.59	0.69	0.79	0.89	0.99	1.09	1.19	1.39	1.49	—	—	—	—	—	—	—
4000	0.59	0.68	0.78	0.88	0.98	1.08	1.17	1.37	1.47	—	—	—	—	—	—	—
4200	0.58	0.68	0.77	0.87	0.96	1.06	1.16	1.35	1.45	—	—	—	—	—	—	—
4400	0.57	0.67	0.76	0.86	0.95	1.05	1.14	1.33	1.43	—	—	—	—	—	—	—
4600	0.56	0.66	0.75	0.85	0.94	1.03	1.13	1.32	1.41	—	—	—	—	—	—	—
4800	0.56	0.65	0.74	0.83	0.93	1.02	1.11	1.30	1.39	—	—	—	—	—	—	—
5000	0.55	0.64	0.73	0.82	0.91	1.00	1.10	1.28	1.37	—	—	—	—	—	—	—
5500	—	—	0.70	0.78	0.87	0.96	1.05	1.22	1.31	—	—	—	—	—	—	—
6000	—	—	0.66	0.74	0.82	0.90	0.98	1.15	1.23	—	—	—	—	—	—	—
6500	—	—	0.60	0.67	0.75	0.82	0.90	1.05	1.12	—	—	—	—	—	—	—
7000	—	—	0.53	0.59	0.66	0.72	0.79	0.92	0.98	—	—	—	—	—	—	—
7500	—	—	0.43	0.48	0.54	0.59	0.64	0.75	0.80	—	—	—	—	—	—	—
8000	—	—	—	0.35	0.38	0.42	0.46	0.54	0.58	—	—	—	—	—	—	—
8500	—	—	—	0.18	0.20	0.22	0.24	0.27	0.29	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-44

Belt width (mm)	5	10	15	20
Factor Kb	0.35	1.00	1.6	2.3

Classical Type T10 Basic power rating
(For 10 mm belt width)

W | T10 / 10mm

Table 2-45a

Number of teeth (T) Pitch diameter (mm) Revolution (rpm)	12 38.20	14 44.56	16 50.93	18 57.30	20 63.66	22 70.03	24 76.39	26 82.76	28 89.12	30 95.49	32 101.86	36 114.59	40 127.32	44 140.06	48 152.79	
870	255	297	340	382	425	467	510	552	595	637	680	765	850	935	1020	—
1160	321	375	428	482	535	589	643	696	750	803	857	964	1071	1178	1285	—
1750	438	511	584	658	731	804	877	950	1023	1096	1169	1315	1461	1607	1753	—
3500	—	847	968	1089	1210	1331	1452	1573	1694	1815	1936	2178	2420	2662	2904	—
100	35	41	46	52	58	64	70	75	81	87	93	104	116	127	139	—
200	68	79	91	102	113	125	136	147	158	170	181	204	226	249	272	—
300	100	116	133	149	166	182	199	216	232	249	265	299	332	365	398	—
400	130	151	173	195	216	238	259	281	303	324	346	389	432	476	519	—
500	159	185	211	238	264	291	317	343	370	396	423	476	528	581	634	—
600	186	217	248	279	310	341	372	403	434	465	496	558	620	682	744	—
700	213	248	283	319	354	390	425	460	496	531	567	638	708	779	850	—
800	238	278	317	357	396	436	476	515	555	595	634	714	793	872	951	—
900	262	306	350	393	437	481	524	568	612	655	699	787	874	961	1049	—
1000	286	333	381	428	476	524	571	619	666	714	762	857	952	1047	1142	—
1100	308	359	411	462	514	565	616	668	719	770	822	924	1027	1130	1233	—
1200	330	385	440	495	550	605	660	715	770	825	880	990	1100	1210	1320	—
1300	351	409	468	526	585	643	702	760	819	877	936	1053	1170	1287	1404	—
1400	371	433	495	557	619	681	743	805	866	928	990	1114	1238	1362	1485	—
1500	391	456	521	587	652	717	782	847	913	978	1043	1173	1304	1434	1564	—
1600	410	479	547	616	684	752	821	889	958	1026	1094	1231	1368	1505	1641	—
1700	429	501	572	644	715	787	858	930	1001	1073	1144	1287	1430	1574	1717	—
1800	447	522	597	671	746	820	895	970	1044	1119	1193	1342	1492	1641	1790	—
1900	465	543	621	698	776	853	931	1008	1086	1164	1241	1396	1551	1707	1862	—
2000	483	564	644	725	805	886	966	1047	1127	1208	1288	1449	1610	1771	1932	—
2200	517	604	690	776	862	949	1035	1121	1207	1293	1380	1552	1725	1897	2070	—
2400	551	643	734	826	918	1010	1102	1193	1285	1377	1469	1652	1836	2020	2203	—
2600	584	681	778	875	973	1070	1167	1264	1362	1459	1556	1751	1945	2140	2334	—
2800	616	718	821	924	1026	1129	1232	1334	1437	1539	1642	1847	2053	2258	2463	—
3000	—	756	863	971	1079	1187	1295	1403	1511	1619	1727	1943	2159	2375	2590	—
3200	—	792	906	1019	1132	1245	1358	1471	1585	1698	1811	2037	2264	2490	2717	—
3400	—	829	947	1066	1184	1302	1421	1539	1658	1776	1894	2131	2368	2605	2842	—
3600	—	865	988	1112	1236	1359	1483	1606	1730	1853	1977	2224	2471	2718	2965	—
3800	—	901	1029	1158	1287	1415	1544	1673	1801	1930	2058	2316	2573	2830	3088	—
4000	—	—	1069	1203	1337	1470	1604	1738	1871	2005	2139	2406	2673	2941	3208	—
4200	—	—	1108	1247	1386	1524	1663	1801	1940	2078	2217	2494	2771	3048	3325	—
4400	—	—	1146	1290	1433	1576	1720	1863	2006	2149	2293	2579	2866	3152	3439	—
4600	—	—	1183	1330	1478	1626	1774	1922	2070	2217	2365	2661	2957	3252	3548	—
4800	—	—	1217	1369	1521	1673	1825	1977	2129	2282	2434	2738	3042	3346	3650	—
5000	—	—	1248	1404	1560	1717	1873	2029	2185	2341	2497	2809	3121	3433	3745	—
5200	—	—	1277	1436	1596	1756	1915	2075	2234	2394	2554	2873	3192	3511	3830	—
5400	—	—	1301	1464	1627	1789	1952	2115	2277	2440	2603	2928	3253	3579	3904	—
5600	—	—	1321	1486	1652	1817	1982	2147	2312	2477	2643	2973	3303	3633	3964	—
5800	—	—	1336	1503	1670	1837	2004	2171	2338	2505	2672	3006	3340	3674	4007	—
6000	—	—	1344	1512	1680	1848	2016	2184	2352	2520	2688	3024	3360	3696	4032	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.

■ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)

Table 2-46

Belt width (mm)	10	15	20	25	30	40	50
Factor Kb	1.00	1.6	2.3	2.9	3.50	4.6	5.8

2 Design

Classical Type T10 Basic power rating (torque)
(For 10 mm belt width)

N·m T10 / 10mm

Table 2-45b

| Number of teeth (T) | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 36 | 40 | 44 | 48 | |
Pitch diameter (mm) — Revolution (rpm)	38.20	44.56	50.93	57.30	63.66	70.03	76.39	82.76	89.12	95.49	101.86	114.59	127.32	140.06	152.79	
870	2.80	3.27	3.73	4.20	4.67	5.13	5.60	6.06	6.53	7.00	7.46	8.40	9.33	10.26	11.20	—
1160	2.64	3.09	3.53	3.97	4.41	4.85	5.29	5.73	6.17	6.61	7.05	7.93	8.82	9.70	10.58	—
1750	2.39	2.79	3.19	3.59	3.99	4.39	4.78	5.18	5.58	5.98	6.38	7.18	7.97	8.77	9.57	—
3500	—	2.31	2.64	2.97	3.30	3.63	3.96	4.29	4.62	4.95	5.28	5.94	6.60	7.26	7.92	—
100	3.32	3.87	4.43	4.98	5.53	6.09	6.64	7.19	7.75	8.30	8.86	9.96	11.07	12.18	13.28	—
200	3.24	3.78	4.32	4.86	5.40	5.95	6.49	7.03	7.57	8.11	8.65	9.73	10.81	11.89	12.97	—
300	3.17	3.70	4.22	4.75	5.28	5.81	6.34	6.86	7.39	7.92	8.45	9.50	10.56	11.62	12.67	—
400	3.10	3.61	4.13	4.64	5.16	5.68	6.19	6.71	7.23	7.74	8.26	9.29	10.32	11.35	12.39	—
500	3.03	3.53	4.04	4.54	5.05	5.55	6.06	6.56	7.07	7.57	8.07	9.08	10.09	11.10	12.11	—
600	2.96	3.46	3.95	4.44	4.94	5.43	5.92	6.42	6.91	7.41	7.90	8.89	9.87	10.86	11.85	—
700	2.90	3.38	3.87	4.35	4.83	5.32	5.80	6.28	6.77	7.25	7.73	8.70	9.66	10.63	11.60	—
800	2.84	3.31	3.79	4.26	4.73	5.21	5.68	6.15	6.63	7.10	7.57	8.52	9.46	10.41	11.36	—
900	2.78	3.25	3.71	4.17	4.64	5.10	5.56	6.03	6.49	6.96	7.42	8.35	9.27	10.20	11.13	—
1000	2.73	3.18	3.64	4.09	4.55	5.00	5.45	5.91	6.36	6.82	7.27	8.18	9.09	10.00	10.91	—
1100	2.68	3.12	3.57	4.01	4.46	4.90	5.35	5.80	6.24	6.69	7.13	8.03	8.92	9.81	10.70	—
1200	2.63	3.06	3.50	3.94	4.38	4.81	5.25	5.69	6.13	6.56	7.00	7.88	8.75	9.63	10.50	—
1300	2.58	3.01	3.44	3.87	4.30	4.73	5.16	5.59	6.02	6.45	6.87	7.73	8.59	9.45	10.31	—
1400	2.53	2.96	3.38	3.80	4.22	4.64	5.07	5.49	5.91	6.33	6.75	7.60	8.44	9.29	10.13	—
1500	2.49	2.91	3.32	3.74	4.15	4.57	4.98	5.40	5.81	6.23	6.64	7.47	8.30	9.13	9.96	—
1600	2.45	2.86	3.27	3.67	4.08	4.49	4.90	5.31	5.72	6.12	6.53	7.35	8.16	8.98	9.80	—
1700	2.41	2.81	3.21	3.62	4.02	4.42	4.82	5.22	5.63	6.03	6.43	7.23	8.04	8.84	9.64	—
1800	2.37	2.77	3.17	3.56	3.96	4.35	4.75	5.14	5.54	5.94	6.33	7.12	7.91	8.71	9.50	—
1900	2.34	2.73	3.12	3.51	3.90	4.29	4.68	5.07	5.46	5.85	6.24	7.02	7.80	8.58	9.36	—
2000	2.31	2.69	3.08	3.46	3.84	4.23	4.61	5.00	5.38	5.77	6.15	6.92	7.69	8.46	9.23	—
2200	2.25	2.62	2.99	3.37	3.74	4.12	4.49	4.87	5.24	5.61	5.99	6.74	7.49	8.24	8.98	—
2400	2.19	2.56	2.92	3.29	3.65	4.02	4.38	4.75	5.11	5.48	5.84	6.58	7.31	8.04	8.77	—
2600	2.14	2.50	2.86	3.22	3.57	3.93	4.29	4.64	5.00	5.36	5.72	6.43	7.14	7.86	8.57	—
2800	2.10	2.45	2.80	3.15	3.50	3.85	4.20	4.55	4.90	5.25	5.60	6.30	7.00	7.70	8.40	—
3000	—	2.41	2.75	3.09	3.44	3.78	4.12	4.47	4.81	5.15	5.50	6.18	6.87	7.56	8.25	—
3200	—	2.36	2.70	3.04	3.38	3.72	4.05	4.39	4.73	5.07	5.40	6.08	6.76	7.43	8.11	—
3400	—	2.33	2.66	2.99	3.33	3.66	3.99	4.32	4.66	4.99	5.32	5.99	6.65	7.32	7.98	—
3600	—	2.29	2.62	2.95	3.28	3.61	3.93	4.26	4.59	4.92	5.24	5.90	6.56	7.21	7.87	—
3800	—	2.26	2.59	2.91	3.23	3.56	3.88	4.20	4.53	4.85	5.17	5.82	6.47	7.11	7.76	—
4000	—	—	2.55	2.87	3.19	3.51	3.83	4.15	4.47	4.79	5.11	5.74	6.38	7.02	7.66	—
4200	—	—	2.52	2.84	3.15	3.47	3.78	4.10	4.41	4.73	5.04	5.67	6.30	6.93	7.56	—
4400	—	—	2.49	2.80	3.11	3.42	3.73	4.04	4.35	4.67	4.98	5.60	6.22	6.84	7.46	—
4600	—	—	2.46	2.76	3.07	3.38	3.68	3.99	4.30	4.60	4.91	5.52	6.14	6.75	7.37	—
4800	—	—	2.42	2.72	3.03	3.33	3.63	3.93	4.24	4.54	4.84	5.45	6.05	6.66	7.26	—
5000	—	—	2.38	2.68	2.98	3.28	3.58	3.87	4.17	4.47	4.77	5.36	5.96	6.56	7.15	—
5200	—	—	2.34	2.64	2.93	3.22	3.52	3.81	4.10	4.40	4.69	5.28	5.86	6.45	7.03	—
5400	—	—	2.30	2.59	2.88	3.16	3.45	3.74	4.03	4.32	4.60	5.18	5.75	6.33	6.90	—
5600	—	—	2.25	2.53	2.82	3.10	3.38	3.66	3.94	4.22	4.51	5.07	5.63	6.20	6.76	—
5800	—	—	2.20	2.47	2.75	3.02	3.30	3.57	3.85	4.12	4.40	4.95	5.50	6.05	6.60	—
6000	—	—	2.14	2.41	2.67	2.94	3.21	3.48	3.74	4.01	4.28	4.81	5.35	5.88	6.42	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.

■ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)

Table 2-46

Belt width (mm)	10	15	20	25	30	40	50
Factor Kb	1.00	1.6	2.3	2.9	3.50	4.6	5.8

2 Design

SUPER TORQUE S2M Basic power rating

(For 4mm belt width)

W | **S2M / 4mm**

Table 2-47a

Number of teeth (T) / Revolution (rpm) ↓ Pitch diameter (mm) →	14	15	16	18	20	22	24	26	28	30	32	36	40	44	50	60
	8.91	9.55	10.19	11.46	12.73	14.01	15.28	16.55	17.83	19.10	20.37	22.92	25.46	28.01	31.83	38.20
870	11	12	14	16	19	21	23	26	28	30	33	37	41	46	52	62
1160	13	15	17	20	23	26	29	32	35	38	41	46	52	57	65	77
1750	17	20	22	26	31	35	39	43	47	51	55	63	70	77	88	105
3500	26	30	34	41	49	56	63	70	77	83	90	102	114	126	143	169
50	1	1	1	2	2	2	2	2	3	3	3	3	4	4	5	6
100	2	2	2	3	3	4	4	4	5	5	6	6	7	8	9	11
150	3	3	3	4	5	5	6	6	7	7	8	9	10	11	12	15
200	4	4	4	5	6	7	7	8	9	9	10	11	13	14	16	19
250	4	5	5	6	7	8	9	10	10	11	12	14	15	17	19	23
300	5	5	6	7	8	9	10	11	12	13	14	16	18	19	22	26
350	6	6	7	8	9	10	11	13	14	15	16	18	20	22	25	30
400	6	7	8	9	10	11	13	14	15	16	18	20	22	25	28	33
450	7	8	8	10	11	13	14	15	17	18	19	22	25	27	31	37
500	7	8	9	11	12	14	15	17	18	20	21	24	27	29	33	40
550	8	9	10	11	13	15	16	18	20	21	23	26	29	32	36	43
600	8	9	10	12	14	16	18	19	21	23	24	28	31	34	39	46
650	9	10	11	13	15	17	19	21	22	24	26	29	33	36	41	49
700	9	10	12	14	16	18	20	22	24	26	28	31	35	38	44	52
800	10	12	13	15	17	20	22	24	26	28	31	35	39	43	49	58
900	11	13	14	16	19	22	24	26	29	31	33	38	42	47	53	63
1000	12	14	15	18	21	23	26	29	31	34	36	41	46	51	58	69
1100	13	14	16	19	22	25	28	31	34	36	39	44	50	55	62	74
1200	14	15	17	20	24	27	30	33	36	39	42	47	53	58	66	79
1300	14	16	18	22	25	28	32	35	38	41	44	50	56	62	70	84
1400	15	17	19	23	26	30	33	37	40	44	47	53	59	66	74	89
1500	16	18	20	24	28	31	35	39	42	46	49	56	63	69	78	93
1600	16	19	21	25	29	33	37	41	44	48	52	59	66	72	82	98
1700	17	19	22	26	30	34	38	42	46	50	54	61	69	76	86	102
1800	18	20	22	27	31	36	40	44	48	52	56	64	72	79	90	107
1900	18	21	23	28	33	37	42	46	50	54	59	67	75	82	93	111
2000	19	22	24	29	34	39	43	48	52	57	61	69	77	85	97	115
2200	20	23	26	31	36	41	46	51	56	60	65	74	83	91	104	123
2400	21	24	27	33	38	44	49	54	59	64	69	79	88	97	110	131
2600	22	25	28	34	40	46	52	57	63	68	73	83	93	103	117	139
2800	23	26	30	36	42	48	54	60	66	72	77	88	98	108	123	146
3000	24	27	31	38	44	51	57	63	69	75	81	92	103	113	129	153
3200	25	28	32	39	46	53	59	66	72	78	84	96	108	119	134	160
3400	26	29	33	41	48	55	62	69	75	82	88	100	112	124	140	166
3600	26	30	34	42	50	57	64	71	78	85	91	104	116	128	145	172
3800	27	31	35	43	51	59	66	74	81	88	95	108	121	133	151	178
4000	28	32	36	45	53	61	69	76	83	91	98	111	125	137	156	184
4500	29	34	39	48	57	65	74	82	90	98	105	120	134	148	168	198
5000	30	36	41	50	60	69	78	87	96	104	112	128	143	158	179	211
5500	31	37	42	53	63	73	83	92	101	110	119	136	152	167	189	222
6000	32	38	44	55	66	77	87	97	107	116	125	143	160	176	198	232
6500	33	39	45	57	69	80	91	101	111	121	131	149	167	184	207	242
7000	34	40	47	59	71	83	94	105	116	126	136	156	174	191	215	250
7500	34	41	48	61	74	86	98	109	120	131	141	161	180	197	222	257
8000	34	42	49	62	76	88	101	113	124	135	146	166	186	204	228	263
9000	35	43	50	65	79	93	106	119	131	143	154	176	196	214	239	273

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)　　Table 2-48

Belt width (mm)	4	6	10
Factor Kb	1.00	1.59	2.84

SUPER TORQUE S2M Basic power rating (torque)
(For 4mm belt width)

N·cm | S2M | 4mm

Table 2-47b

Number of teeth (T)	14	15	16	18	20	22	24	26	28	30	32	36	40	44	50	60
Pitch diameter (mm)	8.91	9.55	10.19	11.46	12.73	14.01	15.28	16.55	17.83	19.10	20.37	22.92	25.46	28.01	31.83	38.20
Revolution (rpm)																
870	12.0	13.4	14.9	17.6	20.4	23.0	25.7	28.3	30.8	33.3	35.8	40.7	45.4	50.0	56.8	67.8
1160	11.0	12.3	13.7	16.3	18.9	21.4	23.9	26.4	28.8	31.1	33.5	38.0	42.5	46.8	53.2	63.4
1750	9.5	10.8	12.0	14.5	16.8	19.2	21.4	23.6	25.8	28.0	30.1	34.3	38.3	42.2	47.9	57.1
3500	7.1	8.1	9.2	11.3	13.3	15.3	17.2	19.1	20.9	22.7	24.4	27.9	31.2	34.4	39.0	46.2
50	22.1	24.3	26.4	30.7	34.8	39.0	43.0	47.0	51.1	55.0	58.9	66.7	74.3	81.9	93.0	111.2
100	19.7	21.7	23.6	27.5	31.3	35.1	38.8	42.5	46.1	49.7	53.3	60.4	67.3	74.1	84.2	100.7
150	18.2	20.1	22.0	25.6	29.3	32.8	36.4	39.8	43.3	46.7	50.0	56.7	63.2	69.6	79.1	94.5
200	17.2	19.0	20.8	24.3	27.8	31.2	34.6	37.9	41.2	44.5	47.7	54.1	60.3	66.4	75.5	90.1
250	16.4	18.2	19.9	23.3	26.7	30.0	33.2	36.5	39.7	42.8	45.9	52.0	58.0	63.9	72.6	86.7
300	15.8	17.5	19.2	22.5	25.7	29.0	32.1	35.3	38.4	41.4	44.4	50.4	56.2	61.9	70.3	84.0
350	15.2	16.9	18.6	21.8	25.0	28.1	31.2	34.2	37.3	40.2	43.2	49.0	54.6	60.2	68.4	81.6
400	14.8	16.4	18.0	21.2	24.3	27.4	30.4	33.4	36.3	39.2	42.1	47.7	53.3	58.7	66.7	79.6
450	14.3	15.9	17.5	20.6	23.7	26.7	29.7	32.6	35.5	38.3	41.1	46.7	52.1	57.4	65.2	77.8
500	14.0	15.5	17.1	20.2	23.2	26.1	29.0	31.9	34.7	37.5	40.3	45.7	51.0	56.2	63.9	76.2
550	13.6	15.2	16.7	19.7	22.7	25.6	28.5	31.3	34.1	36.8	39.5	44.8	50.0	55.2	62.7	74.8
600	13.3	14.9	16.4	19.3	22.2	25.1	27.9	30.7	33.4	36.1	38.8	44.0	49.2	54.2	61.6	73.4
650	13.0	14.5	16.0	19.0	21.8	24.7	27.4	30.2	32.9	35.5	38.2	43.3	48.3	53.3	60.5	72.2
700	12.8	14.3	15.7	18.6	21.5	24.3	27.0	29.7	32.4	35.0	37.6	42.6	47.6	52.5	59.6	71.1
800	12.3	13.8	15.2	18.0	20.8	23.5	26.2	28.8	31.4	34.0	36.5	41.4	46.2	51.0	57.9	69.1
900	11.9	13.3	14.7	17.5	20.2	22.9	25.5	28.0	30.6	33.1	35.5	40.3	45.0	49.7	56.4	67.3
1000	11.5	12.9	14.3	17.0	19.7	22.3	24.8	27.3	29.8	32.3	34.7	39.4	44.0	48.5	55.1	65.7
1100	11.2	12.6	13.9	16.6	19.2	21.7	24.2	26.7	29.1	31.5	33.9	38.5	43.0	47.4	53.9	64.2
1200	10.9	12.2	13.6	16.2	18.7	21.3	23.7	26.1	28.5	30.9	33.2	37.7	42.1	46.5	52.8	62.9
1300	10.6	11.9	13.2	15.8	18.3	20.8	23.2	25.6	28.0	30.3	32.5	37.0	41.3	45.6	51.7	61.6
1400	10.3	11.6	12.9	15.5	17.9	20.4	22.8	25.1	27.4	29.7	31.9	36.3	40.6	44.7	50.8	60.5
1500	10.1	11.4	12.7	15.2	17.6	20.0	22.4	24.7	26.9	29.2	31.4	35.7	39.9	44.0	49.9	59.4
1600	9.8	11.1	12.4	14.9	17.3	19.7	22.0	24.2	26.5	28.7	30.8	35.1	39.2	43.2	49.1	58.5
1700	9.6	10.9	12.1	14.6	17.0	19.3	21.6	23.8	26.1	28.2	30.3	34.5	38.6	42.6	48.3	57.5
1800	9.4	10.7	11.9	14.3	16.7	19.0	21.2	23.5	25.6	27.8	29.9	34.0	38.0	41.9	47.6	56.6
1900	9.2	10.5	11.7	14.1	16.4	18.7	20.9	23.1	25.3	27.4	29.4	33.5	37.5	41.3	46.9	55.8
2000	9.1	10.3	11.5	13.8	16.1	18.4	20.6	22.8	24.9	27.0	29.0	33.0	36.9	40.7	46.2	55.0
2200	8.7	9.9	11.1	13.4	15.7	17.9	20.0	22.1	24.2	26.3	28.2	32.2	36.0	39.6	45.0	53.5
2400	8.4	9.6	10.7	13.0	15.2	17.4	19.5	21.6	23.6	25.6	27.5	31.4	35.1	38.7	43.9	52.2
2600	8.1	9.3	10.4	12.6	14.8	16.9	19.0	21.0	23.0	25.0	26.9	30.6	34.2	37.8	42.8	50.9
2800	7.9	9.0	10.1	12.3	14.4	16.5	18.6	20.5	22.5	24.4	26.3	29.9	33.5	36.9	41.9	49.7
3000	7.6	8.7	9.8	12.0	14.1	16.1	18.1	20.1	22.0	23.9	25.7	29.3	32.8	36.1	41.0	48.6
3200	7.4	8.5	9.6	11.7	13.8	15.8	17.7	19.6	21.5	23.4	25.2	28.7	32.1	35.4	40.1	47.6
3400	7.2	8.3	9.3	11.4	13.4	15.4	17.4	19.2	21.1	22.9	24.7	28.1	31.5	34.7	39.3	46.6
3600	7.0	8.0	9.1	11.2	13.2	15.1	17.0	18.9	20.7	22.5	24.2	27.6	30.9	34.0	38.6	45.7
3800	6.8	7.8	8.9	10.9	12.9	14.8	16.7	18.5	20.3	22.1	23.8	27.1	30.3	33.4	37.9	44.8
4000	6.6	7.6	8.7	10.7	12.6	14.5	16.4	18.2	19.9	21.7	23.3	26.6	29.8	32.8	37.2	44.0
4500	6.2	7.2	8.2	10.1	12.0	13.9	15.6	17.4	19.1	20.7	22.4	25.5	28.5	31.4	35.6	42.0
5000	5.8	6.8	7.8	9.6	11.5	13.3	15.0	16.7	18.3	19.9	21.5	24.5	27.4	30.2	34.1	40.2
5500	5.5	6.4	7.4	9.2	11.0	12.7	14.4	16.0	17.6	19.2	20.7	23.6	26.4	29.0	32.8	38.6
6000	5.1	6.1	7.0	8.8	10.5	12.2	13.8	15.4	17.0	18.5	19.9	22.7	25.4	28.0	31.6	37.0
6500	4.9	5.8	6.7	8.4	10.1	11.8	13.3	14.9	16.4	17.8	19.2	22.0	24.5	27.0	30.4	35.5
7000	4.6	5.5	6.4	8.1	9.7	11.3	12.9	14.4	15.8	17.2	18.6	21.2	23.7	26.0	29.3	34.1
7500	4.3	5.2	6.1	7.8	9.4	10.9	12.4	13.9	15.3	16.7	18.0	20.5	22.9	25.1	28.2	32.8
8000	4.1	5.0	5.8	7.5	9.0	10.6	12.0	13.4	14.8	16.1	17.4	19.9	22.2	24.3	27.2	31.5
9000	3.7	4.5	5.3	6.9	8.4	9.9	11.3	12.6	13.9	15.2	16.4	18.6	20.8	22.7	25.3	29.0

