TBI MOTION

Timing Belt & Pulley

High Performance | High Precision | High Quality

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Index

Introduction for Timing Belt & Pulley

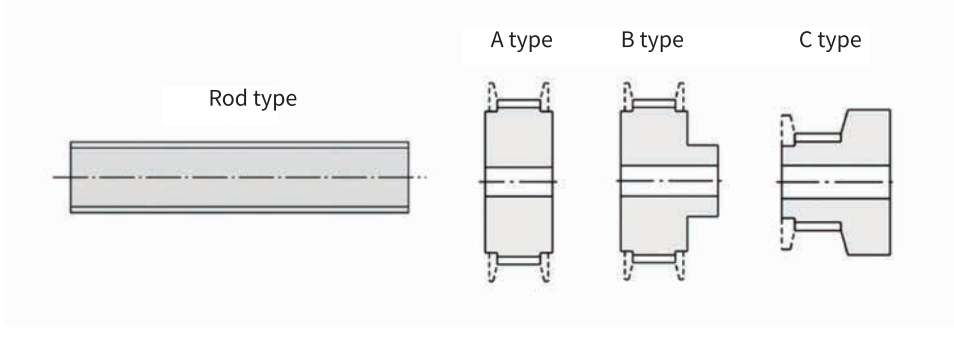
Timing Belt & Pulley

Timing belts and pulleys are essential parts in mechanical systems, commonly used in situations that need precise timing and high efficiency. They work together to ensure smooth power transfer and accurate movement control, and are applied in a wide range of industries.

Material of the Belt

Rubber type (G)	Polyurethane type (U)
	

Type of the Pulley



Series

Super Torque Timing Belt(G、U) and Pulley(A type、B type、C type、Rod type)

- The belt runs smoothly and can be used with small pulleys
- The belt and pulley mesh seamlessly, ensuring quiet operation.
- The belt and pulley can function with low tension.
- Small belts can transfer high torque efficiently.

Trapezoidal Type Timing Belt(U) and Pulley(B type、Rod type)

- Perfect for light-load drives that need high accuracy.
- Aesthetically pleasing and free of contamination, making it suitable for use as a paper-feed application.
- Very flexible, working perfectly with small pulleys for smooth operation.

1 Set required condition in design work

1.Type of Machine

2.Transmission Power

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

3.Degree of load fluctuation (magnitude and speed)

For the case of using a brake or forward/reverse rotation, please contact TBI INTELLIGENCE.

4.Running hours in a single day

5.Small pulley revolution speed

6.Speed ratio

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

7.Interim center distance

8.Restrictions on pulley diameters

9.Special uses and environmental conditions

Please contact TBI INTELLIGENCE for the case of exposed to high or low temperature, water, oil, acid, or alkali, and so on.
※Under conditions of low speed and high torque, it is recommended to design with Mega Torque.

2 Set the design power

1.How to obtain the service factor (Ks)

$$Ks = Ko+Kr+Ki$$

Ks:Service factor
Ko:Service correction factor [Table 1]
Kr:Speed ratio correction factor [Table 2]
Ki:Idler correction factor [Table3]

2.How to calculate the design power (Pd)

$$Pd = Pt \times Ks$$

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

To convert the transmission torque into the transmission power, please apply the following formula.

$$Tq = tq \times Ks$$

$$Pd = \frac{Tq \times n}{9.55 \times 10^3}$$

Tq:Design torque (N.m)
tq:Transmission torque(N.m)
n:Revolution speed(rpm)
Ks:Service factor
Pd:Design power (kW)

(1) If using servo motors

The design torque should be used by multiplying the maximum torque by the Service factor (Ks).

(2)If using spindle motors

The design torque should be used by multiplying the motor's power at the base speed by the service factor (Ks).

