

[Technical Data]

Selection of Transmission Timing Belts 1

[Step 1] Setting the Required Design Conditions

(1) Machine Type (2) Power Transmission (3) Load Variances (4) Operation Duration per Day (5) Small Pulley Rotational Speed
(6) Rotation Ratio (L.g. Pulley # of Teeth / Small Pulley # of Teeth) (7) Shaft Center Distance (Interim) (8) Pulley Diameter Limitation (9) Other Usage Conditions

[Step 2-a] Calculating Design Power.....MXL/XL/L/H/S_M/MTS_M/T Series

• Design Power (Pd) = Transmission Power (Pt) x Overload Factor (Ks)
• Calculate Transmission Power at Motor Rated Power Output. (Ideally should be calculated with the load applied to the belt)
• Overload Factor (Ks)=Ko+Kr+Ki Overload Factor (Ks)=Lo+Kr+Ki Ko: Overload Correction Factor (Table 1) Kr: Rotation Ratio Correction Factor (Table 2) Ki: Idler Correction Factor (Table 3)

Table 1. Load Correction Factor (Ko)

Typical Machines Using a Belt	Motor					
	Max. Output not Exceeding 300% of Rated Value			Max. Output Exceeding 300% of Rated Value		
	AC Motor (Standard Motor, Synchronous Motor) DC Motor (Shunt), Engine with 2 or More Cylinders			Special Motor (High torque), Single-Cylinder Engine DC Motor (Series), Operation with Lye Shaft or Clutch		
	Operation Hours			Operation Hours		
	Intermittent use 1 Day 3 to 5 hrs	Regular Use 1 Day 8 to 12 hrs	Continuous Use 1 Day 8 to 12 hrs	Intermittent use 1 Day 3 to 5 hrs	Regular Use 1 Day 8 to 12 hrs	Continuous Use 1 Day 8 to 12 hrs
Exhibit Instrument, Projector, Measuring Instrument, Medical Machine	1.0	1.2	1.4	1.2	1.4	1.6
Cleaner, Sewing Machine, Office Machine, Carpentry Lathe, Belt Sawing Machine	1.2	1.4	1.6	1.4	1.6	1.8
Light Load Belt Conveyor, Packer, Sifter	1.3	1.5	1.7	1.5	1.7	1.9
Liquid Mixer, Drill Press, Lathe, Screw Machine, (Circular Sawing) Machine, Planer, Washing Machine, Paper Manufacturing Machine (Excluding Pulp Manufacturing Machine), Printing Machine	1.4	1.6	1.8	1.6	1.8	2.0
Mixer (Cement and Viscous Matter), Belt Conveyor (Ore, Coal and Sand), Grinder, Shaping Machine, Boring Machine, Milling Machine, Compressor (Centrifugal), Vibration Sifter, Textile Machine (Warper and Winder), Rotary Compressor, Compressor (Reciprocal)	1.5	1.7	1.9	1.7	1.9	2.1
Conveyor (Apron, Pan, Bucket and Elevator), Extraction, Fan, Blower (Centrifugal, Suction and Discharge), Power Generator, Exciter, Hoist, Elevator, Rubber Processor (Calender, Roll and Extruder), Textile Machine (Weaving Machine, Fine Spinning Machine, Twisting Machine and Weft Winding Machine)	1.6	1.8	2.0	1.8	2.0	2.2
Centrifugal Separator, Conveyor (Flight and Screw), Hammer Mill, Paper Manufacturing Machine (Pulpapitor)	1.7	1.9	2.1	1.9	2.1	2.3

⚠ Typical machines using a belt are listed above. For other machines using a belt, a load correction coefficient should be fixed by reference to this table.

⚠ In the case of starts and stops over 100 times per day or rapid acceleration and deceleration, check the above values multiplied by 1.3. (MTS_M only)

Table 2. Speed Ration Correction Coefficient (Kr)

Speed Ratio	Coefficient (Kr)
1.00 to 1.25	0
1.25 to 1.75	0.1
1.75 to 2.50	0.2
2.50 to 3.50	0.3
3.50 or more	0.4

Table 3. Idlers Correction Coefficient (Ki)

Position of Idler	Coefficient (Ki)
Inside the loose side of the belt	0
Outside the loose side of the belt	0.1
Inside the loose side of the belt	0.1
Outside the loose side of the belt	0.2

[Step 2-b] Calculating Design PowerFor P_M/UP_M Series

• Design Power (Pd) = Transmission Power (Pt) x Overload Factor (Ks)
• Calculate Transmission Power at Motor Rated Power Output. (Ideally should be calculated with the load applied to the belt)
• Normal Motor Load Factor (Ks)=Ko+Ki+Kh
Ko: Application Coefficient (Table 4) Ki: Idler Correction Factor (Table 5) Kr: Speed Multiplication Correction Factor (Table 6) Kh: Operation Time Correction Factor (Table 7)

Table 4. Application Coefficient (Ko)

Type of Motor		I	II	III		
Type of Passive Unit	Peak Output/Basic Output	200% or Less	200 to 300	300% or More		
A	Extremely Smooth Transmission	1.0	1.2	1.4		
B	Fairly Smooth Transmission	1.3	1.5	1.7		
C	Transmission with Moderate Impact	1.6	1.8	2.0		
D	Transmission with Considerable Impact	1.8	2.0	2.2		
E	Transmission with Large Impact	2.0	2.2	2.5		
Motor	AC Motor	Single-Phase	—	—	All Types	
		Squirrel-Cage Induction	2 Poles	100kW or More	90~3.7kW	2.2kW or Less
			4 Poles	55kW or More	45kW or Less	—
			6 Poles	37kW or More	30kW or Less	—
			8 Poles	15kW or More	11kW or Less	—
		Wire-Wound	4 Poles	—	15kW or Less	11kW or Less
			6 Poles	—	11kW or Less	7.5kW or Less
			8 Poles	—	5.5kW or Less	3.7kW or Less
		Synchronous Motor	—	Average Torque	High Torque	
		DC Motor	Shunt	Compound	Series	
	Internal Combustion Engine	8 or More Cylinders	7 ~ 5 Cylinders	4 ~ 2 Cylinders		
	Hydraulic Motor	—	—	All Types		

Note) When the transmission involves regular, reverse revolutions, large momentum or extreme impact, a basic-use coefficient of 2.5 or more can be used.

Table 5. Correction Coefficient when Idler is Used (Ki)

Location of Idler in Use	Inside	Outside
Loose Side of the Belt	0	+0.1
Tense Side of the Belt	+0.1	+0.2

Should be added for each idler.

Table 6. Speed Increase Correction Coefficient (Kr)

Speed Increase Ratio	Correction Coefficient
1 to 1.25	0
1.25 to 1.75	+0.1
1.75 to 2.5	+0.2
2.5 to 3.5	+0.3
3.5 or more	+0.4

Type	Typical Passive Machines
A	Measuring Instrument, Camera Device, Radar, Medical Machine, Projector
B	Belt Conveyor (For Light Load) Chain Conveyor (For Light Load) Driller Press, Lathe, Screw Machine Electric Typewriter, Calculator, Duplicator, Printing Press, Cutter, Paper Folder, Printer, Mixer, Calender-Dryer, Lathe, Belt Sawing Machine, Plane, Circular Sawing Machine, Planer, Mixer (Liquid), Bread Baking Machine, Flour Kneading Machine, Sifter (Drum and Cone), Sawing Machine
C	Belt Conveyor (Ore, Coal, Sand), Elevator, Boring Mill, Grinder, Milling Machine, Shaper, Metal Sawing Machine, Wind Hoist, Dryer, Washing Machine (Including a Winger), Excavator, Mixer, Granulating Machine, Pump (Centrifugal, Gear and Rotary), Compressor (High-Speed Center), Stirrer, Mixer (Viscous Matter), Centrifugal Forced Blower, General Rubber Handling Machine, Power Generator, Sifter (Electric)
D	Conveyor (Apron, Bucket, Flight, Screw), Hoist, Cutting Press, Shattering Machine, Pulp Manufacturing Machine, Weaving Machine, Spinning Machine, Twisting Machine, Blender, Centrifugal Separator, Blower (Axial Flow, for Mining and Roots), General Construction Equipment, Hammer Mill, Rolligang
E	Crank Press, Pump (Reciprocal), Compressor (Reciprocating), Civil Engineering, Mining Equipment Including Crushing Machine (Ball, Rod, Gravel), Rubber Mixer

Table 7. Operating Correction Coefficient (Kh)

Operation Hours	Correction Coefficient
Operated 10 or More Hours a Day	+0.1
Operated 20 or More Hours a Day	+0.2
Operated 500 Hours or Less (For Seasonal Operation)	-0.2

[Step 2-c] Calculating the Design Power.....2GT/3GT Series

•Design Power (Pd) =Transmission Power (Pt) ×Overload Coefficient (Ks)

· Calculate the Transmission Power (Pt) in terms of the rated power of the prime motor. (Originally, it is ideal to calculate from the actual load applied to the belt)

A: Normal Motor Load Factor (Ks)=Ko+Ki+Kr+Kh

Ko: Load Correction Factor (Table 8) Ki: Idler Correction Factor (Table 9) Kr: Speed Multiplication Correction Factor (Table 10) Kh: Operation Time Correction Factor (Table 11)

B: Servo Motor Kp, other table*

Table 8. Load Correction Factor (Ko)

Type of Motor		I	II	III
Peak Output/Basic Output		150% or Less	Over 150%~200% or Less	Over 250%
AC Motor	Single-Phase	—	—	All Types
	Squirrel	—	—	All Types
	Cage	—	37Kw or More	30Kw or Less
	Type	—	—	All Types
	6 Phase · 8 Phase	—	—	15Kw or Less
	4 Phase	—	—	11Kw or Less
Synchronous Motor	Wound Field	—	—	5.5Kw or Less
	Type	—	—	—
	8 Phase	—	—	—
DC Motor		Shunt	Wound Field	Series
Hydraulic Motor		—	—	All Types
Office Machinery	Printer · Fax Machine · Copy Machine	—	1.2	1.4
Home Appliance	Juicer	—	1.4	1.6
	Vacuum Cleaner	1	1.2	1.4
Finance Equipment	Money Exchanger · Ticket Machine · Ticket Gates · Bank Teller Machine	1.3	1.4	1.5
Food · Medicine · Medical Equipment	Bakery Equipment	1.2	1.4	1.6
	Mixer · Granulator	1.4	1.6	1.8
	Centrifuge	1.5	1.7	1.9
	Medical Machinery · Measurement Equipment	1	1.2	1.4
Machine Tool	Drill Press · Lathe	1.2	1.4	1.6
	Milling Machine	1.3	1.5	1.7
	Wood Lathe	1.2	1.4	1.6
Printing Book Making	Printer · Book Making Machine · Cutter	1.2	1.4	1.6
Textile Machine	Textile · Knitting Machinery	1.3	1.5	1.7
Sawing Machine	Sawing Machine — Home Use	—	1.2	1.4
	Sawing Machine — Industrial	—	1.6	1.8
Belt Conveyor · Packaging Machine	Belt Conveyor — Light Objects	1.1	1.3	1.5
	Packaging Machine	1.2	1.4	1.6
Film · Wire Making Machine	Calender · Extruder	1.4	1.6	1.8
	Wire Making Machinery	1.4	1.6	1.8

Table 12. Special Motor Correction Factor (Kp)

Motor Type	Load Correction Factor
Servo Motor	Design as Kp=2.5 for Rated Output, and Kp=0.5 for Peak Output (Rational speed as applied speed)
Spindle Motor	Design as Kp=2.2 for Rated Output and Base Rotational Speed

[Step 2-d] Calculating Designed Power For EV5GT/EV8YU Series

•Design Power (Pd) =Transmission Power (Pt) × Overload Factor (Ks)

· Calculate Transmission Power at Motor Rated Power Output. (Ideally should be calculated with the load applied to the belt)

· Overload Factor (Ks)=Ko+Ki+Kr+Kh+Km

Ko: Load Correction Factor (Table 13) Ki: Idler Correction Factor (Table 14) Kr: Speed Multiplication Correction Factor (Table 15) Kh: Operation Time Correction Factor (Table 16) Km: Start/Stop Correction Factor (Table 17)

Table 13. Load Correction Factor (Ko)

Prime Motor Type		Induction Motor	Spindle Motor	Servo Motor (Peak Output/Rated Output)		
				200% or Less	201~299%	300% or More
Robot	Scara Type	2.0	2.0	1.6	1.7	1.8
Injection Mold Machine	Weld/Fastening · Ball Screw Drive	1.8	1.8	1.3	1.4	1.5
Machine Tool	Lathe · Drill Press	1.6	1.3	1.2	1.3	1.4
Machine Tool	Milling Machine	1.7	1.3	1.2	1.3	1.4
Conveyor		1.8	1.8	1.4	1.5	1.6
Medical Machinery · Measurement Equipment		1.5	1.5	1.1	0.1	0.2
Packaging Machine		1.6	1.5	1.1	0.1	0.2
Agitator · Mixer	Liquid	1.6	1.6	1.2	1.3	1.4
	Viscous Material	1.7	1.7	1.3	1.4	1.5
Drilling Machine · Granulator		1.8	1.8	1.4	1.5	1.6
Centrifuge		1.9	1.9	1.5	1.6	1.7
Mills	Ball · Rods	2.2	2.2	1.7	1.8	1.9
Printing Machine · Book Making Machine		2.0	2.0	1.6	1.7	1.8
Paper Making Machine	Calender · Dryer	2.0	2.0	1.6	1.7	1.8
Textile Machine		2.0	2.0	1.6	1.7	1.8
Wire Related	Wire Drawing & Twisting Machine	2.1	2.0	1.6	0.1	0.2
Woodworking Machine		1.7	1.7	1.2	1.3	1.4
Pump		2.0	2.0	1.6	1.7	1.8
Compressor	Reciprocating · Rotating	2.0	2.0	1.6	1.7	1.8
Fan · Blower	Axial Flow · Roots	2.0	1.8	1.3	1.4	1.5
Generator · Exciter		1.8	1.8	1.4	1.5	1.6
Rubber Industry Machinery · Lumber Mill Machinery		2.0	2.0	1.6	1.7	1.8

Table 9. Idler Correction Factor (Ki)

Idler Position	Inside	Outside
Loose Side of the Belt	0	+0.1
Tense Side of the Belt	+0.1	+0.2

Table 10. Speed Multiplication Correction Factor (Kr)

Speed Increase Ratio	Correction Factor
1 or More Less than 1.25	0
1.25 or More Less than 1.75	+0.1
1.75 or More Less than 2.5	+0.2
2.5 or More Less than 3.5	+0.3
3.5 or More	+0.4

Table 11. Operation Time Correction Factor (Kh)

Operation Time	Correction Factor
Less than 10 hours (Everyday)	0
10~16 Hours Continuous (Everyday)	+0.2
16~24 Hours Continuous (Everyday)	+0.4
300 Hours/Year or Less (Seasonal operations etc.)	-0.2

Table 14. Idler Correction Factor (Ki)

No Idler	0
Inside Idler	0.1×(Qty-1)
Outside Idler	0.1×(Qty-1)

Table 15. Speed Multiplication Correction Factor (Kr)

Operation Duration (Hours/Day)	Correction Factor
1 or More Less than 1.25	0
1.25 or More Less than 1.75	0.1
1.75 or More Less than 2.5	0.2
2.5 or More Less than 3.5	0.3
3.5 or More	0.4

Table 16. Operation Time Correction Factor (Kh)

Operation Duration (Hours/Day)	Correction Factor
≤8	0.1
8<16	0.2
16≤	0.3

Table 17. Start/Stop Correction Factor (Km)

Start/Stop Frequency (Times/Day)	Correction Factor
≤10	0.1
11<100	0.2
101<500	0.3
501<	0.4

Selection of Transmission Timing Belts 2

[Step 3] Temporarily Selecting the Type of Belt from Selection Guide Table

Table 18. Selection Guide Table 1 (MXL,XL,L,H,T5,T10)

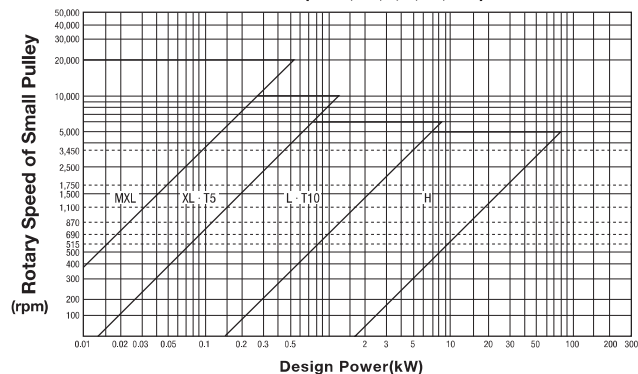


Table 19. Selection Guide Table 2 (S_M series)

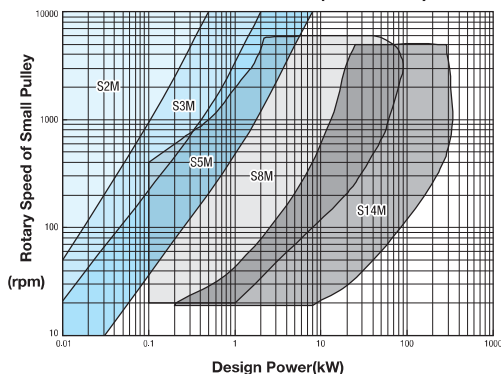


Table 20. Selection Guide Table 3 (P_M series)

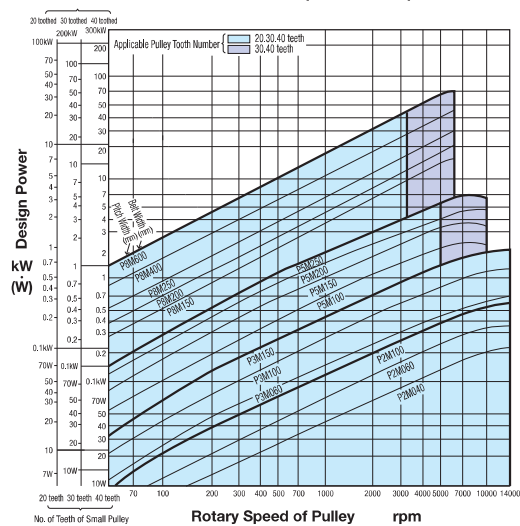


Table 21. Selection Guide Table 4 (MTS8M)

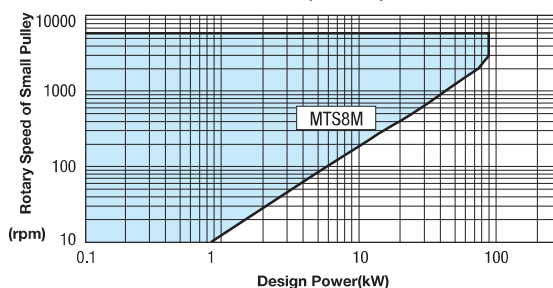


Table 22. Selection Guide Table 5 (UP_M series)

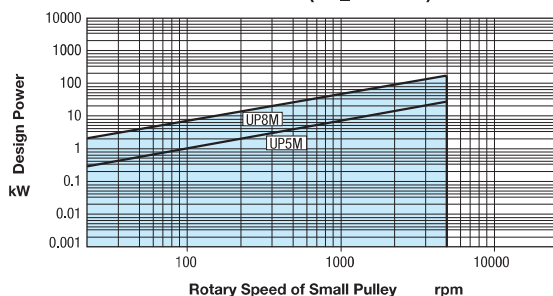


Table 23. Selection Guide Table (2GT·3GT series)

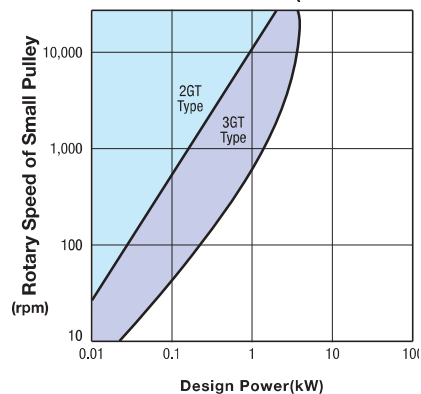
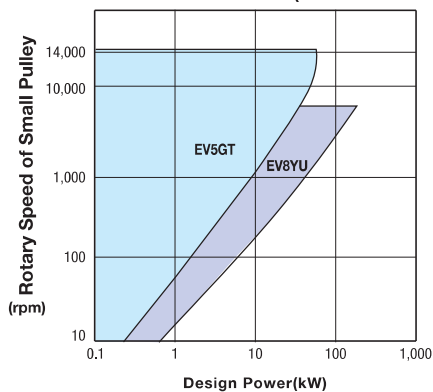


Table 24. Selection Guide Table (EV5GT·EV8YU series)



[Step 4] Determining Number of Teeth of Large and Small Pulley, Belt Length, Inter-Shaft Distance

- (1) Select the number of teeth of large and small pulley from P.1929~1939, which can satisfy the predetermined speed ratio.
(However, note that the number of teeth for small pulley should be larger than the min. number of teeth shown in Table 25.)

$$\text{Speed Ratio} = \frac{\text{Number of Teeth of Large Pulley}}{\text{Number of Teeth of Small Pulley}}$$

Table 25. Min. Number of Teeth of Pulley

Rotary Speed of Small Pulley (rpm)	Type of Belt, Minimum Number of Teeth											
	MXL	XL	L	H	S2M	S3M	S5M	S8M	S14M	MTS8M	T5	T10
900 or Less	12	10	12	14	14	14	14	22	—	24	12	14
Over 900 1200 or Less	12	10	12	16	14	14	16	24	34	24	12	16
Over 1200 1800 or Less	14	11	14	18	16	16	20	26	38	24	14	18
Over 1800 3600 or Less	16	12	16	20	18	18	24	28	40	24	16	20
Over 3600 4800 or Less	—	16	20	24	20	20	26	30	48	24	20	22
Over 4800 10000 or Less	—	—	—	—	20	20	26	—	—	—	—	—

- (2) Determine approx. belt circum. length (Lp') in terms of temporary inter-shaft distance (C'), diameter of large pulley (Dp) and diameter of small pulley (dp).

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

C' : Temporary Inter-shaft Distance

Dp : Pitch Diameter of Large Pulley (mm)

dp : Pitch Diameter of Small Pulley (mm)

Lp' : Approx. Belt Circum. Length (mm)

- (3) Determine a belt circum. length (Lp') that is the nearest value to approx. belt circum. length referring to P.1189~1200, and then calculate the correct inter-shaft distance using the following formula.

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

Dp : Pitch Diameter of Large Pulley (mm)

C : Inter-shaft Distance

dp : Pitch Diameter of Small Pulley (mm)

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

Lp : Belt Circum. Length (mm)

[Step 5] Determining Belt Width

- (1) Calculate an approx. belt width using the following formula, and then select a belt width (Bw:mm) that is the nearest value to the approximated value.

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

Pd: Design Power

Ps: Reference Transmission CapacityUse the Reference Transmission Capacity Table on P.1929~1939.