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-48

Belt width (mm)	4	6	10
Factor Kb	1.00	1.59	2.84

2 Design

SUPER TORQUE S3M Basic power rating

(For 6 mm belt width)

W | **S3M** / **6mm**

Table 2-49a

Number of teeth (T) / Revolution (rpm) / Pitch diameter (mm)	14 / 13.37	15 / 14.32	16 / 15.28	18 / 17.19	20 / 19.10	22 / 21.01	24 / 22.92	26 / 24.83	28 / 26.74	30 / 28.65	32 / 30.56	36 / 34.38	40 / 38.20	44 / 42.02	50 / 47.75	60 / 57.30
870	53	58	62	70	79	87	95	103	110	118	125	140	155	169	189	222
1160	67	72	78	89	99	109	119	129	139	148	158	176	194	213	237	279
1750	92	100	107	122	137	151	165	178	192	205	218	243	268	293	325	381
3500	154	167	180	206	230	254	277	300	322	344	365	407	446	486	537	624
50	5	5	6	6	7	8	8	9	10	11	11	13	14	15	17	20
100	9	9	10	12	13	14	15	17	18	19	21	23	25	28	31	37
150	12	13	14	16	18	20	22	24	26	27	29	33	36	39	44	52
200	16	17	18	21	23	26	28	30	33	35	37	42	46	50	56	67
250	19	21	22	25	28	31	34	37	39	42	45	50	55	61	68	80
300	22	24	26	29	33	36	39	43	46	49	52	58	65	71	79	94
350	25	27	29	33	37	41	45	49	52	56	59	66	73	81	90	106
400	28	31	33	37	42	46	50	54	58	62	66	74	82	90	100	119
450	31	34	36	41	46	51	55	60	64	69	73	82	90	99	111	131
500	34	37	39	45	50	55	60	65	70	75	80	89	99	108	121	143
550	37	40	43	48	54	60	65	71	76	81	86	97	107	117	130	154
600	39	43	46	52	58	64	70	76	82	87	93	104	114	125	140	165
650	42	46	49	56	62	68	75	81	87	93	99	111	122	134	149	176
700	45	48	52	59	66	73	79	86	92	99	105	118	130	142	159	187
800	50	54	58	66	73	81	89	96	103	110	117	131	145	158	176	208
900	55	59	64	72	81	89	97	105	113	121	129	144	159	174	194	228
1000	60	64	69	79	88	97	106	115	123	132	140	157	173	189	211	248
1100	64	69	75	85	95	105	114	124	133	142	151	169	186	204	227	267
1200	69	74	80	91	102	112	122	133	143	152	162	181	200	218	243	286
1300	73	79	85	97	108	119	130	141	152	162	173	193	213	233	259	304
1400	78	84	90	103	115	127	138	150	161	172	183	204	225	246	274	322
1500	82	89	95	108	121	134	146	158	170	182	193	216	238	260	289	340
1600	86	93	100	114	127	141	154	166	179	191	203	227	250	273	304	357
1700	90	98	105	119	134	147	161	174	187	200	213	238	262	286	318	373
1800	94	102	110	125	140	154	168	182	196	209	222	248	273	299	332	390
1900	98	106	114	130	146	161	175	190	204	218	232	259	285	311	346	406
2000	102	110	119	135	151	167	182	198	212	227	241	269	296	324	359	421
2200	110	119	128	146	163	180	196	212	228	244	259	289	318	348	386	452
2400	117	127	136	155	174	192	210	227	244	261	277	309	340	371	411	481
2600	124	135	145	165	185	204	223	241	259	277	294	328	360	393	436	509
2800	131	142	153	174	195	216	235	255	274	292	311	346	380	415	460	536
3000	138	150	161	184	205	227	248	268	288	308	327	364	400	436	483	562
3200	145	157	169	193	216	238	260	281	302	322	342	381	419	457	505	588
3400	151	164	177	201	225	249	272	294	316	337	358	398	437	477	527	612
3600	157	171	184	210	235	259	283	306	329	351	373	415	455	496	548	635
3800	164	177	191	218	244	270	294	318	342	365	387	431	473	515	568	658
4000	170	184	198	226	253	280	305	330	355	378	402	447	490	533	588	679
4500	184	200	216	246	275	304	332	359	385	411	436	484	530	576	634	729
5000	198	215	232	265	297	327	357	386	414	442	468	520	568	616	677	774
5500	211	230	248	283	317	349	381	412	442	471	499	553	603	653	715	813
6000	224	243	263	300	336	370	404	436	468	498	528	584	636	688	751	848
6500	236	256	277	316	354	390	426	460	492	524	555	613	667	719	782	876
7000	247	269	291	332	371	410	446	482	516	549	580	640	695	747	810	900
7500	259	281	304	347	388	428	466	503	538	572	604	665	721	773	834	917
8000	269	293	316	361	404	445	485	523	559	594	627	688	744	796	854	929
9000	289	315	340	388	434	478	520	559	597	633	667	729	784	832	884	935

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-50

Belt width (mm)	6	10	15
Factor Kb	1.00	1.79	2.84

SUPER TORQUE S3M Basic power rating (torque)
(For 6 mm belt width)

N·cm S3M 6mm

Table 2-49b

Number of teeth (T) / Revolution (rpm) ＼ Pitch diameter (mm)	14 13.37	15 14.32	16 15.28	18 17.19	20 19.10	22 21.01	24 22.92	26 24.83	28 26.74	30 28.65	32 30.56	36 34.38	40 38.20	44 42.02	50 47.75	60 57.30
870	58	63	68	77	86	95	104	113	121	129	138	154	170	186	207	244
1160	55	60	64	73	81	90	98	106	114	122	130	145	160	175	195	229
1750	50	54	59	67	75	82	90	97	105	112	119	133	146	160	177	208
3500	42	46	49	56	63	69	76	82	88	94	100	111	122	133	147	170
50	92	99	106	120	134	148	162	175	188	201	214	240	266	292	327	388
100	84	90	97	110	123	135	148	160	172	184	196	219	242	266	298	353
150	79	85	92	104	116	128	139	151	162	174	185	207	229	251	281	333
200	76	82	88	99	111	122	134	145	156	167	177	198	219	241	269	318
250	73	79	85	96	107	118	129	140	150	161	171	192	212	232	259	307
300	71	77	82	93	104	115	125	136	146	156	166	186	206	225	252	298
350	69	75	80	91	102	112	122	132	143	152	162	181	200	220	245	290
400	68	73	78	89	99	110	120	130	139	149	159	177	196	215	240	284
450	66	72	77	87	97	107	117	127	137	146	155	174	192	210	235	278
500	65	70	75	86	96	105	115	125	134	143	153	171	188	207	230	272
550	64	69	74	84	94	104	113	123	132	141	150	168	185	203	226	267
600	63	68	73	83	93	102	111	121	130	139	148	165	182	200	223	263
650	62	67	72	82	91	101	110	119	128	137	146	163	180	197	219	259
700	61	66	71	81	90	99	108	117	126	135	144	160	177	194	216	255
800	59	64	69	78	88	97	106	114	123	132	140	156	173	189	211	248
900	58	63	68	77	86	95	103	112	120	129	137	153	169	185	206	242
1000	57	61	66	75	84	93	101	110	118	126	134	150	165	181	201	237
1100	56	60	65	74	82	91	99	107	116	124	131	147	162	177	197	232
1200	55	59	64	72	81	89	97	106	113	121	129	144	159	174	194	228
1300	54	58	63	71	80	88	96	104	112	119	127	142	156	171	190	224
1400	53	57	62	70	78	86	94	102	110	117	125	139	154	168	187	220
1500	52	56	61	69	77	85	93	101	108	116	123	137	151	165	184	216
1600	51	56	60	68	76	84	92	99	107	114	121	135	149	163	181	213
1700	51	55	59	67	75	83	90	98	105	112	120	133	147	161	179	210
1800	50	54	58	66	74	82	89	97	104	111	118	132	145	159	176	207
1900	49	53	57	65	73	81	88	95	103	110	117	130	143	157	174	204
2000	49	53	57	65	72	80	87	94	101	108	115	128	141	155	172	201
2200	48	52	55	63	71	78	85	92	99	106	113	126	138	151	167	196
2400	47	50	54	62	69	76	83	90	97	104	110	123	135	148	164	191
2600	46	49	53	61	68	75	82	89	95	102	108	120	132	144	160	187
2800	45	48	52	59	67	74	80	87	93	100	106	118	130	142	157	183
3000	44	48	51	58	65	72	79	85	92	98	104	116	127	139	154	179
3200	43	47	50	57	64	71	78	84	90	96	102	114	125	136	151	175
3400	42	46	50	57	63	70	76	83	89	95	101	112	123	134	148	172
3600	42	45	49	56	62	69	75	81	87	93	99	110	121	132	145	168
3800	41	45	48	55	61	68	74	80	86	92	97	108	119	129	143	165
4000	40	44	47	54	60	67	73	79	85	90	96	107	117	127	140	162
4500	39	42	46	52	58	65	70	76	82	87	93	103	113	122	135	155
5000	38	41	44	51	57	63	68	74	79	84	89	99	109	118	129	148
5500	37	40	43	49	55	61	66	72	77	82	87	96	105	113	124	141
6000	36	39	42	48	53	59	64	69	74	79	84	93	101	109	119	135
6500	35	38	41	46	52	57	63	68	72	77	82	90	98	106	115	129
7000	34	37	40	45	51	56	61	66	70	75	79	87	95	102	111	123
7500	33	36	39	44	49	54	59	64	69	73	77	85	92	98	106	117
8000	32	35	38	43	48	53	58	62	67	71	75	82	89	95	102	111
9000	31	33	36	41	46	51	55	59	63	67	71	77	83	88	94	99

* Calculate revolutions not aforementioned proportionally.

2
Design

Width correction factor (Kb)   Table 2-50

Belt width (mm)	6	10	15
Factor Kb	1.00	1.79	2.84

SUPER TORQUE S5M Basic power rating
(For 10 mm belt width)

W | **S5M / 10mm**

Table 2-51a

Number of teeth (T)	14	15	16	18	20	22	24	26	28	30	32	36	40	44	48	60
Pitch diameter (mm) Revolution (rpm)	22.28	23.87	25.46	28.65	31.83	35.01	38.20	41.38	44.56	47.75	50.93	57.30	63.66	70.03	76.39	95.49
870	173	192	210	246	282	317	352	386	420	453	486	551	614	677	738	916
1160	216	239	263	309	355	399	443	487	529	572	613	695	775	854	931	1154
1750	293	326	359	425	488	551	613	673	733	792	849	963	1073	1181	1286	1587
3500	475	534	592	705	816	923	1029	1131	1231	1330	1425	1611	1787	1955	2115	2544
50	16	18	19	22	25	28	31	34	37	40	43	48	54	59	64	80
100	30	32	35	41	46	52	57	62	68	73	78	88	98	108	118	147
150	42	46	50	58	66	73	81	89	96	104	111	125	140	154	168	209
200	53	58	63	74	84	94	104	113	123	132	142	161	179	197	215	268
250	64	70	76	89	101	113	125	137	149	160	172	194	217	239	260	324
300	74	81	89	103	118	132	146	160	173	187	200	227	253	279	304	378
350	84	92	101	118	134	150	166	182	198	213	228	259	288	318	346	431
400	93	103	112	131	150	168	186	203	221	238	255	289	323	355	388	482
450	103	113	124	145	165	185	205	224	244	263	282	319	356	392	428	532
500	112	123	135	158	180	202	224	245	266	287	308	349	389	428	467	581
550	121	133	146	170	195	218	242	265	288	311	333	378	421	464	506	629
600	129	143	156	183	209	235	260	285	310	334	358	406	453	499	544	676
650	138	152	167	195	223	250	278	304	331	357	383	434	484	533	581	722
700	146	161	177	207	237	266	295	323	351	379	407	461	514	566	618	767
800	162	179	197	231	264	296	329	361	392	423	454	514	574	632	689	856
900	178	197	216	253	290	326	362	397	432	466	500	566	632	696	759	941
1000	193	214	234	275	315	355	394	432	470	507	544	617	688	758	826	1025
1100	207	230	252	297	340	383	425	466	507	548	588	666	743	818	892	1106
1200	221	246	270	318	364	410	456	500	544	588	630	715	797	877	956	1185
1300	235	261	287	338	388	437	485	533	580	626	672	762	849	935	1019	1262
1400	248	276	304	358	411	463	515	565	615	664	713	808	901	992	1081	1338
1500	262	291	320	378	434	489	543	597	649	701	753	853	951	1047	1141	1411
1600	274	305	336	397	456	514	571	628	683	738	792	898	1001	1102	1200	1483
1700	287	319	352	415	478	539	599	658	716	774	830	941	1049	1155	1258	1553
1800	299	333	367	434	499	563	626	688	749	809	868	984	1097	1207	1314	1621
1900	311	347	382	452	520	587	653	717	781	844	905	1026	1144	1258	1370	1688
2000	323	360	397	470	541	611	679	746	813	878	942	1068	1189	1308	1424	1753
2200	346	386	426	504	581	656	730	803	874	944	1013	1148	1279	1406	1529	1879
2400	367	411	454	538	620	701	780	858	934	1009	1082	1226	1365	1500	1630	1998
2600	389	435	480	570	658	744	828	911	991	1071	1149	1301	1448	1590	1727	2111
2800	409	458	507	602	695	786	875	962	1048	1132	1214	1374	1528	1677	1820	2218
3000	429	481	532	633	731	826	920	1012	1102	1190	1277	1445	1606	1761	1910	2319
3200	448	502	556	662	765	866	965	1061	1155	1247	1338	1513	1680	1841	1995	2414
3400	466	524	580	691	799	904	1008	1108	1206	1303	1397	1579	1752	1918	2076	2502
3600	484	544	603	719	832	942	1049	1154	1256	1356	1454	1642	1821	1992	2153	2584
3800	501	564	626	747	864	978	1090	1199	1305	1408	1509	1704	1888	2062	2227	2659
4000	518	583	647	773	895	1014	1130	1242	1352	1459	1563	1763	1951	2129	2296	2728
4500	558	629	699	837	970	1098	1224	1345	1463	1578	1689	1901	2098	2282	2452	2870
5000	595	672	748	896	1039	1177	1312	1441	1566	1688	1804	2025	2228	2414	2581	2966
5500	629	712	793	952	1104	1251	1393	1530	1661	1788	1909	2135	2340	2523	2683	3014
6000	661	749	835	1003	1164	1319	1468	1611	1747	1878	2002	2231	2434	2609	2756	3011
6500	690	783	874	1051	1220	1382	1537	1685	1825	1958	2084	2312	2508	2672	2800	2955
7000	716	814	910	1096	1272	1440	1600	1752	1895	2029	2154	2378	2563	2709	2812	2841
7500	741	843	943	1137	1320	1493	1657	1811	1955	2090	2213	2428	2598	2720	2791	2666
8000	763	870	974	1174	1363	1541	1708	1863	2007	2140	2260	2462	2611	2703	2735	2428
9000	801	915	1026	1239	1436	1620	1790	1944	2084	2208	2315	2479	2570	2583	2513	1745

▇ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-52

Belt width (mm)	10	15	25
Factor Kb	1.00	1.59	2.84

2 Design

SUPER TORQUE S5M Basic power rating (torque)
(For 10 mm belt width)

N·cm S5M / 10mm

Table 2-51b

Number of teeth (T) Pitch diameter (mm) Revolution (rpm)	14 22.28	15 23.87	16 25.46	18 28.65	20 31.83	22 35.01	24 38.20	26 41.38	28 44.56	30 47.75	32 50.93	36 57.30	40 63.66	44 70.03	48 76.39	60 95.49
870	190	210	231	271	310	348	386	424	461	497	534	605	674	743	810	1005
1160	178	197	216	255	292	329	365	401	436	471	505	572	638	703	766	950
1750	160	178	196	232	267	301	334	367	400	432	464	525	586	644	702	866
3500	130	146	161	192	223	252	281	309	336	363	389	439	488	534	577	694
50	312	341	370	428	484	540	596	651	706	760	813	920	1025	1128	1231	1533
100	283	310	336	390	442	494	545	596	646	696	746	844	940	1035	1129	1406
150	265	291	317	367	417	467	516	564	612	659	706	799	890	981	1070	1331
200	253	278	302	351	400	447	494	541	587	633	678	767	855	942	1027	1279
250	243	268	292	339	386	432	478	523	568	612	656	743	828	912	995	1237
300	236	259	283	329	375	420	465	509	552	595	638	723	805	887	968	1204
350	229	252	275	321	365	410	453	496	539	581	623	706	787	867	945	1176
400	223	246	269	313	357	401	444	486	528	569	610	691	770	848	925	1151
450	218	241	263	307	350	393	435	476	517	558	598	678	756	833	908	1129
500	214	236	258	301	344	386	427	468	508	549	588	666	743	818	893	1109
550	210	231	253	296	338	379	420	460	500	540	579	656	731	805	878	1092
600	206	227	249	291	332	373	414	453	493	532	570	646	720	794	866	1076
650	202	224	245	287	328	368	408	447	486	524	562	637	711	783	854	1061
700	199	220	241	283	323	363	402	441	480	518	555	629	701	773	843	1047
800	194	214	235	275	315	354	393	431	468	505	542	614	685	754	823	1021
900	188	209	229	269	308	346	384	421	458	494	530	601	670	738	805	999
1000	184	204	224	263	301	339	376	413	449	485	520	589	657	724	789	979
1100	180	200	219	258	295	332	369	405	441	476	510	578	645	710	775	960
1200	176	196	215	253	290	326	363	398	433	468	502	569	634	698	761	943
1300	173	192	211	248	285	321	357	392	426	460	494	560	624	687	749	927
1400	170	188	207	244	280	316	351	386	420	453	486	551	615	677	737	912
1500	167	185	204	240	276	311	346	380	413	447	479	543	606	667	726	898
1600	164	182	201	237	272	307	341	375	408	440	473	536	597	657	716	885
1700	161	179	198	233	268	303	337	370	402	435	466	529	589	649	706	872
1800	159	177	195	230	265	299	332	365	397	429	461	522	582	640	697	860
1900	156	174	192	227	261	295	328	361	393	424	455	516	575	632	688	848
2000	154	172	190	224	258	292	324	356	388	419	450	510	568	625	680	837
2200	150	168	185	219	252	285	317	348	379	410	440	498	555	610	664	815
2400	146	163	180	214	247	279	310	341	372	401	431	488	543	597	649	795
2600	143	160	176	210	242	273	304	334	364	393	422	478	532	584	634	775
2800	139	156	173	205	237	268	298	328	357	386	414	469	521	572	621	757
3000	136	153	169	201	233	263	293	322	351	379	406	460	511	561	608	738
3200	134	150	166	198	228	258	288	317	345	372	399	451	501	549	595	720
3400	131	147	163	194	224	254	283	311	339	366	392	443	492	539	583	703
3600	128	144	160	191	221	250	278	306	333	360	386	436	483	528	571	686
3800	126	142	157	188	217	246	274	301	328	354	379	428	474	518	560	668
4000	124	139	155	185	214	242	270	297	323	348	373	421	466	508	548	651
4500	118	134	148	178	206	233	260	286	311	335	358	403	445	484	520	609
5000	114	128	143	171	198	225	251	275	299	322	345	387	426	461	493	566
5500	109	124	138	165	192	217	242	266	288	310	331	371	406	438	466	523
6000	105	119	133	160	185	210	234	256	278	299	319	355	387	415	439	479
6500	101	115	128	154	179	203	226	248	268	288	306	340	369	393	411	434
7000	98	111	124	149	174	196	218	239	258	277	294	324	350	370	384	388
7500	94	107	120	145	168	190	211	231	249	266	282	309	331	346	355	339
8000	91	104	116	140	163	184	204	222	240	255	270	294	312	323	326	290
9000	85	97	109	131	152	172	190	206	221	234	246	263	273	274	267	185

■ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)   Table 2-52

Belt width (mm)	10	15	25
Factor Kb	1.00	1.59	2.84

2

Design

SUPER TORQUE S8M Basic power rating

(For 60 mm belt width)

kW | **S8M / 60mm**

Table 2-53a

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	20 / 50.93	21 / 53.48	22 / 56.02	24 / 61.12	26 / 66.21	28 / 71.30	30 / 76.39	32 / 81.49	36 / 91.67	40 / 101.86	44 / 112.05	48 / 122.23	50 / 127.32	60 / 152.79	72 / 183.35	84 / 213.90
870	6.38	6.70	7.02	7.66	8.29	8.93	9.56	10.20	11.47	12.73	14.00	15.25	15.88	19.01	22.73	26.41
1160	8.51	8.93	9.35	10.20	11.05	11.89	12.73	13.58	15.25	16.93	18.60	20.26	21.08	25.19	30.03	34.77
1750	12.81	13.44	14.07	15.34	16.61	17.86	19.12	20.37	22.86	25.33	27.78	30.20	31.40	37.29	44.09	50.52
3500	25.33	26.56	27.78	30.20	32.59	34.96	37.29	39.60	44.09	48.42	52.57	56.52	58.42	67.02	75.09	80.26
50	0.37	0.39	0.40	0.44	0.48	0.51	0.55	0.59	0.66	0.73	0.81	0.88	0.92	1.10	1.32	1.54
100	0.73	0.77	0.81	0.88	0.95	1.03	1.10	1.18	1.32	1.47	1.62	1.76	1.84	2.20	2.64	3.08
200	1.47	1.54	1.62	1.76	1.91	2.06	2.20	2.35	2.64	2.94	3.23	3.52	3.67	4.40	5.28	6.16
300	2.20	2.31	2.42	2.64	2.86	3.08	3.30	3.52	3.96	4.40	4.84	5.28	5.50	6.60	7.92	9.24
400	2.94	3.08	3.23	3.52	3.82	4.11	4.40	4.70	5.28	5.87	6.46	7.04	7.34	8.80	10.55	12.30
500	3.67	3.85	4.04	4.40	4.77	5.14	5.50	5.87	6.60	7.34	8.07	8.80	9.16	10.99	13.17	15.34
600	4.40	4.62	4.84	5.28	5.72	6.16	6.60	7.04	7.92	8.80	9.67	10.55	10.99	13.17	15.78	18.37
700	5.14	5.39	5.65	6.16	6.68	7.19	7.70	8.21	9.24	10.26	11.28	12.30	12.80	15.34	18.37	21.37
800	5.87	6.16	6.46	7.04	7.63	8.21	8.80	9.38	10.55	11.71	12.88	14.04	14.62	17.51	20.94	24.34
900	6.60	6.93	7.26	7.92	8.58	9.24	9.89	10.55	11.86	13.17	14.47	15.78	16.42	19.66	23.50	27.29
1000	7.34	7.70	8.07	8.80	9.53	10.26	10.99	11.72	13.17	14.62	16.06	17.51	18.22	21.80	26.03	30.20
1100	8.07	8.47	8.87	9.67	10.48	11.28	12.08	12.88	14.47	16.06	17.65	19.23	20.01	23.92	28.54	33.07
1200	8.80	9.24	9.67	10.55	11.42	12.30	13.17	14.04	15.77	17.51	19.23	20.94	21.80	26.03	31.02	35.90
1300	9.53	10.00	10.48	11.42	12.37	13.31	14.26	15.20	17.07	18.94	20.80	22.65	23.57	28.12	33.48	38.68
1400	10.26	10.77	11.28	12.30	13.31	14.33	15.34	16.35	18.37	20.37	22.37	24.35	25.33	30.20	35.90	41.41
1500	10.99	11.53	12.08	13.17	14.26	15.34	16.42	17.51	19.66	21.80	23.92	26.03	27.08	32.25	38.29	44.09
1600	11.71	12.30	12.88	14.04	15.20	16.35	17.50	18.66	20.94	23.22	25.47	27.71	28.82	34.29	40.64	46.71
1700	12.44	13.06	13.68	14.91	16.14	17.36	18.58	19.80	22.22	24.63	27.01	29.37	30.54	36.30	42.95	49.26
1800	13.17	13.82	14.47	15.78	17.07	18.37	19.66	20.94	23.50	26.03	28.54	31.02	32.25	38.29	45.22	51.75
1900	13.89	14.58	15.27	16.64	18.01	19.37	20.73	22.08	24.77	27.43	30.06	32.66	33.95	40.25	47.44	54.17
2000	14.62	15.34	16.06	17.51	18.94	20.37	21.80	23.22	26.03	28.82	31.57	34.29	35.63	42.18	49.62	56.52
2100	15.34	16.10	16.86	18.37	19.87	21.37	22.86	24.35	27.29	30.20	33.07	35.90	37.29	44.09	51.75	58.79
2200	16.06	16.86	17.65	19.23	20.80	22.36	23.92	25.47	28.54	31.57	34.56	37.49	38.94	45.96	53.83	60.98
2300	16.79	17.61	18.44	20.09	21.73	23.36	24.98	26.59	29.78	32.93	36.03	39.07	40.57	47.81	55.86	63.08
2400	17.51	18.37	19.23	20.94	22.65	24.34	26.03	27.71	31.02	34.29	37.49	40.64	42.18	49.62	57.83	65.10
2500	18.22	19.12	20.01	21.80	23.57	25.33	27.08	28.82	32.25	35.63	38.94	42.18	43.77	51.40	59.74	67.02
2600	18.94	19.87	20.80	22.65	24.49	26.31	28.12	29.92	33.48	36.96	40.38	43.71	45.34	53.15	61.59	68.84
2700	19.66	20.62	21.58	23.50	25.40	27.29	29.16	31.02	34.69	38.29	41.80	45.22	46.89	54.85	63.38	70.57
2800	20.37	21.37	22.36	24.35	26.31	28.26	30.20	32.12	35.90	39.60	43.20	46.71	48.42	56.52	65.10	72.19
2900	21.09	22.12	23.14	25.19	27.22	29.23	31.23	33.21	37.09	40.89	44.59	48.17	49.92	58.15	66.75	73.70
3000	21.80	22.86	23.92	26.03	28.13	30.20	32.25	34.29	38.28	42.18	45.97	49.62	51.40	59.74	68.33	75.09
3200	23.22	24.35	25.47	27.71	29.92	32.12	34.29	36.43	40.63	44.72	48.66	52.45	54.29	62.79	71.27	77.54
3400	24.63	25.82	27.01	29.37	31.71	34.02	36.30	38.55	42.95	47.20	51.29	55.19	57.07	65.66	73.90	79.48
3600	26.03	27.29	28.54	31.03	33.48	35.90	38.28	40.64	45.22	49.62	53.84	57.83	59.74	68.33	76.20	80.90
3800	27.43	28.75	30.06	32.66	35.23	37.76	40.24	42.69	47.44	51.99	56.30	60.36	62.29	70.81	78.15	81.77
4000	28.82	30.20	31.57	34.29	36.96	39.59	42.18	44.72	49.62	54.29	58.69	62.79	64.72	73.06	79.72	82.04
4200	30.20	31.64	33.07	35.90	38.68	41.41	44.09	46.71	51.75	56.52	60.98	65.10	67.02	75.09	80.90	—
4400	31.57	33.07	34.56	37.50	40.38	43.20	45.96	48.66	53.83	58.69	63.18	67.29	69.18	76.89	81.68	—
4600	32.93	34.49	36.03	39.08	42.05	44.97	47.81	50.58	55.86	60.78	65.29	69.35	71.20	78.43	82.02	—
4800	34.29	35.90	37.49	40.64	43.71	46.71	49.62	52.45	57.83	62.79	67.29	71.27	73.06	79.72	81.92	—
5000	35.63	37.30	38.94	42.18	45.34	48.42	51.40	54.29	59.74	64.72	69.18	73.06	74.77	80.74	81.34	—
5200	36.96	38.68	40.37	43.71	46.95	50.10	53.14	56.08	61.59	66.57	70.96	74.71	76.32	81.47	—	—
5400	38.29	40.05	41.79	45.22	48.54	51.75	54.85	57.83	63.38	68.33	72.63	76.20	77.69	81.91	—	—
5600	39.60	41.41	43.20	46.71	50.10	53.37	56.52	59.53	65.10	70.00	74.18	77.54	78.89	82.04	—	—
5800	40.89	42.76	44.59	48.18	51.64	54.96	58.15	61.19	66.75	71.58	75.60	78.71	79.91	—	—	—
6000	42.18	44.09	45.96	49.63	53.15	56.52	59.74	62.79	68.33	73.06	76.89	79.72	80.73	—	—	—

■ Endurance time decreases.

■ Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor   Kb

Table 2-54

Belt width (mm)	15	20	25	30	40	50	60	70	80	100
Factor Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2

Design

SUPER TORQUE S8M Basic power rating (torque)

(For 60 mm belt width)

N·m S8M / 60mm

Table 2-53b

Number of teeth (T)	20	21	22	24	26	28	30	32	36	40	44	48	50	60	72	84
Pitch diameter (mm) / Revolution (rpm)	50.93	53.48	56.02	61.12	66.21	71.30	76.39	81.49	91.67	101.86	112.05	122.23	127.32	152.79	183.35	213.90
870	70	74	77	84	91	98	105	112	126	140	154	167	174	209	250	290
1160	70	74	77	84	91	98	105	112	126	139	153	167	174	207	247	286
1750	70	73	77	84	91	97	104	111	125	138	152	165	171	204	241	276
3500	69	72	76	82	89	95	102	108	120	132	143	154	159	183	205	219
50	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	295
100	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	295
200	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	294
300	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	294
400	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	294
500	70	74	77	84	91	98	105	112	126	140	154	168	175	210	252	293
600	70	74	77	84	91	98	105	112	126	140	154	168	175	210	251	292
700	70	74	77	84	91	98	105	112	126	140	154	168	175	209	251	292
800	70	74	77	84	91	98	105	112	126	140	154	168	175	209	250	291
900	70	74	77	84	91	98	105	112	126	140	154	167	174	209	249	290
1000	70	74	77	84	91	98	105	112	126	140	153	167	174	208	249	288
1100	70	74	77	84	91	98	105	112	126	139	153	167	174	208	248	287
1200	70	74	77	84	91	98	105	112	126	139	153	167	173	207	247	286
1300	70	73	77	84	91	98	105	112	125	139	153	166	173	207	246	284
1400	70	73	77	84	91	98	105	112	125	139	153	166	173	206	245	282
1500	70	73	77	84	91	98	105	111	125	139	152	166	172	205	244	281
1600	70	73	77	84	91	98	104	111	125	139	152	165	172	205	243	279
1700	70	73	77	84	91	98	104	111	125	138	152	165	172	204	241	277
1800	70	73	77	84	91	97	104	111	125	138	151	165	171	203	240	275
1900	70	73	77	84	91	97	104	111	124	138	151	164	171	202	238	272
2000	70	73	77	84	90	97	104	111	124	138	151	164	170	201	237	270
2100	70	73	77	84	90	97	104	111	124	137	150	163	170	200	235	267
2200	70	73	77	83	90	97	104	111	124	137	150	163	169	200	234	265
2300	70	73	77	83	90	97	104	110	124	137	150	162	168	199	232	262
2400	70	73	77	83	90	97	104	110	123	136	149	162	168	197	230	259
2500	70	73	76	83	90	97	103	110	123	136	149	161	167	196	228	256
2600	70	73	76	83	90	97	103	110	123	136	148	161	167	195	226	253
2700	70	73	76	83	90	97	103	110	123	135	148	160	166	194	224	250
2800	69	73	76	83	90	96	103	110	122	135	147	159	165	193	222	246
2900	69	73	76	83	90	96	103	109	122	135	147	159	164	192	220	243
3000	69	73	76	83	90	96	103	109	122	134	146	158	164	190	218	239
3200	69	73	76	83	89	96	102	109	121	133	145	157	162	187	213	231
3400	69	73	76	83	89	96	102	108	121	133	144	155	160	184	208	223
3600	69	72	76	82	89	95	102	108	120	132	143	153	158	181	202	215
3800	69	72	76	82	89	95	101	107	119	131	142	152	157	178	196	205
4000	69	72	75	82	88	95	101	107	118	130	140	150	155	174	190	196
4200	69	72	75	82	88	94	100	106	118	129	139	148	152	171	184	—
4400	69	72	75	81	88	94	100	106	117	127	137	146	150	167	177	—
4600	68	72	75	81	87	93	99	105	116	126	136	144	148	163	170	—
4800	68	71	75	81	87	93	99	104	115	125	134	142	145	159	163	—
5000	68	71	74	81	87	92	98	104	114	124	132	140	143	154	155	—
5200	68	71	74	80	86	92	98	103	113	122	130	137	140	150	—	—
5400	68	71	74	80	86	92	97	102	112	121	128	135	137	145	—	—
5600	68	71	74	80	85	91	96	102	111	119	126	132	135	140	—	—
5800	67	70	73	79	85	91	96	101	110	118	124	130	132	—	—	—
6000	67	70	73	79	85	90	95	100	109	116	122	127	129	—	—	—

Endurance time decreases.

Belt speed exceeds 33 m/sec.

* Calculate revolutions not aforementioned proportionally.

Width correction factor   Kb

Table 2-54

Belt width (mm)	15	20	25	30	40	50	60	70	80	100
Factor Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2

Design

SUPER TORQUE S14M Basic power rating
(For 120 mm belt width)

kW S14M / 120mm

Table 2-55a

Number of teeth (T)	28	30	32	34	36	40	42	44	48	50	56	60	64	72	84	
Pitch diameter (mm)	124.78	133.69	142.60	151.52	160.43	178.25	187.17	196.08	213.90	222.82	249.55	267.38	285.21	320.86	374.33	
Revolution (rpm)																
575	32.08	34.36	36.63	38.90	41.17	45.69	47.94	50.19	54.67	56.91	63.58	68.00	72.39	81.10	93.92	—
690	38.45	41.17	43.88	46.59	49.29	54.67	57.36	60.03	65.35	68.00	75.89	81.10	86.26	96.45	111.32	—
870	48.35	51.75	55.14	58.52	61.89	68.57	71.90	75.21	81.77	85.03	94.69	101.03	107.28	119.49	136.99	—
1160	64.12	68.57	73.00	77.40	81.77	90.42	94.69	98.92	107.27	111.39	123.46	131.27	138.88	153.40	173.26	—
1750	95.20	101.57	107.84	114.03	120.11	131.94	137.68	143.29	154.12	159.32	174.00	182.97	191.22	205.36	220.01	—
3450	172.13	181.11	189.39	196.95	203.73	214.76	218.93	222.14	225.48	—	—	—	—	—	—	—
20	1.12	1.20	1.28	1.36	1.44	1.60	1.68	1.76	1.92	2.00	2.24	2.40	2.56	2.88	3.36	—
40	2.24	2.40	2.56	2.72	2.88	3.20	3.36	3.52	3.84	4.00	4.48	4.80	5.12	5.76	6.71	—
60	3.36	3.60	3.84	4.08	4.32	4.80	5.04	5.28	5.76	6.00	6.71	7.19	7.67	8.63	10.07	—
80	4.48	4.80	5.12	5.44	5.76	6.39	6.71	7.03	7.67	7.99	8.95	9.59	10.23	11.51	13.42	—
90	5.04	5.40	5.76	6.12	6.47	7.19	7.55	7.91	8.63	8.99	10.07	10.79	11.51	12.95	15.10	—
100	5.60	6.00	6.39	6.79	7.19	7.99	8.39	8.79	9.59	9.99	11.19	11.99	12.79	14.38	16.77	—
200	11.19	11.99	12.79	13.58	14.38	15.98	16.78	17.57	19.17	19.96	22.35	23.94	25.53	28.71	33.47	—
300	16.78	17.97	19.17	20.36	21.56	23.94	25.14	26.33	28.71	29.90	33.47	35.84	38.21	42.94	49.99	—
400	22.35	23.94	25.53	27.12	28.71	31.88	33.47	35.05	38.21	39.79	44.51	47.65	50.78	57.01	66.27	—
500	27.92	29.90	31.88	33.86	35.84	39.79	41.76	43.72	47.65	49.60	55.45	59.33	63.20	70.87	82.22	—
600	33.47	35.84	38.21	40.58	42.94	47.65	50.00	52.34	57.01	59.33	66.27	70.87	75.43	84.47	97.76	—
700	39.00	41.76	44.51	47.26	50.00	55.45	58.17	60.88	66.27	68.96	76.95	82.22	87.45	97.76	112.80	—
800	44.51	47.65	50.78	53.90	57.01	63.19	66.28	69.34	75.43	78.46	87.45	93.37	99.22	110.68	127.26	—
900	50.00	53.51	57.01	60.50	63.97	70.87	74.30	77.71	84.47	87.82	97.76	104.27	110.69	123.19	141.06	—
1000	55.45	59.33	63.19	67.04	70.87	78.46	82.22	85.96	93.37	97.03	107.84	114.90	121.83	135.23	154.12	—
1100	60.88	65.12	69.34	73.54	77.71	85.96	90.05	94.10	102.11	106.06	117.69	125.23	132.60	146.75	166.35	—
1200	66.28	70.87	75.43	79.97	84.47	93.37	97.76	102.11	110.68	114.90	127.26	135.23	142.98	157.70	177.67	—
1300	71.63	76.57	81.47	86.34	91.16	100.66	105.35	109.98	119.07	123.54	136.54	144.87	152.91	168.03	188.00	—
1400	76.95	82.22	87.45	92.63	97.76	107.84	112.80	117.69	127.26	131.94	145.50	154.12	162.37	177.67	197.26	—
1500	82.22	87.82	93.37	98.85	104.27	114.90	120.11	125.23	135.23	140.10	154.12	162.94	171.32	186.59	205.36	—
1600	87.45	93.37	99.21	104.99	110.68	121.82	127.26	132.60	142.97	148.00	162.37	171.32	179.72	194.73	212.22	—
1700	92.63	98.85	104.99	111.04	116.99	128.60	134.25	139.78	150.47	155.62	170.23	179.21	187.54	202.04	217.76	—
1800	97.76	104.27	110.68	117.00	123.19	135.23	141.06	146.75	157.70	162.95	177.67	186.59	194.73	208.46	221.90	—
1900	102.83	109.62	116.30	122.85	129.28	141.70	147.69	153.52	164.65	169.96	184.67	193.43	201.27	213.95	224.55	—
2000	107.85	114.90	121.82	128.61	135.23	148.00	154.12	160.05	171.32	176.64	191.21	199.70	207.11	218.44	225.62	—
2100	112.80	120.11	127.26	134.25	141.06	154.12	160.35	166.35	177.67	182.97	197.26	205.36	212.22	221.90	—	—
2200	117.69	125.23	132.60	139.78	146.75	160.05	166.35	172.40	183.70	188.94	202.79	210.39	216.57	224.26	—	—
2300	122.51	130.28	137.84	145.19	152.30	165.79	172.13	178.19	189.39	194.52	207.79	214.76	220.11	225.48	—	—
2400	127.26	135.23	142.97	150.47	157.70	171.32	177.68	183.70	194.73	199.70	212.22	218.44	222.81	225.50	—	—
2500	131.94	140.10	148.00	155.62	162.95	176.63	182.97	188.93	199.69	204.46	216.07	221.40	224.63	—	—	—
2600	136.54	144.87	152.91	160.64	168.03	181.73	188.01	193.87	204.28	208.79	219.30	223.60	225.54	—	—	—
2700	141.06	149.55	157.70	165.51	172.94	186.59	192.77	198.49	208.46	212.67	221.90	225.02	225.50	—	—	—
2800	145.50	154.12	162.37	170.23	177.67	191.21	197.26	202.80	212.22	216.07	223.83	225.62	—	—	—	—
3000	154.12	162.94	171.32	179.22	186.59	199.69	205.36	210.39	218.44	221.40	225.62	—	—	—	—	—
3200	162.37	171.32	179.72	187.54	194.73	207.11	212.23	216.57	222.81	224.63	—	—	—	—	—	—
3400	170.23	179.21	187.53	195.16	202.04	213.38	217.76	221.22	225.20	225.64	—	—	—	—	—	—
3600	177.68	186.59	194.73	202.04	208.46	218.44	221.90	224.26	—	—	—	—	—	—	—	—
3800	184.68	193.43	201.27	208.13	213.95	222.21	224.55	225.59	—	—	—	—	—	—	—	—
4000	191.22	199.70	207.11	213.39	218.44	224.63	225.62	—	—	—	—	—	—	—	—	—
4200	197.26	205.36	212.22	217.77	221.90	225.62	—	—	—	—	—	—	—	—	—	—
4400	202.80	210.39	216.57	221.22	224.26	—	—	—	—	—	—	—	—	—	—	—
4600	207.79	214.76	220.11	223.72	225.48	—	—	—	—	—	—	—	—	—	—	—
4800	212.23	218.44	222.81	225.21	—	—	—	—	—	—	—	—	—	—	—	—
5000	216.07	221.40	224.63	225.64	—	—	—	—	—	—	—	—	—	—	—	—

Endurance time decreases.

Belt speed exceeds 33 m/sec.

Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)

Table 2-56

Belt width (mm)	30	40	50	60	80	100	120	140
Factor Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2 Design

SUPER TORQUE S14M Basic power rating (torque)
(For 120 mm belt width)

N·m S14M / 120mm

Table 2-55b

Revolution (rpm) \ Number of teeth (T) / Pitch diameter (mm)	28 124.78	30 133.69	32 142.60	34 151.52	36 160.43	40 178.25	42 187.17	44 196.08	48 213.90	50 222.82	56 249.55	60 267.38	64 285.21	72 320.86	84 374.33	
575	533	571	608	646	684	759	796	834	908	945	1056	1129	1202	1347	1560	—
690	532	570	607	645	682	757	794	831	904	941	1050	1122	1194	1335	1541	—
870	531	568	605	642	679	753	789	826	898	933	1039	1109	1178	1312	1504	—
1160	528	565	601	637	673	744	780	814	883	917	1016	1081	1143	1263	1426	—
1750	520	554	589	622	655	720	751	782	841	869	950	998	1043	1121	1201	—
3450	476	501	524	545	564	594	606	615	624	—	—	—	—	—	—	—
20	534	573	611	649	687	763	802	840	916	954	1069	1145	1222	1374	1603	—
40	534	573	611	649	687	763	802	840	916	954	1069	1145	1222	1374	1603	—
60	534	573	611	649	687	763	802	840	916	954	1069	1145	1221	1374	1603	—
80	534	573	611	649	687	763	802	840	916	954	1069	1145	1221	1374	1602	—
90	534	573	611	649	687	763	802	840	916	954	1069	1145	1221	1374	1602	—
100	534	573	611	649	687	763	802	840	916	954	1068	1145	1221	1373	1602	—
200	534	572	610	649	687	763	801	839	915	953	1067	1143	1219	1371	1598	—
300	534	572	610	648	686	762	800	838	914	952	1065	1141	1216	1367	1591	—
400	534	572	610	648	685	761	799	837	912	950	1063	1138	1212	1361	1582	—
500	533	571	609	647	685	760	798	835	910	947	1059	1133	1207	1354	1570	—
600	533	570	608	646	683	758	796	833	907	944	1055	1128	1201	1344	1556	—
700	532	570	607	645	682	757	794	831	904	941	1050	1122	1193	1334	1539	—
800	531	569	606	643	681	754	791	828	900	937	1044	1115	1184	1321	1519	—
900	531	568	605	642	679	752	788	825	896	932	1037	1106	1174	1307	1497	—
1000	530	567	604	640	677	749	785	821	892	927	1030	1097	1163	1291	1472	—
1100	529	565	602	638	675	746	782	817	886	921	1022	1087	1151	1274	1444	—
1200	527	564	600	636	672	743	778	813	881	914	1013	1076	1138	1255	1414	—
1300	526	562	598	634	670	739	774	808	875	908	1003	1064	1123	1234	1381	—
1400	525	561	597	632	667	736	769	803	868	900	993	1051	1108	1212	1346	—
1500	523	559	594	629	664	732	765	797	861	892	981	1037	1091	1188	1307	—
1600	522	557	592	627	661	727	760	791	853	883	969	1023	1073	1162	1267	—
1700	520	555	590	624	657	722	754	785	845	874	956	1007	1054	1135	1223	—
1800	519	553	587	621	654	717	748	779	837	865	943	990	1033	1106	1177	—
1900	517	551	585	618	650	712	742	772	828	854	928	972	1012	1075	1129	—
2000	515	549	582	614	646	707	736	764	818	843	913	954	989	1043	1077	—
2100	513	546	579	611	642	701	729	757	808	832	897	934	965	1009	—	—
2200	511	544	576	607	637	695	722	748	797	820	880	913	940	974	—	—
2300	509	541	572	603	632	688	715	740	786	808	863	892	914	936	—	—
2400	506	538	569	599	628	682	707	731	775	795	844	869	887	897	—	—
2500	504	535	565	594	622	675	699	722	763	781	825	846	858	—	—	—
2600	502	532	562	590	617	667	691	712	750	767	806	821	828	—	—	—
2700	499	529	558	585	612	660	682	702	737	752	785	796	798	—	—	—
2800	496	526	554	581	606	652	673	692	724	737	763	770	—	—	—	—
3000	491	519	545	571	594	636	654	670	695	705	718	—	—	—	—	—
3200	485	511	536	560	581	618	633	646	665	670	—	—	—	—	—	—
3400	478	503	527	548	567	599	612	621	633	634	—	—	—	—	—	—
3600	471	495	517	536	553	579	589	595	—	—	—	—	—	—	—	—
3800	464	486	506	523	538	558	564	567	—	—	—	—	—	—	—	—
4000	457	477	494	509	522	536	539	—	—	—	—	—	—	—	—	—
4200	449	467	483	495	505	513	—	—	—	—	—	—	—	—	—	—
4400	440	457	470	480	487	—	—	—	—	—	—	—	—	—	—	—
4600	431	446	457	464	468	—	—	—	—	—	—	—	—	—	—	—
4800	422	435	443	448	—	—	—	—	—	—	—	—	—	—	—	—
5000	413	423	429	431	—	—	—	—	—	—	—	—	—	—	—	—

Endurance time decreases.
Belt speed exceeds 33 m/sec.
Avoid using 2 overlapping elements.

* Calculate revolutions not aforementioned proportionally.

Width correction factor (Kb)

Table 2-56

Belt width (mm)	30	40	50	60	80	100	120	140
Factor Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2 Design

MEGA TORQUE G MTS5M Basic power rating

(For 10mm belt width)

W | MTS5M G / 10mm

Table 2-57a

Number of Teeth → Revolution (rpm) ↓ / Pitch φ (mm) →	14 22.28	15 23.87	16 25.46	18 28.65	20 31.83	22 35.01	24 38.20	25 39.79	26 41.38	28 44.56	30 47.75	32 50.93	36 57.30	40 63.66	44 70.03	48 76.39	60 95.49
100	32	37	43	53	64	74	84	89	94	105	115	125	145	165	185	205	264
200	60	70	80	100	120	140	160	170	180	200	219	239	278	317	355	394	508
300	86	101	115	145	175	204	233	248	262	291	320	349	406	463	520	576	744
400	110	130	149	188	227	266	304	323	342	381	418	456	532	606	681	755	975
500	134	158	183	231	279	326	374	397	421	468	515	562	655	747	839	930	1202
600	157	186	215	272	329	386	442	470	498	554	610	665	776	886	995	1103	1425
700	180	213	246	313	379	444	509	542	574	639	704	768	895	1022	1148	1274	1646
800	202	240	277	353	428	502	576	613	650	723	796	869	1014	1157	1300	1442	1864
900	223	266	308	392	476	559	642	683	724	806	888	969	1131	1291	1451	1609	2079
1000	245	291	338	431	523	615	707	752	798	888	978	1068	1247	1424	1600	1774	2292
1100	265	317	368	469	571	671	771	821	871	970	1068	1166	1361	1555	1747	1938	2502
1200	286	342	397	508	617	726	835	889	943	1050	1157	1264	1475	1685	1893	2100	2710
1300	306	366	426	545	663	781	898	956	1014	1130	1245	1360	1588	1814	2038	2260	2916
1400	326	391	455	582	709	835	961	1023	1085	1209	1333	1456	1700	1941	2181	2419	3119
1500	346	415	483	619	755	889	1023	1090	1156	1288	1420	1551	1811	2068	2323	2576	3320
1600	365	438	511	656	800	943	1085	1155	1226	1366	1506	1645	1921	2194	2464	2732	3519
1700	385	462	539	692	844	996	1146	1221	1295	1444	1592	1738	2030	2318	2604	2886	3715
1800		485	567	728	889	1048	1207	1286	1364	1521	1676	1831	2138	2442	2742	3039	3909
1900		508	594	764	933	1101	1267	1350	1433	1597	1761	1923	2246	2564	2879	3190	4100
2000		531	621	799	976	1152	1327	1414	1501	1673	1845	2015	2352	2686	3015	3340	4289
2200			674	869	1063	1255	1446	1541	1635	1823	2010	2196	2563	2925	3283	3635	4658
2400				938	1148	1356	1563	1666	1768	1971	2173	2374	2771	3161	3545	3923	5017
2600				1007	1232	1456	1679	1789	1899	2118	2334	2550	2975	3392	3803	4205	5364
2800				1074	1315	1555	1793	1911	2028	2262	2493	2723	3175	3619	4054	4480	5699
3000				1140	1397	1652	1905	2031	2156	2404	2649	2893	3372	3842	4301	4749	6022
3200					1478	1749	2016	2149	2281	2544	2803	3060	3566	4059	4541	5009	6331
3400					1558	1843	2126	2266	2405	2682	2955	3225	3755	4272	4775	5263	6627
3600						1937	2234	2381	2527	2817	3104	3387	3941	4480	5003	5508	6908
3800						2029	2341	2495	2648	2951	3250	3546	4123	4683	5224	5745	7174
4000						2121	2446	2606	2766	3083	3394	3702	4301	4881	5439	5974	7424
4500						2343	2701	2879	3054	3402	3743	4078	4728	5351	5944	6505	7975
5000							2947	3140	3330	3706	4074	4434	5128	5785	6402	6977	8413
5500							3183	3389	3594	3995	4387	4768	5497	6178	6808	7382	8726
6000							3407	3627	3844	4268	4680	5079	5835	6530	7158	7716	8903
6500							3620	3852	4080	4524	4953	5366	6138	6835	7449	7972	8933
7000							3821	4063	4301	4762	5204	5626	6405	7091	7674	8146	8804
7500								4261	4506	4981	5432	5859	6634	7295	7832	8232	8506
8000								4443	4695	5179	5635	6062	6821	7444	7916	8223	8026
8500								4610	4867	5356	5813	6234	6966	7534	7922	8115	7354
9000								4761	5020	5511	5963	6374	7064	7561	7847	7901	6478

▨ Endurance time decreases.

▨ Belt speed exceeds 33m/sec.

∗Values in the above table are based on a 10mm belt width.
  For other width use the width correction factor (Kb).
∗If the revolution is less than 100 rpm, calculate power rating proportionally with 100 rpm.

Width correction factor (Kb)　Table 2-58

BELT WIDTH(mm)	10	15	25
FACTOR	1.00	1.59	2.84

2 Design

MEGA TORQUE G MTS5M Basic power rating (torque)

(For 10mm belt width)

N·m MTS5M G / 10mm

Table 2-57b

Revolution (rpm) / Number of Teeth Pitch φ (mm)	14 22.28	15 23.87	16 25.46	18 28.65	20 31.83	22 35.01	24 38.20	25 39.79	26 41.38	28 44.56	30 47.75	32 50.93	36 57.30	40 63.66	44 70.03	48 76.39	60 95.49
100	3.1	3.6	4.1	5.1	6.1	7.0	8.0	8.5	9.0	10.0	10.9	11.9	13.8	15.8	17.7	19.6	25.2
200	2.9	3.3	3.8	4.8	5.7	6.7	7.6	8.1	8.6	9.5	10.5	11.4	13.3	15.1	17.0	18.8	24.2
300	2.7	3.2	3.7	4.6	5.6	6.5	7.4	7.9	8.3	9.3	10.2	11.1	12.9	14.7	16.5	18.3	23.7
400	2.6	3.1	3.6	4.5	5.4	6.3	7.3	7.7	8.2	9.1	10.0	10.9	12.7	14.5	16.2	18.0	23.3
500	2.6	3.0	3.5	4.4	5.3	6.2	7.1	7.6	8.0	8.9	9.8	10.7	12.5	14.3	16.0	17.8	22.9
600	2.5	3.0	3.4	4.3	5.2	6.1	7.0	7.5	7.9	8.8	9.7	10.6	12.3	14.1	15.8	17.6	22.7
700	2.5	2.9	3.4	4.3	5.2	6.1	6.9	7.4	7.8	8.7	9.6	10.5	12.2	13.9	15.7	17.4	22.4
800	2.4	2.9	3.3	4.2	5.1	6.0	6.9	7.3	7.8	8.6	9.5	10.4	12.1	13.8	15.5	17.2	22.2
900	2.4	2.8	3.3	4.2	5.0	5.9	6.8	7.2	7.7	8.5	9.4	10.3	12.0	13.7	15.4	17.1	22.1
1000	2.3	2.8	3.2	4.1	5.0	5.9	6.7	7.2	7.6	8.5	9.3	10.2	11.9	13.6	15.3	16.9	21.9
1100	2.3	2.7	3.2	4.1	5.0	5.8	6.7	7.1	7.6	8.4	9.3	10.1	11.8	13.5	15.2	16.8	21.7
1200	2.3	2.7	3.2	4.0	4.9	5.8	6.6	7.1	7.5	8.4	9.2	10.1	11.7	13.4	15.1	16.7	21.6
1300	2.2	2.7	3.1	4.0	4.9	5.7	6.6	7.0	7.4	8.3	9.1	10.0	11.7	13.3	15.0	16.6	21.4
1400	2.2	2.7	3.1	4.0	4.8	5.7	6.6	7.0	7.4	8.2	9.1	9.9	11.6	13.2	14.9	16.5	21.3
1500	2.2	2.6	3.1	3.9	4.8	5.7	6.5	6.9	7.4	8.2	9.0	9.9	11.5	13.2	14.8	16.4	21.1
1600	2.2	2.6	3.1	3.9	4.8	5.6	6.5	6.9	7.3	8.2	9.0	9.8	11.5	13.1	14.7	16.3	21.0
1700	2.2	2.6	3.0	3.9	4.7	5.6	6.4	6.9	7.3	8.1	8.9	9.8	11.4	13.0	14.6	16.2	20.9
1800		2.6	3.0	3.9	4.7	5.6	6.4	6.8	7.2	8.1	8.9	9.7	11.3	13.0	14.5	16.1	20.7
1900		2.6	3.0	3.8	4.7	5.5	6.4	6.8	7.2	8.0	8.8	9.7	11.3	12.9	14.5	16.0	20.6
2000		2.5	3.0	3.8	4.7	5.5	6.3	6.7	7.2	8.0	8.8	9.6	11.2	12.8	14.4	15.9	20.5
2200			2.9	3.8	4.6	5.4	6.3	6.7	7.1	7.9	8.7	9.5	11.1	12.7	14.2	15.8	20.2
2400				3.7	4.6	5.4	6.2	6.6	7.0	7.8	8.6	9.4	11.0	12.6	14.1	15.6	20.0
2600				3.7	4.5	5.3	6.2	6.6	7.0	7.8	8.6	9.4	10.9	12.5	14.0	15.4	19.7
2800				3.7	4.5	5.3	6.1	6.5	6.9	7.7	8.5	9.3	10.8	12.3	13.8	15.3	19.4
3000				3.6	4.4	5.3	6.1	6.5	6.9	7.6	8.4	9.2	10.7	12.2	13.7	15.1	19.2
3200					4.4	5.2	6.0	6.4	6.8	7.6	8.4	9.1	10.6	12.1	13.5	14.9	18.9
3400					4.4	5.2	6.0	6.4	6.8	7.5	8.3	9.1	10.5	12.0	13.4	14.8	18.6
3600						5.1	5.9	6.3	6.7	7.5	8.2	9.0	10.5	11.9	13.3	14.6	18.3
3800						5.1	5.9	6.3	6.7	7.4	8.2	8.9	10.4	11.8	13.1	14.4	18.0
4000						5.1	5.8	6.2	6.6	7.4	8.1	8.8	10.3	11.6	13.0	14.3	17.7
4500						5.0	5.7	6.1	6.5	7.2	7.9	8.7	10.0	11.4	12.6	13.8	16.9
5000							5.6	6.0	6.4	7.1	7.8	8.5	9.8	11.0	12.2	13.3	16.1
5500							5.5	5.9	6.2	6.9	7.6	8.3	9.5	10.7	11.8	12.8	15.1
6000							5.4	5.8	6.1	6.8	7.4	8.1	9.3	10.4	11.4	12.3	14.2
6500							5.3	5.7	6.0	6.6	7.3	7.9	9.0	10.0	10.9	11.7	13.1
7000							5.2	5.5	5.9	6.5	7.1	7.7	8.7	9.7	10.5	11.1	12.0
7500								5.4	5.7	6.3	6.9	7.5	8.4	9.3	10.0	10.5	10.8
8000								5.3	5.6	6.2	6.7	7.2	8.1	8.9	9.4	9.8	9.6
8500								5.2	5.5	6.0	6.5	7.0	7.8	8.5	8.9	9.1	8.3
9000								5.1	5.3	5.8	6.3	6.8	7.5	8.0	8.3	8.4	6.9

■ Endurance time decreases.

■ Belt speed exceeds 33m/sec.

∗ Values in the above table are based on a 10mm belt width.
  For other width use the width correction factor (Kb).
∗ If the revolution is less than 100 rpm, use power rating of 100 rpm.

Width correction factor (Kb)   Table 2-58

BELT WIDTH(mm)	10	15	25
FACTOR	1.00	1.59	2.84

2
Design

MEGA TORQUE G MTS8M Basic power rating
(For 60mm belt width)

kW / **MTS8M G** / **60mm**

Table 2-59a

Number of Teeth → Revolution (rpm) ↓ / Pitch ∅ (mm)	24 / 61.12	26 / 66.21	28 / 71.30	30 / 76.39	32 / 81.49	34 / 86.58	36 / 91.67	38 / 96.77	40 / 101.86	42 / 106.95	44 / 112.05	46 / 117.14	48 / 122.23	50 / 127.32	60 / 152.79	72 / 183.35	84 / 213.90
50	1.35	1.47	1.58	1.70	1.82	1.93	2.05	2.17	2.27	2.37	2.46	2.56	2.66	2.75	3.21	3.75	4.27
100	2.71	2.94	3.17	3.40	3.63	3.87	4.11	4.35	4.54	4.74	4.93	5.12	5.31	5.50	6.42	7.50	8.54
200	4.91	5.32	5.73	6.15	6.57	6.99	7.42	7.85	8.20	8.54	8.89	9.22	9.56	9.89	11.52	13.41	15.23
300	6.91	7.48	8.06	8.64	9.23	9.83	10.43	11.04	11.52	12.00	12.47	12.94	13.41	13.87	16.12	18.71	21.20
400	8.77	9.50	10.23	10.98	11.73	12.48	13.25	14.02	14.63	15.23	15.82	16.41	16.99	17.57	20.38	23.62	26.72
500	10.53	11.40	12.29	13.18	14.08	14.99	15.92	16.85	17.57	18.28	18.99	19.69	20.38	21.07	24.40	28.22	31.88
600	12.20	13.22	14.24	15.28	16.33	17.39	18.46	19.55	20.38	21.20	22.02	22.82	23.62	24.40	28.22	32.59	36.76
700	13.80	14.95	16.11	17.29	18.48	19.69	20.91	22.15	23.09	24.01	24.92	25.82	26.72	27.60	31.88	36.76	41.39
800	15.32	16.61	17.91	19.23	20.56	21.91	23.28	24.66	25.70	26.72	27.72	28.72	29.70	30.68	35.39	40.74	45.81
900	16.79	18.21	19.64	21.09	22.56	24.05	25.56	27.10	28.22	29.34	30.44	31.52	32.59	33.65	38.77	44.57	50.04
1000	18.21	19.75	21.31	22.89	24.50	26.13	27.78	29.46	30.68	31.88	33.06	34.23	35.39	36.53	42.03	48.25	54.09
1100	19.57	21.24	22.92	24.64	26.38	28.14	29.94	31.76	33.06	34.35	35.62	36.87	38.10	39.32	45.19	51.80	57.98
1200	20.89	22.67	24.48	26.33	28.20	30.10	32.04	34.00	35.39	36.76	38.10	39.43	40.74	42.03	48.25	55.22	61.71
1300	22.16	24.06	26.00	27.97	29.97	32.01	34.08	36.19	37.66	39.10	40.52	41.93	43.31	44.67	51.21	58.52	65.29
1400	23.38	25.40	27.46	29.56	31.69	33.86	36.07	38.33	39.87	41.39	42.89	44.36	45.81	47.24	54.09	61.71	68.73
1500	24.57	26.71	28.88	31.10	33.37	35.67	38.02	40.41	42.03	43.62	45.19	46.73	48.25	49.74	56.88	64.79	72.03
1600	25.71	27.97	30.26	32.61	35.00	37.44	39.92	42.46	44.15	45.81	47.44	49.05	50.63	52.18	59.59	67.76	75.19
1700	26.82	29.19	31.60	34.07	36.59	39.16	41.78	44.46	46.22	47.95	49.64	51.31	52.95	54.56	62.23	70.63	78.22
1800	27.89	30.37	32.90	35.49	38.14	40.84	43.60	46.42	48.25	50.04	51.79	53.52	55.22	56.88	64.78	73.40	81.12
1900	28.92	31.51	34.16	36.87	39.65	42.48	45.38	48.35	50.23	52.08	53.90	55.68	57.43	59.15	67.27	76.07	83.89
2000	29.92	32.62	35.39	38.22	41.12	44.09	47.13	50.23	52.18	54.09	55.96	57.79	59.59	61.36	69.68	78.64	86.53
2100	30.89	33.70	36.57	39.53	42.55	45.65	48.83	52.08	54.09	56.05	57.97	59.86	61.71	63.51	72.03	81.12	89.05
2200	31.82	34.74	37.73	40.80	43.95	47.19	50.50	53.90	55.96	57.97	59.95	61.88	63.77	65.62	74.30	83.50	91.43
2300	32.72	35.74	38.85	42.04	45.32	48.68	52.14	55.68	57.79	59.86	61.88	63.85	65.79	67.68	76.51	85.79	—
2400	33.59	36.72	39.93	43.25	46.65	50.15	53.74	57.43	59.59	61.71	63.77	65.79	67.76	69.68	78.64	87.98	—
2500	34.42	37.66	40.99	44.42	47.95	51.58	55.31	59.15	61.36	63.51	65.62	67.68	69.68	71.64	80.72	90.08	—
2600	35.23	38.57	42.01	45.56	49.21	52.98	56.85	60.83	63.09	65.29	67.43	69.52	71.56	73.55	82.72	92.09	—
2700	36.00	39.44	43.00	46.67	50.45	54.34	58.36	62.48	64.78	67.02	69.21	71.33	73.40	75.41	84.66	—	—
2800	36.75	40.29	43.96	47.74	51.65	55.68	59.83	64.11	66.45	68.73	70.94	73.09	75.19	77.23	86.53	—	—
2900	37.46	41.11	44.89	48.79	52.82	56.99	61.28	65.70	68.08	70.39	72.64	74.82	76.94	78.99	88.34	—	—
3000	38.15	41.90	45.78	49.80	53.96	58.26	62.70	67.27	69.68	72.03	74.30	76.50	78.64	80.71	90.08	—	—
3200	39.44	43.39	47.49	51.75	56.16	60.72	65.44	70.31	72.79	75.19	77.51	79.76	81.93	84.02	—	—	—
3400	40.61	44.76	49.08	53.57	58.23	63.07	68.07	73.25	75.78	78.22	80.58	82.85	85.04	87.14	—	—	—
3600	41.67	46.02	50.55	55.28	60.19	65.30	70.59	76.07	78.64	81.12	83.50	85.79	87.98	90.08	—	—	—
3800	42.63	47.17	51.92	56.88	62.04	67.42	73.00	78.78	81.39	83.89	86.29	88.58	90.76	—	—	—	—
4000	43.47	48.21	53.17	58.36	63.78	69.42	75.30	81.39	84.02	86.53	88.93	91.21	—	—	—	—	—
4200	44.21	49.14	54.31	59.73	65.41	71.32	77.49	83.89	86.53	89.04	91.43	—	—	—	—	—	—
4400	44.85	49.96	55.35	61.00	66.92	73.11	79.57	86.29	88.93	91.43	—	—	—	—	—	—	—
4600	45.38	50.68	56.27	62.16	68.33	74.80	81.55	88.57	91.21	—	—	—	—	—	—	—	—
4800	45.81	51.29	57.09	63.21	69.64	76.37	83.42	90.76	—	—	—	—	—	—	—	—	—
5000	46.14	51.80	57.81	64.15	70.83	77.84	85.18	—	—	—	—	—	—	—	—	—	—
5200	46.36	52.20	58.41	64.99	71.92	79.20	86.84	—	—	—	—	—	—	—	—	—	—
5400	46.48	52.51	58.92	65.72	72.90	80.46	—	—	—	—	—	—	—	—	—	—	—
5600	46.51	52.70	59.32	66.34	73.78	—	—	—	—	—	—	—	—	—	—	—	—
5800	46.43	52.80	59.61	66.86	74.54	—	—	—	—	—	—	—	—	—	—	—	—
6000	46.25	52.79	59.80	67.28	—	—	—	—	—	—	—	—	—	—	—	—	—

- ▢ Endurance time decreases.
- ▢ Belt speed exceeds 20m/sec.
- ▢ Avoid using 2 overlapping conditions.

∗Values in the above table are based on a 60mm belt width.
For other width use the width correction factor (Kb).

∗If the revolution is less than 50 rpm, calculate power rating proportionally with 50 rpm.