(3) If using linear motors

Calculate the design power with the following formula.

$$Te = m \times \alpha$$

$$Pt = \frac{Te \times V}{1000}$$

$$Pd = Pt \times Ks$$

Te: Effective tension(N)
m: Weight (kg)
α: Acceleration(m/sec^2)
V: Belt speed(m/sec)
Pd: Design power (kW)
Pt: Transmission power (kW)
Ks: Service factor

1. The value of Ko

[Table 1] Service correction factor (Ko)

Driven machine	Driving unit / Motor					
	AC motor and motor with rated power output DC motor (Parallel wound) Engine with two or more cylinders			Servo motor and other motor capable of exceeding rated power output DC motor (Series wound) Single-cylinder engine		
	Running time (hr/day)			Running time (hr/day)		
	~5	~12	~24	~5	~12	~24
● Display equipment ● Medical equipment	1.0	1.2	1.4	1.2	1.4	1.6
● Carpenter's lathe ● Band saw	1.2	1.4	1.6	1.4	1.6	1.8
● Packaging machine ● Light load belt conveyor ● Screening machine	1.3	1.5	1.7	1.5	1.7	1.9
● Liquid stirring machine ● Drilling machine ● Lathe ● Tapping machine ● Circular saw ● Planer	1.4	1.6	1.8	1.6	1.8	2.0
● Grinder ● Mixer (Cement/Viscous medium) ● Boring machine ● Milling machine ● Gas Compressor (Centrifugal / Rotary) ● Vibrating Screening machine ● Rotary Compressor ● Injection molding machine and Shaping machine ● Belt conveyor (ore, coal or sand)	1.5	1.7	1.9	1.7	1.9	2.1
● Extraction pump ● Hoist ● Elevator ● Washer ● Rubber processing machine (Calender, roll, extrusion machine) ● Fan ● Blower ● Conveyor (Apron, pan, bucket and elevator) ● Textile machine	1.6	1.8	2.0	1.8	2.0	2.2
● Centrifugal separator ● Conveyor (Flight Chain or screw) ● Hammer mill ● Papermaking machine (Pulper and beater)	1.7	1.9	2.1	1.9	2.1	2.3
● Kiln machinery (Brick or kneading machine) ● Mine propeller ● Air circulator	1.8	2.0	2.2	2.0	2.2	2.4

2. The value of Kr

[Table 2] Speed ratio correction factor (**Kr**)

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

3. The value of Ki

[Table 3] Idler correction factor (Ki)

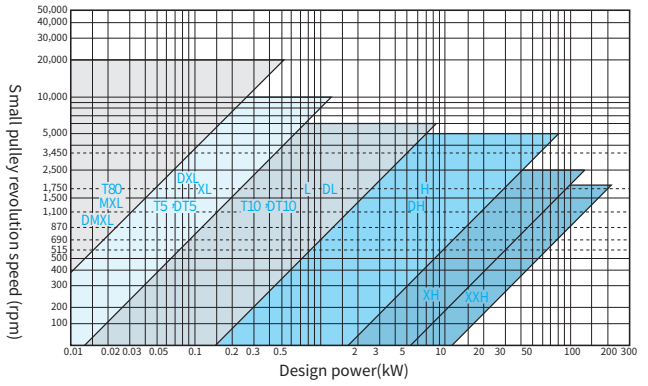
Idler position	Correction Factor (Ki)
When used on belt inner side on slack side of belt	0
When used on belt outer side on slack side of belt	0.1
When used on belt inner side on tight side of belt	0.1
When used on belt outer side on tight side of belt	0.2

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

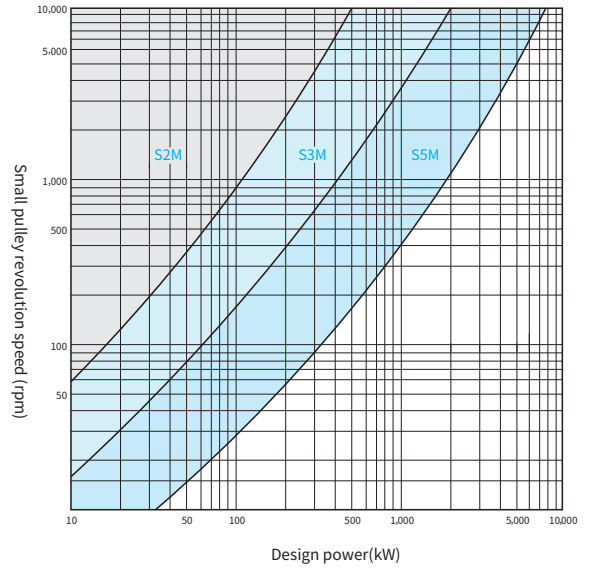
3 Select the tooth Profile

Select the tooth Profile from the quick selection charts (following Fig1~3 Tooth Profile selection) according to small pulley revolution speed (rpm) and design power.