Km: Engagement Correction Coefficient (Table 26)

Wp: Reference Belt Width (Table 27)

Table 26. Engagement Correction Coefficient (Km)

No. of Teeth Engaged Zm	More than 6	5	4	3	2
Km	1.0	0.8	0.6	0.4	0.2

Table 27. Reference Belt Width (Wp)

Type of Belt	MXL	XL	L	H	S2M	S3M	S5M	S8M	S14M	MTS8M
Reference Belt Width	6.4	25.4	25.4	25.4	4	6	10	60	120	60

Type of Belt	P2M	P3M	P5M	P8M	T5	T10
Reference Belt Width	4	6	10	15	10	10

$$\text{No. of Teeth Engaged (Zm)} = \frac{Zd \cdot \theta}{360^\circ}$$

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

Zd: No. of Teeth of Small Pulley

Dp: Pitch Diameter of Large Pulley (mm)

C: Inter-shaft Distance (mm)

θ : Contact Angle (°)

dp: Pitch Diameter of Small Pulley (mm)

- (2) Check if Design Power (Pd) satisfies the following formula. (If not, select the belt width of one size larger again.)

$$Pd < Ps \cdot Km \cdot Kb$$

Pd: Design Power

Km: Engagement Correction Coefficient

KL: Length Correction Coefficient (Table 29)

$$*2GT \cdot 3GT \cdot EV5GT \cdot EV8YU$$

Ps: Reference Transmission Capacity

Kb: Width Correction Coefficient (Table 28)

$$Pd < Ps \cdot Km \cdot Kb \cdot KL$$

Table 28. Width Correction Coefficient (Kb)

Type of Belt	Belt Width Nominal mm	Width Correction Coefficient Kb
MXL	019	4.8
	025	6.4
	037	9.5
	050	12.7
XL	025	6.4
	031	7.9
	037	9.5
	050	12.7
L	050	12.7
	075	19.1
	100	25.4
	150	38.1
H	075	19.1
	100	25.4
	150	38.1
	200	50.8

Type of Belt	Belt Width Nominal mm	Width Correction Coefficient Kb
P2M	40	4
	60	6
P3M	100	10
	150	15
P5M	100	10
	150	15
P8M	150	15
	250	25
T5	100	10
	150	15
T10	200	20
	250	25
	300	30
	400	40
	500	50

Type of Belt	Belt Width Nominal mm	Width Correction Coefficient Kb
2GT	4	4
	6	6
	9	9
3GT	6	6
	9	9
	15	15
EV5GT	9	9
	12	12
	15	15
EV8YU	15	15
	20	20
	25	25

Table 29. Length Correction Coefficient (KL)

Length Correction Coefficient (KL)	0.80	0.90	1.00	1.10	1.20
2GT Belt Length (mm)	130 or less	131~182	183~280	281~419	420 or less
3GT Belt Length (mm)	190 or less	191~260	261~400	401~599	600 or less
EV5GT Belt Length (mm)	440 or less	441~550	551~800	801~1100	1001 or less
EV8YU Belt Length (mm)	600 or less	601~900	901~1250	1251~1799	1800 or less

[Step 6] Check if Inter-Shaft Distance Adjustment Range is Larger than that in Table 16

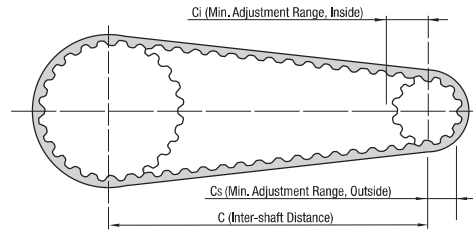


Table 16. Minimum Inter-Axial Distance Adjustment Range

Belt Length	Length Tolerance	Inter-Shaft Distance Tolerance	MXL		XL		L		H		S2M S3M S5M		S8M S14M		MTS8M		P2M P3M P5M		P8M		T5		T10	
			Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs
150 or Less	±0.35	±0.18	3	3	5	3	10	3	15	3	10	2	15	3	15	—	10	3	15	3	5	3	10	3
150 to 250	±0.41	±0.21		3		3		3		2		3		3		3		3						
250 to 380	±0.46	±0.23		5		5		5		2		3		3		3		3						
380 to 500	±0.51	±0.26		10		10		10		2		3		3		3		3						
500 to 750	±0.60	±0.30		10		10		10		3		5		3		5		5						
750 to 1000	±0.66	±0.33		15		15		15		3		5		5		5		5						
1000 to 1250	±0.76	±0.38		15		15		15		5		10		5		10		10						
1250 to 1500	±0.82	±0.41		25		25		25		5		10		10		10		10						
1500 to 1750	±0.86	±0.43		25		25		25		5		10		10		10		10						
1750 to 2000	±0.92	±0.46		30		30		30		30		5		10		10		10						

Belt Length	Length Tolerance	Inter-Shaft Distance Tolerance	2GT		3GT		EV5GT		EV8YU	
			Ci	Cs	Ci	Cs	Ci	Cs	Ci	Cs
150 or Less	± 0.40	± 0.20	3	3	3	3	3	3	3	3
Over 150 250 or Less	± 0.40	± 0.20	3	3	3	3	3	3	3	3
Over 250 380 or Less	± 0.46	± 0.23	3	3	3	3	3	3	3	3
Over 380 500 or Less	± 0.50	± 0.25	3	3	3	3	3	3	3	3
Over 500 750 or Less	± 0.60	± 0.30	4	5	5	5	10	5	20	5
Over 750 1000 or Less	± 0.66	± 0.33	4	5	5	5	10	5	20	5
Over 1000 1250 or Less	± 0.76	± 0.38	10	10	10	10	10	10	10	10
Over 1250 1500 or Less	± 0.82	± 0.41	10	10	10	10	10	10	10	10
Over 1500 1750 or Less	± 0.86	± 0.43	10	10	10	10	10	10	10	10
Over 1750 2000 or Less	± 0.92	± 0.46	10	10	10	10	10	10	10	10

Notes on Operation

- Be careful to avoid the ingress of foreign particles.
When solid foreign particles enter during operation, it can scratch the belt and adversely affect the engagement of the belt and the pulley.
In some cases, the pulley may disengage, land on the teeth of the pulley, and be cut.
- Avoid Adhesion of oil.
Oil on the rubber timing belt may wet and expand it, drastically shortening its service life.
(a) Take special care when using solvent type oil.
(b) A small amount of lubricant or grease, however, rarely causes a trouble.
- Do not use the belt in a humid atmosphere.
- Please use a well-ventilated safety cover.
- The service life of the belt, when used at a high temperature (80°C or more), can be drastically shortened.

Reference Belt Width Tolerance

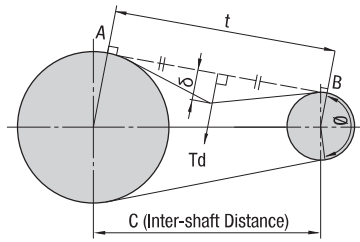
(Unit: mm)

Belt Width	Belt Length			
	351 or Less	351 to 840	840 to 1680	1680 or More
10 or Less	+0.3 -0.6	+0.3 -0.6	+0.3 -0.6	+0.6 -0.6
10 to 40	+0.6 -0.6	+0.6 -0.6	+0.6 -0.6	+0.6 -0.6
40 to 50	+0.6 -0.6	+0.6 -0.6	+1.0 -1.0	+1.0 -1.3

Cautions on Use of Belt

How to Extend Belt

When the belt is too taut, its service life can be shortened, while when it is not taut enough, the belt may (jump off) the groove of the pulley due to an activating torque or shock load. Keep the belt stationary and optimize its tautness. The warp load necessary to provide the optimum tautness can be calculated from values representing the belt, its width and the span in equation A below.



$$T_d = \frac{T_i + \frac{t \times Y}{L_p}}{16} \quad \text{Equation A}$$

Td: Load N Needed for Deflection d at the Center of Span t

Ti : Initial Tension N From Table 31

Lp : Length of the Belt (mm)

Y : Correction Coefficient From Table 31

C : Inter-shaft Distance (mm)

δ : Deflection (mm) δ=0.016t

dp : Diameter of the Pitch Circle of the Small Pulley (mm)

t : Span Length (mm)

Dp : Diameter of the Pitch Circle of the Large Pulley (mm)

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

Table 31. Initial Tension (Ti) and Correction Coefficient (Y)

Type	Ti-Y	Belt Nominal Width Belt Width (mm)									
		019	025	031	037	050	075	100	150	200	
MXL	Ti	9.8	13.7	—	21.6	29.9	—	—	—	—	
	N	5.8	8.2	—	12.9	18.0	—	—	—	—	
Coefficient Y		—	—	—	—	—	—	—	—	—	
XL	Ti	—	29	37	44	67	—	—	—	—	
	N	—	18	25	32	51	—	—	—	—	
Coefficient Y		—	3.8	5.4	7.6	11.8	—	—	—	—	
L	Ti	—	—	—	—	76	125	175	273	—	
	N	—	—	—	—	52	87	123	191	—	
Coefficient Y		—	—	—	—	44.1	75.5	107	165	—	
H	Ti	—	—	—	—	—	293	421	646	889	
	N	—	—	—	—	—	222	312	486	668	
Coefficient Y		—	—	—	—	—	142	205	317	423	

Type	Ti-Y	Belt Nominal Width Belt Width (mm)			
		60	100	150	250
P2M	Ti	13	—	—	—
	N	9.8	—	—	—
Coefficient Y		0.9	—	—	—
P3M	Ti	—	46	74	—
	N	—	34	55	—
Coefficient Y		—	1.9	3.0	—
P5M	Ti	—	147	225.4	—
	N	—	107.8	166.6	—
Coefficient Y		—	56.9	82.4	—
P8M	Ti	—	—	294	509.6
	N	—	—	225.4	382.2
Coefficient Y		—	—	135	239

Type	Ti-Y	Belt Nominal Width Belt Width (mm)							
		40	60	100	150	250	300	400	600
S2M	Ti	7.8	12.7	22.6	—	—	—	—	—
	N	5.9	9.8	16.7	—	—	—	—	—
Coefficient Y		9.8	15.7	27.4	—	—	—	—	—
S3M	Ti	—	26	46	73	—	—	—	—
	N	—	20	34	54	—	—	—	—
Coefficient Y		—	26.5	46.1	75.5	—	—	—	—
S5M	Ti	—	—	77	124	221	—	—	—
	N	—	—	58	93	166	—	—	—
Coefficient Y		—	—	52.8	85.5	151.0	—	—	—
S8M MTS8M	Ti	—	—	—	294	510	628	873	—
	N	—	—	—	226	382	470	657	—
Coefficient Y		—	—	—	98	196	235	333	—
S14M	Ti	—	—	—	—	—	1226	1912	—
	N	—	—	—	—	—	1108	1726	—
Coefficient Y		—	—	—	—	—	686	1059	—

Type	Ti-Y	Belt Nominal Width Belt Width (mm)							
		100	150	200	250	300	400	500	
T5	Ti	37.3	59	85	106	—	—	—	
	N	24.5	39	59	74	—	—	—	
Coefficient Y		16.7	26.5	38.2	47.5	—	—	—	
T10	Ti	—	162	235	294	363	500	628	
	N	—	108	157	196	245	333	422	
Coefficient Y		—	71.6	104.9	130.4	163.8	222.6	281.5	

Type	Ti-Y	Belt Nominal Width Belt Width (mm)						
		4	6	9	12	15	20	25
2GT	Ti	12.2	20.5	32.8	—	—	—	—
	N	9.4	15.8	25.2	—	—	—	—
Coefficient Y		—	—	—	—	—	—	—
3GT	Ti	—	38	57	—	96	—	—
	N	—	29	44	—	74	—	—
Coefficient Y		—	—	—	—	—	—	—
EV5GT	Ti	—	—	92	127	163	—	—
	N	—	—	71	98	125	—	—
Coefficient Y		—	—	—	—	—	—	—
EV8YU	Ti	—	—	—	—	273	364	455
	N	—	—	—	—	210	280	350
Coefficient Y		—	—	—	—	—	—	—

Selection of Transmission Timing Belts 4 -Transmission Capacity Table-

Table 32. Reference Transmission Capacity of MXL Ps -Nominal Width of Belts 025(6.4mm)- (W)

No. of Teeth of Small Pulley	Diameter of the Pitch Circle(mm)	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40
		7.76	9.06	9.70	10.35	11.64	12.94	14.23	15.52	16.17	16.82	18.11	19.40	20.70	23.29	25.97
950	9.0	10.5	11.3	12.0	13.5	15.0	16.5	18.0	18.8	19.6	21.1	22.6	24.1	27.1	30.1	
1160	11.0	12.8	13.8	14.7	16.5	18.4	20.2	22.0	23.0	23.9	25.7	27.6	29.4	33.1	36.7	
1425		15.8	16.9	18.0	20.3	22.6	24.8	27.1	28.2	29.3	31.6	33.9	36.1	40.6	45.1	
1750		19.4	20.8	22.2	24.9	27.7	30.5	33.3	34.7	36.0	38.8	41.6	44.3	49.9	55.4	
2850			33.9	36.1	40.6	45.1	49.6	54.1	56.4	58.6	63.1	67.6	72.1	81.0	90.0	
3450			41.0	43.7	49.2	54.6	60.1	65.5	68.2	70.9	76.3	81.7	87.1	97.9	108.6	
100	0.9	1.1	1.1	1.2	1.4	1.5	1.7	1.9	1.9	2.0	2.2	2.3	2.5	2.8	3.1	
200	1.9	2.2	2.3	2.5	2.8	3.1	3.4	3.8	3.9	4.1	4.4	4.7	5.0	5.7	6.3	
300	2.8	3.3	3.5	3.8	4.2	4.7	5.2	5.7	5.9	6.1	6.6	7.1	7.6	8.5	9.5	
400	3.8	4.4	4.7	5.0	5.7	6.3	6.9	7.6	7.9	8.2	8.8	9.5	10.1	11.4	12.6	
500	4.7	5.5	5.9	6.3	7.1	7.9	8.7	9.5	9.9	10.3	11.1	11.9	12.6	14.2	15.8	
600	5.7	6.6	7.1	7.6	8.5	9.5	10.4	11.4	11.9	12.3	13.3	14.2	15.2	17.1	19.0	
700	6.6	7.7	8.3	8.8	10.0	11.1	12.2	13.3	13.8	14.4	15.5	16.6	17.7	19.9	22.2	
800	7.6	8.8	9.5	10.1	11.4	12.6	13.9	15.2	15.8	16.5	17.7	19.0	20.3	22.8	25.3	
900	8.5	10.0	10.7	11.4	12.8	14.2	15.7	17.1	17.8	18.5	19.9	21.4	22.8	25.7	28.5	
1000	9.5	11.1	11.9	12.6	14.2	15.8	17.4	19.0	19.8	20.6	22.2	23.8	25.3	28.5	31.7	
1100	10.4	12.2	13.0	13.9	15.7	17.4	19.2	20.9	21.8	22.6	24.4	26.1	27.9	31.4	34.8	
1200	11.4	13.3	14.2	15.2	17.1	19.0	20.9	22.8	23.8	24.7	26.6	28.5	30.4	34.2	38.0	
1300		14.4	15.4	16.5	18.5	20.6	22.6	24.7	25.7	26.8	28.8	30.9	32.9	37.1	41.2	
1400		15.5	16.6	17.7	19.9	22.2	24.4	26.6	27.7	28.8	31.0	33.3	35.5	39.9	44.3	
1500		16.6	17.8	19.0	21.4	23.8	26.1	28.5	29.7	30.9	33.3	35.6	38.0	42.8	47.5	
1600		17.7	19.0	20.3	22.8	25.3	27.9	30.4	31.7	32.9	35.5	38.0	40.5	45.6	50.7	
1700		18.8	20.2	21.5	24.2	26.9	29.6	32.3	33.7	35.0	37.7	40.4	43.1	48.5	53.8	
1800		19.9	21.4	22.8	25.7	28.5	31.4	34.2	35.6	37.1	39.9	42.8	45.6	51.3	57.0	
2000			23.8	25.3	28.5	31.7	34.8	38.0	39.6	41.2	44.3	47.5	50.7	57.0	63.3	
2200			26.1	27.9	31.4	34.8	38.3	41.8	43.6	45.3	48.8	52.2	55.7	62.7	69.6	
2400			28.5	30.4	34.2	38.0	41.8	45.6	47.5	49.4	53.2	57.0	60.8	68.3	75.9	
2600			30.9	32.9	37.1	41.2	45.3	49.4	51.5	53.5	57.6	61.7	65.8	74.0	82.1	
2800				35.5	39.9	44.3	48.8	53.2	55.4	57.6	62.0	66.4	70.8	79.6	88.4	
3000				38.0	42.8	47.5	52.2	57.0	59.3	61.7	66.4	71.2	75.9	85.3	94.6	
3200				40.5	45.6	50.7	55.7	60.8	63.3	65.8	70.8	75.9	80.9	90.9	100.9	
3400				43.1	48.5	53.8	59.2	64.5	67.2	69.9	75.2	80.6	85.9	96.5	107.1	
3600				45.6	51.3	57.0	62.7	68.3	71.2	74.0	79.6	85.3	90.9	102.1	113.3	
3800					54.1	60.1	66.1	72.1	75.1	78.1	84.0	90.0	95.9	107.7	119.5	
4000					57.0	63.3	69.6	75.9	79.0	82.1	88.4	94.6	100.9	113.3	125.6	
4200					59.8	66.4	73.0	79.6	82.9	86.2	92.8	99.3	105.8	118.8	131.8	
4400					62.7	69.6	76.5	83.4	86.8	90.3	97.1	104.0	110.8	124.4	137.9	
4600					65.5	72.7	79.9	87.1	90.7	94.3	101.5	108.6	115.8	129.9	144.0	
4800					68.3	75.9	83.4	90.9	94.6	98.4	105.8	113.3	120.7	135.4	150.0	

*Values in the table above are for nominal belt width 025(6.4mm). For other belt widths, those values should be multiplied by the width correction coefficient, Kb, shown in Table 28.

Table 33. Reference Transmission Capacity of XL Ps -Nominal Width of Belts 100(25.4mm)- (kW)

Rotary Speed of Small Pulley(rpm)	No. of Teeth of Small Pulley	Diameter of the Pitch Circle(mm)																
		10	11	12	14	15	16	18	19	20	21	22	24	25	26	28	30	
		16.17	17.79	19.40	22.64	24.26	25.87	29.11	30.72	32.34	33.96	35.57	38.81	40.43	42.04	45.28	48.51	
950		0.14	0.16	0.17	0.20	0.21	0.23	0.26	0.27	0.29	0.30	0.32	0.35	0.36	0.38	0.41	0.43	
1160		0.17	0.19	0.21	0.25	0.26	0.28	0.32	0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.50	0.53	
1425				0.26	0.30	0.32	0.35	0.39	0.41	0.43	0.46	0.48	0.52	0.54	0.57	0.61	0.65	
1750				0.32	0.37	0.40	0.43	0.48	0.51	0.53	0.56	0.59	0.64	0.67	0.69	0.75	0.80	
2850				0.52	0.61	0.65	0.07	0.78	0.82	0.87	0.91	0.95	1.04	1.08	1.12	1.21	1.29	
3450				0.63	0.74	0.79	0.84	0.94	1.00	1.05	1.10	1.15	1.25	1.30	1.35	1.45	1.55	
100		0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	
200		0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.09	
300		0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.13	
400		0.06	0.06	0.07	0.08	0.09	0.09	0.11	0.11	0.12	0.12	0.13	0.14	0.15	0.16	0.17	0.18	
500		0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.16	0.18	0.19	0.20	0.21	0.23	
600		0.09	0.10	0.11	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.20	0.22	0.23	0.24	0.25	0.27	
700		0.10	0.11	0.12	0.15	0.16	0.17	0.19	0.20	0.21	0.22	0.23	0.25	0.27	0.28	0.30	0.32	
800		0.12	0.13	0.14	0.17	0.18	0.19	0.22	0.23	0.24	0.25	0.27	0.29	0.30	0.32	0.34	0.37	
900		0.13	0.15	0.16	0.19	0.20	0.22	0.25	0.26	0.27	0.29	0.30	0.33	0.34	0.36	0.38	0.41	
1000		0.15	0.16	0.18	0.21	0.23	0.24	0.27	0.29	0.30	0.32	0.33	0.37	0.38	0.40	0.43	0.46	
1100		0.16	0.18	0.20	0.23	0.25	0.27	0.30	0.32	0.33	0.35	0.37	0.40	0.42	0.44	0.47	0.50	
1200		0.18	0.20	0.22	0.25	0.27	0.29	0.33	0.35	0.37	0.38	0.40	0.44	0.46	0.48	0.51	0.55	
1300				0.24	0.28	0.30	0.32	0.36	0.38	0.40	0.42	0.44	0.48	0.50	0.52	0.56	0.59	
1400				0.25	0.30	0.32	0.34	0.38	0.41	0.43	0.45	0.47	0.51	0.53	0.56	0.60	0.64	
1500				0.27	0.32	0.34	0.37	0.41	0.43	0.46	0.48	0.50	0.55	0.57	0.59	0.64	0.69	
1600				0.29	0.34	0.37	0.39	0.44	0.46	0.49	0.51	0.54	0.59	0.61	0.63	0.68	0.73	
1700				0.31	0.36	0.39	0.41	0.47	0.49	0.52	0.54	0.57	0.62	0.65	0.67	0.73	0.78	
1800				0.33	0.38	0.41	0.44	0.49	0.52	0.55	0.58	0.60	0.66	0.69	0.71	0.77	0.82	
2000				0.37	0.43	0.46	0.49	0.55	0.58	0.61	0.64	0.67	0.73	0.76	0.79	0.85	0.91	
2200				0.40	0.47	0.50	0.54	0.60	0.64	0.67	0.70	0.74	0.80	0.84	0.87	0.94	1.00	
2400				0.44	0.51	0.55	0.59	0.66	0.70	0.73	0.77	0.80	0.88	0.91	0.95	1.02	1.09	
2600				0.48	0.56	0.59	0.63	0.71	0.75	0.79	0.83	0.87	0.95	0.99	1.03	1.10	1.18	
2800				0.51	0.60	0.64	0.68	0.77	0.81	0.85	0.89	0.94	1.02	1.06	1.10	1.19	1.27	
3000				0.55	0.64	0.69	0.73	0.82	0.87	0.91	0.96	1.00	1.09	1.14	1.18	1.27	1.35	
3200				0.59	0.68	0.73	0.78	0.88	0.92	0.97	1.02	1.07	1.16	1.21	1.26	1.35	1.44	
3400				0.62	0.73	0.78	0.83	0.93	0.98	1.03	1.08	1.13	1.23	1.28	1.33	1.43	1.53	
3600				0.66	0.77	0.82	0.88	0.98	1.04	1.09	1.14	1.20	1.30	1.35	1.41	1.51	1.61	
3800					0.87	0.92	1.04	1.09	1.15	1.21	1.26	1.37	1.43	1.48	1.59	1.69	1.78	
4000					0.91	0.97	1.09	1.15	1.21	1.27	1.33	1.44	1.50	1.55	1.67	1.78	1.86	
4200					0.96	1.02	1.14	1.21	1.27	1.33	1.39	1.51	1.57	1.63	1.74	1.86		
4400					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					1.05	1.12	1.25	1.32	1.38	1.45	1.52	1.64	1.71	1.77	1.90	2.02		
4800					1.09	1.16	1.30	1.37	1.44	1.51	1.58	1.71	1.78	1.84	1.97	2.10		

Selection is easy with Timing Pulleys and Belts automatic calculation tool available at:
http://fawos.misumi.jp/FA_WEB/pulley/

Table 34. Reference Transmission Capacity of L Ps -Nominal Width of Belts 100(25.4mm)- (kW)