Width correction factor Kb

Table 2-60

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
FACTOR	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2 Design

MEGA TORQUE G MTS8M Basic power rating (torque)

(For 60mm belt width)

N·m MTS8M G / 60mm

Table 2-59b

Revolution (rpm) \ Number of Teeth / Pitch φ (mm)	24 / 61.12	26 / 66.21	28 / 71.30	30 / 76.39	32 / 81.49	34 / 86.58	36 / 91.67	38 / 96.77	40 / 101.86	42 / 106.95	44 / 112.05	46 / 117.14	48 / 122.23	50 / 127.32	60 / 152.79	72 / 183.35	84 / 213.90
50	259	280	302	324	347	369	392	415	434	452	471	489	507	525	613	716	816
100	259	280	302	324	347	369	392	415	434	452	471	489	507	525	613	716	816
200	234	254	274	293	313	334	354	375	391	408	424	440	456	472	550	640	727
300	220	238	257	275	294	313	332	351	367	382	397	412	427	441	513	595	675
400	209	227	244	262	280	298	316	335	349	363	378	392	406	419	486	564	638
500	201	218	235	252	269	286	304	322	335	349	363	376	389	402	466	539	609
600	194	210	227	243	260	277	294	311	324	337	350	363	376	388	449	519	585
700	188	204	220	236	252	269	285	302	315	327	340	352	364	376	435	501	564
800	183	198	214	229	245	261	278	294	307	319	331	343	354	366	422	486	547
900	178	193	208	224	239	255	271	287	299	311	323	334	346	357	411	473	531
1000	174	189	203	219	234	249	265	281	293	304	316	327	338	349	401	461	516
1100	170	184	199	214	229	244	260	276	287	298	309	320	331	341	392	450	503
1200	166	180	195	209	224	239	255	270	282	292	303	314	324	334	384	439	491
1300	163	177	191	205	220	235	250	266	277	287	298	308	318	328	376	430	479
1400	159	173	187	202	216	231	246	261	272	282	292	302	312	322	369	421	469
1500	156	170	184	198	212	227	242	257	268	278	288	297	307	317	362	412	458
1600	153	167	181	195	209	223	238	253	263	273	283	293	302	311	356	404	449
1700	151	164	177	191	205	220	235	250	260	269	279	288	297	306	349	397	439
1800	148	161	174	188	202	217	231	246	256	265	275	284	293	302	344	389	430
1900	145	158	172	185	199	213	228	243	252	262	271	280	289	297	338	382	422
2000	143	156	169	182	196	210	225	240	249	258	267	276	284	293	333	375	413
2100	140	153	166	180	193	208	222	237	246	255	264	272	281	289	327	369	405
2200	138	151	164	177	191	205	219	234	243	252	260	269	277	285	322	362	397
2300	136	148	161	174	188	202	216	231	240	248	257	265	273	281	318	356	—
2400	134	146	159	172	186	199	214	228	237	245	254	262	270	277	313	350	—
2500	131	144	157	170	183	197	211	226	234	243	251	258	266	274	308	344	—
2600	129	142	154	167	181	195	209	223	232	240	248	255	263	270	304	338	—
2700	127	139	152	165	178	192	206	221	229	237	245	252	260	267	299	—	—
2800	125	137	150	163	176	190	204	219	227	234	242	249	256	263	295	—	—
2900	123	135	148	161	174	188	202	216	224	232	239	246	253	260	291	—	—
3000	121	133	146	158	172	185	200	214	222	229	236	243	250	257	287	—	—
3200	118	129	142	154	168	181	195	210	217	224	231	238	244	251	—	—	—
3400	114	126	138	150	164	177	191	206	213	220	226	233	239	245	—	—	—
3600	111	122	134	147	160	173	187	202	209	215	221	228	233	239	—	—	—
3800	107	118	130	143	156	169	183	198	204	211	217	223	228	—	—	—	—
4000	104	115	127	139	152	166	180	194	201	207	212	218	—	—	—	—	—
4200	100	112	123	136	149	162	176	191	197	202	208	—	—	—	—	—	—
4400	97	108	120	132	145	159	173	187	193	198	—	—	—	—	—	—	—
4600	94	105	117	129	142	155	169	184	189	—	—	—	—	—	—	—	—
4800	91	102	114	126	138	152	166	181	—	—	—	—	—	—	—	—	—
5000	88	99	110	122	135	149	163	—	—	—	—	—	—	—	—	—	—
5200	85	96	107	119	132	145	159	—	—	—	—	—	—	—	—	—	—
5400	82	93	104	116	129	142	—	—	—	—	—	—	—	—	—	—	—
5600	79	90	101	113	126	—	—	—	—	—	—	—	—	—	—	—	—
5800	76	87	98	110	123	—	—	—	—	—	—	—	—	—	—	—	—
6000	74	84	95	107	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.
■ Belt speed exceeds 20m/sec.
■ Avoid using 2 overlapping conditions.

＊Values in the above table are based on a 60mm belt width.
　For other width use the width correction factor (Kb).
＊If the revolution is less than 50 rpm, use power rating of 50 rpm.

Width correction factor　Kb

Table 2-60

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
FACTOR	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2
Design

MEGA TORQUE G MTS14M Basic power rating

(For 120mm belt width)

kW MTS14M G / 120mm

Table 2-61a

Revolution (rpm) \ Number of Teeth	28	30	32	34	36	40	42	44	48	50	56	60	64	72	84
Pitch ⌀ (mm)	124.78	133.69	142.60	151.52	160.43	178.25	187.17	196.08	213.90	222.82	249.55	267.38	285.21	320.86	374.33
20	3.07	3.34	3.61	3.80	4.00	4.38	4.57	4.75	5.12	5.31	5.85	6.21	6.56	7.26	8.27
40	6.15	6.67	7.22	7.61	7.99	8.76	9.13	9.51	10.25	10.62	11.70	12.42	13.12	14.51	16.55
60	9.22	10.01	10.82	11.41	11.99	13.13	13.70	14.26	15.37	15.92	17.55	18.62	19.68	21.77	24.82
80	12.29	13.35	14.43	15.21	15.98	17.51	18.27	19.02	20.50	21.23	23.41	24.83	26.25	29.03	33.10
90	13.83	15.02	16.23	17.11	17.98	19.70	20.55	21.39	23.06	23.89	26.33	27.94	29.53	32.65	37.24
100	15.36	16.68	18.04	19.01	19.98	21.89	22.83	23.77	25.62	26.54	29.26	31.04	32.81	36.28	41.37
200	27.88	30.31	32.81	34.55	36.28	39.69	41.37	43.04	46.34	47.97	52.79	55.95	59.07	65.20	74.16
300	39.25	42.74	46.34	48.78	51.19	55.95	58.29	60.62	65.20	67.47	74.16	78.54	82.86	91.35	103.71
400	49.84	54.38	59.07	62.15	65.20	71.20	74.16	77.09	82.86	85.71	94.13	99.63	105.06	115.69	131.15
500	59.83	65.42	71.20	74.89	78.54	85.71	89.24	92.74	99.63	103.03	113.05	119.60	126.05	138.68	157.02
600	69.31	75.96	82.86	87.13	91.34	99.63	103.70	107.74	115.68	119.60	131.15	138.68	146.10	160.61	181.65
700	78.36	86.09	94.13	98.95	103.70	113.05	117.65	122.19	131.15	135.56	148.55	157.02	165.36	181.65	205.24
800	87.02	95.84	105.05	110.40	115.68	126.05	131.14	136.18	146.10	150.98	165.36	174.73	183.94	201.93	227.94
900	95.32	105.27	115.68	121.54	127.33	138.68	144.25	149.77	160.61	165.95	181.65	191.88	201.93	221.54	249.87
1000	103.30	114.41	126.05	132.41	138.68	150.98	157.02	162.99	174.73	180.50	197.48	208.53	219.39	240.56	271.11
1100	110.98	123.27	136.18	143.02	149.76	162.99	169.47	175.88	188.49	194.68	212.90	224.75	236.38	259.05	291.72
1200	118.37	131.87	146.10	153.40	160.61	174.72	181.65	188.49	201.93	208.53	227.94	240.56	252.94	277.06	311.78
1300	125.49	140.24	155.82	163.58	171.23	186.21	193.56	200.82	215.07	222.07	242.64	256.00	269.11	294.62	—
1400	132.36	148.39	165.35	173.56	181.65	197.48	205.24	212.90	227.94	235.33	257.02	271.11	284.91	311.77	—
1500	138.98	156.32	174.72	183.36	191.87	208.53	216.69	224.75	240.56	248.32	271.10	285.89	300.38	—	—
1600	145.36	164.06	183.93	193.00	201.92	219.39	227.94	236.38	252.94	261.07	284.91	300.38	315.53	—	—
1700	151.51	171.60	193.00	202.48	211.81	230.06	238.99	247.81	265.10	273.59	298.46	314.59	—	—	—
1800	157.44	178.96	201.92	211.81	221.53	240.56	249.87	259.05	277.05	285.89	311.77	—	—	—	—
1900	163.16	186.14	210.72	221.00	231.12	250.89	260.56	270.10	288.81	297.98	324.85	—	—	—	—
2000	168.67	193.16	219.38	230.06	240.56	261.07	271.10	280.99	300.38	309.88	—	—	—	—	—
2100	173.97	200.01	227.94	238.99	249.86	271.10	281.48	291.72	311.77	321.60	—	—	—	—	—
2200	179.08	206.69	236.37	247.80	259.04	280.99	291.72	302.29	322.99	—	—	—	—	—	—
2300	183.99	213.23	244.71	256.51	268.10	290.75	301.81	312.71	—	—	—	—	—	—	—
2400	188.71	219.61	252.94	265.10	277.05	300.38	311.77	322.99	—	—	—	—	—	—	—
2500	193.24	225.85	261.07	273.58	285.88	309.88	321.60	—	—	—	—	—	—	—	—
2600	197.59	231.95	269.10	281.97	294.61	319.27	—	—	—	—	—	—	—	—	—
2700	201.76	237.90	277.05	290.26	303.24	—	—	—	—	—	—	—	—	—	—
2800	205.75	243.72	284.91	298.46	311.76	—	—	—	—	—	—	—	—	—	—
2900	209.57	249.41	292.68	306.56	320.20	—	—	—	—	—	—	—	—	—	—
3000	213.21	254.96	300.37	314.58	—	—	—	—	—	—	—	—	—	—	—
3100	216.68	260.39	307.98	322.52	—	—	—	—	—	—	—	—	—	—	—
3200	219.99	265.69	315.52	—	—	—	—	—	—	—	—	—	—	—	—
3300	223.12	270.87	322.99	—	—	—	—	—	—	—	—	—	—	—	—
3400	226.09	275.92	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	228.90	280.86	—	—	—	—	—	—	—	—	—	—	—	—	—

- Endurance time decreases.
- Belt speed exceeds 20m/sec.
- Avoid using 2 overlapping conditions.

∗ Values in the above table are based on a 120mm belt width.
  For other width use the width correction factor (Kb).
∗ If the revolution is less than 20 rpm, calculate power rating proportionally with 20 rpm.

Width correction factor Kb

Table 2-62

BELT WIDTH(mm)	40	50	60	80	100	120	140
FACTOR	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2
Design

MEGA TORQUE G MTS14M Basic power rating (torque)

(For 120mm belt width)

N·m MTS14M G / 120mm

Table 2-61b

Number of Teeth / Revolution (rpm) \ Pitch (mm)	28 124.78	30 133.69	32 142.60	34 151.52	36 160.43	40 178.25	42 187.17	44 196.08	48 213.90	50 222.82	56 249.55	60 267.38	64 285.21	72 320.86	84 374.33
20	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
40	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
60	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
80	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
90	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
100	1467	1593	1722	1815	1908	2090	2180	2269	2446	2534	2793	2963	3132	3464	3950
200	1331	1447	1566	1649	1732	1895	1975	2055	2212	2290	2520	2671	2820	3112	3540
300	1249	1360	1475	1552	1629	1780	1855	1929	2075	2147	2360	2499	2637	2907	3300
400	1190	1298	1410	1483	1556	1699	1770	1840	1978	2046	2247	2378	2507	2761	3130
500	1142	1249	1360	1430	1500	1637	1704	1771	1902	1967	2159	2284	2407	2648	2998
600	1103	1209	1318	1386	1453	1585	1650	1714	1841	1903	2087	2207	2325	2556	2890
700	1069	1174	1284	1349	1414	1542	1604	1666	1789	1849	2026	2142	2255	2477	2799
800	1038	1144	1254	1317	1380	1504	1565	1625	1743	1802	1973	2085	2195	2410	2720
900	1011	1117	1227	1289	1351	1471	1530	1589	1704	1760	1927	2035	2142	2350	2651
1000	986	1092	1203	1264	1324	1441	1499	1556	1668	1723	1885	1991	2094	2297	2588
1100	963	1070	1182	1241	1300	1415	1471	1526	1636	1690	1848	1951	2052	2248	2532
1200	942	1049	1162	1220	1278	1390	1445	1500	1606	1659	1813	1914	2012	2204	2480
1300	922	1030	1144	1201	1257	1368	1421	1475	1579	1631	1782	1880	1976	2164	—
1400	903	1012	1128	1184	1239	1347	1400	1452	1554	1605	1753	1849	1943	2126	—
1500	885	995	1112	1167	1221	1327	1379	1430	1531	1580	1725	1820	1912	—	—
1600	867	979	1097	1152	1205	1309	1360	1410	1509	1558	1700	1792	1883	—	—
1700	851	964	1084	1137	1189	1292	1342	1392	1489	1536	1676	1767	—	—	—
1800	835	949	1071	1123	1175	1276	1325	1374	1469	1516	1654	—	—	—	—
1900	820	935	1059	1110	1161	1261	1309	1357	1451	1497	1632	—	—	—	—
2000	805	922	1047	1098	1148	1246	1294	1341	1434	1479	—	—	—	—	—
2100	791	909	1036	1086	1136	1232	1280	1326	1417	1462	—	—	—	—	—
2200	777	897	1026	1075	1124	1219	1266	1312	1402	—	—	—	—	—	—
2300	764	885	1016	1065	1113	1207	1253	1298	—	—	—	—	—	—	—
2400	751	874	1006	1055	1102	1195	1240	1285	—	—	—	—	—	—	—
2500	738	862	997	1045	1092	1183	1228	—	—	—	—	—	—	—	—
2600	726	852	988	1035	1082	1172	—	—	—	—	—	—	—	—	—
2700	713	841	980	1026	1072	—	—	—	—	—	—	—	—	—	—
2800	702	831	971	1018	1063	—	—	—	—	—	—	—	—	—	—
2900	690	821	963	1009	1054	—	—	—	—	—	—	—	—	—	—
3000	678	811	956	1001	—	—	—	—	—	—	—	—	—	—	—
3100	667	802	948	993	—	—	—	—	—	—	—	—	—	—	—
3200	656	793	941	—	—	—	—	—	—	—	—	—	—	—	—
3300	645	784	934	—	—	—	—	—	—	—	—	—	—	—	—
3400	635	775	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	624	766	—	—	—	—	—	—	—	—	—	—	—	—	—

- Endurance time decreases.
- Belt speed exceeds 20m/sec.
- Avoid using 2 overlapping conditions.

*Values in the above table are based on a 120mm belt width.
 For other width use the width correction factor (Kb).
*If the revolution is less than 20 rpm, use power rating of 20 rpm.

Width correction factor   Kb

Table 2-62

BELT WIDTH(mm)	40	50	60	80	100	120	140
FACTOR	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2

Design

MEGA TORQUE U MTS8M Basic power rating
(For 60 mm belt width)

kW | **MTS8M U** / **60mm**

Table 2 -63a

Number of Teeth / Revolution (rpm) / Pitch φ (mm)	24	26	28	30	32	36	40	44	48	50	60
	61.12	66.21	71.30	76.39	81.49	91.67	101.86	112.05	122.23	127.32	152.79
100	2.61	2.80	2.99	3.17	3.35	3.71	4.06	4.41	4.75	4.92	5.75
200	4.75	5.09	5.42	5.75	6.07	6.71	7.34	7.95	8.55	8.85	10.31
300	6.71	7.18	7.64	8.10	8.55	9.44	10.31	11.16	12.00	12.41	14.42
400	8.55	9.15	9.73	10.31	10.88	12.00	13.09	14.16	15.20	15.72	18.24
500	10.31	11.02	11.72	12.41	13.09	14.42	15.72	16.99	18.24	18.85	21.83
600	12.00	12.82	13.62	14.42	15.20	16.74	18.24	19.70	21.13	21.83	25.25
700	13.62	14.55	15.46	16.36	17.24	18.97	20.66	22.30	23.90	24.69	28.52
800	15.20	16.23	17.24	18.24	19.22	21.13	22.99	24.81	26.58	27.45	31.66
900	16.74	17.87	18.97	20.06	21.13	23.22	25.25	27.23	29.16	30.11	34.69
1000	18.24	19.46	20.66	21.83	22.99	25.25	27.45	29.58	31.66	32.68	37.61
1100	19.70	21.01	22.30	23.56	24.81	27.23	29.58	31.87	34.09	35.18	40.43
1200	21.13	22.53	23.90	25.25	26.58	29.16	31.66	34.09	36.45	37.61	43.17
1300	22.53	24.02	25.47	26.90	28.31	31.04	33.69	36.26	38.75	39.97	45.82
1400	23.90	25.47	27.01	28.52	30.00	32.89	35.67	38.37	40.99	42.27	48.40
1500	25.25	26.90	28.52	30.11	31.66	34.69	37.61	40.43	43.17	44.51	50.89
1600	26.58	28.31	30.00	31.66	33.29	36.45	39.50	42.45	45.30	46.69	53.32
1700	27.88	29.69	31.46	33.19	34.89	38.18	41.35	44.42	47.38	48.82	55.68
1800	29.16	31.04	32.89	34.69	36.45	39.88	43.17	46.34	49.40	50.89	57.97
1900	30.42	32.38	34.29	36.16	37.99	41.54	44.95	48.23	51.38	52.92	60.19
2000	31.66	33.69	35.67	37.61	39.50	43.17	46.69	50.07	53.32	54.90	62.35
2200	34.09	36.26	38.37	40.43	42.45	46.34	50.07	53.64	57.06	58.71	66.48
2400	36.45	38.75	40.99	43.17	45.30	49.40	53.32	57.06	60.63	62.35	70.37
2600	38.75	41.17	43.53	45.82	48.06	52.36	56.45	60.33	64.03	65.81	74.01
2800	40.99	43.53	45.99	48.39	50.73	55.21	59.45	63.47	67.27	69.10	77.42
3000	43.17	45.82	48.39	50.89	53.32	57.96	62.35	66.48	70.36	72.22	80.60
3200	45.30	48.06	50.73	53.32	55.83	60.62	65.13	69.35	73.30	75.18	83.54
3400	47.37	50.23	53.00	55.67	58.26	63.19	67.80	72.10	76.09	77.97	86.25
3600	49.40	52.36	55.21	57.96	60.62	65.67	70.36	74.71	78.72	80.60	88.72
3800	51.38	54.43	57.36	60.19	62.91	68.06	72.82	77.20	81.21	83.07	—
4000	53.32	56.44	59.45	62.35	65.13	70.36	75.17	79.57	83.54	85.37	—
4200	55.21	58.41	61.49	64.44	67.27	72.58	77.42	81.80	85.73	87.51	—
4400	57.06	60.33	63.47	66.48	69.35	74.71	79.57	83.92	87.76	89.49	—
4600	58.86	62.20	65.40	68.45	71.36	76.76	81.61	85.90	89.64	—	—
4800	60.62	64.03	67.27	70.36	73.30	78.72	83.54	87.76	—	—	—
5000	62.35	65.80	69.09	72.22	75.17	80.60	85.37	89.49	—	—	—
5200	64.03	67.54	70.86	74.01	76.98	82.39	87.10	—	—	—	—
5400	65.67	69.22	72.58	75.75	78.72	84.10	88.72	—	—	—	—
5500	66.48	70.05	73.42	76.59	79.57	84.92	89.49	—	—	—	—

▮ Belt speed exceeds 20m/sec.

* Values in the above table are based on a 60mm belt width. For other width use the width correction factor (Kb).
* If the revolution is less than 100 rpm, calculate power rating proportionally with 100 rpm.

Width correction factor   Kb
Table 2-64

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2
Design

MEGA TORQUE U MTS8M Basic power rating (torque)
(For 60 mm belt width)

N·m   MTS8M U / 60mm

Table 2-63b

Revolution (rpm) / Number of Teeth Pitch φ (mm)	24 61.12	26 66.21	28 71.30	30 76.39	32 81.49	36 91.67	40 101.86	44 112.05	48 122.23	50 127.32	60 152.79
100	249	267	285	303	320	354	388	421	454	470	549
200	227	243	259	274	290	320	350	379	408	423	492
300	214	229	243	258	272	300	328	355	382	395	459
400	204	218	232	246	260	286	312	338	363	375	435
500	197	210	224	237	250	275	300	324	348	360	417
600	191	204	217	229	242	266	290	313	336	347	402
700	186	198	211	223	235	259	282	304	326	337	389
800	181	194	206	218	229	252	274	296	317	328	378
900	178	190	201	213	224	246	268	289	309	319	368
1000	174	186	197	208	219	241	262	282	302	312	359
1100	171	182	194	205	215	236	257	277	296	305	351
1200	168	179	190	201	211	232	252	271	290	299	343
1300	165	176	187	198	208	228	247	266	285	294	337
1400	163	174	184	194	205	224	243	262	280	288	330
1500	161	171	182	192	202	221	239	257	275	283	324
1600	159	169	179	189	199	218	236	253	270	279	318
1700	157	167	177	186	196	214	232	249	266	274	313
1800	155	165	174	184	193	211	229	246	262	270	307
1900	153	163	172	182	191	209	226	242	258	266	302
2000	151	161	170	180	189	206	223	239	255	262	298
2200	148	157	167	175	184	201	217	233	248	255	288
2400	145	154	163	172	180	197	212	227	241	248	280
2600	142	151	160	168	176	192	207	222	235	242	272
2800	140	148	157	165	173	188	203	216	229	236	264
3000	137	146	154	162	170	184	198	212	224	230	256
3200	135	143	151	159	167	181	194	207	219	224	249
3400	133	141	149	156	164	177	190	202	214	219	242
3600	131	139	146	154	161	174	187	198	209	214	235
3800	129	137	144	151	158	171	183	194	204	209	—
4000	127	135	142	149	155	168	179	190	199	204	—
4200	125	133	140	146	153	165	176	186	195	199	—
4400	124	131	138	144	150	162	173	182	190	194	—
4600	122	129	136	142	148	159	169	178	186	—	—
4800	121	127	134	140	146	157	166	175	—	—	—
5000	119	126	132	138	144	154	163	171	—	—	—
5200	118	124	130	136	141	151	160	—	—	—	—
5400	116	122	128	134	139	149	157	—	—	—	—
5500	115	122	127	133	138	147	155	—	—	—	—

Belt speed exceeds 20m/sec.

2 Design

* Values in the above table are based on a 60mm belt width. For other width use the width correction factor (Kb).
* If the revolution is less than 100 rpm, use power rating of 100 rpm.