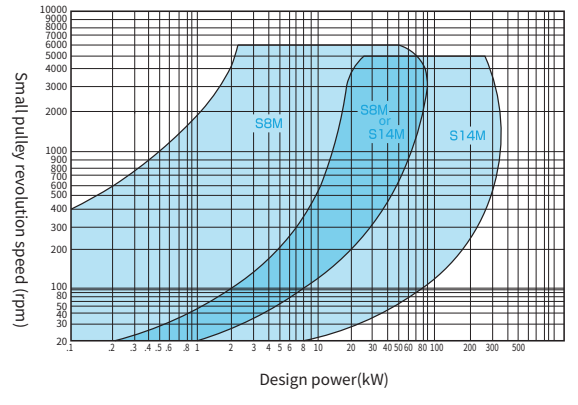
[Fig 1] Tooth Profile selection (Trapezoidal Type)



[Fig 2]Tooth Profile selection (STPD1)



[Fig 3] Tooth Profile selection (STPD2)



4 Determine the large and small pulleys, the belt length and the correct center distance

1. Determine the large and small pulleys.

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

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

Use small pulleys that have the minimum number of teeth given in the [Table 5] or more.

[Table 5] Allowable minimum number of teeth

Speed ratio(rpm)	S2M	S3M/DS3M	S5M/DS5M	S8M/DS8M	MXL/DMXL
5000	20	20	24	32	18
3500	18	18	24	28	16
1750	16	16	20	28	16
1160	14	16	16	24	16
870	14	14	14	22	10
690	14	14	14	22	10
575	14	14	14	22	10

2. Determine the belt length.

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

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

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

3. Determine the correct center distance.

Obtain the correct center distance from the selected belt length (standard belt pitch length) by using the below formula.

● **How to obtain the correct center distance (C)**

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

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

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

5 Determine the belt width

1. Calculate the approximate belt width

● How to obtain teeth in mesh correction factor (Km)

Calculate the number of teeth in mesh (Zm) using the following formula and then obtain the teeth in mesh correction factor (Km) from [Table 6].

$$Zm = \frac{Zd \times \theta}{360^\circ}$$

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

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

[Table 6] Teeth in mesh correction factor (Km)

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

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

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

Bw' : Interim belt width(mm)
Pd : Design power(Kw)
Ps : Basic power rating(Kw)
Km : Teeth in mesh correction factor [Table 6]
Wp :Standard belt width(mm) [Table 7]

[Table 7] Standard belt width Wp (mm)

Type	Wp(mm)
S2M	4.0
S3M、DS3M	6.0
S5M、DS5M	10.0
S8M、DS8M	60.0
T80	6.4

● How to obtain the basic power rating (Ps)

The basic power rating for the standard belt width can be obtained from the basic power rating table, using the number of teeth and revolution speed of the small pulley. If there is no suitable condition in the basic power rating table, please contact TBI INTELLIGENCE.

2. Obtain the belt width

Select the closest belt width to the interim belt width (Bw') from amongst the belt width (Bw) [Table 8].

[Table 8] Belt width (Bw)

Type	Nominal width(Belt width)
S2M	40(4mm)、60(6mm)、100(10mm)
S3M、DS3M	60(6mm)、100(10mm)、150(15mm)
S5M、DS5M	100(10mm)、150(15mm)、250(25mm)
S8M、DS8M	150(15mm) 、250(25mm) 、300(30mm) 、400(40mm) 、600(60mm)
T80	3.2(3.2mm) / 4.8(4.8mm) / 6.4(6.4mm) / 9.5(9.5mm)

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

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

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

Pd: Design power (Kw)
Ps: Basic power rating(Kw)
Km: Teeth in mesh correction factor
Kb: Width correction factor[Table 9]