Rotary Speed of Small Pulley (rpm)	No. of Teeth of Small Pulley	Diameter of the Pitch Circle (mm)	12	14	15	16	18	19	20	21	22	24	25	26	28	30	32	36	40	48
			36.38	42.45	45.48	48.51	54.57	57.61	60.64	63.67	66.70	72.77	75.80	78.83	84.89	90.96	97.02	109.15	121.28	145.53
725			0.33	0.39	0.42	0.44	0.50	0.53	0.56	0.58	0.61	0.67	0.70	0.72	0.78	0.83	0.89	1.00	1.11	1.33
870			0.40	0.47	0.50	0.53	0.60	0.63	0.67	0.70	0.73	0.80	0.83	0.87	0.93	1.00	1.07	1.20	1.33	1.59
950			0.44	0.51	0.55	0.58	0.66	0.69	0.73	0.77	0.80	0.87	0.91	0.95	1.02	1.09	1.16	1.31	1.45	1.73
1160			0.53	0.62	0.67	0.71	0.80	0.85	0.89	0.93	0.98	1.07	1.11	1.15	1.24	1.33	1.41	1.59	1.76	2.09
1425				0.77	0.82	0.87	0.98	1.04	1.09	1.14	1.20	1.31	1.36	1.41	1.52	1.62	1.73	1.93	2.13	2.52
1750				0.94	1.01		1.07	1.20	1.27	1.34	1.40	1.47	1.59	1.66	1.72	1.85	1.97	2.10	2.34	2.58
2850						1.73	1.93	2.03	2.13	2.23	2.33	2.52	2.62	2.71	2.89	3.07	3.24	3.56	3.84	4.31
3450						2.07	2.31	2.43	2.54	2.66	2.77	2.99	3.09	3.19	3.39	3.58	3.76	4.07	4.33	4.67
100			0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.12	0.13	0.15	0.18
200			0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.23	0.24	0.27	0.30	0.37
300			0.13	0.16	0.17	0.18	0.20	0.22	0.23	0.24	0.25	0.27	0.29	0.30	0.32	0.34	0.37	0.41	0.46	0.55
400			0.18	0.21	0.23	0.24	0.27	0.29	0.30	0.32	0.34	0.37	0.38	0.40	0.43	0.46	0.49	0.55	0.61	0.74
500			0.23	0.27	0.29	0.30	0.34	0.36	0.38	0.40	0.42	0.46	0.48	0.50	0.54	0.58	0.61	0.69	0.77	0.92
600			0.27	0.32	0.34	0.37	0.41	0.44	0.46	0.48	0.51	0.55	0.58	0.60	0.64	0.69	0.74	0.83	0.92	1.10
700			0.32	0.37	0.40	0.43	0.48	0.51	0.54	0.56	0.59	0.64	0.67	0.70	0.75	0.81	0.86	0.97	1.07	1.28
800			0.37	0.43	0.46	0.49	0.55	0.58	0.61	0.64	0.68	0.74	0.77	0.80	0.86	0.92	0.98	1.10	1.22	1.46
900			0.41	0.48	0.52	0.55	0.62	0.66	0.69	0.73	0.76	0.83	0.86	0.90	0.97	1.03	1.10	1.24	1.37	1.64
1000			0.46	0.54	0.58	0.61	0.69	0.73	0.77	0.81	0.84	0.92	0.96	1.00	1.07	1.15	1.22	1.37	1.52	1.81
1100			0.51	0.59	0.63	0.68	0.76	0.80	0.84	0.89	0.93	1.01	1.05	1.09	1.18	1.26	1.34	1.51	1.67	1.99
1200			0.55	0.64	0.69	0.74	0.83	0.87	0.92	0.97	1.01	1.10	1.15	1.19	1.28	1.37	1.46	1.64	1.81	2.15
1300				0.70	0.75	0.80	0.90	0.95	1.00	1.05	1.09	1.19	1.24	1.29	1.39	1.48	1.58	1.77	1.96	2.32
1400				0.75	0.81	0.86	0.97	1.02	1.07	1.12	1.18	1.28	1.34	1.39	1.49	1.59	1.70	1.90	2.10	2.48
1500				0.81	0.86	0.92	1.03	1.09	1.15	1.20	1.26	1.37	1.43	1.48	1.59	1.70	1.81	2.03	2.24	2.64
1600				0.86	0.92	0.98	1.10	1.16	1.22	1.28	1.34	1.46	1.52	1.58	1.70	1.81	1.93	2.15	2.38	2.80
1700				0.91	0.98	1.04	1.17	1.23	1.30	1.36	1.42	1.55	1.61	1.68	1.80	1.92	2.04	2.28	2.51	2.95
1800				0.97	1.03		1.10	1.24	1.31	1.37	1.44	1.51	1.64	1.70	1.77	1.90	2.03	2.15	2.40	2.64
1900						1.16	1.31	1.38	1.45	1.52	1.59	1.73	1.80	1.86	2.00	2.13	2.27	2.52	2.77	3.24
2000						1.22	1.37	1.45	1.52	1.59	1.67	1.81	1.89	1.96	2.10	2.24	2.38	2.64	2.90	3.38
2200						1.34	1.51	1.59	1.67	1.75	1.83	1.99	2.06	2.14	2.29	2.44	2.59	2.87	3.14	3.64
2400						1.46	1.64	1.73	1.81	1.90	1.99	2.15	2.24	2.32	2.48	2.64	2.80	3.10	3.38	3.87
2500						1.52	1.70	1.80	1.89	1.97	2.06	2.24	2.32	2.41	2.58	2.74	2.90	3.20	3.49	3.98
2600						1.58	1.77	1.86	1.96	2.05	2.14	2.32	2.41	2.50	2.67	2.84	3.00	3.31	3.59	4.09
2800						1.70	1.90	2.00	2.10	2.20	2.29	2.48	2.58	2.67	2.85	3.02	3.19	3.51	3.80	4.27
3000						1.81	2.03	2.13	2.24	2.34	2.44	2.64	2.74	2.84	3.02	3.20	3.38	3.70	3.98	4.43
3200						1.93	2.15	2.27	2.38	2.48	2.59	2.80	2.90	3.00	3.19	3.38	3.55	3.87	4.15	4.56
3400						2.04	2.28	2.40	2.51	2.62	2.73	2.95	3.05	3.16	3.35	3.54	3.72	4.04	4.30	4.65
3600						2.15	2.40	2.52	2.64	2.76	2.87	3.10	3.20	3.31	3.51	3.70	3.87	4.18	4.43	4.71
3800						2.52	2.65	2.77	2.89	3.01	3.24	3.35	3.45	3.56	3.66	3.84	4.02	4.31	4.54	4.73
4000						2.64	2.77	2.90	3.02	3.14	3.38	3.49	3.59	3.80	3.98	4.15	4.43	4.62	4.72	
4200						2.76	2.89	3.02	3.15	3.27	3.51	3.62	3.73	3.93	4.11	4.27	4.53	4.69	4.66	
4400						2.87	3.01	3.14	3.27	3.40	3.64	3.75	3.85	4.05	4.23	4.38	4.61	4.72	4.56	
4600						2.99	3.13	3.26	3.39	3.52	3.76	3.87	3.97	4.17	4.33	4.48	4.67	4.73	4.42	
4800						3.10	3.24	3.38	3.51	3.64	3.87	3.98	4.09	4.27	4.43	4.56	4.71	4.72	4.23	

* The circumferential speed of pulley is 33(m/s) or more; a dynamic balance for the pulley is essential.

* Values in the table above are for nominal belt width 100(25.4mm). For other belt widths, those values should be multiplied by the width correction coefficient, Kb, shown in Table 28.

Table 35. Reference Transmission Capacity of H Ps -Nominal Width of Belts 100(25.4mm)- (kW)

Rotary Speed of Small Pulley (rpm)	No. of Teeth of Small Pulley	Diameter of the Pitch Circle (mm)																	
		14	15	16	18	19	20	21	22	24	25	26	28	30	32	36	40	48	
		56.60	60.64	64.68	72.77	76.81	80.85	84.89	88.94	97.02	101.06	105.1	113.19	121.28	129.36	145.53	161.70	194.04	
725		1.33	1.43	1.52	1.71	1.81	1.90	2.00	2.09	2.28	2.38	2.47	2.66	2.85	3.04	3.41	3.79	4.53	
870		1.60	1.71	1.83	2.05	2.17	2.28	2.40	2.51	2.74	2.85	2.96	3.19	3.41	3.64	4.08	4.53	5.41	
950			1.99	2.24	2.37	2.49	2.61	2.74	2.99	3.11	3.23	3.48	3.72	3.97	4.45	4.93	5.89		
1160				2.43	2.74	2.89	3.04	3.19	3.34	3.64	3.79	3.94	4.23	4.53	4.82	5.41	5.99	7.12	
1425					3.35	3.54	3.72	3.91	4.09	4.45	4.63	4.81	5.17	5.53	5.89	6.59	7.27	8.61	
1750					4.11	4.33	4.55	4.78	5.00	5.44	5.66	5.87	6.31	6.73	7.16	7.98	8.79	10.32	
2850							7.27	7.61	7.95	8.61	8.93	9.25	9.87	10.48	11.06	12.16	13.15	14.80	
3450							8.68	9.07	9.45	10.19	10.55	10.91	11.59	12.24	12.85	13.95	14.87	16.09	
100		0.18	0.19	0.21	0.23	0.25	0.26	0.27	0.28	0.31	0.32	0.34	0.36	0.39	0.42	0.47	0.52	0.63	
200		0.36	0.39	0.42	0.47	0.50	0.52	0.55	0.57	0.63	0.65	0.68	0.73	0.79	0.84	0.94	1.05	1.26	
300		0.55	0.59	0.63	0.71	0.75	0.79	0.83	0.86	0.94	0.98	1.02	1.10	1.18	1.26	1.42	1.57	1.89	
400		0.73	0.79	0.84	0.94	1.00	1.05	1.10	1.15	1.26	1.31	1.36	1.47	1.57	1.68	1.89	2.10	2.52	
500		0.92	0.98	1.05	1.18	1.25	1.31	1.38	1.44	1.57	1.64	1.71	1.84	1.97	2.10	2.36	2.62	3.14	
600		1.10	1.18	1.26	1.42	1.50	1.57	1.65	1.73	1.89	1.97	2.05	2.20	2.36	2.52	2.83	3.14	3.76	
700		1.29	1.38	1.47	1.65	1.75	1.84	1.93	2.02	2.20	2.30	2.39	2.57	2.75	2.93	3.30	3.66	4.38	
800		1.47	1.57	1.68	1.89	1.99	2.10	2.20	2.31	2.52	2.62	2.73	2.93	3.14	3.35	3.76	4.17	4.99	
900		1.65	1.77	1.89	2.13	2.24	2.36	2.48	2.60	2.83	2.95	3.06	3.30	3.53	3.76	4.22	4.68	5.59	
1000				2.10	2.36	2.49	2.62	2.75	2.88	3.14	3.27	3.40	3.66	3.92	4.17	4.68	5.19	6.18	
1100				2.31	2.60	2.74	2.88	3.02	3.17	3.45	3.59	3.74	4.02	4.30	4.58	5.14	5.69	6.77	
1200				2.52	2.83	2.99	3.14	3.30	3.45	3.76	3.92	4.07	4.38	4.68	4.99	5.59	6.18	7.35	
1300					3.06	3.23	3.40	3.57	3.74	4.07	4.24	4.40	4.73	5.06	5.39	6.03	6.67	7.91	
1400					3.30	3.48	3.66	3.84	4.02	4.38	4.55	4.73	5.09	5.44	5.79	6.48	7.16	8.47	
1500					3.53	3.72	3.92	4.11	4.30	4.68	4.87	5.06	5.44	5.81	6.18	6.91	7.63	9.01	
1600					3.76	3.97	4.17	4.38	4.58	4.99	5.19	5.39	5.79	6.18	6.57	7.35	8.10	9.55	
1700					3.99	4.21	4.43	4.64	4.86	5.29	5.50	5.71	6.13	6.55	6.96	7.77	8.56	10.07	
1800					4.22	4.45	4.68	4.91	5.14	5.59	5.81	6.03	6.48	6.91	7.35	8.19	9.01	10.57	
1900							4.93	5.17	5.41	5.89	6.12	6.35	6.82	7.27	7.73	8.61	9.46	11.06	
2000							5.19	5.44	5.69	6.18	6.43	6.67	7.16	7.63	8.10	9.01	9.89	11.53	
2100								5.44	5.70	5.96	6.48	6.73	6.99	7.49	7.98	8.47	9.41	10.32	
2200								5.69	5.96	6.23	6.77	7.03	7.30	7.82	8.33	8.83	9.81	10.73	
2300								5.94	6.22	6.50	7.06	7.33	7.61	8.15	8.68	9.19	10.19	11.14	
2400								6.18	6.48	6.77	7.35	7.63	7.91	8.47	9.01	9.55	10.57	11.53	
2500								6.43	6.73	7.03	7.63	7.93	8.22	8.79	9.35	9.89	10.94	11.91	
2600								6.67	6.99	7.30	7.91	8.22	8.52	9.10	9.68	10.24	11.30	12.28	
2800								7.16	7.49	7.82	8.47	8.79	9.10	9.72	10.32	10.90	11.99	12.99	
3000								7.63	7.98	8.33	9.01	9.35	9.68	10.32	10.94	11.53	12.64	13.63	
3200								8.10	8.47	8.83	9.54	9.89	10.24	10.90	11.53	12.12	13.25	14.22	
3400								8.56	8.95	9.33	10.07	10.42	10.78	11.45	12.10	12.71	13.81	14.75	
3600									9.01	9.41	9.81	10.57	10.94	11.30	11.99	12.64	13.25	14.33	
3800										10.28	11.06	11.44	11.80	12.50	13.15	13.75	14.80	15.60	
4000										10.73	11.53	11.91	12.28	12.99	13.63	14.22	15.21	15.92	
4200										11.18	11.99	12.37	12.75	13.44	14.08	14.65	15.56	16.16	
4400										11.61	12.43	12.81	13.19	13.87	14.49	15.03	15.86	16.31	
4600										12.03	12.85	13.23	13.60	14.28	14.87	15.37	16.09	16.39	
4800										12.43	13.25	13.63	13.99	14.65	15.21	15.67	16.26	16.37	

Selection of Transmission Timing Belts 5 -Transmission Capacity Table-

Table 36. Reference Transmission Capacity of S2M Ps -Belt Width 4mm- (W)

No. of Teeth of Small Pulley		14	15	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	8.91	9.55	10.19	11.46	12.73	14.01	15.28	15.92	16.55	17.83	19.10	20.37	22.92	25.46	28.01	30.56	31.83	38.20
		870	11	12	14	16	19	21	23	25	26	28	30	33	37	41	46	50	52
1160	13	15	17	20	23	26	29	31	32	35	38	41	46	52	57	62	65	75	
1750	17	20	22	27	31	35	39	41	43	47	51	55	63	70	78	85	98	105	
3500	26	30	34	41	49	56	63	67	70	77	83	90	102	115	126	138	143	170	
50	1	1	1	2	2	2	2	2	2	3	3	3	3	3	4	4	5	5	6
100	2	2	2	3	3	4	4	4	4	5	5	5	6	6	7	8	8	9	11
150	3	3	3	4	4	5	5	6	6	7	7	8	8	9	10	11	12	12	15
200	4	4	4	5	6	7	7	8	8	9	9	10	11	13	14	15	16	19	
250	4	5	5	6	7	8	8	9	10	10	11	12	14	15	17	18	19	23	
300	5	5	6	7	8	9	10	11	11	12	13	14	16	18	19	21	22	26	
350	6	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	25	30	
400	6	7	8	9	10	11	13	13	14	15	16	18	20	22	25	27	28	33	
450	7	8	8	10	11	13	14	15	15	17	18	19	22	25	27	30	31	37	
500	7	8	9	11	12	14	15	16	17	18	20	21	24	27	29	32	33	40	
550	8	9	10	11	13	15	16	17	18	20	21	23	26	29	32	35	36	43	
600	8	9	10	12	14	16	18	18	19	21	23	24	28	31	34	37	39	46	
650	9	10	11	13	15	17	19	20	21	22	24	26	30	33	36	40	41	49	
700	9	10	12	14	16	18	20	21	22	24	26	28	31	35	39	42	44	52	
750	10	11	12	14	17	19	21	22	23	25	27	29	33	37	41	44	46	55	
800	12	13	15	17	20	22	24	25	26	28	31	33	36	39	43	47	49	58	
850	11	12	13	16	18	21	23	24	25	28	30	32	36	41	45	49	51	61	
900	11	13	14	16	19	22	24	25	26	29	31	34	38	43	47	51	53	63	
950	12	13	14	17	20	22	25	26	28	30	33	35	40	44	49	53	56	66	
1000	12	14	15	18	21	23	26	27	29	31	34	36	41	46	51	55	58	69	
1100	13	14	16	19	22	25	28	29	31	34	36	39	44	50	55	60	62	74	
1200	14	15	17	20	24	27	30	31	33	36	39	42	47	53	58	64	66	79	
1300	14	16	18	22	25	28	32	33	35	38	41	44	50	56	62	68	71	84	
1400	15	17	19	23	26	30	33	35	37	40	44	47	53	60	66	72	75	89	
1500	16	18	20	24	28	31	35	37	39	42	46	49	56	63	69	75	79	94	
1600	17	19	21	25	29	33	37	39	41	44	48	52	59	66	73	79	82	98	
1700	17	19	22	26	30	34	39	41	43	46	50	54	62	69	76	83	86	103	
1800	18	20	23	27	31	36	40	42	44	48	52	56	64	72	79	86	90	107	
1900	18	21	23	28	33	37	42	44	46	50	55	59	67	75	82	90	94	111	
2000	19	22	24	29	34	39	43	46	48	52	57	61	69	78	85	93	97	115	
2200	20	23	26	31	36	41	46	49	51	56	61	65	74	83	92	100	104	124	
2400	21	24	27	33	38	44	49	52	54	59	64	69	79	88	97	106	111	131	
2600	22	25	28	35	40	46	52	55	57	63	68	73	84	93	103	112	117	139	
2800	23	26	30	36	42	49	55	57	60	66	72	77	88	98	109	118	123	146	
3000	24	28	31	38	44	51	57	60	63	69	75	81	92	103	114	124	129	153	
3200	25	29	32	39	46	53	60	63	66	72	79	85	96	108	119	130	135	160	
3400	26	30	33	41	48	55	62	65	69	75	82	88	100	112	124	135	140	167	
3600	26	30	34	42	50	57	64	68	71	78	85	92	104	117	129	140	146	173	
3800	27	31	35	44	51	59	67	70	74	81	88	95	108	121	133	145	151	179	
4000	28	32	36	45	53	61	69	73	76	84	91	98	112	125	138	150	156	185	
4500	29	34	39	48	57	66	74	78	82	90	98	106	121	135	149	162	168	199	
5000	30	36	41	51	60	70	79	83	88	96	105	113	129	144	159	173	179	211	
5500	32	37	43	53	63	74	83	88	93	102	111	119	136	152	168	183	190	223	
6000	33	38	44	56	66	77	87	92	97	107	117	126	143	160	176	192	199	233	
6500	33	40	46	58	69	80	91	97	102	112	122	132	150	168	184	200	208	243	
7000	34	41	47	60	72	83	95	100	106	117	127	137	156	174	192	208	216	251	
7500	34	41	48	61	74	86	98	104	110	121	132	142	162	181	198	215	223	259	
8000	35	42	49	63	76	89	101	107	113	125	136	147	167	187	205	222	229	265	
8500	35	43	50	64	78	91	104	110	116	128	140	151	172	192	210	227	235	270	
9000	35	43	51	65	80	94	107	113	119	132	144	155	177	197	215	232	240	275	

*Values in the table above are for 4mm belt width. For other belt widths, those values should be multiplied by the width correction coefficient, Kb, shown in Table 28.

Table 37. Reference Transmission Capacity of S3M Ps -Belt Width 6mm- (W)

No. of Teeth of Small Pulley		14	15	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	13.37	14.32	15.28	17.19	19.10	21.01	22.92	23.87	24.83	26.74	28.65	30.56	34.38	38.20	42.02	45.84	47.75	57.30
870	53	58	62	73	79	87	95	99	103	110	118	125	140	155	169	182	188	222	279
1160	67	72	78	92	99	110	119	124	129	138	148	158	176	194	212	229	238	280	350
1750	102	100	107	128	137	151	165	171	178	192	205	218	243	268	291	315	326	381	475
3500	154	167	180	215	230	255	277	289	300	322	344	365	407	446	484	521	539	624	779
50	5	5	6	7	7	8	8	8	9	9	10	11	11	13	14	15	17	17	20
100	9	9	9	10	12	13	14	15	16	17	18	19	21	23	25	28	30	31	37
150	12	13	14	17	18	20	22	23	24	26	27	29	33	36	39	43	44	52	64
200	16	17	18	22	23	26	28	29	30	33	35	37	42	46	50	54	56	67	80
250	19	21	22	26	28	31	34	35	37	39	42	45	50	55	61	66	68	80	94
300	22	24	26	31	33	36	39	41	43	46	49	52	58	65	71	76	79	94	106
350	25	27	29	35	37	41	45	47	49	52	56	59	66	73	80	87	90	106	120
400	28	31	33	39	42	46	50	52	54	58	62	66	74	82	90	97	101	119	131
450	31	34	36	43	46	51	55	58	60	64	69	73	82	90	99	107	111	131	143
500	34	37	39	47	50	55	60	63	65	70	75	80	89	99	108	117	121	143	154
550	37	40	43	51	54	60	65	68	71	76	81	86	97	107	116	126	131	154	165
600	39	43	46	54	58	64	70	73	76	82	87	93	104	114	125	135	140	165	176
650	42	46	49	58	62	69	75	78	81	87	93	99	111	122	133	144	150	176	187
700	45	48	52	62	66	73	79	83	86	92	99	105	118	130	142	153	159	187	200
750	47	51	55	65	70	77	84	87	91	98	105	111	124	137	150	162	168	198	210
800	50	54	58	69	73	81	89	92	96	103	110	117	131	145	158	171	177	208	220
850	52	57	61	72	77	86	93	97	101	108	116	123	138	152	166	179	186	218	228
900	55	59	64	76	81	90	97	101	105	113	121	129	144	159	173	187	194	228	238
950	57	62	66	79	84	94	102	106	110	118	127	135	150	166	181	196	203	238	248
1000	60	64	69	82	88	97	106	110	115	123	132	142	157	173	188	204	211	248	258
1100	64	69	75	89	95	105	114	119	124	133	142	151	169	186	202	220	228	264	274
1200	69	74	80	95	102	113	122	128	133	143	152	162	181	200	218	235	244	286	296
1300	73	79	85	101	108	120	130	136	141	152	162	173	193	213	232	250	260	304	314
1400	78	84	90	107	115	127	138	144	150	161	172	183	204	225	245	265	275	322	332
1500	82	89	95	113	121	134	146	152	158	170	182	193	216	238	259	280	290	340	350
1600	86	93	100	119	127	141	154	160	166	179	191	203	227	250	272	294	305	356	366
1700	90	98	105	125	134	148	161	168	174	187	200	213	238	262	285	308	319	373	383
1800	94	102	110	130	140	155	168	175	182	196	209	222	248	273	298	322	333	390	400
1900	98	106	114	136	146	161	175	183	190	204	218	232	259	285	310	335	347	406	416
2000	102	110	119	141	151	166	180	187	194	208	222	237	264	290	324	348	361	421	431
2200	110	119	128	152	163	180	196	204	212	228	244	259	289	318	346	374	387	452	462
2400	117	127	136	162	174	193	210	218	227	244	261	277	309	340	369	398	413	481	491
2600	124	135	145	173	185	205	223	232	241	259	277	294	328	360	392	422	437	509	519
2800	131	142	153	182	195	216	235	245	255	274	292	311	346	380	412	446	461	536	546
3000	138	150	161	192	205	228	248	258	268	288	306	327	364	400	434	468	483	560	570
3200	145	157	169	201	216	239	260	270	281	302	322	342	381	419	455	490	507	588	598
3400	151	164	177	210	225	250	272	283	294	316	337	358	398	437	475	511	528	612	622
3600	157	171	184	219	235	260	283	295	306	329	351	373	415	455	494	531	549	635	645
3800	164	178	191	224	241	267	291	303	314	338	360	383	427	470	510	548	566	654	664
4000	170	184	198	237	255	281	305	318	330	355	378	402	447	490	531	570	590	678	688
4500	184	200	216	257	275	305	332	345	359	385	411	436	484	530	574	616	636	729	739
5000	198	215	232	277	297	329	357	372	386	414	442	468	520	568	614	658	679	774	784
5500	216	236	248	296	317	351	381	396	412	442	472	499	553	603	651	696	717	813	823
6000	224	245	258	312	336	372	404	420	436	468	498	526	584	636	684	730	751	848	858
6500	231	256	277	331	354	392	426	443	460	492	524	555	613	667	717	763	784	882	892
7000	247	269	291	347	371	411	446	464	482	516	549	580	640	695	745	791	812	909	919
7500	259	281	304	363	388	430	466	485	503	538	572	604	665	721	771	816	836	934	944
8000	269	293	316	376	404	447	485	504	523	559	594	627	688	744	793	837	856	954	964
8500	279	304	328	390	419	464	503	522	542	579	614	648	710	765	814	858	877	976	986
9000	289	315	340	406	434	480	520	540	559	597	633	667	729	784	830	869	885	984	994