Width correction factor   Kb
Table 2-64

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
Kb	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

MEGA TORQUE GII MTS8M Basic power rating

(For 60mm belt width)

kW MTS8M GII / 60mm

Table 2-65a

Revolution (rpm) \ Number of Teeth / Pitch φ (mm)	24 / 61.12	26 / 66.21	28 / 71.30	30 / 76.39	32 / 81.49	34 / 86.58	36 / 91.67	38 / 96.77	40 / 101.86	42 / 106.95	44 / 112.05	46 / 117.14	48 / 122.23	50 / 127.32	60 / 152.79	72 / 183.35	84 / 213.90
50	2.0	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.4	3.6	3.7	3.8	4.0	4.1	4.8	5.6	6.4
100	4.1	4.4	4.7	5.1	5.4	5.8	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.2	9.6	11.3	12.8
200	7.4	8.0	8.6	9.2	9.8	10.5	11.1	11.8	12.3	12.8	13.3	13.8	14.3	14.8	17.3	20.1	22.8
300	10.4	11.2	12.1	13.0	13.9	14.7	15.6	16.6	17.3	18.0	18.7	19.4	20.1	20.8	24.2	28.1	31.8
400	13.2	14.2	15.4	16.5	17.6	18.7	19.9	21.0	21.9	22.8	23.7	24.6	25.5	26.4	30.6	35.4	40.1
500	15.8	17.1	18.4	19.8	21.1	22.5	23.9	25.3	26.4	27.4	28.5	29.5	30.6	31.6	36.6	42.3	47.8
600	18.3	19.8	21.4	22.9	24.5	26.1	27.7	29.3	30.6	31.8	33.0	34.2	35.4	36.6	42.3	48.9	55.1
700	20.7	22.4	24.2	25.9	27.7	295.	31.4	33.2	34.6	36.0	37.4	38.7	40.1	41.4	47.8	55.1	62.1
800	23.0	24.9	26.9	28.8	30.8	32.9	34.9	37.0	38.5	40.1	41.6	43.1	44.6	46.0	53.1	61.1	68.7
900	25.2	27.3	29.5	31.6	33.8	36.1	38.3	40.6	42.3	44.0	45.7	47.3	48.9	50.5	58.2	66.9	75.1
1000	27.3	29.6	32.0	34.3	36.7	39.2	41.7	44.2	46.0	47.8	49.6	51.4	53.1	54.8	63.1	72.4	81.1
1100	29.4	31.9	34.4	37.0	39.6	42.2	44.9	47.6	49.6	51.5	53.4	55.3	57.2	59.0	67.8	77.7	87.0
1200	31.3	34.0	36.7	39.5	42.3	45.2	48.1	51.0	53.1	55.1	57.2	59.1	61.1	63.1	72.4	82.8	92.6
1300	33.2	36.1	39.0	41.9	45.0	48.0	51.1	54.3	56.5	58.7	60.8	62.9	65.0	67.0	76.8	87.8	97.9
1400	35.1	38.1	41.2	44.3	47.5	50.8	54.1	57.5	59.8	62.1	64.3	66.5	68.7	70.9	81.1	92.6	103.1
1500	36.9	40.1	43.3	46.7	50.0	53.5	57.0	60.6	63.0	65.4	67.8	70.1	72.4	74.6	85.3	97.2	108.0
1600	38.6	41.9	45.4	48.9	52.5	56.2	59.9	63.7	66.2	68.7	71.2	73.6	75.9	78.3	89.4	101.6	112.8
1700	40.2	43.8	47.4	51.1	54.9	58.7	62.7	66.7	69.3	71.9	74.5	77.0	79.4	81.8	93.3	105.9	117.3
1800	41.8	45.6	49.4	53.2	57.2	61.3	65.4	69.6	72.4	75.1	77.7	80.3	82.8	85.3	97.2	110.1	121.7
1900	43.4	47.3	51.2	55.3	59.5	63.7	68.1	72.5	75.4	78.1	80.8	83.5	86.1	88.7	100.9	114.1	125.8
2000	44.9	48.9	53.1	57.3	61.7	66.1	70.7	75.4	78.3	81.1	83.9	86.7	89.4	92.0	104.5	118.0	129.8
2100	46.3	50.5	54.9	59.3	63.8	68.5	73.2	78.1	81.1	84.1	87.0	89.8	92.6	95.3	108.0	121.7	133.6
2200	47.7	52.1	56.6	61.2	65.9	70.8	75.8	80.8	83.9	87.0	89.9	92.8	95.7	98.4	111.4	125.3	137.1
2300	49.1	53.6	58.3	63.1	68.0	73.0	78.2	83.5	86.7	89.8	92.8	95.8	98.7	101.5	114.8	128.7	—
2400	50.4	55.1	59.9	64.9	70.0	75.2	80.6	86.1	89.4	92.6	95.7	98.7	101.6	104.5	118.0	132.0	—
2500	51.6	56.5	61.5	66.6	71.9	77.4	83.0	88.7	92.0	95.3	98.4	101.5	104.5	107.5	121.1	135.1	—
2600	52.8	57.8	63.0	68.3	73.8	79.5	85.3	91.2	94.6	97.9	101.1	104.3	107.3	110.3	124.1	138.1	—
2700	54.0	59.2	64.5	70.0	75.7	81.5	87.5	93.7	97.2	100.5	103.8	107.0	110.1	113.1	127.0	—	—
2800	55.1	60.4	65.9	71.6	77.5	83.5	89.7	96.2	99.7	103.1	106.4	109.6	112.8	115.8	129.8	—	—
2900	56.2	61.7	67.3	73.2	79.2	85.5	91.9	98.6	102.1	105.6	109.0	112.2	115.4	118.5	132.5	—	—
3000	57.2	62.8	68.7	74.7	80.9	87.4	94.0	100.9	104.5	108.0	111.4	114.8	118.0	121.1	135.1	—	—
3200	59.2	65.1	71.2	77.6	84.2	91.1	98.2	105.5	109.2	112.8	116.3	119.6	122.9	126.0	—	—	—
3400	60.9	67.1	73.6	80.4	87.3	94.6	102.1	109.9	113.7	117.3	120.9	124.3	127.6	130.7	—	—	—
3600	62.5	69.0	75.8	82.9	90.3	97.9	105.9	114.1	118.0	121.7	125.3	128.7	132.0	135.1	—	—	—
3800	63.9	70.8	77.9	85.3	93.1	101.1	109.5	118.2	122.1	125.8	129.4	132.9	136.1	—	—	—	—
4000	65.2	72.3	79.8	87.5	95.7	104.1	112.9	122.1	126.0	129.8	133.4	136.8	—	—	—	—	—
4200	66.3	73.7	81.5	89.6	98.1	107.0	116.2	125.8	129.8	133.6	137.1	—	—	—	—	—	—
4400	67.3	74.9	83.0	91.5	100.4	109.7	119.4	129.4	133.4		—	—	—	—	—	—	—
4600	68.1	76.0	84.4	93.2	102.5	112.2	122.3	132.9	136.8	—	—	—	—	—	—	—	—
4800	68.7	76.9	85.6	94.8	104.5	114.6	125.1	136.1	—	—	—	—	—	—	—	—	—
5000	69.2	77.7	86.7	96.2	106.2	116.8	127.8	—	—	—	—	—	—	—	—	—	—
5200	69.5	78.3	87.6	97.5	107.9	118.8	130.3	—	—	—	—	—	—	—	—	—	—
5400	69.7	78.8	88.4	98.6	109.4	120.7	—	—	—	—	—	—	—	—	—	—	—
5600	69.8	79.1	89.0	99.5	110.7	—	—	—	—	—	—	—	—	—	—	—	—
5800	69.6	79.2	89.4	100.3	111.8	—	—	—	—	—	—	—	—	—	—	—	—
6000	69.4	79.2	89.7	100.9	—	—	—	—	—	—	—	—	—	—	—	—	—

Endurance time decreases.
Belt speed exceeds 20m/sec.
Avoid using 2 overlapping conditions.

＊Values in the above table are based on a 60mm belt width.
For other width use the width correction factor (Kb).

＊If the revolution is less than 50 rpm, calculate power rating proportionally with 50 rpm.

Width correction factor　Kb　　　　　　　　　　　　Table 2-66

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
FACTOR	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

2 Design

MEGA TORQUE GII MTS8M Basic power rating (torque)

(For 60mm belt width)

N·m MTS8M GII / 60mm

Table 2-65b

Number of Teeth → Revolution (rpm) ↓ / Pitch φ (mm)	24 61.12	26 66.21	28 71.30	30 76.39	32 81.49	34 86.58	36 91.67	38 96.77	40 101.86	42 106.95	44 112.05	46 117.14	48 122.23	50 127.32	60 152.79	72 183.35	84 213.90
50	388	421	453	487	520	554	588	623	651	678	706	734	761	788	920	1074	1224
100	388	421	453	487	520	554	588	623	651	678	706	734	761	788	920	1074	1224
200	352	381	410	440	470	501	531	562	587	612	636	661	685	709	825	960	1091
300	330	357	385	413	441	469	498	527	550	573	596	618	640	662	770	893	1013
400	314	340	366	393	420	447	474	502	524	545	567	588	609	629	730	846	957
500	302	327	352	378	403	430	456	483	503	524	544	564	584	604	699	809	913
600	291	316	340	365	390	415	441	467	487	506	526	545	564	583	674	778	878
700	282	306	330	354	378	403	428	453	472	491	510	528	547	565	652	752	847
800	274	297	321	344	368	392	417	442	460	478	496	514	532	549	634	730	820
900	267	290	313	336	359	383	407	431	449	467	484	502	519	536	617	709	796
1000	261	283	305	328	351	374	398	422	439	457	474	490	507	523	602	691	775
1100	255	277	299	321	343	366	390	414	431	447	464	480	496	512	589	675	755
1200	249	271	292	314	337	359	382	406	422	439	455	471	486	502	576	659	737
1300	244	265	286	308	330	353	376	399	415	431	447	462	477	492	564	645	719
1400	239	260	281	302	324	346	369	392	408	424	439	454	469	483	553	631	703
1500	235	255	276	297	319	341	363	386	401	417	432	446	461	475	543	619	688
1600	230	250	271	292	313	335	357	380	395	410	425	439	453	467	534	607	673
1700	226	246	266	287	308	330	352	375	389	404	418	432	446	460	524	595	659
1800	222	242	262	282	303	325	347	369	384	398	412	426	439	453	516	584	646
1900	218	238	258	278	299	320	342	365	379	393	406	420	433	446	507	574	633
2000	214	234	253	274	295	316	338	360	374	387	401	414	427	439	499	563	620
2100	211	230	249	270	290	311	333	355	369	382	395	408	421	433	491	553	607
2200	207	226	246	266	286	307	329	351	364	377	390	403	415	427	484	544	595
2300	204	223	242	262	282	303	325	347	360	373	385	398	410	422	476	534	—
2400	200	219	238	258	278	299	321	343	356	368	381	393	404	416	469	525	—
2500	197	216	235	255	275	296	317	339	352	364	376	388	399	410	462	516	—
2600	194	212	231	251	271	292	313	335	348	360	372	383	394	405	456	507	—
2700	191	209	228	248	268	288	310	332	344	356	367	378	389	400	449	—	—
2800	188	206	225	244	264	285	306	328	340	352	363	374	385	395	443	—	—
2900	185	203	222	241	261	281	303	325	336	348	359	370	380	390	436	—	—
3000	182	200	219	238	258	278	299	321	333	344	355	365	376	385	430	—	—
3200	177	194	213	232	251	272	293	315	326	337	347	357	367	376	—	—	—
3400	171	189	207	226	245	266	287	309	319	330	339	349	358	367	—	—	—
3600	166	183	201	220	240	260	281	303	313	323	332	341	350	358	—	—	—
3800	161	178	196	214	234	254	275	297	307	316	325	334	342	—	—	—	—
4000	156	173	190	209	228	249	270	291	301	310	318	327	—	—	—	—	—
4200	151	168	185	204	223	243	264	286	295	304	312	—	—	—	—	—	—
4400	146	163	180	199	218	238	259	281	290	298	—	—	—	—	—	—	—
4600	141	158	175	194	213	233	254	276	284	—	—	—	—	—	—	—	—
4800	137	153	170	189	208	228	249	271	—	—	—	—	—	—	—	—	—
5000	132	148	166	184	203	223	244	—	—	—	—	—	—	—	—	—	—
5200	128	144	161	179	198	218	239	—	—	—	—	—	—	—	—	—	—
5400	123	139	156	174	193	213	—	—	—	—	—	—	—	—	—	—	—
5600	119	135	152	170	189	—	—	—	—	—	—	—	—	—	—	—	—
5800	115	130	147	165	184	—	—	—	—	—	—	—	—	—	—	—	—
6000	110	126	143	161	—	—	—	—	—	—	—	—	—	—	—	—	—

- Endurance time decreases.
- Belt speed exceeds 20m/sec.
- Avoid using 2 overlapping conditions.

∗Values in the above table are based on a 60mm belt width. For other width use the width correction factor (Kb).

∗If the revolution is less than 50 rpm, use power rating of 50 rpm.

Width correction factor Kb

Table 2-66

BELT WIDTH(mm)	15	20	25	30	40	50	60	70	80	100
FACTOR	0.21	0.29	0.37	0.45	0.63	0.81	1.00	1.19	1.39	1.79

MEGA TORQUE GⅡ MTS14M Basic power rating

(For 120mm belt width)

kW MTS14M GⅡ / 120mm

Table 2-67a

Revolution (rpm) \ Number of Teeth Pitch φ (mm)	28 124.78	30 133.69	32 142.60	34 151.52	36 160.43	40 178.25	42 187.17	44 196.08	48 213.90	50 222.82	56 249.55	60 267.38	64 285.21	72 320.86	84 374.33
20	4.6	5.0	5.4	5.7	6.0	6.6	6.9	7.1	7.7	8.0	8.8	9.3	9.8	10.9	12.4
40	9.2	10.0	10.8	11.4	12.0	13.1	13.7	14.3	15.4	15.9	17.6	18.6	19.7	21.8	24.8
60	13.8	15.0	16.2	17.1	18.0	19.7	20.6	21.4	23.1	23.9	26.3	27.9	29.5	32.7	37.2
80	18.4	20.0	21.6	22.8	24.0	26.3	27.4	28.5	30.7	31.8	35.1	37.3	39.4	43.5	49.6
90	20.7	22.5	24.4	25.7	27.0	29.5	30.8	32.1	34.6	35.8	39.5	41.9	44.3	49.0	55.9
100	23.0	25.0	27.1	28.5	30.0	32.8	34.3	35.7	38.4	39.8	43.9	46.6	49.2	54.4	62.1
200	41.8	45.5	49.2	51.8	54.4	59.5	62.1	64.6	69.5	72.0	79.2	83.9	88.6	97.8	111.2
300	58.9	64.1	69.5	73.2	76.8	83.9	87.4	90.9	97.8	101.2	111.2	117.8	124.3	137.0	155.6
400	74.8	81.6	88.6	93.2	97.8	106.8	111.2	115.6	124.3	128.6	141.2	149.4	157.6	173.5	196.7
500	89.7	98.1	106.8	112.3	117.8	128.6	133.9	139.1	149.4	154.5	169.6	179.4	189.1	208.0	235.5
600	104.0	113.9	124.3	130.7	137.0	149.4	155.6	161.6	173.5	179.4	196.7	208.0	219.2	240.9	272.5
700	117.5	129.1	141.2	148.4	155.6	169.6	176.5	183.3	196.7	203.3	222.8	235.5	248.0	272.5	307.9
800	130.5	143.8	157.6	165.6	173.5	189.1	196.5	204.3	219.1	226.5	248.0	262.1	275.9	302.9	341.9
900	143.0	157.9	173.5	182.3	191.0	208.0	216.4	224.6	240.9	248.9	272.5	287.8	302.9	332.3	374.8
1000	155.0	171.6	189.1	198.6	208.0	226.5	235.5	244.5	262.1	270.8	296.2	312.8	329.1	360.8	406.7
1100	166.5	184.9	204.3	214.5	224.6	244.5	254.2	263.8	282.7	292.0	319.3	337.1	354.6	388.6	437.6
1200	177.6	197.8	219.1	230.1	240.9	262.1	272.5	282.7	302.9	312.8	341.9	360.8	379.4	415.6	467.7
1300	188.2	210.4	233.7	245.4	256.8	279.3	290.3	301.2	322.6	333.1	364.0	384.0	403.7	441.9	—
1400	198.5	222.6	248.0	260.3	272.5	296.2	307.9	319.3	341.9	353.0	385.5	406.7	427.4	467.7	—
1500	208.5	234.5	262.1	275.0	287.8	312.8	325.0	337.1	360.8	372.5	406.7	428.8	450.6	—	—
1600	218.0	246.1	275.9	289.5	302.9	329.1	341.9	354.6	379.4	391.6	427.4	450.6	473.3	—	—
1700	227.3	257.4	289.5	303.7	317.7	345.1	358.5	371.7	397.7	410.4	447.7	471.9	—	—	—
1800	236.2	268.4	302.9	317.7	332.3	360.8	374.8	388.6	415.6	428.8	467.7	—	—	—	—
1900	244.7	279.2	316.1	331.5	346.7	376.3	390.8	405.2	433.2	447.0	487.3	—	—	—	—
2000	253.0	289.7	329.1	345.1	360.8	391.6	406.7	421.5	450.6	464.8	—	—	—	—	—
2100	261.0	300.0	341.9	358.5	374.8	406.7	422.2	437.6	467.7	482.4	—	—	—	—	—
2200	268.6	310.0	354.6	371.7	388.6	421.5	437.6	453.4	484.5	—	—	—	—	—	—
2300	276.0	319.8	367.1	384.8	402.2	436.1	452.7	469.1	—	—	—	—	—	—	—
2400	283.1	329.4	379.4	397.6	415.6	450.6	467.7	484.5	—	—	—	—	—	—	—
2500	289.9	338.8	391.4	410.4	428.8	464.8	482.4	—	—	—	—	—	—	—	—
2600	296.4	347.9	403.7	423.0	441.9	478.9	—	—	—	—	—	—	—	—	—
2700	302.6	356.9	415.6	435.4	454.9	—	—	—	—	—	—	—	—	—	—
2800	308.6	365.6	427.4	447.7	467.6	—	—	—	—	—	—	—	—	—	—
2900	314.4	374.1	439.0	459.8	480.3	—	—	—	—	—	—	—	—	—	—
3000	319.8	382.4	450.6	471.9	—	—	—	—	—	—	—	—	—	—	—
3100	325.0	390.6	462.0	483.8	—	—	—	—	—	—	—	—	—	—	—
3200	330.0	398.5	473.3	—	—	—	—	—	—	—	—	—	—	—	—
3300	334.7	406.3	484.5	—	—	—	—	—	—	—	—	—	—	—	—
3400	339.1	413.9	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	343.4	421.3	—	—	—	—	—	—	—	—	—	—	—	—	—

■ Endurance time decreases.

■ Belt speed exceeds 20m/sec.

■ Avoid using 2 overlapping conditions.

∗ Values in the above table are based on a 120mm belt width.
   For other width use the width correction factor (Kb).
∗ If the revolution is less than 20 rpm, calculate power rating proportionally with 20 rpm.

Width correction factor Kb

Table 2-68

BELT WIDTH(mm)	40	50	60	80	100	120	140
FACTOR	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2 Design

MEGA TORQUE GII MTS14M Basic power rating (torque)

(For 120mm belt width)

N·m MTS14M GII / 120mm

Table 2-67b

Number of Teeth / Revolution (rpm) / Pitch φ (mm)	28 124.78	30 133.69	32 142.60	34 151.52	36 160.43	40 178.25	42 187.17	44 196.08	48 213.90	50 222.82	56 249.55	60 267.38	64 285.21	72 320.86	84 374.33
20	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
40	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
60	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
80	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
90	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
100	2201	2390	2584	2724	2862	3135	3271	3405	3670	3802	4191	4447	4699	5198	5927
200	1997	2171	2350	2475	2599	2843	2963	3083	3319	3436	3781	4007	4231	4670	5312
300	1874	2041	2213	2329	2444	2672	2783	2894	3113	3222	3541	3750	3957	4362	4952
400	1785	1948	2115	2226	2335	2550	2656	2761	2968	3070	3371	3568	3762	4143	4697
500	1714	1874	2040	2146	2250	2456	2557	2657	2854	2952	3239	3427	3611	3973	4499
600	1655	1814	1978	2080	2181	2379	2476	2572	2762	2855	3131	3311	3488	3835	4337
700	1604	1762	1926	2025	2122	2314	2408	2501	2684	2774	3040	3213	3384	3717	4200
800	1558	1716	1881	1977	2071	2257	2348	2439	2616	2704	2961	3129	3294	3161	4082
900	1517	1676	1841	1935	2027	2207	2296	2384	2556	2641	2891	3054	3214	3526	3977
1000	1480	1639	1806	1897	1987	2163	2249	2335	2503	2586	2829	2987	3143	3446	3884
1100	1445	1605	1773	1863	1950	2123	2207	2290	2455	2535	2773	2927	3078	3374	3799
1200	1413	1574	1744	1831	1917	2086	2168	2250	2410	2489	2721	2872	3020	3307	4060
1300	1383	1545	1717	1803	1887	2052	2133	2213	2370	2447	2674	2821	2965	3246	—
1400	1354	1518	1692	1776	1859	2021	2100	2178	2332	2408	2630	2774	2915	3190	—
1500	1327	1493	1669	1751	1832	1991	2069	2146	2297	2372	2589	2730	2869	—	—
1600	1301	1469	1647	1728	1808	1964	2041	2116	2265	2337	2551	2689	2825	—	—
1700	1277	1446	1626	1706	1785	1939	2014	2088	2234	2305	2515	2651	—	—	—
1800	1253	1424	1607	1686	1763	1914	1989	2062	2205	2275	2481	—	—	—	—
1900	1230	1403	1589	1666	1742	1892	1965	2036	2177	2247	2449	—	—	—	—
2000	1208	1383	1571	1648	1723	1870	1942	2013	2151	2220	—	—	—	—	—
2100	1187	1364	1555	1630	1704	1849	1920	1990	2127	2194	—	—	—	—	—
2200	1166	1346	1539	1614	1687	1830	1899	1968	2103	—	—	—	—	—	—
2300	1146	1328	1524	1598	1670	1811	1880	1948	—	—	—	—	—	—	—
2400	1126	1311	1510	1582	1654	1793	1861	1928	—	—	—	—	—	—	—
2500	1107	1294	1496	1568	1638	1776	1843	—	—	—	—	—	—	—	—
2600	1089	1278	1483	1554	1623	1759	—	—	—	—	—	—	—	—	—
2700	1070	1262	1470	1540	1609	—	—	—	—	—	—	—	—	—	—
2800	1053	1247	1458	1527	1595	—	—	—	—	—	—	—	—	—	—
2900	1035	1232	1446	1514	1582	—	—	—	—	—	—	—	—	—	—
3000	1018	1217	1434	1502	—	—	—	—	—	—	—	—	—	—	—
3100	1001	1203	1423	1490	—	—	—	—	—	—	—	—	—	—	—
3200	985	1189	1412	—	—	—	—	—	—	—	—	—	—	—	—
3300	969	1176	1402	—	—	—	—	—	—	—	—	—	—	—	—
3400	953	1163	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	937	1150	—	—	—	—	—	—	—	—	—	—	—	—	—

- Endurance time decreases.
- Belt speed exceeds 20m/sec.
- Avoid using 2 overlapping conditions.

＊Values in the above table are based on a 120mm belt width.
　For other width use the width correction factor (Kb).
＊If the revolution is less than 20 rpm, use power rating of 20 rpm.