[Table 9] Width correction factor Kb

Nominal width	Width(mm)	S2M	S3M(DS3M)	S5M(DS5M)	S8M(DS8M)	MXL、T80
40	4.0	1.00				
60	6.0	1.59	1.00			
100	10.0	2.84	1.79	1.00		
150	15.0		2.84	1.59	0.21	
200	20.0				0.29	
250	25.0			2.84	0.37	
300	30.0				0.45	
400	40.0				0.63	
500	50.0				0.81	
600	60.0				1.00	
700	70.0				1.19	
800	80.0				1.39	
1000	100.0				1.79	
3.2	3.2					0.45
4.8	4.8					0.72
6.4	6.4					1.00
9.5	9.5					1.57

6 Check the center distance adjustment allowance

According to the selected belt length, take the adjustment allowance from an appropriate point to the inner side (installation allowance) and to the outer side (elongation allowance) as the guaranteed adjustment allowance of the center distance.
Obtain inner adjustment allowance from [Table 10].
Obtain outer adjustment allowance from [Table 11].

[Table 10] Inner adjustment allowance

Tooth Profile	S2M	S3M(DS3M)	S5M(DS5M)	S8M(DS8M)	MXL、T80
Adjustment allowance(mm)	10	10	10	15	3

[Table 11-a] Outer adjustment allowance(1)

S2M、S3M、S5M、DS3M、DS5M	
Belt length(mm)	Outer adjustment allowance(mm)
Lp ≤ 508.0	2
508.0<Lp ≤ 1016.0	3
1016.0<Lp ≤ 2032.0	5
2032.0<Lp ≤ 2540.0	10

[Table 11-b] Outer adjustment allowance (2)

S8M、DS8M	
Belt length(mm)	Outer adjustment allowance(mm)
Lp ≤ 508.0	3
508.0<Lp ≤ 1016.0	5
1016.0<Lp ≤ 2032.0	10
2032.0<Lp ≤ 4572.0	15
4572.0<Lp ≤ 5080.0	20

[Table 11-c] Outer adjustment allowance (3)

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

7 Belt tension

Without proper tension, power transmissivity and durability cannot be maintained at satisfactory levels.

1. Correct belt tensioning

(1)Obtain the span length (Ls)

Obtain the length without the belt contacting the pulleys. Span length should be obtained with the following formula.

● **How to obtain the span length (Ls)**

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

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

(2)Obtain the deflection(δ)

● **How to obtain the deflection(δ)**

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

δ: Deflection(mm)
Ls: Span length(mm)

(3)Obtain the deflection force (Tδ)to apply to the deflection(δ)

● **How to obtain the deflection force(Tδ)**

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

Tδ: deflection force (N)
To: Required initial tension(N)
See [Table 12], Pg.11. (Obtain both To min and To max.)
Ls: Span length(mm)
Y: Obtain from [Table12].
Lp: Belt length(mm)

※The formula should be changed to the following one when using MXL type.

$$T\delta = \frac{To}{16}$$

(4)Tension the belt

Draw the belt taut so that the deflection force at the amount of deflection(δ)is Tδ min to Tδ max.

8 Shaft load

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

● **How to obtain static shaft load (Fs)**

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

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

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

The assembly tension of the belt will decrease slightly after a few hours of operation, depending on the degree of wear between the belt and the pulley. Therefore, after assembly, the system should be run for about 1 minute to allow for the break-in process, and then the tension should be adjusted to the specified value. After that, no further tension adjustments will be necessary.

If the tension of the timing belt is not properly adjusted and the meshing condition is poor, it will lead to shorten the lifespan of the belt.

[Table 12-a] Initial tension To and Y (SUPER TORQUE) Unit :N

Belt Width(mm)			4	6	10	15	25
S2M	To	Min.	5.88	9.34	16.7		
		Max.	7.85	12.5	22.3		
	Y		9.8	15.7	27.5		
S3M	To	Min.		19.6	35.1	55.7	
		Max.		26.5	47.4	75.3	
	Y			26.5	48.1	75.5	
S5M	To	Min.			57.9	91.9	164.0
		Max.			77.5	123.0	220.0
	Y				52.8	85.5	151.0

[Table 12-b]Initial tension To and Y (SUPER TORQUE) Unit :N

Belt Width(mm)			15	20	25	30	35	40	45	50	55	60
S8M	To	Min.	214	297	383	472	562	655	749	844	941	1040
		Max.	285	395	510	627	748	871	996	1123	1252	1383
	Y		98	147	196	235	284	333	382	422	471	520