Table 38. Reference Transmission Capacity of S5M Ps -Belt Width 10mm-

(W)

No. of Teeth of Small Pulley	14	15	16	18	20	22	24	25	26	28	30	32	36	40	44	48	60
Rotary Speed of Small Pulley(rpm)	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
Diameter of the Pitch Circle(mm)																	
870	173	192	210	246	282	317	352	369	386	420	453	486	551	614	677	738	916
1160	216	239	263	309	355	399	443	465	487	529	572	613	695	775	854	931	1154
1750	293	326	359	425	488	551	613	643	673	733	792	849	983	1073	1181	1286	1587
3500	473	534	592	705	816	923	1029	1080	1131	1231	1330	1425	1611	1787	1955	2115	2544
50	16	18	19	22	25	28	31	33	34	37	40	43	48	54	59	64	80
100	30	32	35	41	46	52	57	60	62	68	73	78	88	98	108	118	147
150	42	46	50	58	66	73	81	85	89	96	104	111	125	140	154	168	209
200	53	58	63	74	84	94	104	108	113	123	132	142	161	179	197	215	268
250	64	70	76	89	101	113	125	131	137	149	160	172	194	217	239	260	324
300	74	81	89	103	118	132	146	153	160	173	187	200	227	253	279	304	378
350	84	92	101	118	134	150	166	174	182	198	213	228	259	288	318	346	431
400	93	103	112	131	150	168	186	195	203	221	238	255	289	323	355	388	482
450	103	113	124	145	165	185	205	215	224	244	263	282	319	356	392	428	532
500	112	123	135	158	180	202	224	234	245	266	287	308	349	389	428	467	581
550	121	133	146	170	195	218	242	254	265	288	311	333	378	421	464	506	629
600	129	143	156	183	209	235	260	272	285	310	334	358	406	453	499	544	676
650	138	152	167	195	223	250	278	291	304	331	357	383	434	484	533	581	722
700	146	161	177	207	237	266	296	309	323	351	379	407	461	514	566	618	767
750	154	171	187	219	250	281	312	327	342	372	401	431	488	544	599	654	812
800	162	179	197	231	264	296	329	345	361	392	423	454	514	574	632	689	856
850	170	188	206	242	277	311	345	362	379	412	445	477	541	603	664	724	899
900	178	197	216	253	290	326	361	378	397	432	466	500	566	629	691	751	941
950	185	205	225	264	303	341	378	396	415	451	487	522	592	660	727	783	983
1000	193	214	234	275	315	355	394	413	432	470	507	544	617	688	758	826	1025
1100	207	230	252	297	340	383	425	446	466	507	548	588	666	743	818	892	1106
1200	221	246	270	318	364	410	456	478	500	544	588	630	715	797	877	956	1185
1300	235	261	287	338	388	437	485	509	533	580	626	670	767	851	931	1010	1252
1400	248	276	304	358	411	463	515	540	565	615	664	713	808	901	992	1081	1338
1500	262	291	320	378	434	489	543	570	597	649	701	753	853	951	1047	1141	1411
1600	274	305	336	397	456	514	571	600	628	683	738	792	898	1001	1102	1200	1483
1700	287	319	352	415	478	539	599	629	658	716	774	830	941	1049	1155	1258	1553
1800	299	333	367	434	499	563	628	659	688	749	809	868	984	1097	1207	1314	1621
1900	311	347	382	452	520	587	653	685	717	781	844	905	1026	1144	1258	1370	1688
2000	323	360	397	470	541	611	679	713	746	813	878	942	1068	1189	1308	1424	1753
2200	346	386	426	504	581	656	730	767	803	874	944	1013	1148	1279	1406	1529	1879
2400	367	411	454	538	620	701	780	819	858	934	1009	1082	1226	1365	1500	1630	1998
2600	389	435	480	570	658	744	828	870	911	991	1071	1148	1301	1448	1594	1727	2111
2800	409	458	507	602	695	786	875	919	962	1048	1132	1214	1374	1528	1677	1820	2218
3000	429	481	532	633	731	826	920	967	1012	1102	1190	1277	1445	1606	1761	1910	2319
3200	448	502	556	662	765	866	965	1013	1061	1155	1247	1338	1513	1680	1841	1995	2414
3400	466	524	580	691	799	904	1008	1060	1110	1206	1303	1397	1584	1759	1918	2076	2502
3600	484	544	603	719	832	942	1049	1102	1154	1256	1356	1454	1642	1821	1982	2153	2594
3800	501	564	626	747	864	978	1090	1145	1199	1305	1408	1509	1704	1888	2062	2227	2659
4000	518	583	647	773	895	1014	1130	1186	1242	1352	1459	1563	1763	1951	2129	2296	2728
4500	558	629	699	837	970	1098	1224	1285	1345	1463	1578	1689	1901	2098	2282	2452	2870
5000	595	672	746	896	1037	1177	1312	1377	1441	1568	1686	1804	2026	2213	2391	2567	3067
5500	629	712	793	951	1104	1251	1393	1462	1530	1661	1788	1909	2135	2340	2523	2683	3014
6000	661	749	835	1003	1164	1319	1468	1540	1611	1747	1878	2002	2231	2434	2609	2756	3011
6500	690	783	874	1051	1220	1382	1537	1612	1685	1825	1958	2084	2312	2508	2672	2800	2955
7000	719	814	910	1096	1272	1440	1600	1677	1752	1895	2029	2154	2378	2563	2709	2812	2941
7500	741	843	943	1137	1320	1493	1657	1737	1811	1955	2090	2213	2438	2628	2775	2891	2966
8000	763	870	974	1174	1363	1540	1708	1787	1863	2007	2140	2260	2482	2611	2703	2735	2827
8500	783	894	1001	1208	1402	1583	1752	1831	1908	2050	2179	2294	2479	2602	2658	2643	2722
9000	801	915	1026	1239	1436	1620	1790	1869	1944	2084	2208	2315	2479	2570	2583	2513	2745

* ☐ The circumferential speed of pulley is 33(m/s)or more; a dynamic balance for the pulley is essential.

*Values in the table above are for 10mm belt width. For other belt widths, those values should be multiplied by the width correction coefficient, Kb, shown in Table 28.

Table 39. Reference Transmission Capacity of S8M Ps -Belt Width 60mm-

(kW)

Table 6-1		Reference Transmission Capacity of Small Pulley																		
No. of Teeth of Small Pulley		20	21	22	24	25	26	28	30	32	34	36	38	40	44	48	50	60	72	84
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	50.93	53.48	56.02	61.12	63.66	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	152.79	183.35	213.90
870	1160	6.38	6.70	7.02	7.66	7.98	8.29	8.93	9.56	10.20	10.83	11.47	12.10	12.73	14.00	15.25	15.88	19.01	22.73	26.41
1750	1750	6.51	6.93	7.35	8.02	8.36	8.69	9.35	9.99	10.63	11.27	11.91	12.55	13.19	14.46	15.71	16.35	19.48	23.19	26.88
3500	3500	12.81	13.44	14.07	15.34	15.97	16.61	17.86	19.12	20.37	21.62	22.86	24.10	25.33	27.78	30.20	31.40	37.29	44.09	50.52
50	100	0.37	0.39	0.40	0.44	0.46	0.48	0.51	0.55	0.59	0.62	0.66	0.70	0.73	0.81	0.88	0.92	1.10	1.32	1.54
100	200	0.73	0.77	0.81	0.88	0.92	0.95	1.03	1.10	1.18	1.25	1.32	1.40	1.47	1.62	1.76	1.84	2.20	2.64	3.08
200	300	1.47	1.54	1.62	1.76	1.84	1.91	2.06	2.20	2.35	2.50	2.64	2.79	2.94	3.23	3.52	3.67	4.40	5.28	6.16
300	400	2.20	2.31	2.42	2.64	2.75	2.86	3.08	3.30	3.52	3.74	3.96	4.18	4.40	4.84	5.28	5.50	6.60	7.92	9.24
400	500	2.94	3.08	3.23	3.52	3.67	3.82	4.11	4.40	4.70	4.99	5.28	5.58	5.87	6.46	7.04	7.34	8.80	10.55	12.30
500	600	3.67	3.85	4.04	4.40	4.59	4.77	5.14	5.50	5.87	6.24	6.60	6.97	7.34	8.07	8.80	9.16	10.99	13.17	15.34
600	700	4.40	4.62	4.84	5.28	5.50	5.72	6.16	6.60	7.04	7.48	7.92	8.36	8.80	9.67	10.55	10.99	13.17	15.78	18.37
700	800	5.14	5.39	5.65	6.16	6.42	6.68	7.19	7.70	8.21	8.72	9.24	9.75	10.26	11.28	12.30	12.80	15.34	18.37	21.37
800	900	5.87	6.16	6.46	7.04	7.34	7.63	8.21	8.80	9.38	9.97	10.55	11.13	11.71	12.88	14.04	14.62	17.51	20.94	24.34
900	1000	6.60	6.93	7.25	7.92	8.25	8.58	9.24	9.89	10.55	11.21	11.86	12.52	13.17	14.47	15.78	16.42	19.66	23.50	27.29
1000	1200	7.34	7.70	8.07	8.80	9.16	9.53	10.26	10.99	11.72	12.44	13.17	13.89	14.62	16.06	17.51	18.22	21.80	26.03	30.20
1200	1400	8.07	8.47	8.88	9.68	10.08	10.48	11.28	12.08	12.88	13.68	14.47	15.27	16.06	17.64	19.23	20.04	23.64	28.34	33.37
1400	1600	8.80	9.24	9.67	10.55	10.99	11.42	12.30	13.17	14.04	14.91	15.77	16.64	17.51	19.23	20.94	21.80	26.03	31.02	35.98
1600	1800	9.53	10.00	10.48	11.42	11.90	12.37	13.31	14.26	15.20	16.14	17.07	18.01	18.94	20.80	22.65	23.57	28.12	33.98	38.68
1800	2000	10.26	10.77	11.28	12.30	12.80	13.31	14.33	15.34	16.35	17.36	18.37	19.37	20.37	22.37	24.35	25.33	30.20	35.40	41.41
2000	2200	10.99	11.53	12.08	13.17	13.71	14.26	15.34	16.42	17.51	18.58	19.66	20.73	21.80	23.92	26.03	27.08	32.32	38.29	44.29
2200	2400	11.71	12.30	12.88	14.04	14.62	15.20	16.35	17.50	18.66	19.80	20.98	22.16	23.32	25.47	27.71	28.85	34.69	40.94	46.96
2400	2600	12.44	13.06	13.68	15.12	15.72	16.14	17.36	18.58	19.80	21.02	22.22	23.43	24.63	27.01	29.21	30.35	36.50	42.95	48.96
2600	2800	13.17	13.82	14.47	16.78	16.42	17.07	18.37	19.66	20.94	22.22	23.50	24.77	26.03	28.54	31.02	32.25	38.29	45.22	51.17
2800	3000	13.89	14.58	15.27	18.14	17.32	18.01	19.37	20.73	22.08	23.43	24.77	26.10	27.43	30.06	32.66	33.95	40.25	47.44	54.75
3000	3200	14.62	15.34	16.06	18.51	18.22	18.84	20.37	21.80	23.22	24.63	26.03	27.43	28.82	31.57	34.29	35.63	42.18	49.62	56.79
3200	3400	15.34	16.10	16.86	18.77	18.12	18.97	21.37	22.86	24.35	25.82	27.29	28.75	30.20	33.07	35.90	37.29	44.09	51.75	58.92
3400	3600	16.06	16.86	17.65	19.26	20.01	20.90	23.22	24.82	26.41	27.99	29.57	31.15	32.72	35.69	38.50	39.89	46.96	54.96	62.68
3600	3800	16.79	17.61	18.44	20.09	20.91	21.73	23.36	24.98	26.59	28.19	29.78	31.37	32.93	36.03	39.07	40.57	47.81	55.86	63.63
3800	4000	17.51	18.37	19.23	20.94	21.80	22.65	24.34	26.03	27.71	29.37	31.02	32.66	34.30	37.49	40.64	42.18	49.62	57.83	65.10
4000	4200	18.22	19.12	20.01	21.80	22.68	23.57	25.33	27.10	28.82	30.54	32.25	33.95	35.63	38.94	42.18	43.77	51.40	59.74	67.02
4200	4400	18.94	19.87	20.80	22.65	23.57	24.49	26.31	28.12	29.92	31.71	33.48	35.23	36.96	40.38	43.71	45.34	53.15	61.59	68.84
4400	4600	19.66	20.62	21.58	23.49	24.45	25.40	27.29	29.16	31.02	32.87	34.71	36.54	38.36	41.88	45.12	46.75	54.85	63.58	70.57
4600	4800	20.37	21.37	22.37	24.35	25.33	26.31	28.26	30.20	32.12	34.02	35.90	37.76	39.60	43.10	46.37	48.02	56.52	65.10	72.57
4800	5000	21.09	22.12	23.14	25.19	26.21	27.22	29.23	31.23	33.21	35.16	37.09	39.01	40.89	44.59	48.17	49.92	58.55	67.55	75.00
5000	5200	21.80	22.86	23.92	26.03	27.08	28.13	30.20	32.25	34.29	36.30	38.28	40.25	42.18	45.97	49.62	51.40	59.74	68.83	75.98
5200	5400	22.51	23.61	24.70	26.87	27.95	29.03	31.16	33.27	35.36	37.43	39.46	41.48	43.46	47.32	51.05	52.86	61.29	69.84	76.93
5400	5600	23.22	24.35	25.47	27.71	28.82	29.92	32.12	34.29	36.43	38.55	40.63	42.69	44.72	48.66	52.45	54.29	62.79	71.27	77.54
5600	5800	23.92	25.09	26.27	28.59	29.73	30.89	33.16	35.36	37.49	39.60	41.69	43.76	45.81	49.74	53.56	55.45	64.07	72.63	78.87
5800	6000	24.63	25.82	27.01	29.37	30.54	31.71	34.02	36.30	38.55	40.76	42.95	45.09	47.20	51.29	55.09	57.07	65.86	73.90	79.48
6000	6200	25.33	26.56	27.79	30.20	31.43	32.66	35.08	37.43	39.78	42.13	44.48	46.82	49.16	53.24	57.03	59.04	68.03	76.33	81.90
6200	6400	26.03	27.29	28.54	31.03	32.25	33.48	35.90	38.28	40.64	42.95	45.22	47.44	49.62	53.84	57.83	59.91	68.93	76.20	80.90
6400	6600	26.73	28.02	29.30	31.85	33.10	34.36	36.83	39.27	41.67	44.02	46.33	48.60	50.81	55.08	59.11	61.03	69.60	77.22	81.41
6600	6800	27.43	28.75	30.06	32.66	33.95	35.23	37.76	40.24	42.69	45.09	47.44	49.74	51.99	56.30	60.36	62.29	70.81	78.15	81.87
6800	7000	28.12	29.48	30.82	33.49	34.79	36.08	38.61	41.15	43.64	46.11	48.54	50.95	53.31	57.64	61.69	63.57	72.07	79.23	82.04
7000	7200	28.82	30.20	31.57	34.29	35.63	36.96	39.59	42.18	44.72	47.20	49.62	51.99	54.29	58.60	62.79	64.72	73.06	79.72	82.04
7200	7400	29.51	30.91	32.30	35.08	36.46	37.84	40.47	43.14	45.80	48.46	51.11	53.75	56.37	60.69	64.81	66.72	75.00	81.77	84.00
7400	7600	30.20	31.64	33.07	35.90	37.29	38.68	41.41	44.09	46.71	49.26	51.75	54.18	56.52	60.98	65.01	67.02	75.09	80.90	
7600	7800	31.57	33.07	34.56	37.50	38.94	40.38	43.20	45.96	48.66	51.28	53.83	56.30	58.69	63.18	67.29	69.18	76.89	81.68	
7800	8000	32.93	34.49	36.03	39.08	40.57	42.05	44.97	47.81	50.58	53.26	55.86	58.37	60.78	65.29	69.35	71.20	78.43	82.02	
8000	8200	34.29	35.90	37.49	40.60	42.18	43.71	46.71	49.62	52.45	55.19	57.83	60.39	62.79	67.29	71.27	72.95	79.82	81.02	
8200	8400	35.63	37.30	38.94	42.18	43.71	45.24	48.42	51.40	54.34	57.24	60.09	62.87	65.59	70.09	73.97	75.47	82.02	81.34	
8400	8600	36.96	38.68	40.37	43.71	45.34	46.95	50.10	53.14	56.08	58.90	61.59	64.15	66.57	70.96	74.71	76.32	81.47		
8600	8800	38.29	40.05	41.79	45.22	46.89	48.54	51.75	54.85	57.83	60.67	63.36	65.94	68.33	72.63	76.20	77.69	81.91		
8800	9000	39.60	41.41	43.20	46.71	48.42	50.10	53.37	56.52	59.53	62.39	65.10	67.64	70.00	74.18	77.54	78.89	82.04		
9000	9200	40.89	42.76	44.59	48.18	49.92	51.64	54.96	58.15	61.19	63.95	66.75	69.27	71.58	75.60	78.71	79.91			
9200	9400	42.18	44.09	45.99	49.69	51.45	53.21	57.05	60.39	63.52	66.54	69.45	72.15	74.75	79.00	82.02				

Selection of Transmission Timing Belts 6 -Transmission Capacity Table-

Table 40. Reference Transmission Capacity of S14M Ps -Belt Width 120mm- (kW)

Number of Teeth of Small Pulley Ratio of Speed of Small Pulley	28	30	32	34	36	40	42	44	48	50	56	60	64	72	84
	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
575	32.08	34.36	36.63	38.90	41.17	45.68	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	81.09	86.26	96.44	111.32
870	48.35	51.75	55.14	58.52	61.88	68.57	71.90	75.20	81.77	85.03	94.68	101.02	107.27	119.49	136.99
1160	64.12	68.57	73.00	77.40	81.77	90.41	94.69	98.92	107.27	111.39	123.45	131.27	138.87	153.39	173.25
1750	95.20	101.57	107.84	114.03	120.11	131.93	137.68	143.29	154.11	159.32	174.00	182.96	191.21	205.36	220.00
3450	172.13	181.10	189.39	196.95	203.72	214.76	218.93	222.13	225.47						
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	12.94	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	14.28	16.77
200	11.19	11.99	12.78	13.58	14.38	15.98	16.78	17.57	19.19	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	31.68	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	47.64	49.60	55.45	59.33	63.20	70.87	82.22
600	33.47	35.84	38.21	40.58	42.94	47.64	49.60	52.34	57.00	59.33	66.27	70.87	75.43	84.47	97.76
700	39.00	41.76	44.51	47.26	49.99	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	50.77	53.90	57.01	63.19	66.27	69.34	75.43	78.46	87.45	93.36	99.21	110.88	127.26
900	49.99	53.51	57.00	60.49	63.97	70.87	74.29	77.70	84.47	87.82	97.75	104.27	110.88	123.19	141.06
1000	55.45	59.33	63.19	67.04	70.87	78.46	82.22	85.96	93.36	97.03	107.84	114.90	121.82	135.23	154.11
1100	60.88	65.12	69.34	73.54	77.70	85.96	90.05	94.10	102.11	106.06	117.68	125.23	132.60	146.75	166.35
1200	66.27	70.87	75.43	79.97	84.47	93.36	97.76	102.11	110.88	114.90	127.26	135.23	142.97	157.70	177.67
1300	71.63	76.57	81.47	86.34	91.16	100.66	105.35	109.97	119.07	123.53	136.53	144.87	152.91	168.02	188.00
1400	76.95	82.22	87.45	92.63	97.76	107.84	112.80	117.69	127.26	131.94	145.49	154.12	162.37	177.67	197.26
1500	82.22	87.45	92.63	98.05	104.27	114.90	120.11	125.23	135.23	140.10	154.11	162.94	171.32	186.69	205.36
1600	87.45	93.36	99.21	104.99	110.88	121.82	127.26	132.60	142.97	148.00	162.36	171.31	179.72	194.73	212.22
1700	92.63	98.05	104.99	111.04	116.99	128.60	134.25	139.78	150.46	155.62	170.22	179.21	187.53	202.63	217.76
1800	97.76	104.27	110.88	116.99	123.19	135.23	141.06	146.75	157.70	162.94	177.67	186.59	194.73	208.45	221.89
1900	102.83	109.62	116.29	122.85	129.27	141.70	147.69	153.51	164.65	169.95	184.67	193.43	201.26	213.94	224.54
2000	107.85	114.90	121.82	128.61	135.23	147.99	154.12	160.05	171.31	176.63	191.21	199.69	207.11	218.44	225.62
2100	112.80	120.10	127.26	134.25	141.06	154.11	160.34	166.35	177.67	182.96	197.25	205.36	212.22	221.89	
2200	117.69	125.23	132.60	139.78	146.75	160.05	166.35	172.40	183.70	188.93	202.79	210.39	216.55	224.26	
2300	122.51	130.27	137.83	145.19	152.30	165.78	172.13	178.18	189.39	194.51	207.78	214.75	220.10	225.47	
2400	127.26	135.23	142.97	150.47	157.70	171.31	177.67	183.70	194.72	199.69	212.22	218.43	222.80	225.50	
2500	131.94	140.10	147.99	155.62	162.94	176.63	182.97	188.93	199.69	204.46	216.06	221.39	224.63		
2600	136.54	144.87	152.90	160.63	168.02	181.62	188.00	193.86	204.27	208.78	219.29	223.59	225.54		
2700	141.06	149.54	157.70	165.51	172.93	186.58	192.77	198.49	208.45	212.66	221.89	225.01	225.50		
2800	145.50	154.12	162.36	170.23	177.67	191.21	197.26	202.79	212.22	216.06	223.83	225.62			
2900	149.85	158.58	166.90	174.80	182.22	195.38	201.46	206.76	215.55	218.98	225.06				
3000	154.12	162.94	171.31	179.21	186.59	199.69	205.36	210.39	218.43	221.39	225.62				
3100	158.29	167.19	175.58	183.46	190.76	203.53	208.95	213.66	220.86	223.28					
3200	162.37	171.31	179.71	187.53	194.73	207.10	212.22	216.56	222.80	224.63					
3300	166.35	175.32	183.70	191.44	198.49	210.39	215.16	219.09	224.25	225.42					
3400	170.23	179.21	187.53	195.16	202.03	213.37	217.76	221.22	225.20	225.63					
3500	174.00	182.96	191.21	198.69	205.36	216.06	220.01	222.94	225.62						
3600	177.67	186.59	194.72	202.04	208.45	218.43	221.89	224.26							
3700	181.23	190.08	198.08	205.18	211.32	220.49	223.41	225.14							
3800	184.67	193.43	201.26	208.12	213.94	222.21	224.54	225.58							
3900	188.00	196.63	204.27	210.86	216.51	223.59	225.28	225.58							
4000	191.21	199.69	207.10	213.38	218.44	224.63	225.62								
4100	194.30	202.60	209.75	215.68	220.30	225.30									
4200	197.26	205.36	212.22	217.76	221.89	225.62									
4300	200.09	207.95	214.49	219.61	223.21										
4400	202.79	210.39	216.56	221.22	224.26										
4500	205.38	212.98	218.43	222.59	225.01										
4600	207.79	214.76	220.10	223.71	225.47										
4700	210.08	216.68	221.56	224.58	225.64										
4800	212.22	218.43	222.80	225.20											
4900	214.22	220.00	223.63	225.55											
5000	216.06	221.39	224.63	225.63											

*Because the durability in terms of hours decreases in the [] marked range, this range should be avoided whenever possible.
*The circumferential speed of pulley is 33 (m/s) or more in the [] marked range; a dynamic balance for the pulley is essential.
*The [] marked range should be avoided whenever possible, as above two factors overlap here. *Values in the table above is for nominal belt width 120 (120mm). For other belt widths, those values should be multiplied by the width correction coefficient in Table 28.