Width correction factor Kb

Table 2-68

BELT WIDTH(mm)	40	50	60	80	100	120	140
FACTOR	0.29	0.37	0.45	0.63	0.81	1.00	1.19

2
Design

MEGA TORQUE EX MTS3M Basic power rating
(For 6 mm belt width)

W | MTS3M EX | 6mm

Table 2-69a

Revolution (rpm) / Number of teeth (T) / Pitch diameter (mm)	24 / 22.92	26 / 24.83	28 / 26.74	30 / 28.65	32 / 30.56	36 / 34.38	40 / 38.20	44 / 42.02	50 / 47.75	60 / 57.30
870	95	103	110	118	125	140	155	169	189	222
1160	119	129	139	148	158	176	194	213	237	279
1750	165	178	192	205	218	243	268	293	325	381
3500	277	300	322	344	365	407	446	486	537	624
50	8	9	10	11	11	13	14	15	17	20
100	15	17	18	19	21	23	25	28	31	37
150	22	24	26	27	29	33	36	39	44	52
200	28	30	33	35	37	42	46	50	56	67
250	34	37	39	42	45	50	55	61	68	80
300	39	43	46	49	52	58	65	71	79	94
350	45	49	52	56	59	66	73	81	90	106
400	50	54	58	62	66	74	82	90	100	119
450	55	60	64	69	73	82	90	99	111	131
500	60	65	70	75	80	89	99	108	121	143
550	65	71	76	81	86	97	107	117	130	154
600	70	76	82	87	93	104	114	125	140	165
650	75	81	87	93	99	111	122	134	149	176
700	79	86	92	99	105	118	130	142	159	187
800	89	96	103	110	117	131	145	158	176	208
900	97	105	113	121	129	144	159	174	194	228
1000	106	115	123	132	140	157	173	189	211	248
1100	114	124	133	142	151	169	186	204	227	267
1200	122	133	143	152	162	181	200	218	243	286
1300	130	141	152	162	173	193	213	233	259	304
1400	138	150	161	172	183	204	225	246	274	322
1500	146	158	170	182	193	216	238	260	289	340
1600	154	166	179	191	203	227	250	273	304	357
1700	161	174	187	200	213	238	262	286	318	373
1800	168	182	196	209	222	248	273	299	332	390
1900	175	190	204	218	232	259	285	311	346	406
2000	182	198	212	227	241	269	296	324	359	421
2200	196	212	228	244	259	289	318	348	386	452
2400	210	227	244	261	277	309	340	371	411	481
2600	223	241	259	277	294	328	360	393	436	509
2800	235	255	274	292	311	346	380	415	460	536
3000	248	268	288	308	327	364	400	436	483	562
3200	260	281	302	322	342	381	419	457	505	588
3400	272	294	316	337	358	398	437	477	527	612
3600	283	306	329	351	373	415	455	496	548	635
3800	294	318	342	365	387	431	473	515	568	658
4000	305	330	355	378	402	447	490	533	588	679
4500	332	359	385	411	436	484	530	576	634	729
5000	357	386	414	442	468	520	568	616	677	774
5500	381	412	442	471	499	553	603	653	715	813
6000	404	436	468	498	528	584	636	688	751	848
6500	426	460	492	524	555	613	667	719	782	876
7000	446	482	516	549	580	640	695	747	810	900
7500	466	503	538	572	604	665	721	773	834	917
8000	485	523	559	594	627	688	744	796	854	929
9000	520	559	597	633	667	729	784	832	884	935

* Values in the above table are based on a 6mm belt width. For other width use the width correction factor (Kb).

* If the revolution is less than 50 rpm, calculate power rating proportionally with 50 rpm.

Width correction factor (Kb)   Table 2-70

Belt width (mm)	6	10	15
Kb	1.00	1.79	2.84

MEGA TORQUE EX MTS3M Basic power rating (torque)
(For 6 mm belt width)

N·cm MTS3M EX / 6mm

Table 2-69b

Number of teeth (T) / Pitch diameter (mm) / Revolution (rpm)	24	26	28	30	32	36	40	44	50	60
	22.92	24.83	26.74	28.65	30.56	34.38	38.20	42.02	47.75	57.30
870	104	113	121	129	138	154	170	186	207	244
1160	98	106	114	122	130	145	160	175	195	229
1750	90	97	105	112	119	133	146	160	177	208
3500	76	82	88	94	100	111	122	133	147	170
50	162	175	188	201	214	240	266	292	327	388
100	148	160	172	184	196	219	242	266	298	353
150	139	151	162	174	185	207	229	251	281	333
200	134	145	156	167	177	198	219	241	269	318
250	129	140	150	161	171	192	212	232	259	307
300	125	136	146	156	166	186	206	225	252	298
350	122	132	143	152	162	181	200	220	245	290
400	120	130	139	149	159	177	196	215	240	284
450	117	127	137	146	155	174	192	210	235	278
500	115	125	134	143	153	171	188	207	230	272
550	113	123	132	141	150	168	185	203	226	267
600	111	121	130	139	148	165	182	200	223	263
650	110	119	128	137	146	163	180	197	219	259
700	108	117	126	135	144	160	177	194	216	255
800	106	114	123	132	140	156	173	189	211	248
900	103	112	120	129	137	153	169	185	206	242
1000	101	110	118	126	134	150	165	181	201	237
1100	99	107	116	124	131	147	162	177	197	232
1200	97	106	113	121	129	144	159	174	194	228
1300	96	104	112	119	127	142	156	171	190	224
1400	94	102	110	117	125	139	154	168	187	220
1500	93	101	108	116	123	137	151	165	184	216
1600	92	99	107	114	121	135	149	163	181	213
1700	90	98	105	112	120	133	147	161	179	210
1800	89	97	104	111	118	132	145	159	176	207
1900	88	95	103	110	117	130	143	157	174	204
2000	87	94	101	108	115	128	141	155	172	201
2200	85	92	99	106	113	126	138	151	167	196
2400	83	90	97	104	110	123	135	148	164	191
2600	82	89	95	102	108	120	132	144	160	187
2800	80	87	93	100	106	118	130	142	157	183
3000	79	85	92	98	104	116	127	139	154	179
3200	78	84	90	96	102	114	125	136	151	175
3400	76	83	89	95	101	112	123	134	148	172
3600	75	81	87	93	99	110	121	132	145	168
3800	74	80	86	92	97	108	119	129	143	165
4000	73	79	85	90	96	107	117	127	140	162
4500	70	76	82	87	93	103	113	122	135	155
5000	68	74	79	84	89	99	109	118	129	148
5500	66	72	77	82	87	96	105	113	124	141
6000	64	69	74	79	84	93	101	109	119	135
6500	63	68	72	77	82	90	98	106	115	129
7000	61	66	70	75	79	87	95	102	111	123
7500	59	64	69	73	77	85	92	98	106	117
8000	58	62	67	71	75	82	89	95	102	111
9000	55	59	63	67	71	77	83	88	94	99

* Values in the above table are based on a 6mm belt width. For other width use the width correction factor (Kb).

* If the revolution is less than 50 rpm, use power rating of 50 rpm.
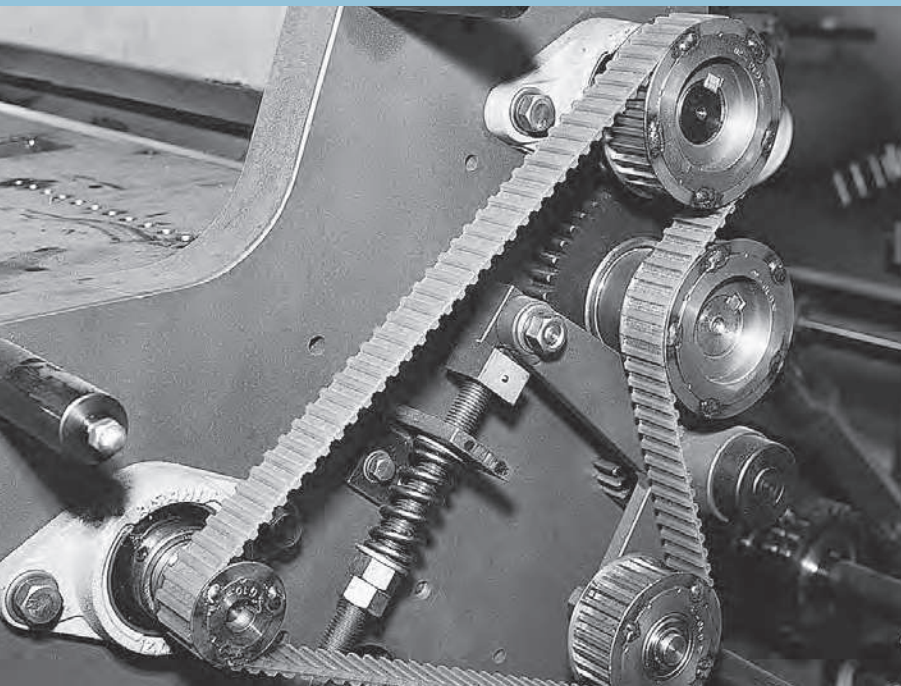
Width correction factor (Kb) Table 2-70

Belt width (mm)	6	10	15
Kb	1.00	1.79	2.84

2 Design

MEGA TORQUE EX MTS5M Basic power rating

(For 10mm belt width)

W | MTS5M EX 10mm

Table 2-71a

Revolution (rpm) \ Number of Teeth / Pitch φ (mm)	14 / 22.28	15 / 23.87	16 / 25.46	18 / 28.65	20 / 31.83	22 / 35.01	24 / 38.20	25 / 39.79	26 / 41.38	28 / 44.56	30 / 47.75	32 / 50.93	36 / 57.30	40 / 63.66	44 / 70.03	48 / 76.39	60 / 95.49
100	32	37	43	53	64	74	84	89	94	105	115	125	145	165	185	205	264
200	60	70	80	100	120	140	160	170	180	200	219	239	278	317	355	394	508
300	86	101	115	145	175	204	233	248	262	291	320	349	406	463	520	576	744
400	110	130	149	188	227	266	304	323	342	381	418	456	532	606	681	755	975
500	134	158	183	231	279	326	374	397	421	468	515	562	655	747	839	930	1202
600	157	186	215	272	329	386	442	470	498	554	610	665	776	886	995	1103	1425
700	180	213	246	313	379	444	509	542	574	639	704	768	895	1022	1148	1274	1646
800	202	240	277	353	428	502	576	613	650	723	796	869	1014	1157	1300	1442	1864
900	223	266	308	392	476	559	642	683	724	806	888	969	1131	1291	1451	1609	2079
1000	245	291	338	431	523	615	707	752	798	888	978	1068	1247	1424	1600	1774	2292
1100	265	317	368	469	571	671	771	821	871	970	1068	1166	1361	1555	1747	1938	2502
1200	286	342	397	508	617	726	835	889	943	1050	1157	1264	1475	1685	1893	2100	2710
1300	306	366	426	545	663	781	898	956	1014	1130	1245	1360	1588	1814	2038	2260	2916
1400	326	391	455	582	709	835	961	1023	1085	1209	1333	1456	1700	1941	2181	2419	3119
1500	346	415	483	619	755	889	1023	1090	1156	1288	1420	1551	1811	2068	2323	2576	3320
1600	365	438	511	656	800	943	1085	1155	1226	1366	1506	1645	1921	2194	2464	2732	3519
1700	385	462	539	692	844	996	1146	1221	1295	1444	1592	1738	2030	2318	2604	2886	3715
1800	—	485	567	728	889	1048	1207	1286	1364	1521	1676	1831	2138	2442	2742	3039	3909
1900	—	508	594	764	933	1101	1267	1350	1433	1597	1761	1923	2246	2564	2879	3190	4100
2000	—	531	621	799	976	1152	1327	1414	1501	1673	1845	2015	2352	2686	3015	3340	4289
2200	—	—	674	869	1063	1255	1446	1541	1635	1823	2010	2196	2563	2925	3283	3635	4658
2400	—	—	—	938	1148	1356	1563	1666	1768	1971	2173	2374	2771	3161	3545	3923	5017
2600	—	—	—	1007	1232	1456	1679	1789	1899	2118	2334	2550	2975	3392	3803	4205	5364
2800	—	—	—	1074	1315	1555	1793	1911	2028	2262	2493	2723	3175	3619	4054	4480	5699
3000	—	—	—	1140	1397	1652	1905	2031	2156	2404	2649	2893	3372	3842	4301	4749	6022
3200	—	—	—	—	1478	1749	2016	2149	2281	2544	2803	3060	3566	4059	4541	5009	6331
3400	—	—	—	—	1558	1843	2126	2266	2405	2682	2955	3225	3755	4272	4775	5263	6627
3600	—	—	—	—	—	1937	2234	2381	2527	2817	3104	3387	3941	4480	5003	5508	6908
3800	—	—	—	—	—	2029	2341	2495	2648	2951	3250	3546	4123	4683	5224	5745	7174
4000	—	—	—	—	—	2121	2446	2606	2766	3083	3394	3702	4301	4881	5439	5974	7424
4500	—	—	—	—	—	2343	2701	2879	3054	3402	3743	4078	4728	5351	5944	6505	7975
5000	—	—	—	—	—	—	2947	3140	3330	3706	4074	4434	5128	5785	6402	6977	8413
5500	—	—	—	—	—	—	3183	3389	3594	3995	4387	4768	5497	6178	6808	7382	8726
6000	—	—	—	—	—	—	3407	3627	3844	4268	4680	5079	5835	6530	7158	7716	8903
6500	—	—	—	—	—	—	3620	3852	4080	4524	4953	5366	6138	6835	7449	7972	8933
7000	—	—	—	—	—	—	3821	4063	4301	4762	5204	5626	6405	7091	7674	8146	8804
7500	—	—	—	—	—	—	—	4261	4506	4981	5432	5859	6634	7295	7832	8232	8506
8000	—	—	—	—	—	—	—	4443	4695	5179	5635	6062	6821	7444	7916	8223	8026
8500	—	—	—	—	—	—	—	4610	4867	5356	5813	6234	6966	7534	7922	8115	7354
9000	—	—	—	—	—	—	—	4761	5020	5511	5963	6374	7064	7561	7847	7901	6478

Endurance time decreases.

Belt speed exceeds 33m/sec.

* Values in the above table are based on a 10mm belt width. For other width use the width correction factor (Kb).
* If the revolution is less than 100 rpm, calculate power rating proportionally with 100 rpm.

Width correction factor (Kb)   Table 2-72

BELT WIDTH(mm)	10	15	25
Kb	1.00	1.59	2.84

2 Design

MEGA TORQUE EX MTS5M Basic power rating (torque)

(For 10mm belt width)

N·m MTS5M EX / 10mm

Table 2-71b

Revolution (rpm) \ Number of Teeth / Pitch φ (mm)	14	15	16	18	20	22	24	25	26	28	30	32	36	40	44	48	60
	22.28	23.87	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	57.30	63.66	70.03	76.39	95.49
100	3.1	3.6	4.1	5.1	6.1	7.0	8.0	8.5	9.0	10.0	10.9	11.9	13.8	15.8	17.7	19.6	25.2
200	2.9	3.3	3.8	4.8	5.7	6.7	7.6	8.1	8.6	9.5	10.5	11.4	13.3	15.1	17.0	18.8	24.2
300	2.7	3.2	3.7	4.6	5.6	6.5	7.4	7.9	8.3	9.3	10.2	11.1	12.9	14.7	16.5	18.3	23.7
400	2.6	3.1	3.6	4.5	5.4	6.3	7.3	7.7	8.2	9.1	10.0	10.9	12.7	14.5	16.2	18.0	23.3
500	2.6	3.0	3.5	4.4	5.3	6.2	7.1	7.6	8.0	8.9	9.8	10.7	12.5	14.3	16.0	17.8	22.9
600	2.5	3.0	3.4	4.3	5.2	6.1	7.0	7.5	7.9	8.8	9.7	10.6	12.3	14.1	15.8	17.6	22.7
700	2.5	2.9	3.4	4.3	5.2	6.1	6.9	7.4	7.8	8.7	9.6	10.5	12.2	13.9	15.7	17.4	22.4
800	2.4	2.9	3.3	4.2	5.1	6.0	6.9	7.3	7.8	8.6	9.5	10.4	12.1	13.8	15.5	17.2	22.2
900	2.4	2.8	3.3	4.2	5.0	5.9	6.8	7.2	7.7	8.5	9.4	10.3	12.0	13.7	15.4	17.1	22.1
1000	2.3	2.8	3.2	4.1	5.0	5.9	6.7	7.2	7.6	8.5	9.3	10.2	11.9	13.6	15.3	16.9	21.9
1100	2.3	2.7	3.2	4.1	5.0	5.8	6.7	7.1	7.6	8.4	9.3	10.1	11.8	13.5	15.2	16.8	21.7
1200	2.3	2.7	3.2	4.0	4.9	5.8	6.6	7.1	7.5	8.4	9.2	10.1	11.7	13.4	15.1	16.7	21.6
1300	2.2	2.7	3.1	4.0	4.9	5.7	6.6	7.0	7.4	8.3	9.1	10.0	11.7	13.3	15.0	16.6	21.4
1400	2.2	2.7	3.1	4.0	4.8	5.7	6.6	7.0	7.4	8.2	9.1	9.9	11.6	13.2	14.9	16.5	21.3
1500	2.2	2.6	3.1	3.9	4.8	5.7	6.5	6.9	7.4	8.2	9.0	9.9	11.5	13.2	14.8	16.4	21.1
1600	2.2	2.6	3.1	3.9	4.8	5.6	6.5	6.9	7.3	8.2	9.0	9.8	11.5	13.1	14.7	16.3	21.0
1700	2.2	2.6	3.0	3.9	4.7	5.6	6.4	6.9	7.3	8.1	8.9	9.8	11.4	13.0	14.6	16.2	20.9
1800	—	2.6	3.0	3.9	4.7	5.6	6.4	6.8	7.2	8.1	8.9	9.7	11.3	13.0	14.5	16.1	20.7
1900	—	2.6	3.0	3.8	4.7	5.5	6.4	6.8	7.2	8.0	8.8	9.7	11.3	12.9	14.5	16.0	20.6
2000	—	2.5	3.0	3.8	4.7	5.5	6.3	6.7	7.2	8.0	8.8	9.6	11.2	12.8	14.4	15.9	20.5
2200	—	—	2.9	3.8	4.6	5.4	6.3	6.7	7.1	7.9	8.7	9.5	11.1	12.7	14.2	15.8	20.2
2400	—	—	—	3.7	4.6	5.4	6.2	6.6	7.0	7.8	8.6	9.4	11.0	12.6	14.1	15.6	20.0
2600	—	—	—	3.7	4.5	5.3	6.2	6.6	7.0	7.8	8.6	9.4	10.9	12.5	14.0	15.4	19.7
2800	—	—	—	3.7	4.5	5.3	6.1	6.5	6.9	7.7	8.5	9.3	10.8	12.3	13.8	15.3	19.4
3000	—	—	—	3.6	4.4	5.3	6.1	6.5	6.9	7.6	8.4	9.2	10.7	12.2	13.7	15.1	19.2
3200	—	—	—	—	4.4	5.2	6.0	6.4	6.8	7.6	8.4	9.1	10.6	12.1	13.5	14.9	18.9
3400	—	—	—	—	4.4	5.2	6.0	6.4	6.8	7.5	8.3	9.1	10.5	12.0	13.4	14.8	18.6
3600	—	—	—	—	—	5.1	5.9	6.3	6.7	7.5	8.2	9.0	10.5	11.9	13.3	14.6	18.3
3800	—	—	—	—	—	5.1	5.9	6.3	6.7	7.4	8.2	8.9	10.4	11.8	13.1	14.4	18.0
4000	—	—	—	—	—	5.1	5.8	6.2	6.6	7.4	8.1	8.8	10.3	11.6	13.0	14.3	17.7
4500	—	—	—	—	—	5.0	5.7	6.1	6.5	7.2	7.9	8.7	10.0	11.4	12.6	13.8	16.9
5000	—	—	—	—	—	—	5.6	6.0	6.4	7.1	7.8	8.5	9.8	11.0	12.2	13.3	16.1
5500	—	—	—	—	—	—	5.5	5.9	6.2	6.9	7.6	8.3	9.5	10.7	11.8	12.8	15.1
6000	—	—	—	—	—	—	5.4	5.8	6.1	6.8	7.4	8.1	9.3	10.4	11.4	12.3	14.2
6500	—	—	—	—	—	—	5.3	5.7	6.0	6.6	7.3	7.9	9.0	10.0	10.9	11.7	13.1
7000	—	—	—	—	—	—	5.2	5.5	5.9	6.5	7.1	7.7	8.7	9.7	10.5	11.1	12.0
7500	—	—	—	—	—	—	—	5.4	5.7	6.3	6.9	7.5	8.4	9.3	10.0	10.5	10.8
8000	—	—	—	—	—	—	—	5.3	5.6	6.2	6.7	7.2	8.1	8.9	9.4	9.8	9.6
8500	—	—	—	—	—	—	—	5.2	5.5	6.0	6.5	7.0	7.8	8.5	8.9	9.1	8.3
9000	—	—	—	—	—	—	—	5.1	5.3	5.8	6.3	6.8	7.5	8.0	8.3	8.4	6.9

▇ Endurance time decreases.

▇ Belt speed exceeds 33m/sec.

* Values in the above table are based on a 10mm belt width. For other width use the width correction factor (Kb).
* If the revolution is less than 100 rpm, use power rating of 100 rpm.

Width correction factor (Kb)   Table 2-72

BELT WIDTH(mm)	10	15	25
Kb	1.00	1.59	2.84

2

Design

Reference

3

3.Reference

Belt installation

1 Shut off the power of machine.

2 Check the coplanarity of pulleys.
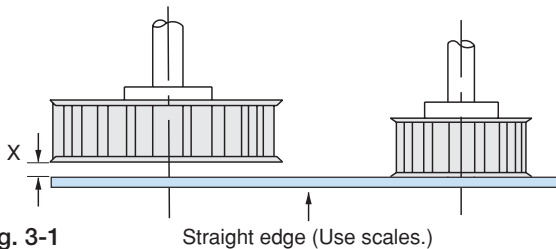
Fig. 3-1   Straight edge (Use scales.)

Adjust dimension X to as close to **"O"** as possible.
Place a straight edge against the side faces of the pulleys and check that the pair of pulleys are coplanar.

3 Shorten the center distance.
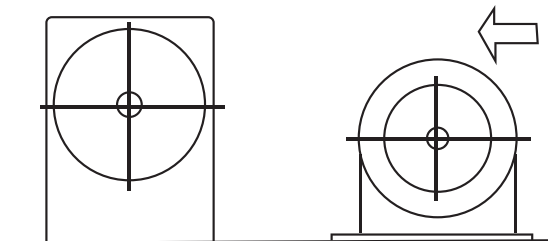
Fig. 3-2

Loosen the slide base and anchoring parts, and shorten the center distance until the belt is no longer stressed.

4 Tension the belt.
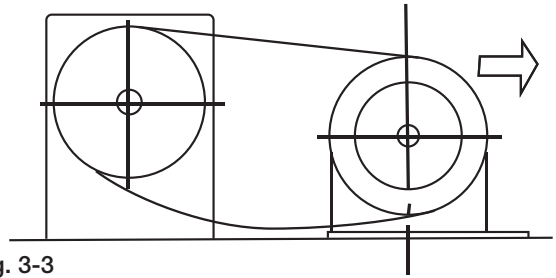
Fig. 3-3

Match the belt teeth to the pulley grooves and slowly pull the slide base to tension the belt.
When untensioned, the belt is slightly short and may not mesh all pulley teeth in the case of pulleys with a high number of teeth. In this case, slowly tension the belt until any inadequate mesh between the belt and pulleys is eliminated.

5 Draw the belt taut to the specified tension.

Tension the belt to the deflection load obtained, using the formula below, when the belt span (that part of the belt not turning around the pulleys) is depressed at the center to the specified amount (16/1000 of belt span).
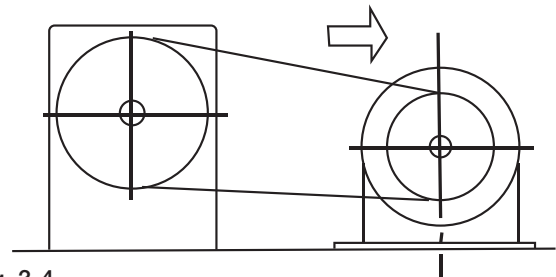
Fig. 3-4

$$\text{Deflection load} = \frac{\text{To} + \dfrac{\text{Ls}}{\text{Lp}} \times Y}{16}$$

To: Required initial tension (N) **Ls : Span length (mm)**
Lp: Belt pitch length (mm) **Y: Constant**
* For numerical values, see Table 2-26 on pg. 2-22~24.