[Table 12-c]Initial tension To and Y (Polyurethane trapezoidal type) Unit :N

Belt Width(mm)			3.2	4.8	6.4	9.5
T80	To	Min.	3.74	5.93	8.24	12.9
		Max.	6.23	9.89	13.7	21.5
	Y					

Design Example

1 Set condition required in design work

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

2 Set the design power

● **The service factor(Ks)**
Service correction factor (Ko)=2.0→(Pg.4 [Table 1])
Speed ratio correction factor (Kr)=0→(Pg.4 [Table 2])
Idler correction factor (Ki)=0 → (Pg.4 [Table 3])
KS=Ko+Kr+Ki
=2.0+0+0
=2.0

● **The design power(Pd)**
Transmission power (Pt)=3.7kw
Service factor (Ks)=2.0
Pd=PtxKs
=3.7X2.0
=7.4

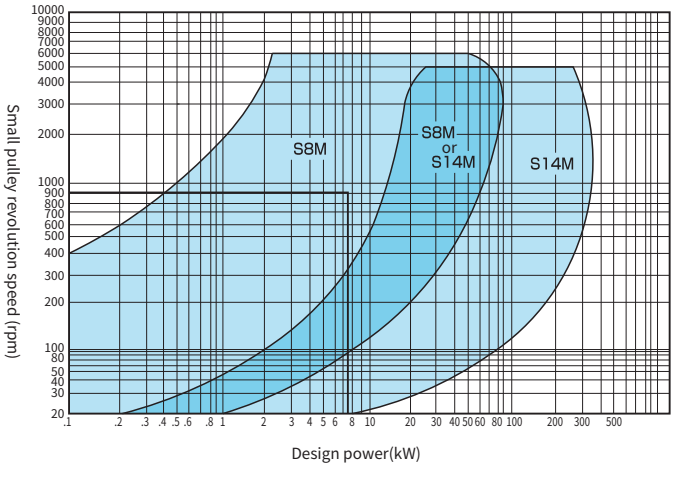
3 Select the tooth Profile

Select the tooth Profile from the quick selection charts (following Fig1~3 Tooth Profile selection).
Y-axis value：Small pulley revolution speed is 900min^{-1} from Step 1
X-axis value：The design power is 7.4kw from Step 2

The tooth profile can be determined by the intersection of the X-axis and the Y-axis.

● **Selected Tooth Profile: S8M**

[Fig 3]Tooth Profile selection (PTSD2)



4 Determine the large and small pulleys, the belt length and the correct center distance

1. Pulley diameter (Number of teeth)

It is recommended to take price, volume of distribution and other such factors into consideration and form combinations with standard pulleys. These factors will affect durability via belt bend fatigue, etc., therefore select a small pulley diameter (number of teeth) that is larger than the smallest pulley ([Table 5] Allowable minimum number of teeth, Pg. 6) of each belt.

40–teeth small pulley (Pitch diameter：101.86 mm)
44–teeth large pulley (Pitch diameter：112.05 mm)

2. Belt length

Calculate the standard belt length(Lp)

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

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

$$= 2\times 380 + \frac{\pi(112.05 + 101.86)}{2} + \frac{(112.05 + 101.86)^2}{4\times 380}$$

$$=760+336.01+0.07$$

$$=1096.08$$

Lp=1080mm(135 teeth)

3. Center distance

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

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

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

$$=2\times 1080-\pi(112.05+101.86)$$

$$=1487.98mm$$

Note:π=3.1416

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

$$=371.96mm(372mm)$$

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

5 Determine the belt width

1. Calculate the contact angle

Calculate the contact angle (θ) from the large pulley diameter (Dp, pitch diameter: 112.05 mm), small pulley diameter (dp, pitch diameter: 101.86 mm), and center distance (C, 371.96 mm).

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

$$= 180 - \frac{57.3 \times (112.05 - 101,86)}{371.96}$$

$$= 178.4$$

Contact angle(θ)=178.4°

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

Number of teeth on small pulley：40
Contact angle (θ)：178.4°
Number of teeth in mesh (Zm)：178.4/360X40 = 19.8 teeth
Values below the decimal are rounded down, therefore the number of teeth in mesh is 19.