Table 41. Reference Transmission Capacity of MTS8M Ps -Belt Width 60mm- (kW)

Ratio of Speed of Small Pulley	Ratio of Speed of Large Pulley																
	24	26	28	30	32	34	36	38	40	42	44	46	48	50	60	72	84
	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	106.95	112.05	117.14	122.23	127.32	152.79	183.35	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	57.96
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	58.59	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	40.98	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	51.55	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	52.62	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	83.69	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		65.72	72.90	80.46											
5600	46.51	52.70		66.34	73.78												
5800	46.43			66.86	74.54												
6000	46.25																

Table 42. Reference Transmission Capacity of P2M Ps -Belt Width 4mm-

(W)

No. of Teeth of Small Pulley		14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	42	44	48
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	8.91	9.55	10.19	11.46	12.73	14.01	15.28	15.92	16.55	17.83	19.10	20.37	21.65	22.92	25.46	26.74	28.01	30.56
100		2	2	2	2	3	3	3	3	3	4	4	5	5	6	7	7	8	9
200		3	3	4	5	5	6	7	7	7	8	9	10	11	11	13	14	15	17
400		6	6	7	8	9	10	11	12	13	14	15	16	17	19	22	24	25	28
600		8	9	10	11	12	14	16	17	18	19	20	22	23	25	29	31	33	37
800		10	11	12	13	16	18	19	20	21	23	25	27	29	31	36	38	41	46
1000		12	13	14	16	18	20	23	24	25	27	30	32	34	37	42	45	48	54
1200		14	15	16	19	21	23	26	26	28	31	34	37	40	42	48	51	54	61
1400		16	17	18	21	24	26	29	30	32	35	38	41	44	47	54	57	61	68
1450		16	18	19	21	24	27	30	31	33	36	39	42	45	48	55	59	62	70
1500		16	18	19	22	25	28	31	32	34	37	40	43	46	50	57	60	64	71
1600		17	18	20	23	26	29	32	33	35	39	43	46	49	53	60	64	67	75
1750		19	20	22	25	28	31	35	37	38	42	45	49	53	56	64	68	71	79
1800		19	21	23	25	29	32	35	37	38	42	46	50	54	57	65	69	73	81
2000		21	22	24	28	31	34	38	40	42	46	50	54	58	62	70	74	78	87
2400		24	26	28	32	36	40	44	46	48	52	56	61	65	70	80	85	89	99
3000		30	32	37	42	46	52	54	57	62	67	72	77	82	93	98	102	115	
3600		35	38	43	48	53	59	62	64	70	76	82	88	94	106	112	118	131	
4000		38	41	47	52	58	64	67	70	76	82	88	94	101	114	120	127	140	
5000			48	55	61	68	75	78	82	89	96	104	111	118	132	139	147	162	
6000				55	63	70	78	86	90	93	101	109	117	125	133	149	157	164	180
8000					76	86	95	105	109	114	123	132	141	150	158	176	184	192	209
10000					91	101	111	122	127	132	142	151	161	170	178	196	203	210	224
12000						114	125	136	141	146	157	166	175	183	190	206	211	217	228
14000						125	136	148	153	158	168	176	185	190	196	208	214	220	232

*Because the durability in terms of hours decreases in the □□□□ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table 43. Reference Transmission Capacity of P3M Ps -Belt Width 6mm-

(W)

No. of Teeth of Small Pulley	10	12	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	42
Rotary Speed of Small Pulley (rpm)	9.55	11.46	13.37	14.32	15.28	17.19	19.10	20.01	22.92	23.87	24.83	26.74	28.65	30.56	32.47	34.38	38.20	40.11
Diameter of the Pitch Circle (mm)																		
100	4	5	6	6	7	8	9	10	12	12	13	14	15	17	19	20	22	23
200	8	11	12	13	14	16	18	20	23	24	25	28	31	34	36	38	45	47
400	14	17	20	22	24	27	32	35	39	41	43	47	51	56	61	65	75	79
600	19	23	28	30	33	37	42	47	53	55	58	63	69	75	81	87	100	105
800	24	29	35	38	41	46	53	59	65	68	72	79	85	92	99	107	123	129
1000	28	35	41	44	48	55	62	69	77	81	84	92	100	109	118	126	144	151
1200	33	40	47	51	55	63	71	79	88	92	97	106	115	125	135	144	164	172
1400	37	45	54	58	62	71	80	89	99	104	109	119	129	140	151	162	184	193
1450	38	46	55	59	64	72	82	90	102	106	111	122	133	144	155	166	188	197
1500	39	47	56	60	65	75	84	93	104	109	114	125	135	147	158	170	193	202
1600	41	49	59	63	68	79	88	98	109	114	120	131	142	154	166	178	202	212
1750	44	54	63	68	74	84	95	106	118	124	129	141	153	165	177	190	215	226
1800		55	65	70	75	86	97	108	120	126	131	143	155	168	181	193	219	230
2000		59	70	75	81	93	105	117	129	135	142	155	168	182	196	209	237	249
2400		68	81	87	93	107	121	134	148	155	162	177	192	207	223	238	270	284
3000			95	103	112	125	142	158	175	183	191	208	226	243	261	279	316	332
3600			110	118	127	145	163	182	201	210	219	238	258	278	298	318	359	377
4000			119	128	138	158	176	196	216	226	236	257	278	299	321	342	386	405
5000			141	152	163	186	208	231	255	267	278	302	326	351	375	399	448	470
6000				174	187	212	238	264	291	304	317	343	370	397	424	451	505	530
8000					232	263	293	324	356	371	387	418	448	479	508	538	597	627
10000						308	342	377	413	430	446	480	512	545	574	604	663	696
12000						349	386	423	460	477	495	530	562	594	620	646	699	734
14000							424	462	500	517	534	568	597	626	645	665	704	739

*Because the durability in terms of hours decreases in the □□□□ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table 44. Reference Transmission Capacity of P5M Ps -Belt Width 10mm-

(W)

No. of Teeth of Small Pulley	12	14	16	18	20	22	24	25	26	28	30	32	34	36	40	42	44	48	56
Rotary Speed of Small Pulley (rpm)	19.10	22.28	25.46	28.65	31.83	35.05	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	66.85	70.03	76.39	89.15
Diameter of the Pitch Circle (mm)	19.10	22.28	25.46	28.65	31.83	35.05	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	66.85	70.03	76.39	89.15
100	23	26	31	35	41	46	52	55	58	64	70	76	81	86	103	110	118	133	158
200	46	53	63	72	81	92	104	109	115	126	138	151	164	177	205	220	235	267	316
400	77	90	106	122	138	155	173	182	192	211	231	251	272	294	337	361	385	434	514
600	105	123	144	165	188	211	235	247	259	284	310	337	365	394	452	482	513	577	684
800	131	153	179	205	234	262	291	306	322	353	385	417	451	485	556	592	629	706	837
1000	156	182	212	243	276	309	343	361	379	415	453	491	530	570	651	694	738	825	977
1200	179	209	244	280	316	355	394	414	435	476	518	561	605	650	742	790	838	937	1110
1400	201	235	274	319	355	399	443	465	487	532	580	628	677	726	828	880	933	1040	1230
1450	242	282	323	365	409	453	476	499	546	594	643	694	745	850	903	957	1070	1260	
1500	248	288	333	374	420	466	489	512	560	609	659	711	762	869	925	981	1090	1290	
1600	261	303	348	393	441	489	514	538	588	639	691	745	799	910	970	1030	1140	1350	
1750	278	325	372	420	471	522	548	575	628	683	738	795	852	970	1040	1100	1220	1430	
1800	332	380	430	481	532	559	586	640	696	753	810	868	989	1050	1110	1240	1460		
2000	360	412	465	520	576	605	633	691	751	812	874	937	1060	1130	1200	1330	1570		
2400	413	472	532	595	658	691	723	789	857	925	992	1060	1210	1280	1350	1500	2030		
3000	557	628	701	775	812	850	926	1000	1080	1150	1240	1400	1485	1570	1730	2120			
3600	638	719	801	883	925	966	1050	1140	1230	1310	1400	1580	1670	1760	1940	2250			
4000	776	865	953	997	1040	1130	1220	1320	1450	1500	1690	1785	1880	2060	2380				
5000	911	1010	1110	1160	1210	1320	1420	1520	1620	1720	1920	2010	2110	2300	2610				
6000	1140	1260	1310	1370	1480	1580	1690	1790	1900	2100	2190	2290	2460	2720					
8000	1490	1550	1600	1720	1830	1930	2020	2120	2270	2330	2400	2480							
10000	1710	1760	1860	1940	2020	2080	2130	2170	2160	2150	2040								
12000	1770	1810	1880	1910	1940	1920	1900												
14000	1750	1760	1710	1660															

*Because the durability in terms of hours decreases in the □□□□ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table 45. Reference Transmission Capacity of P8M Ps -Belt Width 15mm-

(kW)

No. of Teeth of Small Pulley	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Rotary Speed of Small Pulley (rpm)	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.06	152.79	162.97	183.35
Diameter of the Pitch Circle (mm)	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.06	152.79	162.97	183.35
100	0.16	0.17	0.19	0.21	0.23	0.26	0.31	0.41	0.44	0.48	0.51	0.56	0.60	0.63	0.70	0.74	0.78	0.89
200	0.32	0.35	0.39	0.42	0.45	0.50	0.59	0.69	0.78	0.85	0.91	0.99	1.07	1.14	1.23	1.35	1.40	1.57
400	0.65	0.71	0.77	0.84	0.90	0.95	1.09	1.25	1.37	1.48	1.59	1.72	1.86	1.94	2.16	2.30	2.43	2.71
600	0.96	1.06	1.16	1.25	1.35	1.45	1.53	1.70	1.86	2.02	2.17	2.37	2.55	2.66	2.95	3.12	3.30	3.66
800	1.29	1.41	1.54	1.67	1.80	1.93	2.06	2.18	2.31	2.51	2.69	3.02	3.16	3.27	3.64	3.83	4.08	4.75
870	1.40	1.54	1.68	1.82	1.96	2.10	2.24	2.38	2.51	2.66	2.86	3.16	3.36	3.48	3.90	4.13	4.44	4.98
1000	1.61	1.77	1.93	2.09	2.25	2.41	2.57	2.73	2.89	2.99	3.16	3.64	3.84	4.00	4.47	4.78	5.09	5.71
1160	1.86	2.05	2.24	2.42	2.61	2.79	2.98	3.16	3.35	3.53	3.84	4.08	4.44	4.62	5.17	5.52	6.48	7.28
1200	1.93	2.12	2.31	2.51	2.70	2.89	3.07	3.27	3.46	3.60	3.82	4.22	4.59	4.78	5.34	5.71	6.08	7.52
1400	2.25	2.45	2.70	2.94	3.15	3.37	3.59	3.80	4.03	4.25	4.47	4.90	5.34	5.55	6.20	6.62	7.04	8.68
1450	2.33	2.55	2.79	3.04	3.26	3.65	3.72	3.94	4.17	4.40	4.63	5.07	5.53	5.75	6.41	6.85	7.28	8.96
1500	2.41	2.64	2.89	3.15	3.37	3.72	3.84	4.07	4.31	4.55	4.78	5.25	5.71	5.94	6.62	7.07	7.51	9.25
1600	2.57	2.83	3.07	3.35	3.59	3.84	4.09	4.34	4.59	4.84	5.09	5.59	6.08	6.32	7.04	7.52	7.98	9.81
1750	2.81	3.08	3.36	3.64	3.92	4.20	4.47	4.74	5.01	5.28	5.56	6.09	6.63	6.88	7.68	8.17	8.70	10.6
1800	2.89	3.18	3.72	3.75	4.03	4.31	4.59	4.87	5.15	5.43	5.71	6.26	6.80	7.07	7.86	8.38	8.90	10.9
2000	3.20	3.52	4.01	4.15	4.47	4.78	5.09	5.40	5.71	6.01	6.32	6.93	7.52	7.81	8.68	9.24	9.81	11.9
2400	3.84	4.22	4.59	4.97	5.34	5.71	6.08	6.44	6.80	7.16	7.52	8.22	9.05	9.24	9.86	10.9	11.5	13.8
3000	4.63	5.20	5.62	6.02	6.52	6.81	7.32	7.76	8.22	8.71	9.02	9.84	10.7	11.1	12.2	12.6	12.9	14.6
3600	5.82	6.34	6.75	7.27	7.67	8.17	8.65	9.14	9.72	10.0	10.8	11.7	12.2	13.1	13.9	13.9	15.3	
4000	7.06	7.48	8.14	8.46	9.00	9.60	10.0	10.7	11.0	11.7	12.7	13.2	14.0	14.7	14.9	15.8		
5000	8.81	9.60	10.2	10.7	11.3	11.7	12.4	12.8	13.6	14.5	14.8	15.7						
6000	10.2	11.2	11.9	12.3	13.0	13.2	14.1	14.5	14.9	15.8	16.0							

*Because the durability in terms of hours decreases in the □□□□ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

*□□□□ The circumferential speed of pulley is 33(m/s) or more; a dynamic balance for the pulley is essential.

Table 46. Reference Transmission Capacity of UP5M Ps -Belt Width 10mm-

(W)

Rotary Speed of Small Pulley (rpm)	No. of Teeth of Small Pulley	Diameter of the Pitch Circle (mm)															
		12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50
Rotary Speed of Small Pulley (rpm)	Diameter of the Pitch Circle (mm)	19.10	22.28	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	79.58
		60	72	84	96	108	120	132	144	156	168	180	200	220	240	260	280
20	10	12	15	17	19	21	24	26	29	31	34	39	45	51	58	61	78
40	19	23	28	32	36	40	45	49	54	59	64	74	85	96	108	114	147
60	27	32	39	45	50	56	63	69	76	83	90	104	119	135	152	161	206
100	41	50	60	69	78	88	97	107	118	128	139	162	185	210	236	249	321
200	76	92	111	128	145	162	180	198	215	237	257	298	342	388	436	460	592
400	141	170	206	236	267	299	332	366	401	437	474	550	631	715	804	849	1092
500	172	207	251	287	325	364	405	446	488	532	577	670	769	871	979	1034	1330
600	202	243	295	338	382	428	475	524	574	625	678	788	903	1024	1151	1216	1563
800	260	314	380	436	492	552	613	675	740	806	875	1016	1164	1320	1483	1567	2016
1000	316	382	463	531	600	672	747	822	901	982	1065	1238	1418	1609	1806	1909	2454
1200	376	453	550	630	713	799	887	977	1070	1167	1265	1470	1685	1910	2146	2266	2913
1400	436	526	637	730	826	924	1026	1132	1240	1351	1466	1702	1951	2212	2484	2625	3372
1450		544	658	755	854	957	1061	1171	1283	1397	1516	1760	2017	2288	2569	2714	3488
1500		561	681	780	883	988	1098	1209	1324	1444	1566	1819	2084	2364	2654	2803	3601
1600		599	724	831	940	1052	1169	1287	1410	1537	1667	1935	2218	2514	2823	2984	3833
1750		652	790	907	1025	1147	1275	1405	1539	1677	1817	2111	2420	2743	3080	3254	4178
1800			813	931	1053	1179	1309	1443	1582	1724	1868	2171	2486	2820	3165	3344	4293
2000			902	1032	1169	1309	1453	1601	1754	1912	2071	2407	2757	3124	3508	3707	4687
2400			1068	1222	1386	1552	1720	1897	2077	2262	2453	2849	3261	3695	4146	4378	5485
3000				1517	1714	1918	2130	2348	2570	2798	3034	3520	4027	4559	5108	5389	6614
3600				1794	2029	2272	2519	2774	3039	3307	3584	4151	4743	5361	5996	6320	7629
4000					2245	2513	2785	3067	3358	3655	3956	4577	5226	5895	6583	6932	8040
5000					2747	3072	3404	3747	4090	4446	4807	5542	6301	7066	7843	8229	9048
6000					3217	3585	3969	4359	4757	5154	5559	6376	7185	7995	8776	9159	
8000						5002	5455	5908	6361	6795	7264	8366	8993	9465	9619		
10000									6313	6747	7156	7518	8072	8349	8253		
12000									6824	7142	7359	7475	7316				
14000									6848	6882	6730						

*Because the durability in terms of hours decreases in the □ □ □ □ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table 47. Reference Transmission Capacity of UP8M Ps -Belt Width 15mm-

(kW)

Rotary Speed of Small Pulley (rpm)	No. of Teeth of Small Pulley	Diameter of the Pitch Circle (mm)															
		20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60
Rotary Speed of Small Pulley (rpm)	Diameter of the Pitch Circle (mm)	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79
		60	72	84	96	108	120	132	144	156	168	180	200	220	240	260	280
20	0.11	0.12	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.21	0.23	0.25	0.28	0.29	0.33	0.36	0.40
40	0.19	0.21	0.24	0.26	0.28	0.30	0.33	0.36	0.38	0.40	0.42	0.47	0.52	0.55	0.62	0.67	0.73
60	0.27	0.31	0.34	0.37	0.40	0.44	0.47	0.50	0.53	0.56	0.60	0.67	0.74	0.77	0.89	0.96	1.04
100	0.43	0.48	0.52	0.57	0.62	0.67	0.71	0.77	0.82	0.88	0.93	1.03	1.14	1.20	1.38	1.50	1.62
200	0.76	0.84	0.93	1.01	1.10	1.19	1.28	1.37	1.46	1.57	1.69	1.85	2.06	2.16	2.48	2.70	2.93
300	1.06	1.17	1.29	1.41	1.54	1.66	1.78	1.92	2.05	2.18	2.29	2.59	2.88	3.03	3.48	3.79	4.11
400	1.32	1.47	1.62	1.78	1.93	2.09	2.25	2.41	2.59	2.75	2.92	3.28	3.65	3.84	4.41	4.81	5.22
500	1.57	1.75	1.93	2.12	2.30	2.50	2.69	2.89	3.09	3.30	3.50	3.93	4.37	4.60	5.30	5.78	6.29
600	1.81	2.01	2.22	2.44	2.65	2.88	3.10	3.33	3.57	3.80	4.05	4.54	5.06	5.32	6.14	6.71	7.29
700	2.04	2.26	2.50	2.75	2.99	3.24	3.50	3.75	4.02	4.29	4.57	5.13	5.72	6.02	6.95	7.59	8.26
800	2.25	2.51	2.77	3.04	3.31	3.59	3.87	4.17	4.46	4.76	5.07	5.70	6.35	6.69	7.73	8.45	9.20
900	2.46	2.74	3.03	3.32	3.61	3.92	4.24	4.55	4.88	5.21	5.55	6.25	6.97	7.34	8.48	9.29	10.11
1000	2.66	2.96	3.28	3.58	3.91	4.24	4.58	4.93	5.28	5.64	6.02	6.78	7.56	7.96	9.22	10.08	10.99
1100	2.86	3.19	3.52	3.87	4.23	4.59	4.95	5.33	5.71	6.10	6.51	7.32	8.18	8.62	9.99	10.93	11.91
1200	3.06	3.42	3.78	4.15	4.53	4.92	5.31	5.72	6.13	6.55	6.98	7.87	8.79	9.26	10.74	11.76	12.83
1300	3.26	3.64	4.02	4.42	4.82	5.24	5.67	6.10	6.54	6.99	7.45	8.40	9.40	9.90	11.49	12.59	13.73
1400	3.46	3.86	4.27	4.69	5.12	5.57	6.01	6.47	6.95	7.43	7.92	8.94	9.99	10.53	12.23	13.40	14.62
1450	3.55	3.96	4.39	4.82	5.26	5.72	6.18	6.66	7.15	7.64	8.15	9.20	10.28	10.84	12.59	13.80	15.06
1500	3.65	4.07	4.51	4.95	5.41	5.87	6.35	6.85	7.35	7.85	8.38	9.46	10.58	11.15	12.95	14.20	15.50
1600	3.83	4.27	4.73	5.21	5.69	6.18	6.69	7.21	7.74	8.28	8.84	9.98	11.16	11.77	13.68	15.00	16.37
1750	4.11	4.59	5.08	5.59	6.12	6.64	7.19	7.75	8.32	8.91	9.50	10.74	12.03	12.69	14.75	16.19	17.68
1800	4.19	4.69	5.20	5.71	6.25	6.79	7.35	7.92	8.52	9.11	9.72	11.00	12.31	12.99	15.10	16.58	18.11
2000	4.56	5.09	5.65	6.21	6.79	7.39	8.00	8.63	9.28	9.93	10.61	11.99	13.44	14.18	16.51	18.14	19.82
2400	5.25	5.87	6.51	7.17	7.85	8.54	9.27	10.00	10.75	11.52	12.31	13.95	15.65	16.53	19.27	21.20	23.18
2800	5.91	6.61	7.34	8.09	8.87	9.66	10.48	11.32	12.18	13.06	13.97	15.84	17.81	18.81	21.97	24.19	26.49
3000	6.22	6.97	7.75	8.54	9.37	10.21	11.09	11.97	12.89	13.82	14.79	16.78	18.87	19.94	23.31	25.68	28.13
3600	6.93	7.79	8.66	9.56	10.49	11.45	12.44	13.46	14.50	15.57	16.66	18.94	21.33	22.56	26.44	29.15	31.97
4000	7.36	8.29	9.20	10.18	11.18	12.20	13.27	14.36	15.48	16.63	17.81	20.27	22.85	24.18	28.37	31.30	34.36
5000	8.29	9.34	10.41	11.52	12.68	13.87	15.10	16.38	17.68	19.02	20.40	23.26	26.29	27.84	32.75	36.20	
6000	9.05	9.05	11.41	12.65	13.95	15.28	16.66	18.08	19.55	21.06	22.61	25.85	29.24	31.02	36.56	40.46	

*Because the durability in terms of hours decreases in the □ □ □ □ marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

*□ The circumferential speed of pulley is 33(m/s) or more; a dynamic balance for the pulley is essential.