6 Align the belt.

With the belt taut, check the alignment again using a straight edge. If it is out of alignment, detach the belt and adjust the alignment again.
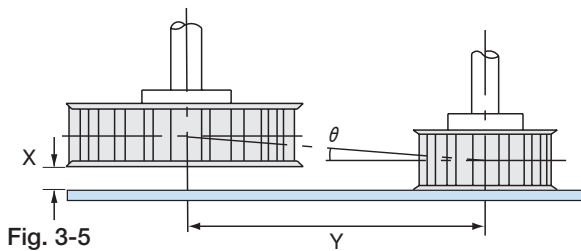
Fig. 3-5

$$\tan\theta = \frac{X}{Y}$$

Belt width	10mm	20mm	30 mm or more
θ	17'	9'	6'

If a bearing is used on only one end of the belt, the shaft deflects during operation, causing the side tracking of belts toward the side opposite the bearing. In this case, correct the coplanarity in advance by the amount of deflection alone.

7 Secure the slide base and other anchoring parts so that they do not move.

8 Check belt and pulley engagement.

Slowly rotate the pulleys and check that the belt and pulleys properly mesh.

If the belt does not properly mesh with the pulleys, check the following.

1.Whether the belt is excessively tensioned or loose

2.Whether the pulley outside diameter is incorrect

Wear can cause the outside diameter to decrease.

3.Whether the pulley profile matches the belt profile

Check items for test-run

Test-run belts for several minutes and perform the checks below. Take countermeasures for any of the noted events that occur.

> ⚠️
>
> Keep your hands and body away from pulleys and belts during operation.
> Also, make sure that the belt has stopped completely and shut off all power supplies before performing checks.

1.Is the belt running over the pulley flange?

(Countermeasure)
Adjust pulley alignment.

2.Is the belt vibrating?

(Countermeasure)
Either change the belt's initial tension (installation tension) or add a new pulley (flat pulley) to gently press on the back face of the belt.

3.Is the belt jumping (belt teeth jump over pulley teeth)?

(Countermeasure)
Increase the belt's initial tension (installation tension). If the belt still jumps despite the tighter tension, a force equal to or greater than the allowed transmission force may be acting on the belt. In this case, consider having the belt redesigned.

4.Is the belt tension decreasing abnormally?

(Countermeasure)
Check if the slide base or other part is loose. It is also possible that the belt did not properly engage the pulley when installed. In this case, retension the belt.

Daily checks

Be careful of the following when performing daily checks on the belt.

1.Make sure that the installation tension of the belt has not decreased drastically.

The belt's installation tension drops slightly after a few hours of operation as pulleys are broken in. When installing a belt, rotate the belt around 10 times first to let the pulleys to break in, then adjust the belt to the appropriate tension. Retensioning is unnecessary.
Retensioning of a timing belt may shorten its service life.

2.Check for cracks on the back face of the belt.

3.Check for cracks at the tooth root of the belt.

4.Check if the facing fabric on belt teeth wears down to the point that the rubber or cord is exposed.

5.Check along the belt side face for wear and damage caused by rubbing against flanges.

6.Check if the belt moves zigzagging when running.

During the forward and reverse operation, the belt may move within the area of the pulley flanges, but there is nothing abnormal about that.
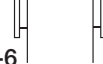
Belt

Fig. 3-6

7.Check for adhering water and oil on the belt.

8.Check if the base is loose.

9.Check for rusting in pulley tooth faces and flanges.

10.Check if the belt makes more noise than usual.

Be sure to check all of the above during inspections.

3

Reference

Use of tension pulleys

1 Conditions of use for tension pulleys

Use a tension pulley only in the following cases.

When the center distance cannot be adjusted.

To increase the number of teeth in mesh on the small pulley

2 Tension pulley installation

Place a tension pulley on the slack side of the belt and be sure to align it properly.

Inner tension pulley

Use a pulley of at least the smallest diameter in the catalog when providing tension from the inside.
- Position the inner tension pulley near the large pulley on the slack side.
- Use a toothed pulley as the tension pulley.

Drive
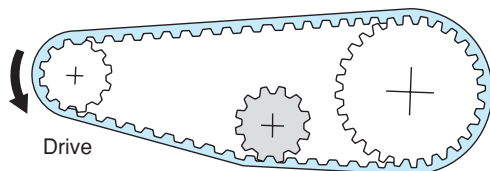
Fig. 3-7

Outer tension pulley

Use a pulley of at least 20% more of the smallest diameter in the catalog when providing tension from the outside.
- Position the outer tension pulley near the small pulley on the slack side.
- Ensure a belt bend angle of 140° or more.
- Use a flat pulley for the tension pulley.
- Do not use outside idlers with polyurethane belts.

Drive
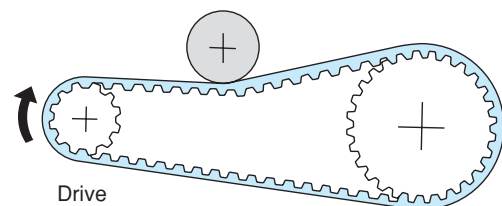
Fig. 3-8

3 Reference

Pulleys

Synchronous power transmission delivers its full performance when the belt and pulleys mesh properly and smoothly. Particularly with SUPER TORQUE Timing Pulleys, precision is necessary because of the special tooth profile.
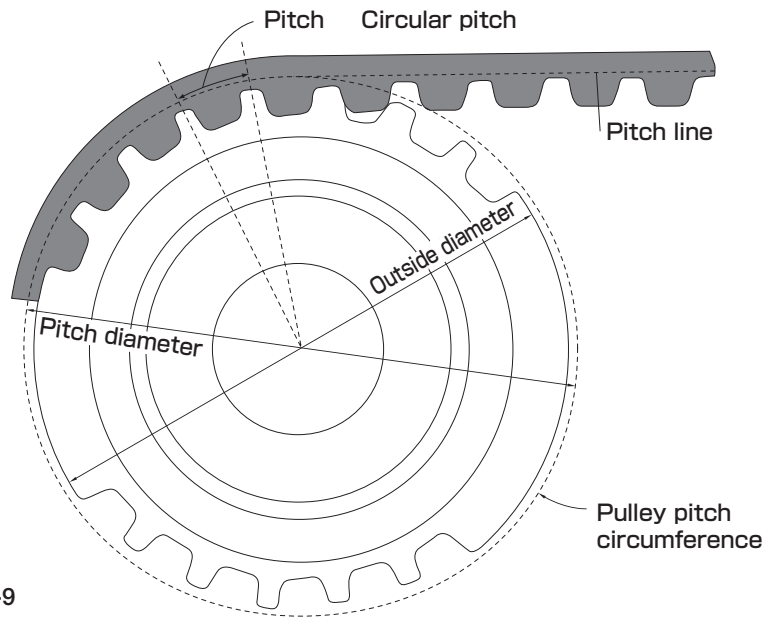
Fig. 3-9

1 Processing of pulley

1. Post-processing of standard pulley shaft hole

Use the pulley's outside diameter (tooth) as a reference for post-processing pulley shaft holes. Be careful not to damage the pulley tooth face.

2. Nonstandard timing pulley

We customize timing pulleys to fit various profiles and materials. Be conscious of the following when designing your pulleys.

OD: Pulley outside diameter
M : Flange inside diameter
W : Pulley tooth width
F : Flange outside diameter
H : Flange step width

3. For tooth cutting only

Note the following in regard to the pulleys that you will need to provide.
(1) The pulley tooth tip is topped (tooth profile finishing), therefore, you should set the topping margin in Table 3-1 for the outside diameter.
(2) Keep the shaft hole diameter to 8 mm or more as much as possible.
(3) Keep the radial run-out of a shaft hole and outside diameter to 3/100 mm or less.
(4) Keep the axial run-out of a pulley side face to 3/100 mm or less.
(5) Be careful not to damage the pulley surface when packaging for shipment.

Pulley outside diameter topping margin　　Table 3-1 (Unit: mm)

Pulley outside diameter O.D.	Topping margin
O.D. ≦150	0.4
150＜O.D. ≦250	0.6
250＜O.D. ≦350	0.8
350＜O.D. ≦450	1.0
450＜O.D. ≦700	1.2
700＜O.D.	1.5

3

Reference

4. Pulley dimensional accuracy

Pulley dimensional accuracy affects belt performance. It is, therefore, important to use pulleys of the dimensional accuracy indicated below.

Pulley outside diameter tolerance (JIS) Table 3-2 (Unit: mm)

Pulley outside diameter O.D.	Tolerance
O.D. ≦ 25.4	$^{+0.05}_{0}$
25.4 < O.D. ≦ 50.8	$^{+0.08}_{0}$
50.8 < O.D. ≦ 101.6	$^{+0.10}_{0}$
101.6 < O.D. ≦ 177.8	$^{+0.13}_{0}$
177.8 < O.D. ≦ 304.8	$^{+0.15}_{0}$
304.8 < O.D. ≦ 508.0	$^{+0.18}_{0}$
508.0 < O.D. ≦ 762.0	$^{+0.20}_{0}$
762.0 < O.D.	$^{+0.23}_{0}$

* Emphasis is placed on installing the belt on pulleys, so tooth tip roundness and tooth profile are sometimes modified from JIS tolerances. Contact us for details.

Outside diameter cylindricity Table 3-3 (Unit: mm)

Pulley width W	Tolerance
W ≦ 19	0.01
19 < W ≦ 45	0.02
45 < W ≦ 94	0.04
94 < W ≦ 150	0.06

Coplanarity of teeth and shaft hole centerline Table 3-4 (Unit: mm)

Pulley width W	Tolerance
W ≦ 45	0.03
45 < W ≦ 94	0.04
94 < W ≦ 150	0.05

Outside diameter run-out against shaft hole Table 3-5

Pulley outside diameter O.D. (mm)	Run-out tolerance (TIR)
O.D. ≦ 203.2	TIR ≦ 0.13 mm
203.2 < O.D.	TIR ≦ 0.13+(O.D. − 203.2)×0.0005 (mm)

Pulley side face run-out against shaft hole Table 3-6

Pulley outside diameter O.D. (mm)	Run-out tolerance (TIR)
O.D. ≦ 101.6	TIR ≦ 0.1 mm
101.6 < O.D. ≦ 254.0	TIR ≦ O.D. × 0.001 (mm)
254.0 < O.D.	TIR ≦ 0.25+(O.D.− 254.0)×0.0005 (mm)

Key groove tolerance Table 3-7 (Unit: mm)

Applicable shaft diameter(d)	Key dimensions	Groove dimensional (b) tolerance JS9	Groove height (h) tolerance
6 < d ≦ 8	2×2	2±0.0125	$1.0^{+0.1}_{0}$
8 < d ≦ 10	3×3	3±0.0125	$1.4^{+0.1}_{0}$
10 < d ≦ 12	4×4	4±0.0150	$1.8^{+0.1}_{0}$
12 < d ≦ 17	5×5	5±0.0150	$2.3^{+0.1}_{0}$
17 < d ≦ 22	6×6	6±0.0150	$2.8^{+0.1}_{0}$
22 < d ≦ 30	8×7	8±0.0180	$3.3^{+0.2}_{0}$
30 < d ≦ 38	10×8	10±0.0180	$3.3^{+0.2}_{0}$
38 < d ≦ 44	12×8	12±0.0215	$3.3^{+0.2}_{0}$
44 < d ≦ 50	14×9	14±0.0215	$3.8^{+0.2}_{0}$
50 < d ≦ 58	16×10	16±0.0215	$4.3^{+0.2}_{0}$
58 < d ≦ 65	18×11	18±0.0215	$4.4^{+0.2}_{0}$
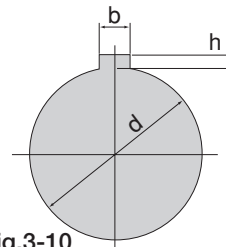
Fig.3-10

When key groove processing is desired, clearly indicate dimensions and tolerances. Unless otherwise specified, key grooves are processed to the tolerances in the table above.

5. Material

Soft-material or cast pulleys are accepted for light load transmission, but be aware of the transmission load, wear resistance, service-life, etc. Generally, the following materials are used for timing pulleys.

Table 3-8

Material	Symbol
Aluminum	A2017、A5056
Plastic	POM（Polyacetal）
Die casts	ADC、ZDC
Sintered metal	SMF-4030
Steel	SS400、S25C、S45C
Cast iron	FC250

6. Notes on processing

General tolerance … Unless otherwise specified, JIS machining coarse level or medium level tolerances are used.
Tapering …… A gauge is required.
Tapping …… Unless otherwise specified, tapping is performed at the center of the tooth root. Remove burrs and whiskers as they can damage the belt.

Remove burrs and whiskers
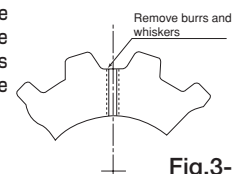
Fig.3-11

7. Pulley surfacing

Standard pulleys are not surfaced, but surfacing is available for some applications. For details, contact us. (Made to order product)

Flanges

With timing pulleys, belts side tracking can occur depending on the parallelism of the shafts and the characteristics of the belt itself.
Flanges are added to pulley side faces to prevent belts from slipping off pulleys.

Horizontal shafts

❶When the center distance is smaller than 8 times of the small pulley diameter, attach flanges on both sides of the small pulley as shown in Fig. 3-12A. Flanges are pre-attached to the standard A, B and C type pulleys.

❷When the center distance is 8 times of the small pulley diameter or larger, attach flanges on both sides of the both pulleys as shown in Fig. 3-12B.

Vertical shafts

Belts may easily come off under their own weight. Flanges should be attached to the lower sides of pulleys.

Fig.3-12A

View from above

Fig.3-12B

View from above

dp

C＞8✕dp(Small pulley diameter)
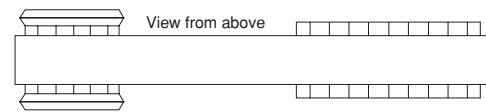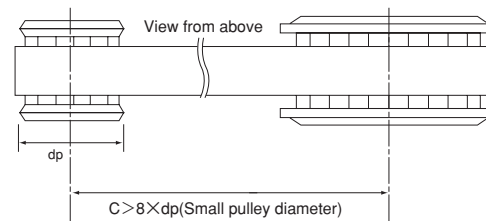
Flange installation

（1）Caulking

Caulk in the below area using a punch.
Set the pulley on a flat surface and caulk with a punch so that the pulley body overlaps the flange face as shown below.
(Wear gloves or other protective gear when working.)

Fig.3-13A
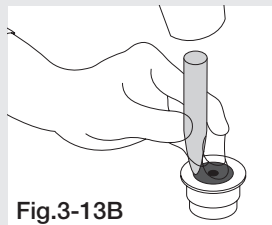
Fig.3-13B

The pulley is unstable while caulking the boss and opposite side. You could use cylinder-shaped tools to stable the pulley as shown in Fig.3-14.

Fig.3-14　Pipe→
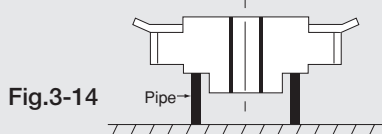
Table 3-9

Pulley outside diameter O.D. (mm)	Caulking points
O.D. ≦30	4
30＜O.D. ≦ 50	6
50＜O.D. ≦ 80	8
80＜O.D. ≦150	10
150＜O.D.	12

* Double the number of caulking points for the S8M and S14M.

Notes on caulking

❶Remove any foreign materials from the flange-fitting area and leave no gap between the pulley and the flange.

❷Caulk the points in a diagonal order, not to let the flange tilt while caulking.

（2）Screw locking

Flanges for large diameter S8M and S14M pulleys and XH and XXH pulleys are cut pieces, and should be attached to the pulley by countersunk screws.

Flange is not sold separately as a single item.

When to replace timing belts

Fig. 3-15

Bottom land

Tooth rubber

Tooth tip

Facing fabric (Reinforcement)

Mating flank
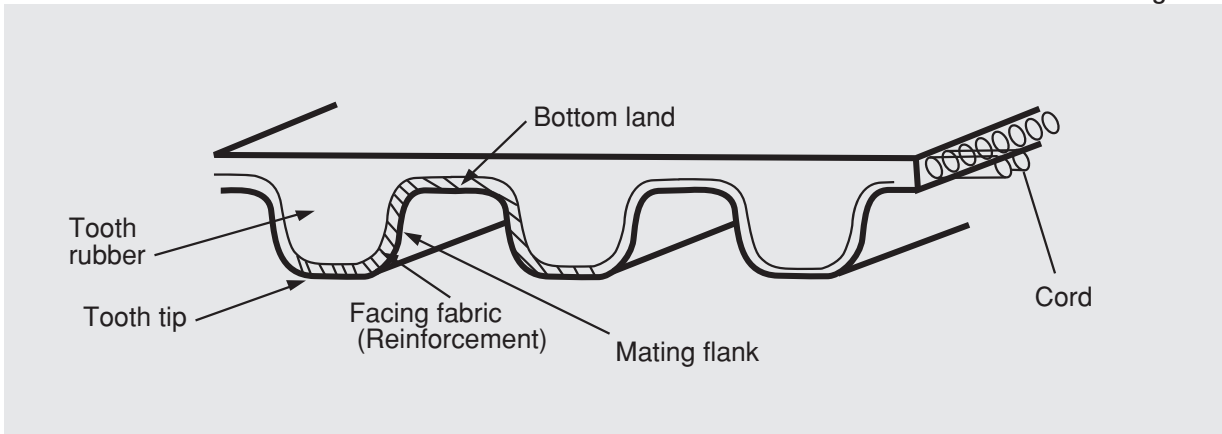
Cord

1 If the facing fabric on belt teeth wears down to the point that the rubber or cord is exposed.
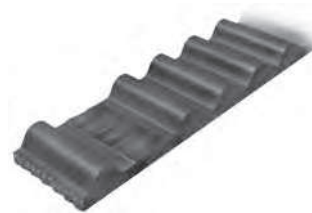
2 If the rubber on the back face of the belt cracks because of increased hardness.

3 If the belt tooth root cracks down to the rubber layer.

4 If the belt side face is damaged by wear.

5 If teeth are lost.

6 If the back face of the belt wears down.

7 If the cord is severed.

3
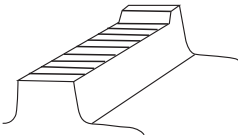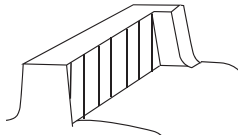
Reference

Pulley check items and replacement periods

Table 3-10

Check item	Trouble and check method	Action to take
Outside diameter wear	(Trouble) Pulley outside diameter wear (Check method) Measure the outside diameter in the belt contact area using a micrometer.	Replace the pulley if worn 0.05 mm or more over the standard outside diameter (listed in the catalog).
Mating flank wear	(Trouble) Pulley mating face wear (Check method) Measure the gradation using a dial gauge. Also measure the tooth depth using calipers equipped with a dial.	Replace the pulley if a 0.05 mm or greater gradation is found in the belt contact area of the pulley.
Tooth surface condition	(Trouble) 1.Rusting (Check method) Visual check	Remove rust and continue using the pulley. However, replace the pulley if rusting is severe.
	(Trouble) 2.Raspy surface of tooth tip and/or mating flank. (Check method) Visual check	If it is hard to make a judgment by checking visually, replace the pulley if surface roughness is 25S or more.
Flange condition	(Trouble) 1.Bent flange (Check method) Visual check	Fix the flange or replace it with a new flange.
	(Trouble) 2.Flange detached from the pulley (Check method) Visual check	Reattach the flange.

3

Reference

3-11

Causes of early damage and countermeasures

Table 3-11

Trouble	Cause	What to do
Abnormal wear in belt side face	· Poor pulley alignment · Unsatisfactory parallelism of pulley shafts · Bent pulley flange	· Align the pulley. · Correct parallelism of pulley shafts. · Fix the flange.
Abnormal wear in mating flank	· Overloading · Excessive belt tension or slack	· Change designs to a wider belt or use a belt of larger pitch. · Adjust the initial tension of the belt.
Abnormal wear in bottom land	· Inadequate pulley tooth profile · Excessive belt tension	· Remake pulleys paying particular attention to the roundness of the pulley tooth tip. · Adjust the initial tension of the belt.
Lost teeth	· Pulley diameter is too small. · Small pulley engages 6 teeth or fewer. · Shock load is applied.	· Change designs. · Increase the number of engaging teeth on the small pulley or change designs. · Eliminate shock load from belt. · Widen the belt width.
Severed cord	· Overloading · Decreased elasticity or corrosion in cord · Entrapped foreign matter · Use at a temperature of 80℃ and above	· Change designs. · Check belt storage and transport conditions. · Eliminate shock load from belt. · Install a cover around the belt. · Lower ambient temperature.
Cracking on back face (backing rubber)	· Use at a temperature of -30℃ and below · Pulley diameter is too small.	· Raise ambient temperature. · Increase pulley diameter.
Rubber deterioration	· Rubber deteriorates in ambient temperatures of 90℃ and above.	· Lower ambient temperature.
Rubber swelling	· Adhering oil · Adhering water	· Prevent oil adherence. · Prevent water adherence.
Pulley mating flank wear	· Overloading · Excessive belt tension · Inadequate pulley material (Too soft)	· Change designs. · Adjust the initial tension of the belt. · Surface the pulley or change the material.
Pulley outside diameter wear	· Pulley's end of service-life · Excessive belt tension 　(Cord is visible underneath the facing fabric.)	· Replace with a new pulley. · Replace with a new pulley and belt, and loosen belt tension.
Abnormal operating noise	· Poor alignment · Excessive belt tension · Overloading · Pulley diameter is too small. · Inadequate pulley tooth profile	· Realign the belt and pulleys. · Adjust the initial tension of the belt. · Change designs. · Change designs. · Use pulley teeth of proper dimensions.
Belt seems elongated	· Short center distance · Loose base	· Adjust the center distance to the proper length. · Strengthen base anchoring.

3

Reference

Environmental Conditions

Use belts within the following ambient temperature range.

-30℃ to 80℃

Do not allow belts to come in contact with water, oil or chemicals.

When there is a possibility of foreign materials coming in direct contact with the belt, always install a cover or other protective device over the belt.

Storage and Handling of Belts

Do not fold or bend with undue force or push in strongly on the edges of the belt.

The cords for the G Type (Rubber) timing belts are made of glass fiber. Exercise sufficient care in storing the belts, as folding or bending them with undue force or pushing in strongly on the edges may cause the cords to break.
As much as possible, do not bend with undue force or push in strongly on the edges of the U Type (Polyurethane) timing belts as well.
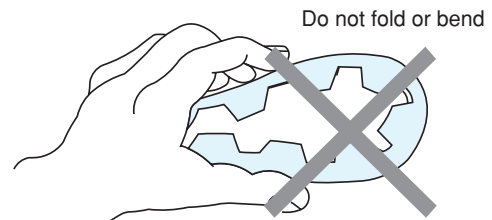
Do not fold or bend

Fig. 3-16

Do not store in locations of extremely high or low temperatures or high humidity.

During use, keep the belts away from direct contact with oil, acid, alkali, ultraviolet rays, ozone, etc.

When there is a possibility of belts coming in direct contact with one of the above, consider implementing measures to protect the belt from contact, such as installing a cover or other device over the belt.

3

Reference

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		kW		N•m	maximum torque
	Speed	Drive		rpm	Driven		rpm
	Pitch Diameter of Pulley	Drive		mm/teeth	Driven		mm/teeth
	Center distance		±		mm	Speed ratio	
	Operational Hours per day		hrs./day		Idler Pulley:		
	Other Special Conditions						
	Ambient Conditions						

Other Information

Information for designing	
Information for price	

3-14

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