3. Obtain the teeth in mesh correction factor

Obtain the teeth in mesh correction factor (Km) from the number of teeth in mesh (Zm).
From [Table 6], the teeth in mesh factor (Km) is 1.0.

[Table 6] Teeth in mesh correction factor (Km)

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

4. Calculate the interim belt width

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

Design power (Pd):7.4kw
Basic power rating (Ps):13.17kw
Teeth in mesh correction factor (Km):1.0
Standard belt width (Wp) of S8M：60 mm (from Table 7, Pg.7)

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

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

$$= 33.7$$

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

5. Obtain the standard belt width

Select the belt width closest to the 33.7 mm interim belt width (Bw') from the belt width (Bw). From [Table 8], Pg.8, it is 40 mm for the 400-nominal width.

6. Check the accuracy of the belt width

First obtain the width correction factor (Kb) from [Table 9], Pg. 8 using the belt width.
Check that the width correction factor (Kb) obtained from the belt width satisfies the below formula.
If the equation is not satisfied, choose a larger belt width.

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

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

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

6 Check the center distance adjustment allowance

From the selected 1080 mm belt length, the following are matched up on [Tables 10] and [Table 11-b] Pg.9
Inner adjustment allowance：15 mm
Outer adjustment allowance：10 mm

「 Design summary 」

Belt : 400S8M1080

Pulley : Drive (Small pulley) 40S8M400
Driven (Large pulley) 44S8M400

Center distance 372.0 $^{+10}_{-15}$ mm

7 Belt tension

Belt : 400S8M1080

Pulley : Drive (Small pulley) 40S8M400
Driven (Large pulley) 44S8M400

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

1. Obtain the required tension of the belt based on the deflection and deflection force.

● Deflection

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

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

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

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

$$Ls = 371.93$$

C: Center distance(mm)
Dp: Large pulley pitch diameter(mm)
dp: Small pulley pitch diameter(mm)
The span length (Ls) is 371.93 mm

$$\delta = 1.6 \times 371.93 \div 100$$
$$= 5.95$$

Accordingly, the deflection (δ) is 6mm

● Deflection force

Calculate the deflection force(Tδ) from To min and To max of the required initial tension(To), using the span length(Ls), belt length(Lp)and Y value of [Table 12].

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

Calculate Tδ min to Tδ max from a 371.93 mm span length (Ls) and 1080 mm belt length (Lp), using To min = 655N, To max = 871N and Y = 333 from [Table 12], Pg. 11 for the 40 mm width of the S8M.

$$T\delta min. = \frac{655 + 371.93 \times 333 \div 1080}{16}$$
$$= 48.1$$

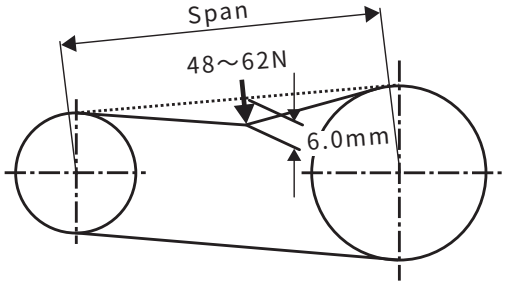
$$T\delta max. = \frac{871 + 371.93 \times 333 \div 1080}{16}$$
$$= 61.6$$

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

● Apply tension to the belt

Tension the belt so that the deflection force at the deflection (δ) is between Tδ min to Tδ max. Tension the belt with 48N to 62N so that the force when the center of the span is depressed to the 6 mm. The belt tension in that moment is from 655N to 871N.

Fig 1



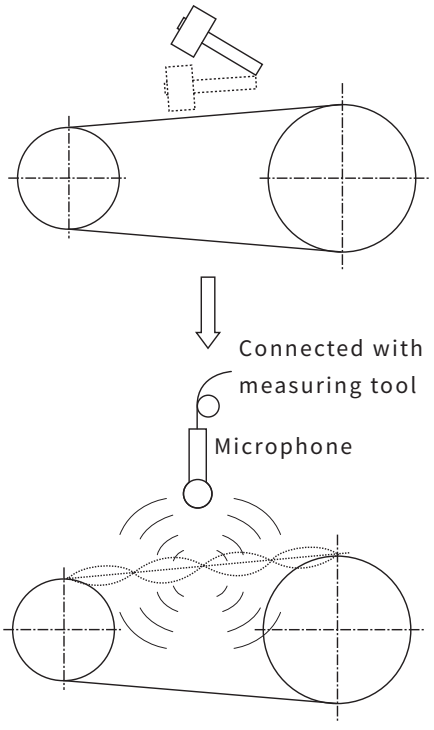
If possible, give equal tension to all spans.