Table 48. Reference Transmission Capacity of T5 Ps -Belt Width 10mm-

(W)

No. of Teeth of Small Pulley		12	14	16	18	20	22	24	28	30
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	19.10	22.28	25.46	28.65	31.83	35.01	38.20	44.56	47.75
		19.10	22.28	25.46	28.65	31.83	35.01	38.20	44.56	47.75
1160	98.5	114.9	131.3	147.7	164.1	180.5	196.9	229.7	246.1	
1750	134.3	156.7	179.1	201.5	223.9	246.3	268.7	313.5	335.9	
3500	222.5	259.6	296.7	333.7	370.8	407.9	445.0	519.1	556.2	
100	10.7	12.4	14.2	16.0	17.8	19.5	21.3	24.9	26.6	
200	20.8	24.3	27.7	31.2	34.7	38.2	41.6	48.6	52.0	
300	30.5	35.6	40.7	45.7	50.8	55.9	61.0	71.2	76.2	
400	39.7	46.4	53.0	59.6	66.2	72.9	79.5	92.7	99.4	
500	46.6	56.7	64.8	72.9	81.0	89.1	97.2	113.4	121.5	
600	57.0	66.5	76.0	85.6	95.1	104.6	114.1	133.1	142.6	
700	65.1	76.0	86.8	97.7	108.6	119.4	130.3	152.0	162.8	
800	72.9	85.0	97.2	109.3	121.5	133.6	145.8	170.1	182.2	
900	80.3	93.7	107.1	120.5	133.9	147.3	160.7	187.5	200.9	
1000	87.5	102.1	116.7	131.3	145.9	160.5	175.0	204.2	218.8	
1100	94.4	110.2	125.9	141.6	157.4	173.1	188.9	220.3	236.1	
1200	101.1	117.9	134.8	151.6	168.5	185.3	202.2	235.9	252.7	
1300	107.5	125.5	143.4	161.3	179.2	197.2	215.1	250.9	268.9	
1400	113.8	132.8	151.7	170.7	189.7	208.6	227.6	265.5	284.5	
1500	119.9	139.8	159.8	179.8	200.0	219.2	239.7	279.7	299.7	
1600	125.8	146.7	167.7	188.6	209.6	230.6	251.5	293.4	314.4	
1700	131.5	153.4	175.4	197.3	219.2	241.1	263.0	306.9	328.8	
1800	137.1	160.0	182.9	205.7	228.6	251.4	274.3	320.0	342.8	
1900	142.6	166.4	190.2	214.0	237.7	261.5	285.3	332.8	356.6	
2000	148.0	172.7	197.4	222.1	246.7	271.4	296.1	345.4	370.1	
2200	158.6	185.0	211.4	237.8	264.3	290.7	317.8	370.0	396.4	
2400	168.8	196.9	225.1	253.2	281.4	309.5	337.6	393.9	422.0	
2600	178.8	208.7	238.5	268.3	298.1	327.9	357.7	417.3	447.1	
2800	188.7	220.5	251.6	283.1	314.5	346.0	377.4	440.4	471.8	
3000	198.5	231.6	264.6	297.7	330.8	363.9	397.0	463.1	496.2	
3200	208.2	242.8	277.5	312.2	346.9	381.6	416.3	485.7	520.4	
3400	217.7	254.0	290.3	326.6	362.9	399.2	435.5	508.0	544.3	
3600	227.2	265.1	303.0	340.8	378.7	416.6	454.4	530.2	568.1	
3800	236.6	276.0	315.5	354.9	394.3	433.8	473.2	552.1	591.5	
4000	245.8	286.8	327.7	368.7	409.7	450.7	491.6	573.6	614.5	
4200	254.8	297.3	339.7	382.2	424.7	467.2	509.6	594.6	637.0	
4400	263.5	307.4	351.4	395.3	439.2	483.1	527.1	614.9	658.8	
4600	271.9	317.2	362.5	407.8	453.1	498.4	543.7	634.4	679.7	
4800	279.7	326.4	373.0	419.6	466.2	512.8	559.5	652.7	699.3	
5000	287.0	334.8	382.7	430.5	478.3	526.2	574.0	669.7	717.5	
5500			402.2	452.4	502.7	553.0	603.2	703.8	754.1	
6000			412.1	463.6	515.1	566.6	618.1	721.1	772.6	
6500			408.2	459.2	510.2	561.2	612.2	714.3	765.3	
7000			385.3	433.5	481.7	529.8	578.0	674.3	722.5	
7500			337.7	379.9	422.1	464.3	506.6	591.0	633.2	
8000				290.8	323.1	355.5	387.8	452.4	484.7	
8500				157.7	175.3	192.8	210.3	245.4	262.9	

*Avoiding the □□□ marked ranges is recommended as endurance time is shorten

*The above table shows values for the nominal width 10 (10mm). Multiply a value in the table by correction coefficient Kb in the table 28 for other widths.

Table 49. Reference Transmission Capacity of T10 Ps - Belt Width 10mm-

(W)

No. of Teeth of Small Pulley		12	14	16	18	20	22	24	26	28	30	32	36	40	44	48
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	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
		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
670	254.9	297.4	339.9	382.4	424.9	467.4	509.9	552.4	594.9	637.4	679.8	722.3	764.8	807.3	849.8	891.8
1160	321.2	374.8	428.3	481.8	535.4	588.9	642.4	696.0	749.5	803.0	856.6	910.1	963.7	1017.2	1070.7	1124.2
1750	438.3	511.3	584.4	657.4	730.5	803.5	876.6	949.6	1022.7	1095.7	1168.8	1241.9	1314.9	1387.9	1460.9	1533.9
3500	725.8	846.8	967.8	1088.7	1209.7	1330.6	1451.6	1572.6	1693.6	1814.6	1935.5	2056.5	2177.5	2298.5	2419.5	2540.5
100	34.8	40.6	46.4	52.1	57.9	63.7	69.5	75.3	81.1	86.9	92.7	104.3	115.9	127.5	139.1	150.7
200	67.9	79.2	90.5	101.9	113.2	124.5	135.8	147.1	158.4	169.8	181.1	203.7	226.3	249.0	271.6	294.2
300	99.5	116.1	132.7	149.3	165.8	182.4	199.0	215.6	232.2	248.8	265.3	298.5	331.7	364.9	398.0	431.2
400	129.7	151.3	172.9	194.5	216.1	237.7	259.3	281.0	302.6	324.2	345.8	389.0	432.2	475.4	518.6	561.8
500	158.5	184.9	211.3	237.8	264.2	290.6	317.0	343.4	369.8	396.3	422.7	475.5	528.3	581.2	634.0	686.8
600	186.1	217.1	248.1	279.1	310.1	341.1	372.2	403.2	434.2	465.2	496.2	558.2	620.2	682.2	744.2	806.2
700	212.5	247.9	283.3	318.7	354.2	389.6	425.0	460.4	495.8	531.2	566.6	637.5	708.3	779.1	850.0	920.8
800	237.8	277.5	317.1	356.7	396.4	436.0	475.6	515.3	554.9	594.5	634.2	713.4	792.7	872.0	951.3	1030.6
900	262.1	305.8	349.5	393.2	436.9	480.6	524.3	568.0	611.7	655.3	699.0	784.4	863.8	943.2	1022.6	1102.0
1000	285.5	333.1	380.7	428.3	475.9	523.5	571.1	618.7	666.2	713.8	761.4	856.6	951.8	1047.0	1142.2	1237.4
1100	308.1	359.4	410.8	462.1	513.5	564.8	616.2	667.5	718.8	770.2	821.5	924.2	1026.9	1129.6	1232.3	1335.0
1200	329.8	384.8	436.8	494.7	549.7	604.7	659.7	714.6	769.6	824.6	879.6	989.5	1099.4	1209.3	1319.2	1429.1
1300	350.9	409.4	467.8	526.3	584.8	644.3	701.4	760.2	818.7	877.2	935.7	1052.6	1169.5	1286.4	1403.3	1520.2
1400	371.3	433.1	495.0	556.9	618.8	680.6	742.5	804.4	866.3	928.1	990.0	1113.8	1237.5	1361.3	1485.0	1608.8
1500	391.0	456.2	521.4	586.6	651.7	716.9	782.1	847.3	912.4	977.6	1042.8	1173.1	1303.5	1433.8	1564.2	1694.6
1600	410.3	478.7	547.1	615.4	683.8	752.2	820.6	889.0	957.4	1025.7	1094.1	1230.9	1367.7	1504.4	1641.2	1777.9
1700	429.1	500.6	572.1	643.6	715.1	786.6	858.1	929.6	1001.2	1072.7	1144.2	1287.2	1430.2	1573.2	1716.2	1859.2
1800	447.4	522.0	596.5	671.1	745.7	820.2	894.8	969.4	1043.9	1118.5	1193.1	1342.2	1491.3	1640.5	1789.6	1938.7
1900	465.4	542.9	620.5	698.0	775.6	853.1	930.7	1008.3	1085.8	1163.4	1240.9	1396.1	1551.2	1706.3	1861.4	2016.5
2000	483.0	563.5	643.9	724.4	804.9	885.4	965.9	1046.4	1126.9	1207.4	1287.9	1448.9	1609.9	1770.9	1931.9	2092.9
2200	517.3	603.5	689.7	776.0	862.2	948.4	1034.6	1120.8	1207.1	1293.3	1379.5	1551.9	1724.4	1896.8	2069.2	2241.6
2400	550.7	642.5	734.3	826.1	917.9	1009.7	1101.4	1193.8	1285.0	1376.8	1468.6	1652.2	1835.8	2019.3	2202.9	2386.5
2600	583.5	680.7	777.9	875.2	972.4	1069.7	1166.9	1264.1	1361.4	1458.6	1555.9	1750.4	1944.9	2139.3	2333.8	2528.3
2800	615.7	718.3	820.9	923.5	1026.1	1128.7	1231.3	1333.9	1436.5	1539.2	1641.8	1847.0	2052.3	2257.5	2462.7	2667.9
3000	755.4	863.4	971.3	1079.2	1187.1	1295.0	1402.9	1510.8	1618.7	1726.6	1834.5	2042.4	2250.3	2458.2	2666.1	2874.0
3200	792.2	905.4	1018.6	1131.8	1244.9	1358.1	1471.2	1584.3	1697.4	1810.5	1923.6	2131.5	2339.4	2547.3	2755.2	2963.1
3400	826.7	947.1	1065.5	1183.9	1302.2	1420.6	1539.0	1657.4	1775.8	1894.2	2012.6	2220.5	2428.4	2636.3	2844.2	3052.1
3600	864.8	984.4	1111.9	1235.4	1358.9	1482.5	1606.0	1729.6	1853.2	1976.7	2100.3	2223.8	2431.7	2639.6	2847.5	3055.4
3800	900.5	1029.1	1157.7	1286.4	1415.0	1543.6	1672.2	1800.9	1929.6	2058.2	2186.9	2386.9	2515.6	2744.3	2973.0	3201.7
4000	1069.2	1202.8	1336.5	1470.0	1603.7	1737.3	1871.1	2004.7	2138.4	2272.1	2405.7	2673.0	2940.3	3207.6	3474.9	3742.2
4200	1108.3	1246.9	1385.4	1523.9	1662.4	1800.9	1939.6	2078.1	2216.7	2355.2	2493.7	2770.8	3047.9	3325.0	3602.1	3879.2
4400	1146.2	1289.5	1432.8	1576.0	1719.2	1862.5	2005.9	2149.2	2292.5	2435.8	2579.1	2865.6	3152.1	3438.6	3725.1	4011.6
4600	1182.5	1330.3	1476.1	1625.8	1774.4	1923.0	2071.6	2220.2	2368.8	2517.4	2666.0	2959.5	3253.0	3546.5	3840.0	4133.5
4800	1217.6	1368.8	1520.9	1672.8	1824.9	1976.9	2128.9	2280.9	2432.9	2584.9	2736.9	3036.4	3335.9	3635.4	3934.9	4234.4
5000	1248.3	1404.3	1560.4	1716.2	1872.2	2028.3	2184.3	2340.3	2496.3	2652.3	2808.3	3108.8	3408.3	3707.8	4007.3	4306.8
5200	1276.7	1436.3	1595.9	1752.5	1912.4	2072.4	2232.4	2392.4	2552.4	2712.4	2872.4	3173.9	3473.4	3772.9	4072.4	4371.9
5400	1301.3	1463.9	1626.6	1789.0	1951.6	2114.2	2277.2	2439.9	2602.5	2765.2	2927.8	3230.3	3529.8	3829.3	4128.8	4428.3
5600	1321.2	1486.4	1651.5	1816.4	1981.5	2146.2	2312.2	2477.3	2642.3	2807.3	2972.3	3275.8	3575.3	3874.8	4174.3	4473.8
5800	1335.8	1502.8	1669.8	1836.4	2003.4	2170.3	2337.7	2504.7	2671.7	2838.7	3005.7	3310.2	3609.7	3909.2	4208.7	4508.2
6000	1344.2	1512.2	1680.2	1847.2	2015.2	2184.3	2352.3	2520.3	2688.3	2856.3	3024.3	3329.8	3629.3	3928.8	4228.3	4527.8

Table 50. Reference Transmission Capacity of 2GT Ps -Belt Width 4mm-

(W)

No. of Teeth of Small Pulley	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Rotary Speed of Small Pulley (rpm)	7.64	8.91	10.19	11.46	12.73	14.01	15.28	16.55	17.83	19.10	20.37	22.92	25.46	28.01	30.56	31.83	38.20	45.84
Diameter of the Pitch Circle (mm)																		
20	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.7	1.9	2.2	2.5	2.6	3.4	4.0
40	0.8	1.0	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.4	2.7	3.1	3.6	4.1	4.6	4.9	6.3	7.6
60	1.1	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.2	3.5	3.8	4.4	5.1	5.8	6.6	7.0	9.1	10.9
100	1.7	2.1	2.4	2.8	3.2	3.6	4.0	4.5	4.9	5.4	5.9	6.9	8.0	9.1	10.3	11.0	14.3	17.2
200	3.0	3.6	4.3	5.0	5.7	6.4	7.2	8.0	8.8	9.7	10.6	12.5	14.5	16.6	18.9	20.1	26.4	31.7
300	4.2	5.0	5.9	6.9	7.9	8.9	10.0	11.1	12.3	13.6	14.9	17.6	20.4	23.5	26.8	28.5	37.7	45.3
400	5.2	6.3	7.4	8.6	9.9	11.2	12.6	14.1	15.6	17.2	18.8	22.3	26.0	30.0	34.3	36.5	48.5	58.2
500	6.1	7.4	8.8	10.2	11.8	13.4	15.1	16.8	18.7	20.6	22.6	26.8	31.4	36.2	41.4	44.1	58.8	70.6
600	7.0	8.5	10.1	11.8	13.5	15.4	17.4	19.4	21.6	23.8	26.2	31.2	36.5	42.2	48.3	51.5	68.9	82.6
700	7.8	9.5	11.3	13.2	15.2	17.4	19.6	21.9	24.4	27.0	29.6	35.3	41.4	48.0	55.0	58.7	78.6	94.4
800	8.6	10.5	12.5	14.6	16.8	19.2	21.7	24.3	27.1	30.0	33.0	39.4	46.2	53.6	61.5	65.6	88.2	105.8
870	9.1	11.1	13.3	15.5	17.9	20.5	23.2	26.0	28.9	32.0	35.2	42.1	49.5	57.5	66.0	70.4	94.7	113.7
900	9.3	11.4	13.6	15.9	18.4	21.0	23.8	26.7	29.7	32.9	36.2	43.3	50.9	59.1	67.9	72.4	97.5	117.0
1000	10.0	12.3	14.6	17.2	19.9	22.7	25.7	28.9	32.2	35.7	39.3	47.1	55.4	64.4	74.1	79.1	106.7	128.0
1160	11.1	13.6	16.3	19.1	22.1	25.4	28.8	32.3	36.1	40.0	44.2	53.0	62.5	72.7	83.7	89.5	121.0	145.2
1200	11.4	13.9	16.6	19.6	22.7	26.0	29.5	33.2	37.0	41.1	45.3	54.4	64.2	74.8	86.1	92.0	124.6	149.5
1400	12.6	15.4	18.5	21.8	25.3	29.1	33.0	37.2	41.6	46.2	51.1	61.4	72.6	84.7	97.7	104.5	141.9	170.3
1450	12.9	15.8	19.0	22.4	26.0	29.8	33.9	38.2	42.7	47.5	52.5	63.1	74.7	87.2	100.6	107.6	146.2	175.4
1600	13.7	16.8	20.3	23.9	27.8	32.0	36.4	41.1	46.0	51.2	56.6	68.2	80.8	94.4	109.0	116.6	158.8	190.6
1750	14.5	17.8	21.5	25.4	29.6	34.1	38.8	43.8	49.1	54.7	60.6	73.1	86.7	101.4	117.2	125.5	171.2	205.4
1800	14.7	18.2	21.9	25.9	30.2	34.8	39.6	44.7	50.2	55.9	61.9	74.7	88.6	103.7	119.9	128.4	175.3	210.3
2000	15.7	19.4	23.4	27.8	32.4	37.4	42.7	48.3	54.2	60.4	66.9	81.0	96.2	112.8	130.5	139.9	191.4	229.7
2400	17.4	21.7	26.3	31.2	36.6	42.3	48.4	54.9	61.8	69.0	76.6	93.0	110.9	130.2	151.1	162.1	222.8	267.3
2800	19.0	23.7	28.8	34.4	40.4	46.9	53.8	61.1	68.9	77.1	85.8	104.4	124.8	146.9	170.8	183.4	253.1	303.7
3200	20.3	25.5	31.1	37.3	43.9	51.1	58.8	66.9	75.6	84.7	94.4	115.2	138.1	162.9	189.8	204.0	282.4	338.9
3600	21.5	27.1	33.2	39.9	47.2	55.0	63.4	72.4	81.9	92.0	102.6	125.6	150.9	178.4	208.2	223.9	311.0	373.2
4000	22.6	28.6	35.1	42.4	50.2	58.7	67.8	77.5	87.9	98.9	110.5	135.6	163.2	193.3	225.9	243.2	338.9	406.7
5000	24.7	31.6	39.2	47.7	56.9	66.9	77.7	89.2	101.6	114.7	128.7	158.9	192.2	228.7	268.3	289.3	406.0	487.2
6000	26.2	33.8	42.4	52.0	62.5	73.9	86.3	99.6	113.8	129.0	145.1	180.2	219.1	261.7	308.1	332.7	469.8	563.8
7000	27.1	35.5	45.0	55.5	67.2	79.9	93.8	108.8	124.8	142.0	160.2	200.0	244.2	292.8	345.8	373.9	531.0	637.3
8000	27.6	36.6	46.9	58.4	71.1	85.2	100.4	117.0	134.7	153.8	174.1	218.4	267.8	322.2	381.6	413.2	590.0	708.0
10000	27.5	37.5	49.2	62.4	77.1	93.5	111.4	130.9	151.9	174.6	198.7	251.8	311.2	376.8	448.7	487.0	702.1	842.6
12000	26.0	36.9	49.8	64.4	81.0	99.5	119.8	142.0	166.1	192.1	220.0	281.4	350.3	426.8	510.7	555.6	807.9	969.5
14000	23.5	35.1	48.9	64.9	83.1	103.5	126.1	150.9	177.9	207.1	238.4	307.8	385.9	472.8	568.5	619.7	908.3	1090.0

*Because the durability in terms of hours decreases in the marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table 51. Reference Transmission Capacity of 3GT Ps -Belt Width 6mm-

(W)

No. of Teeth of Small Pulley		12	14	16	18	20	22	24	26	28	30	32	36	40	48	54	60	72	80
Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)	11.46	13.37	15.28	17.19	19.10	21.01	22.92	24.83	26.74	28.65	30.56	34.38	38.20	45.84	51.57	57.30	68.75	76.39
20		2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	5.9	6.4	6.9	7.8	8.7	10.5	11.8	13.1	15.7	17.4
40		3.6	4.5	5.5	6.4	7.3	8.2	9.1	10.0	10.9	11.8	12.6	14.3	16.0	19.3	21.7	24.2	28.9	32.0
60		5.0	6.4	7.7	9.0	10.3	11.6	12.9	14.2	15.4	16.7	17.9	20.4	22.8	27.5	30.9	34.4	41.1	45.5
100		7.6	9.7	11.8	13.9	15.9	18.0	19.9	21.9	23.9	25.9	27.8	31.6	35.3	42.6	48.0	53.4	63.8	70.6
200		13.1	16.9	20.8	24.6	28.2	32.0	35.6	39.2	42.8	46.4	49.9	56.8	63.6	76.8	86.5	96.1	114.8	127.0
300		17.7	23.2	28.7	34.1	39.2	44.6	49.6	54.8	59.9	65.0	69.8	79.6	89.2	107.7	121.4	134.8	161.0	178.1
400		21.9	28.9	35.9	42.8	49.4	56.3	62.7	69.3	75.7	82.2	88.4	100.9	113.0	136.5	153.9	171.0	204.1	225.7
500		25.6	34.2	42.6	51.0	58.9	67.2	74.9	82.9	90.6	98.5	105.9	121.0	135.6	163.8	184.7	205.1	244.8	270.7
600		29.1	39.0	48.9	58.7	67.8	77.5	86.5	95.8	104.8	114.0	122.6	140.1	157.1	189.8	214.0	237.7	283.7	313.5
700		32.2	43.6	54.8	66.0	76.4	87.4	97.6	108.2	118.4	128.9	138.6	158.5	177.8	214.8	242.2	269.1	321.0	354.7
800		35.2	47.9	60.4	72.9	84.6	96.9	108.3	120.1	131.5	143.2	154.1	176.2	197.7	239.0	269.4	299.3	357.0	394.3
870		37.2	50.8	64.2	77.6	90.1	103.3	115.5	128.2	140.4	152.9	164.6	188.3	211.3	255.4	288.0	319.8	381.4	421.3
900		38.0	52.0	65.8	79.6	92.4	106.0	118.6	131.6	144.2	157.0	169.0	193.3	217.0	262.3	295.8	328.5	391.7	432.6
1000		40.6	55.9	71.0	86.0	100.0	114.9	128.5	142.7	156.4	170.4	183.4	210.0	235.7	285.0	321.3	356.8	425.4	469.8
1160		44.4	61.8	78.8	95.8	111.6	128.4	143.8	159.9	175.2	191.1	205.7	235.6	264.5	319.9	360.7	400.6	477.4	527.0
1200		45.4	63.2	80.7	98.2	114.4	131.7	147.5	164.0	179.8	196.1	211.1	241.9	271.6	328.4	370.3	411.2	490.0	540.9
1400		49.6	69.9	89.7	109.6	128.0	147.5	165.5	184.2	202.1	220.5	237.5	272.2	305.7	369.8	416.9	462.9	551.4	608.3
1450		50.6	71.5	91.9	112.3	131.2	151.4	169.8	189.0	207.4	226.4	243.9	279.5	314.0	379.8	428.3	475.5	566.2	624.6
1600		53.4	76.0	98.2	120.3	140.8	162.6	182.5	203.3	223.2	243.7	262.6	301.1	338.4	409.3	461.5	512.3	609.8	672.5
1750		56.0	80.4	104.2	128.0	149.9	173.4	194.8	217.2	238.5	260.5	280.8	322.1	362.0	437.9	493.7	548.0	652.0	718.7
1800		56.8	81.7	106.1	130.5	152.9	176.9	198.8	221.7	243.5	266.0	286.7	328.9	369.7	447.2	504.2	559.6	665.7	733.7
2000		59.9	87.1	113.6	140.1	164.5	190.6	214.4	239.3	263.0	287.4	309.8	355.7	399.8	483.7	545.3	605.1	719.3	792.3
2400		65.2	96.6	127.3	158.1	186.2	216.4	243.8	272.4	299.7	327.9	353.7	406.3	456.9	552.8	622.9	690.9	820.1	902.2
2800		72.9	105.0	139.7	174.4	206.1	240.2	271.0	303.3	334.0	365.8	394.6	453.7	510.4	617.2	695.3	770.7	913.1	1003.1
3200		80.8	112.3	150.9	189.4	224.5	262.4	296.4	332.2	366.2	401.3	433.1	498.2	560.6	677.7	763.0	845.1	999.1	1095.6
3600		88.4	118.7	161.0	203.2	241.6	283.1	320.3	359.3	396.4	434.7	469.3	540.2	607.8	734.5	826.3	914.4	1078.4	1180.2
4000		95.9	124.3	170.2	216.0	257.5	302.4	342.6	384.9	424.9	466.3	503.5	579.8	652.4	787.8	885.6	979.0	1151.3	1257.0
5000		113.8	135.2	189.6	243.9	292.7	345.8	392.9	442.6	489.4	537.9	581.1	669.6	753.3	907.4	1017.3	1120.7	1306.3	1415.8
6000		130.7	154.3	204.6	266.8	322.3	383.0	436.3	492.7	545.5	600.3	648.7	747.7	840.5	1008.6	1126.6	1235.3	1422.5	1526.3
7000		147.0	173.3	216.0	285.5	347.2	414.7	473.7	536.1	594.2	654.6	707.3	815.5	915.0	1092.0	1214.1	1323.1	1509.2	1586.5
8000		162.6	191.5	224.1	300.4	367.1	441.6	505.6	573.4	636.2	701.3	757.6	872.2	977.3	1159.1	1279.9	1383.5	1534.5	1593.4
10000		192.2	225.7	259.3	320.5	397.5	482.4	554.7	631.3	701.2	773.7	834.6	957.4	1066.1	1240.3	1343.8	1418.4	1471.0	1431.9
12000		219.7	253.3	294.6	331.6	413.4	507.3	585.4	668.1	742.3	818.9	880.9	1004.0	1106.6	1249.1	1312.0	1329.1	1209.3	1008.1
14000		245.5	286.4	326.7	366.1	416.7	512.2	598.6	684.8	760.0	837.2	896.5	1010.9	1096.9	1249.1	1181.5	1102.1		

Selection of Transmission Timing Belts 9 -Transmission Capacity Table-

Table52. Reference Transmission Capacity of EV5GT Ps -Belt Width 15mm-(W)

No. of Teeth of Small Pulley Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)															
	14	16	18	20	22	24	26	28	30	32	36	40	44	48	54	60
	22.28	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	85.94	95.49
20	13	18	22	27	33	38	42	47	52	56	64	72	80	87	97	108
40	24	33	41	50	61	70	79	88	96	104	120	136	150	163	183	203
60	33	46	58	72	87	100	113	126	139	150	173	196	216	236	264	293
100	50	71	91	113	136	157	178	199	219	237	273	310	343	374	419	465
200	85	125	163	205	248	287	326	365	403	438	506	575	636	695	780	867
300	115	173	228	289	350	407	464	520	574	625	723	823	912	996	1119	1244
400	142	217	289	369	447	520	594	667	737	803	931	1060	1176	1285	1445	1607
500	166	258	347	445	539	629	718	808	894	974	1131	1289	1430	1564	1750	1957
600	188	297	402	518	627	733	830	944	1046	1141	1325	1511	1678	1836	2065	2298
700	208	333	454	589	712	834	956	1077	1193	1302	1514	1728	1919	2101	2364	2632
800	227	368	505	657	795	933	1069	1206	1337	1460	1699	1940	2156	2360	2657	2958
870	230	392	540	704	851	1000	1147	1294	1436	1569	1826	2086	2319	2539	2858	3183
900	244	402	554	724	875	1028	1180	1332	1478	1615	1880	2148	2388	2615	2944	3279
1000	260	434	602	789	954	1122	1289	1456	1616	1767	2058	2352	2616	2865	3227	3593
1160	284	483	675	890	1075	1268	1459	1649	1832	2004	2337	2672	2973	3257	3669	4087
1200	289	495	693	915	1105	1304	1500	1696	1885	2062	2405	2751	3061	3353	3778	4209
1400	315	551	780	1035	1251	1478	1704	1929	2145	2349	2742	3138	3493	3828	4314	4807
1450	321	565	801	1065	1286	1521	1754	1986	2209	2419	2825	3233	3599	3945	4446	4952
1600	338	605	863	1152	1391	1647	1901	2155	2397	2627	3070	3516	3914	4291	4837	5390
1750	354	643	923	1237	1494	1771	2046	2320	2583	2831	3311	3793	4224	4631	5221	5817
1800	358	655	943	1264	1527	1811	2093	2374	2644	2899	3390	3884	4326	4743	5347	5958
2000	376	703	1020	1374	1659	1971	2280	2589	2884	3164	3703	4244	4728	5185	5846	6513
2400	406	791	1165	1584	1911	2278	2641	3003	3349	3678	4309	4943	5509	6042	6812	7587
2800	440	872	1301	1783	2151	2571	2986	3400	3795	4171	4892	5615	6259	6865	7737	8613
3200	466	945	1429	1973	2380	2851	3318	3782	4225	4647	5455	6263	6982	7657	8625	9594
3600	529	1011	1550	2155	2598	3120	3636	4150	4640	5107	5998	6888	7679	8419	9477	10531
4000	571	1072	1665	2330	2808	3379	3944	4505	5041	5550	6522	7492	8350	9151	10291	11423
5000	667	1202	1925	2738	3296	3986	4667	5343	5985	6597	7758	8910	9920	10854	12167	13450
6000		1305	2153	3108	3737	4539	5330	6112	6853	7559	8889	10199	11335	12372	13803	15172
7000		1382	2352	3445	4136	5044	5936	6817	7648	8438	9915	11358	12590	13695	15183	16561
8000			2524	3740	4495	5501	6487	7459	8370	9235	10835	12383	13677	14812	16285	17586
9000			2671	4023	4815	5912	6984	8037	9018	9946	11645	13265	14586	15706	17086	18212
10000				4266	5096	6277	7426	8550	9591	10570	12339	13998	15303	16361	17560	
12000				4660	5541	6865	8141	9375	10498	11541	13356	14976	16113	16883		
14000				4930	5825	7256	8617	9915	11067	12113	13831	15238				

*Because the durability in terms of hours decreases in the [] marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

Table53. Reference Transmission Capacity of EV8YU Ps -Belt Width 20mm-(W)

No. of Teeth of Small Pulley Rotary Speed of Small Pulley(rpm)	Diameter of the Pitch Circle(mm)															
	20	22	24	26	28	30	32	34	36	38	40	44	48	54	60	64
	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	137.51	152.79	162.97
10	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.12	0.13	0.14
20	0.07	0.08	0.09	0.10	0.10	0.11	0.13	0.13	0.14	0.15	0.16	0.18	0.20	0.23	0.26	0.28
40	0.13	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32	0.36	0.40	0.46	0.52	0.56
60	0.18	0.21	0.23	0.26	0.29	0.32	0.35	0.38	0.41	0.44	0.48	0.54	0.60	0.69	0.78	0.84
100	0.28	0.33	0.37	0.42	0.47	0.52	0.57	0.62	0.67	0.72	0.78	0.88	0.99	1.14	1.30	1.40
200	0.52	0.60	0.69	0.79	0.89	0.99	1.10	1.20	1.29	1.39	1.52	1.73	1.96	2.27	2.58	2.79
300	0.74	0.86	0.99	1.13	1.29	1.45	1.62	1.76	1.90	2.05	2.25	2.57	2.92	3.38	3.85	4.18
400	0.94	1.10	1.28	1.47	1.67	1.89	2.12	2.30	2.50	2.70	2.97	3.40	3.86	4.48	5.12	5.56
500	1.13	1.34	1.56	1.80	2.05	2.32	2.61	2.84	3.08	3.33	3.68	4.23	4.81	5.59	6.38	6.94
600	1.32	1.57	1.83	2.12	2.42	2.75	3.10	3.38	3.67	3.97	4.38	5.04	5.75	6.68	7.64	8.31
700	1.50	1.79	2.10	2.43	2.79	3.17	3.58	3.90	4.24	4.59	5.08	5.86	6.68	7.77	8.89	9.68
800	1.68	2.00	2.36	2.74	3.15	3.59	4.05	4.43	4.81	5.22	5.78	6.66	7.61	8.86	10.14	11.04
870	1.80	2.15	2.54	2.95	3.40	3.87	4.38	4.79	5.21	5.65	6.26	7.23	8.26	9.62	11.01	11.99
900	1.85	2.21	2.61	3.04	3.50	4.00	4.52	4.94	5.38	5.83	6.47	7.47	8.54	9.95	11.39	12.40
1000	2.02	2.42	2.86	3.34	3.85	4.40	4.99	5.46	5.94	6.45	7.15	8.27	9.46	11.03	12.63	13.75
1160	2.28	2.74	3.26	3.81	4.41	5.05	5.73	6.27	6.83	7.42	8.24	9.54	10.92	12.75	14.60	15.91
1200	2.34	2.82	3.35	3.92	4.54	5.20	5.91	6.47	7.06	7.66	8.51	9.86	11.29	13.17	15.09	16.45
1400	2.65	3.21	3.83	4.50	5.22	5.99	6.82	7.48	8.16	8.86	9.86	11.43	13.11	15.30	17.54	19.11
1450	2.73	3.31	3.94	4.64	5.39	6.19	7.05	7.72	8.43	9.16	10.20	11.82	13.56	15.83	18.15	19.78
1600	2.95	3.59	4.29	5.06	5.88	6.77	7.72	8.47	9.24	10.05	11.20	12.99	14.91	17.41	19.96	21.75
1750	3.17	3.87	4.63	5.47	6.37	7.34	8.39	9.20	10.05	10.93	12.19	14.15	16.25	18.98	21.75	23.71
1800	3.24	3.96	4.75	5.61	6.53	7.53	8.61	9.44	10.31	11.22	12.52	14.54	16.69	19.50	22.35	24.36
2000	3.52	4.32	5.19	6.14	7.17	8.29	9.48	10.41	11.37	12.38	13.82	16.06	18.46	21.56	24.71	26.94
2400	4.06	5.01	6.05	7.19	8.43	9.76	11.20	12.30	13.45	14.65	16.39	19.07	21.93	25.61	29.34	31.57
2800	4.57	5.66	6.88	8.20	9.64	11.20	12.87	14.15	15.48	16.87	18.90	22.00	25.31	29.55	33.82	36.82
3200	5.05	6.29	7.67	9.18	10.82	12.59	14.50	15.95	17.46	19.03	21.35	24.86	28.60	33.35	38.12	41.46
3600	5.50	6.89	8.43	10.12	11.96	13.95	16.08	17.69	19.38	21.12	23.72	27.62	31.78	37.01	42.22	45.86
4000	5.94	7.47	9.17	11.03	13.06	15.26	17.62	19.39	21.23	23.15	26.02	30.30	34.84	40.50	46.10	50.00
5000	6.91	8.79	10.87	13.16	15.65	18.34	21.24	23.37	25.59	27.88	31.39	36.50	41.90	48.40	54.68	
6000	7.75	9.94	12.38	15.05	17.97	21.12	24.52	26.95	29.47	32.08	36.16	41.92	47.96	54.90		
7000	8.44	10.92	13.68	16.70	20.00	23.57	27.39	30.06	32.82	35.65	40.22	46.41	52.84			
8000	8.99	11.72	14.76	18.09	21.72	25.63	29.82	32.65	35.55	38.52	43.45					

*Because the durability in terms of hours decreases in the [] marked range, this range should be avoided whenever possible. For other belt widths, values above should be multiplied by the width correction coefficient shown in Table 28.

[Technical Data] Selection of Conveyor Timing Belts

■ Conveyor belts selection procedure

The following steps for selection is based on the case that sizes of head pulley and tail pulley are same.
(Follow the steps 1 ~3 even when sizes of head pulley and tail pulley are different)
Use a head pulley as a driving pulley.

For belt installation and tension control, make the structure of the driven side to be adjustable of alignment and center distance with set screws.

*Head Pulley: The front of the pulley against traveling direction
*Tail Pulley: The rear end of the pulley against traveling direction

[Step 1] Calculate effective tension (Te).

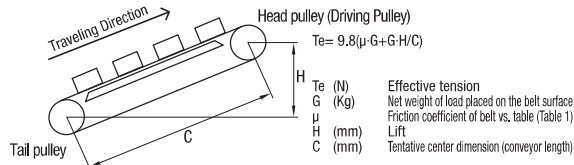


Table 1. Typical Friction Coefficient of Belt versus Table

Table Material	Steel	Stainless	Aluminium	UHMW	Teflon
Friction coefficient: μ	0.65	0.68	0.42	0.31	0.21

[Step 2] Calculate design tension (Td).

$$T_d = K \cdot T_e$$

$$K = K_1 + K_2 + K_3$$

Td (N) Design Tension
K Overload Coefficient
Te (N) Effective Tension

K1 Correction factors for daily operation hours
K2 Belt length correction coefficient
K3 Belt speed correction coefficient

Table 2. K1 Correction Factors for Daily Operation Hours Unit: hour

~5	5~8	8~12	12~16	16~24
1.0	1.1	1.2	1.3	1.4

Table 3. K2 Belt Length Correction Factors Unit: mm

~1500	1501~3000	3001~4500	4501~
0.3	0.2	0.1	0.0

Table 4. K3 Belt Speed Correction Factors Unit: m/minute

~60	61~90	91~120
0.0	0.1	0.2

[Step 3] Select belt type, belt width and pulley dimension.

(1) Select from Table 5 a belt type and a width which have a greater allowable tension than the designed tension.

Table 5. Allowable Tension of Joint Belts Unit: N

Belt Type	Belt width (mm)					
	10	15	20	25	30	40
S5M	120	180	—	300	—	—
S8M	—	235	—	392	471	627
T5	58	87	116	145	—	—
T10	—	180	240	300	360	481
AT5	74	110	—	—	—	—
AT10	—	234	312	391	—	—

Table 5. Allowable Tension of Joint Belts Unit: N

Belt Type	Belt Nominal Width				
	050	075	100	150	200
L	92	138	184	276	—
H	—	163	216	324	432

(2) Select a pulley with a larger number of teeth than the minimum allowable number in Table 6 for both of driving and driven pulley.

Table 6. Number of Minimum Allowable Number of Teeth for Pulleys

Belt Type	L	H	S5M	S8M	T5	T10	AT5	AT10
Pitch (mm)	9.525	12.7	5	8	5	10	5	10
Min. No. of Pulley Teeth	14	14	14	24	12	14	20	14
Pulley Diameter (mm)	42.45	56.60	22.28	61.12	19.10	44.56	31.83	44.56

[Step 4] Determine belt length (no. of teeth) and center distance.

(1) Obtain approximate belt length from tentative center dimension (C') and approximate pulley diameter (Dp').

$$L_p' = 2 \cdot C' + \pi \cdot D_p'$$

Lp' (mm) Approx. belt length
C' (mm) Tentative center dimension
Dp' (mm) Approx. pulley diameter

(2) Determine the number of teeth required from the approximate belt length (Lp') and pitch (P).
Round down the obtained number of teeth (N) to the nearest whole number.

$$N = L_p' / P$$

N No. of belt teeth
p (mm) Pitch

*Check the minimum teeth of belt which is available.

(3) Obtain the proper belt length from the number of teeth (N) and pitch (P).

$$L_p = P \cdot N$$

Lp (mm) Belt length

(4) Determine proper center distance with the following formula:

$$C = P \cdot (N - D_z) / 2$$

C (mm) Center Distance
Dz No. of teeth of pulley

[Step 5] Confirm the adjustment margin for the center distance is larger than figures in Table7-a and 7-b.

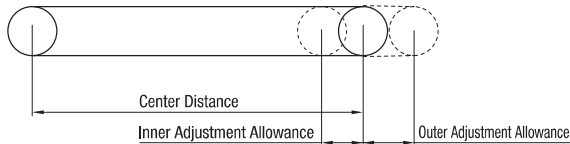


Table 7-a: Inner Adjustment Allowance (Attachment Allowance)

Belt Type	Inner Adjustment Allowance
L	More than 10mm
H	More than 15mm
S5M	More than 10mm
S8M	More than 15mm
T5	More than 5mm
T10	More than 10mm
AT5	More than 10mm
AT10	More than 15mm

Table 7-b: Outer Adjustment Allowance (Tension Allowance)

Distance between shafts (mm)	Outer Adjustment Allowance
~ 500	More than 5mm
501~1000	More than 10mm
1001~1500	More than 15mm
1501~2000	More than 20mm
2001~2500	More than 25mm
2501~	More than 1% of center distance

[Step 6] Install timing belt.

Install the belt with the installation tension in Table 8.
Axis weight at this time is twice the installation tension.

$$F_s = 2 \cdot T_i$$

Fs (N) Shaft load
Ti (N) Fixing Tension (Table 8)

Table 8. Installation Tension for Joint Belts Unit: N

Belt Type	Belt width (mm)					
	10	15	20	25	30	40
S5M	60	90	—	150	—	—
S8M	—	117	—	196	235	313
T5	29	43	58	72	—	—
T10	—	90	120	150	180	240
AT5	37	55	—	—	—	—
AT10	117	156	195	—	—	—

Table 8. Installation Tension for Joint Belts Unit: N

Belt Type	Belt Nominal Width				
	050	075	100	150	200
L	46	69	92	138	—
H	—	81	108	162	216

Reference: Table on Open-end belts Allowable Tension Unit: N

Belt Type	Material	Belt width (mm)							
		6	10	15	20	25	30	40	50
S3M	Polyurethane	127	—	—	—	—	—	—	—
S5M	Rubber	—	310	490	—	—	—	—	—
	Polyurethane	—	215	323	—	539	—	—	—
S8M	Rubber	—	—	—	—	950	—	—	—
	Polyurethane	—	—	647	—	1176	1412	1882	—
T5	Polyurethane	—	112	166	225	284	—	—	—
T10	Polyurethane	—	—	299	397	529	627	862	1064
AT5	Polyurethane	—	147	221	—	—	—	—	—
AT10	Polyurethane	—	—	469	625	781	—	—	—

Ⓐ When using belts for other purpose than conveyance (e.g. transmission), for polyurethane belt S3M; design with 1/2 of the allowable tension in the table; for XL, L, H, S5M, S8M, T5 and T10, design with approx. 2/3 of the allowable tension in the table.

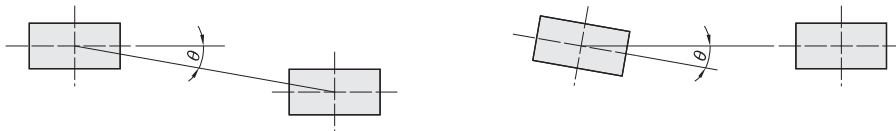
Synchronous Belt Reference Information

Early failures and countermeasures

Abnormal Phenomena	Cause	Measures
Abnormal Wear of Belt Side Faces	- Pulley misalignment - Pulley shafts misalignments - Bent pulley flanges	- Realign - Correct shaft misalignments - Correct bent pulley flanges
Tooth Contact Pressure Surface Abnormal Wear	- Overload - Belt tension too high, too low	- Redesign with a wide belt or use larger belt pitch - Adjust initial belt tension
Belt abnormal wear of pulley contacting area	- Pulley tooth shape incorrect - Belt tension too high	- Adjust initial belt tension - Remake pulley taking note of tooth tip radius
Broken/missing tooth	- Pulley diameter too small - Small pulley meshing 6 teeth or less - Shock loading exists	- Redesign - Increase small pulley tooth mesh or redesign - Avoid shock loading on belt - Increase belt width
Severed Core Wire	- Overload - Core wire decreased elasticity or corrosion - Induction of foreign matter - Excessive temperature	- Redesign - Check belt storage and shipping history/condition - Avoid shocks - Provide a belt cover - Lower environment temperature
Cracks on Backing Rubber	- Usage in low temperature - Pulley diameter too small	- Raise environment temp. - Increase pulley diameter
Heat Degradation of Rubber	Rubber degradation due to high environment temperature	Lower environment temperature
Rubber Swelling	- Contact with oils - Contact with water	- Avoid oil from contacting - Avoid water from contacting
Abnormal Wear of Pulley Teeth	- Overload - Belt tension too high - Pulley material too soft	- Redesign - Adjust initial belt tension - Apply surface hardening treatment on pulley or change pulley material
Pulley Circumference Wear	- Pulley service life has been reached - Belt tension too high (core wire visible on belt back side)	- Replace with a new pulley - Replace with new pulley and belt, and use lower belt tension
Abnormal Sound	- Belt tension too high - Overload - Pulley diameter too small - Pulley tooth shape incorrect	- Realign - Adjust initial belt tension - Redesign - Correct pulley tooth geometry
Apparent Belt Stretch	- Shaft center distance too small - Loose machine base	- Adjust to correct shaft distance - Reinforce machine base

About Pulley Alignments

Misaligned pulleys may cause early belt failure and flange damages.
Align as show below



•MXL/XL/L/H/S_M/MTS_M/T Series

Belt width(mm)	10	20	30≤
$\tan\theta$	5/1000	3/1000	2/1000

•P_M/UP_M

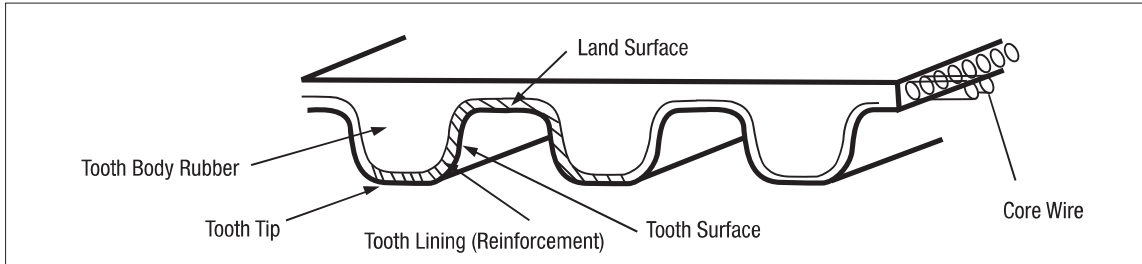
Belt width(mm)	≤30
$\tan\theta$	5/1000

•_GT/EV5GT/EV8YU

Belt width(mm)	≤20	20<40
$\tan\theta$	6/1000	3/1000

Synchronous Belt Replacement Signs

Names of Belt Components



Examples of Belt Replacement Signs

Examples	Condition
1. When belt tooth reinforcement fabric is worn and rubber/core wire are exposed. When tooth surface/grooves are worn and rubber/core wire are exposed	
2. When the backing rubber shows cracks due to hardening	
3. When cracks reaching the rubber are seen at tooth base	
4. Belt side faces are damaged due to wear	
5. When missing tooth can be seen	
6. When excessive wear can be seen on belt back side	
7. When belt or core wire are broken	

⚠️ These are belt replacement timing guides. Early or periodical replacements are recommended even the signs shown above are not yet visible.

[Technical Data] Selection of Synchronous Belt Iron Rubber® 1

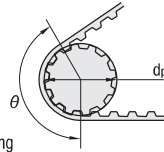
Iron Rubber® is a registered trademark of NOK Corporation.

Iron Rubber® Belts (P1203~P1205) are selected based on applied Load Torque (Nm) or Transmission Capacity (kW).

Selection Condition

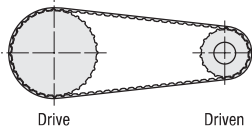
Conditions Needed For Selecting

- Pulley Pitch Diameter: d_p (mm)
- Pulley Wrap Angle: θ (°)
- Pulley Rotational Speed: n (rpm)
- Load Torque: M_d (Nm)
or Transmission Capacity: P (kW)

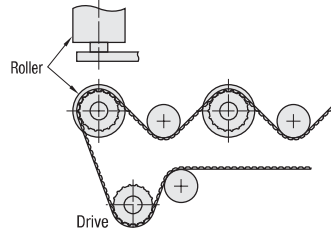


Fundamentally use the Drive side pulley for calculations. When the Driven side pulley is also transmitting torque, calculate for the Driven side also, and make the belt selection based on more severe side.

Ex. 1) When Drive Pulley Diameter > Driven Pulley Diameter, also calculate for the Driven side pulley.



Ex. 2) When the driven pulley is connected to a roller, also calculate for the Driven side.



Selection Method

[Step 1] Load Torque, Transmission Capacity Corrections

Back-side Idler Correction

- When a Transmission Capacity is given as a conditional parameter

$$P = P_0 \times (1 + 0.1 \times f)$$

P : Transmission Capacity Used for Selection (kW)
 P_0 : Transmission Capacity Given as Conditional Parameter (kW)
 f : Number of Back-side Idlers

- When a Load Torque is given as a conditional parameter

$$M_d = M_{d0} \times (1 + 0.1 \times f)$$

M_d : Transmission Capacity Used for Selection (Nm)
 M_{d0} : Transmission Capacity Given as Conditional Parameter (Nm)
 f : Number of Back-side Idlers

[Step 2] Selection of Belt Model

Select belt model using Simplified Selection Chart on P.1945.

- When a Transmission Capacity is given as a conditional parameter
Select belt model based on Transmission Capacity and Pulley Speed (See Table 6)
- When a Load Torque is given as a conditional parameter
Select belt model based on Load Torque and Number of Sm. Pulley Tooth (See Table 7)

[Step 3] Selection of Pulley Tooth Count Z

Note the Min. Pulley Tooth Count when selecting the number of tooth. (See Table 1)

Table 1: Min. Pulley Tooth Count

Rotational Speed (rpm)	MA3	MA5	MA8	AT5	AT10	T5	T10	MXL	XL	L	H
600 or Less	18	15	20	15	15	12	14	12	10	10	14
720 or Less			22							12	
900 or Less			24							14	
1200 or Less			26							16	
1800 or Less	20	20	26	16	20	14	18	14	12	14	18
3000 or Less	22	24	28	18	22	16	20	16		16	20

[Step 4] Selection of Belt Tooth Count ZB

<When pulley ratio is not 1:1>

Obtain belt tooth count from belt length.