2. The method for detecting the vibration (frequency) of the belt and confirming the proper tension applied to the belt.

Using deflection force and bending adjustment methods, measurements are taken at the same measurement point, and the values fluctuate significantly with each measurement (large measurement error).
The frequency values measured by using an acoustic belt tension meter are almost identical and stable with each measurement and the measurements can be taken quickly.
By tapping the belt between the spans, the sound of the belt is measured by using an acoustic belt tension meter during its vibration. The frequency of this sound is determined by the belt's mass, the span length, and the tension of the belt. This principle is used to measure the tension of the belt.

Regarding the method of applying belt tension through stretching, please refer to the design sequence 7 on Pg.10.

Fig 2



The image above illustrates the principle of measurement.

The unit mass of the timing belt (rubber). 【Unit：kg/(10mm width X 1m length)】

MXL	S2M	S3M	S5M	S8M
0.011	0.013	0.019	0.034	0.052
DMXL	-	DS3M	DS5M	DS8M
0.013	-	0.022	0.034	0.060

The unit mass of the timing belt (polyurethane). 【Unit：kg/(10mm width X 1m length)】

T80	S2M	S3M
0.010	0.011	0.015

Use the non-contact ultrasonic tension meter (DOCTOR TENSION TYPE-IV), and input the span length, the unit mass with a width of 10mm, and the belt width of the belt in use, the tension of the belt [N] can be displayed. The tension is converted to frequency using the following formula.

$$F = \frac{1}{2 \times Ls} \times \sqrt{\frac{To}{W}}$$

F:Frequency(Hz)
To:Assembly tension(N)
Ls:Span length(m)
W:Mass of the belt(kg/m)
Refer to [Table 12], Pg.11
To min.=655N
To max.=871N
Ls=0.37193m
The unit mass of the S8M timing belt with a width of 10mm is 0.052 kg/m. Therefore, the mass of a 40mm wide belt is calculated as: W=0.052kg /mX40mm/10mm=0.208kg /m
By substituting these values into the above formula, we obtain:
F min.=75Hz
F max.=87Hz
Please adjust the tension to be within the frequency range of 75 Hz to 87 Hz.

8 Shaft load

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

$$Fs = 2To \cdot \sin\frac{\theta}{2}$$
$$= 2 \times 663 \times \sin\frac{178.4}{2}$$
$$= 1325.87N$$

$$\theta = 180^\circ - \frac{57.3 \times (Dp - dp)}{C}$$
$$= 180^\circ - \frac{57.3 \times (112.05 - 101.86)}{371.96}$$
$$= 178.4^\circ$$

Fs :Static shaft load
To :Required initial tension

Super Torque Timing Belt

Nominal Model Code of Super Torque Timing Belt

100	(D)	S3M	459	G(U)
①	②	③	④	⑤

①

Nominal width (mm)x10	
S2M	4、6、10
S3M	6、10、15
S5M	10、15、25

For example, the code for 10mm in width for S2M belt is 100.

②

Double-sided tooth(D)		
	口：Single-sided tooth	(D)：Double-sided tooth
S2M	口	-
S3M	口	(D)
S5M	口	(D)

※Just leave the single-sided tooth blank. If double-sided tooth is required, mark them as (D).

③

Tooth Profile
S2M
S3M
S5M

④

Nominal length(mm)

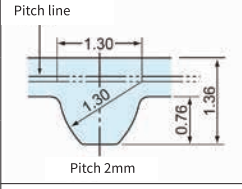
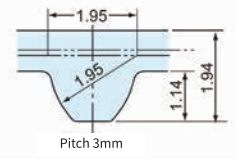
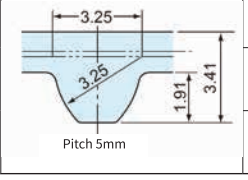
※Please refer to the specification of each tooth profile for details.