Select belt loop length from shaft distance (C), Lg. Pulley Dia., and Sm. Pulley Dia.

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

C : Shaft Center Distance
 d_p : Sm. Pulley Number of Tooth (mm)

D_p : Lg. Pulley Number of Tooth (mm)
 L_p : Belt length (mm)

Calculate number of tooth from belt length.

$$Z_B = \frac{L_p}{t}$$

Z_B : Belt Tooth Count
 t : Belt Pitch (exT10 → $t=10$)

<When pulley ratio is 1:1>

$$Z_B = \frac{2C}{t} + Z$$

C : Shaft Center Distance
 t : Belt Pitch

Z : Number of Pulley Tooth

[Step 5] Calculating Tooth Mesh Count

<When pulley ratio is not 1:1>

$$Z_E = \frac{z_1}{180} \times \cos^{-1} \frac{t(z_2 - z_1)}{2\pi C}$$

z_1 : Sm. Pulley Number of Tooth
 z_2 : Lg. Pulley Number of Tooth

<When pulley ratio is 1:1>

$$Z_E = \frac{z}{2}$$

z : Number of Pulley Tooth

However, Max. Number of Effective Meshed Teeth on the right table will be the upper limit.

Table 2: Max. Number of Effective Meshed Teeth

Belt Type	Max. Number of Effective Meshed Teeth
Long Synchronous Belt	6
Open End Belt	12

[Step 6] Calculating Minimum Belt Width bc

Calculate the minimum belt width from Allowable Transmission Capacity and Allowable Transmission Torque on **P.1945**.

- When a Transmission Capacity is given as a conditional parameter

Table 8 (**P.1945**) Allowable Transmission Capacity (Ps) is used.

$$bc = \frac{P \times 10^4}{P_s \times Z \times \epsilon} \times fw$$

bc: Belt Width (mm)
P: Transmission Capacity (kW)
Ps: Allowable Transmission Capacity
Z: Number of Meshing Teeth
fw: Width Factor (Long Synchronous Belt T10150 : 1.5
Others : 1)
Z: Pulley Tooth Count

- When a Load Torque is given as a conditional parameter

Table 9 (**P.1945**) Allowable Transmission Torque (Mds) is used.

$$bc = \frac{Md \times 10^3}{M_{ds} \times Z \times \epsilon} \times fw$$

Md: Load Torque (Nm)
Mds: Allowable Transmission Torque
Z: Number of Meshing Teeth
fw: Width Factor (Long Synchronous Belt T10150 : 1.5
Others : 1)
Z: Pulley Tooth Count

Select standard belt widths larger than the calculated minimum width bc.

[Step 7] Confirming Min. Shaft Center Distance Adjustment Range

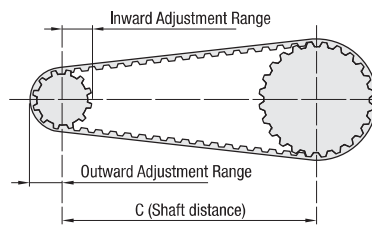
Refer to the table below for Min. Shaft Center Distance Adjustment Range taking in consideration the mounting and adjustment range.

Table 3: Outside Adjustment Range

Outside Adjustment Range (mm)	Outside Adjustment Range (mm)
600 or Less	5
Over 600~1000 or Less	10
Over 1000~1500 or Less	15
Over 1500~2000 or Less	20
Over 2000~2500 or Less	25
Over 2500~3000 or Less	30
Over 3000	Shaft Center Distance × 0.01

Table 4: Inside Adjustment Range

Model	Inside Adjustment Range (mm)
MA3, T5, XL, MXL	5
MA5, AT5, L	10
MA8, AT10, T10, H	15



For flanged pulleys, allow ample adjustment margin taking the flange diameter in consideration.

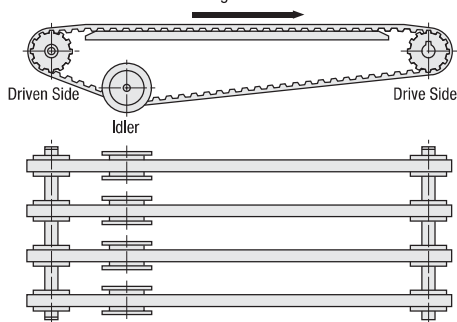
Notes on Selection

• Load Torque and Transmitted Power

Load torque and transmitted power should be calculated for absolute max. load values applicable to the belt for safety.

• For Multiple Belt Parallel Use

- If each belt receives an equal load, calculate with a value of total load divided by the number of belts used.
- However, if the load on each belt may potentially become uneven, calculate with the max. load applicable on one belt.
- The mechanism should be designed to facilitate individual belt tension adjustments.



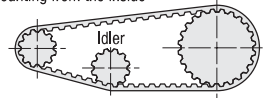
• When an Idler is used

- If use of Idler is unavoidable, always use the Idler on the slack side.
 - Position the Idler on the inside if possible.
- When positioning an Idler on the inside, use one with more teeth than the smaller side pulley.
For placing the Idler on the outside, use a flat pulley without crowning.

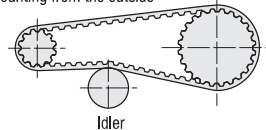
Table 5. Minimum Idler Diameter

Belt Type	Minimum Idler Diameter (mm)
MA3	30
MA5, AT5	40
MA8, AT10	80
T5	30
T10	70
MXL	15
XL	30
L	50
H	90

Mounting from the inside



Mounting from the outside



Selection of Synchronous Belt Iron Rubber® 2

–Selection Guide Table / Allowable Transmission Capacity / Allowable Transmission Torque–

Table 6: Selection Guide Table 1 (Transmission Capacity)

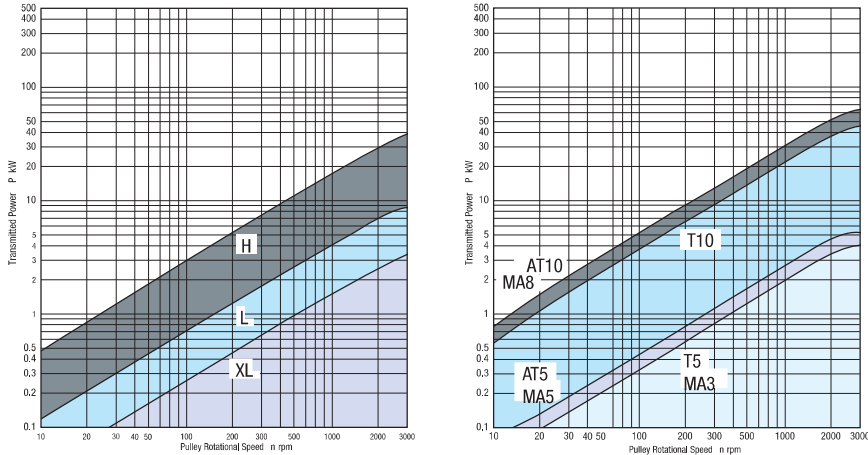


Table 7: Selection Guide Table 2 (Torque)

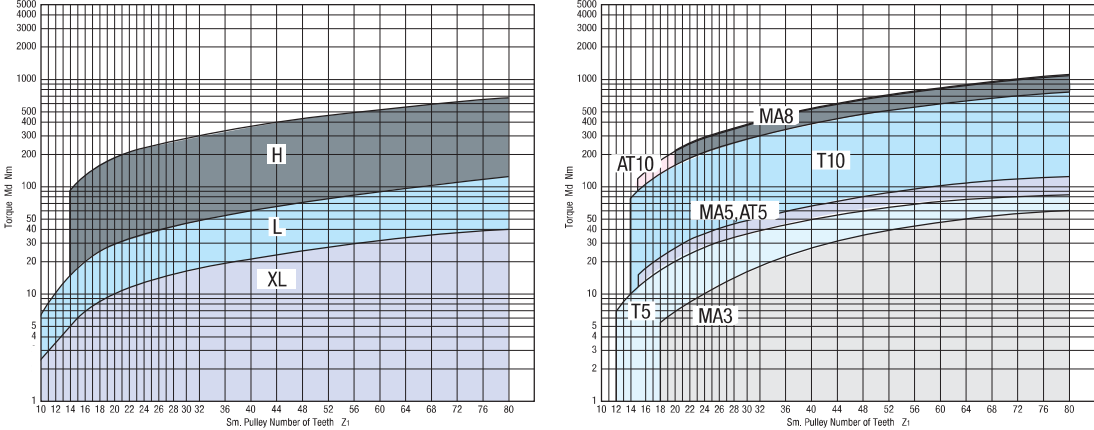


Table 8: Allowable Transmission Capacity (Ps)

Pulley Rotational Speed n (rpm)	MA3	MA5	MA8	AT5	AT10	T5	T10	MXL	XL	L	H
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.026	0.052	0.181	0.052	0.226	0.043	0.181	0.007	0.044	0.129	0.206
40	0.050	0.101	0.351	0.101	0.439	0.084	0.351	0.014	0.085	0.250	0.401
60	0.074	0.147	0.511	0.147	0.639	0.123	0.511	0.020	0.124	0.364	0.583
80	0.096	0.192	0.661	0.192	0.826	0.160	0.661	0.026	0.161	0.471	0.753
100	0.116	0.233	0.800	0.233	1.000	0.194	0.800	0.032	0.196	0.572	0.910
200	0.211	0.422	1.423	0.422	1.779	0.351	1.423	0.058	0.354	1.019	1.616
300	0.296	0.592	1.984	0.592	2.480	0.494	1.980	0.082	0.498	1.419	2.250
400	0.376	0.753	2.496	0.753	3.120	0.627	2.490	0.104	0.632	1.789	2.830
500	0.452	0.905	2.976	0.905	3.720	0.754	2.980	0.126	0.760	2.140	3.370
600	0.525	1.050	3.432	1.050	4.290	0.875	3.430	0.147	0.881	2.470	3.880
700	0.593	1.187	3.864	1.187	4.830	0.989	3.870	0.168	0.999	2.780	4.370
800	0.662	1.324	4.280	1.324	5.350	1.104	4.280	0.188	1.113	3.080	4.830
900	0.728	1.456	4.664	1.456	5.830	1.213	4.680	0.208	1.223	3.370	5.280
1000	0.791	1.538	5.064	1.538	6.330	1.319	5.070	0.227	1.330	3.650	5.720
1100	0.854	1.708	5.440	1.708	6.800	1.423	5.440	0.247	1.434	3.920	6.130
1200	0.914	1.829	5.800	1.829	7.250	1.524	5.800	0.266	1.536	4.190	6.540
1300	0.974	1.947	6.152	1.947	7.690	1.623	6.150	0.285	1.636	4.440	6.930
1400	1.031	2.060	6.496	2.060	8.120	1.719	6.490	0.303	1.733	4.690	7.310
1500	1.088	2.180	6.824	2.180	8.530	1.814	6.830	0.322	1.829	4.930	7.680
1600	1.144	2.290	7.152	2.290	8.940	1.907	7.150	0.340	1.923	5.170	8.040
1700	1.199	2.400	7.464	2.400	9.330	1.998	7.460	0.358	2.010	5.400	8.390
1800	1.254	2.510	7.776	2.510	9.720	2.090	7.770	0.378	2.110	5.620	8.730
1900	1.308	2.610	8.072	2.610	10.090	2.180	8.070	0.394	2.190	5.840	9.060
2000	1.356	2.720	8.368	2.720	10.460	2.260	8.370	0.413	2.280	6.060	9.390
2200	1.458	2.920	8.936	2.920	11.170	2.430	8.940	0.448	2.450	6.480	10.020
2400	1.560	3.120	9.480	3.120	11.850	2.600	9.480	0.485	2.620	6.880	10.630
2600	1.656	3.310	10.008	3.310	12.510	2.760	10.010	0.520	2.780	7.270	11.210
2800	1.746	3.490	10.512	3.490	13.140	2.910	10.510	0.556	2.940	7.640	11.760
3000	1.838	3.680	11.000	3.680	13.750	3.060	11.000	0.590	3.090	8.000	12.300

Table 9: Allowable Transmission Torque (Mds)

Pulley Rotational Speed n (rpm)	MA3	MA5	MA8	AT5	AT10	T5	T10	MXL	XL	L	H
0	1.260	2.520	8.888	2.520	11.110	2.100	8.890	0.344	2.130	6.310	10.150
20	1.230	2.460	8.640	2.460	10.800	2.050	8.640	0.339	2.080	6.140	9.860
40	1.200	2.400	8.392	2.400	10.490	2.000	8.390	0.328	2.030	5.970	9.560
60	1.173	2.350	8.136	2.350	10.170	1.955	8.140	0.319	1.976	5.800	9.270
80	1.144	2.290	7.888	2.290	9.860	1.906	7.890	0.311	1.923	5.630	8.980
100	1.114	2.230	7.640	2.230	9.550	1.857	7.640	0.303	1.871	5.460	8.690
200	1.006	2.010	6.800	2.010	8.500	1.677	6.800	0.276	1.690	4.860	7.720
300	0.943	1.887	6.304	1.887	7.880	1.572	6.300	0.260	1.584	4.520	7.150
400	0.898	1.797	5.952	1.797	7.440	1.497	5.950	0.249	1.509	4.270	6.740
500	0.864	1.728	5.680	1.728	7.100	1.440	5.680	0.241	1.451	4.080	6.430
600	0.836	1.671	5.456	1.671	6.820	1.393	5.460	0.234	1.403	3.920	6.180
700	0.811	1.623	5.272	1.623	6.590	1.352	5.270	0.229	1.363	3.790	5.960
800	0.791	1.581	5.112	1.581	6.390	1.318	5.110	0.225	1.328	3.680	5.770
900	0.772	1.545	4.968	1.545	6.210	1.287	4.970	0.221	1.298	3.580	5.610
1000	0.756	1.512	4.840	1.512	6.050	1.260	4.840	0.217	1.270	3.490	5.460
1100	0.741	1.482	4.720	1.482	5.900	1.235	4.720	0.214	1.245	3.410	5.320
1200	0.728	1.456	4.616	1.456	5.770	1.213	4.620	0.211	1.223	3.330	5.200
1300	0.715	1.430	4.520	1.430	5.650	1.192	4.520	0.209	1.202	3.260	5.090
1400	0.704	1.407	4.432	1.407	5.540	1.173	4.430	0.207	1.182	3.200	4.980
1500	0.693	1.386	4.344	1.386	5.430	1.155	4.350	0.205	1.164	3.140	4.890
1600	0.683	1.366	4.264	1.366	5.330	1.138	4.270	0.203	1.148	3.080	4.800
1700	0.673	1.347	4.192	1.347	5.240	1.122	4.190	0.201	1.132	3.030	4.710
1800	0.665	1.329	4.120	1.329	5.150	1.108	4.120	0.200	1.117	2.980	4.630
1900	0.656	1.312	4.056	1.312	5.070	1.094	4.060	0.198	1.103	2.940	4.560
2000	0.648	1.296	3.952	1.296	4.940	1.080	4.000	0.197	1.089	2.890	4.480
2200	0.634	1.267	3.880	1.267	4.850	1.056	3.880	0.195	1.065	2.810	4.350
2400	0.620	1.240	3.776	1.240	4.720	1.033	3.770	0.193	1.042	2.740	4.230
2600	0.607	1.215	3.672	1.215	4.590	1.012	3.680	0.191	1.021	2.670	4.120
2800	0.596	1.192	3.584	1.192	4.480	0.993	3.590	0.190	1.002	2.610	4.010
3000	0.585	1.170	3.504	1.170	4.380	0.975	3.500	0.188	0.984	2.550	3.910

■ Allowable Tension

Table 10: Joint Processed Belt (Iron Rubber®) Allowable Tension

Unit: N

Type of Belt	Belt Width						
	025	037	050	075	100	150	200
XL	90	135	175	—	—	—	—
L	—	—	320	480	640	—	—
H	—	—	—	480	640	960	1280

Unit: N

Type of Belt	Belt Width					
	100	150	200	250	400	500
T5	150	200	270	350	–	–
T10	–	320	440	640	960	1280
AT5	210	350	–	–	–	–
AT10	–	890	890	1070	–	–

Table 11: Open End Belt (Iron Rubber®) Allowable Tension

Unit: N

Type of Belt	Belt Width						
	025	037	050	075	100	150	200
XL	180	270	350	–	–	–	–
L	–	–	640	960	1280	–	–
H	–	–	–	960	1280	1920	2560

Unit: N

Type of Belt	Belt Width						
	070	100	150	200	250	400	500
MA3	200	300	400	–	–	–	–
MA5	–	470	740	960	–	–	–
MA8	–	–	1620	2160	2700	–	–
T5	200	300	400	550	700	–	–
T10	–	–	640	880	1280	1920	2560
AT5	–	470	740	–	–	–	–
AT10	–	–	1620	2160	2700	–	–

■ Initial Tension Setup

Determine the Initial Tension based on the maximum tension that occurs during operation.

Initial tension is equal throughout the entire belt loop during non-running and idling states.

There are Tension and Slack sides on belts during operation. The differential of the tension is called Effective Tension.

This differential via the pulleys generates torque or transmission capacity.

For toothed belt applications, apply initial tension not cause belt sags on the Slack side.

When a sag is evident during the start-up, it indicates that the initial tension is insufficient.

$$U = \frac{2 \times 10^3 \times Md}{dp} \quad \text{Or} \quad U = \frac{19.1 \times 10^6 \times P}{n \times dp}$$

$$\text{Elasticity Guideline} \quad 0.5U < F_v < 0.5F$$

U: Effective Tension (N)

Md: Load Torque (Nm)

P: Transmission Capacity (kW)

dp: Pulley Diameter (mm)

n: Pulley Rotational Speed (rpm)

Fv: Initial Tension (N)

F: Allowable Tension (N)

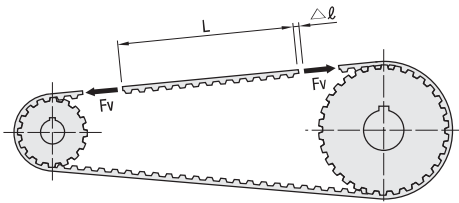
■ Method for Checking Initial Tension

• Method by Checking Belt Elongation

Belt elongation (guideline) at Allowable Tension F,

Joint Process 0.2% = 2mm/m

Open End 0.4% = 4mm/m



Force and elongation follows Hooke's Law (In proportional relationship), and the intermediate value can be obtained by calculations.

• Method Using Belt Vibrations

$$F_v = 4 \times f^2 \times m \times \ell^2$$

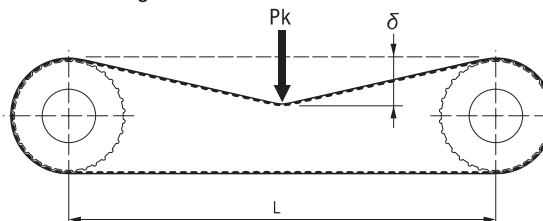
Fv: Belt Tension (N)

f: Vibration Frequency (Hz)

m: Belt Weight Per 1m (kg/m)

ℓ: Span Length

• Method Using Deflection Force and Deflection Amount



$$P_k = F_v / 16$$

Adjust to make deflection

$$\delta \text{ to } [\delta = L/64]$$

Pk: Deflection Force (N)

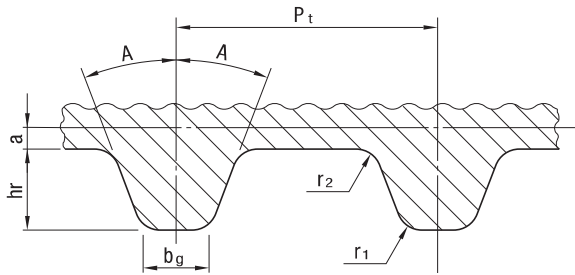
Fv: Desired Tension (N)

δ: Deflection Amount (mm)

L: Span Length (mm)

[Technical Data] Toothed Pulleys Excerpts from JIS B 1856(1993)

1. Dimensions of the Rack for the Cutter and the Tolerances



The pulley should have involute teeth, which are created and shaped by the cutter. The dimensions of the rack for the cutter and the tolerances as determined by analyzing the shape of the rack with a projector, shape measuring instrument or the like, should be agree with the relevant figures in the table below.

Unit: mm

Type	Number of Teeth of the Pulley Z	Pt	A ±0.12	hr +0.05 0	bg +0.05 0	r ₁ ±0.03	r ₂ ±0.03	2a ⁽¹⁾ (Reference)
MXL	10 ≤ Z ≤ 23	2.032 ± 0.008	28°	0.64	0.61	0.30	0.23	0.508
	24 ≤ Z		20°		0.67			
XL	10 ≤ Z	5.080 ± 0.010	25°	1.40	1.27	0.61	0.61	0.508
L	10 ≤ Z	9.525 ± 0.012	20°	2.13	3.10	0.86	0.53	0.762
H	14 ≤ Z ≤ 19	12.700 ± 0.016	20°	2.59	4.24	1.47	1.04	1.372
	20 ≤ Z						1.42	

Note (¹) : a is a measurement indicating the position corresponding to the pitch line (Centerline of the Core Line of the Belt) of the belt corresponding to the shape of the rack for the cutter.

2. Tolerance of Adjacent Pitch Error and Cumulative Pitch Error Unit: mm

Addendum Circle Diameter of Pulley d _o	Allowable Value	
	Tolerance of Adjacent Pitch Error	Accumulated Pitch Error
5.96 ≤ d _o ≤ 25.40	0.03	0.05
25.40 < d _o ≤ 50.80	0.03	0.08
50.80 < d _o ≤ 101.60	0.03	0.10
101.60 < d _o ≤ 177.80	0.05	0.13
177.80 < d _o ≤ 304.80	0.05	0.15
304.80 < d _o ≤ 508.00	0.08	0.18
508.00 < d _o ≤ 762.00	0.08	0.20
762.00 < d _o ≤ 967.16	0.08	0.23

4. Tolerances of Addendum Circle Diameter Unit: mm

Addendum Circle Diameter of Pulley d _o	Tolerance
5.96 ≤ d _o ≤ 25.40	+0.05 0
25.40 < d _o ≤ 50.80	+0.08 0
50.80 < d _o ≤ 101.60	+0.10 0
101.60 < d _o ≤ 177.80	+0.13 0
177.80 < d _o ≤ 304.80	+0.15 0
304.80 < d _o ≤ 508.00	+0.18 0
508.00 < d _o ≤ 762.00	+0.20 0
762.00 < d _o ≤ 967.16	+0.23 0

3. Tolerance of Side Deflection Unit: mm

Addendum Circle Diameter of Pulley d _o	Tolerance of Deflection (TIR) ⁽²⁾
5.96 ≤ d _o ≤ 101.60	0.10
101.60 < d _o ≤ 254.00	Addendum Circle Dia. d _o × 0.001
254.00 < d _o ≤ 967.16	0.25 + [(Addendum Circle Dia. d _o - 254.00) × 0.0005]

Note (²) : TIR is an abbreviation for Total Indicator Reading and refers to the difference between the max. deflection reading and the min. deflection reading.

5. Tolerance of Circumferential Deflection of Addendum Circle Unit: mm

Addendum Circle Diameter of Pulley d _o	Tolerance of Circumferential Deflection
5.96 ≤ d _o ≤ 203.20	0.13
203.20 < d _o ≤ 967.16	0.13 + [(Addendum Circle Dia. d _o - 203.20) × 0.0005]

6. Tolerance of Cylindricity and Parallelism Unit: mm

Nominal Widths of Pulley	Cylindricity Tolerance	Parallelism Tolerance
025~050	0.01	0.03
075~150	0.02	
200 · 300	0.04	0.04
400 · 500	0.06	0.05