⑤

Material		
Tooth Profile	G：Rubber	U：Polyurethane
S2M	G	U
S3M	G	U
S5M	G	-

※Polyurethane (U) type is not available for S5M.

Belt Tooth Profile Specification

Tooth Profile	Cross-section size	Maximum speed (m/sec) Note 1	Tooth Profile	Standard Width		Minimum size for the pulley Note 2		Double-sided tooth(D)	Material	
	Pitch(mm)			Nominal Model	Width (mm)	Pulley diameter(mm)	Number of teeth		Rubber (G)	Polyurethane (U)
S2M	2	30(40)		40	4	8.91	14	-	O	O
				60	6					
				100	10					
S3M	3	30(40)		60	6	13.37	14	O	O	O
				100	10					
				150	15					
S5M	5	30(40)		100	10	22.28	14	O	O	-
				150	15					
				250	25					

Note 1. The value in ( ) is the limit design value, please try to avoid this choice.

Note 2.The diameter and number of teeth of the minimum belt diameter vary depending on the revolution speed of the small pulley.

Belt Specification

Nominal Model	S2M									
Pitch	2.0(mm)									
Code (Width)	40(4mm) / 60(6mm) / 100(10mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	S2M66	33	66	O	-	S2M164	82	164	O	O
	S2M72	36	72	O	-	S2M166	83	166	O	O
	S2M74	37	74	O	-	S2M168	84	168	O	O
	S2M76	38	76	O	-	S2M170	85	170	O	-
	S2M78	39	78	O	-	S2M172	86	172	O	O
	S2M80	40	80	O	O	S2M174	87	174	O	-
	S2M84	42	84	O	-	S2M176	88	176	O	-
	S2M86	43	86	O	-	S2M178	89	178	O	-
	S2M88	44	88	O	-	S2M180	90	180	O	O
	S2M90	45	90	O	O	S2M182	91	182	O	-
	S2M92	46	92	O	-	S2M184	92	184	O	-
	S2M94	47	94	O	-	S2M186	93	186	O	-
	S2M96	48	96	O	-	S2M188	94	188	O	-
	S2M98	49	98	O	O	S2M190	95	190	O	O
	S2M100	50	100	O	O	S2M192	96	192	O	-
	S2M102	51	102	O	-	S2M194	97	194	O	O
	S2M104	52	104	O	-	S2M196	98	196	O	-
	S2M106	53	106	O	-	S2M198	99	198	O	-
	S2M110	55	110	O	-	S2M200	100	200	O	O
	S2M112	56	112	O	O	S2M202	101	202	O	-
	S2M114	57	114	O	O	S2M204	102	204	O	-
	S2M116	58	116	O	O	S2M206	103	206	O	-
	S2M118	59	118	O	O	S2M208	104	208	O	-
	S2M120	60	120	O	O	S2M210	105	210	O	O
	S2M122	61	122	O	O	S2M212	106	212	O	O
	S2M124	62	124	O	-	S2M214	107	214	O	-
	S2M126	63	126	O	O	S2M216	108	216	O	-
	S2M128	64	128	O	-	S2M218	109	218	O	O
	S2M130	65	130	O	O	S2M220	110	220	O	O
	S2M132	66	132	O	-	S2M224	112	224	O	O
	S2M134	67	134	O	-	S2M226	113	226	O	-
	S2M138	69	138	O	O	S2M230	115	230	O	O
	S2M140	70	140	O	O	S2M232	116	232	O	O
	S2M142	71	142	O	-	S2M234	117	234	O	-
	S2M144	72	144	O	O	S2M236	118	236	O	O
	S2M146	73	146	O	-	S2M238	119	238	O	-
	S2M148	74	148	O	-	S2M240	120	240	O	O
	S2M150	75	150	O	-	S2M242	121	242	-	O
	S2M152	76	152	O	O	S2M244	122	244	O	O
	S2M156	78	156	O	-	S2M246	123	246	O	O
	S2M158	79	158	O	O	S2M248	124	248	O	-
	S2M160	80	160	O	O	S2M250	125	250	O	O

Nominal Model	S2M									
Pitch	2.0(mm)									
Code (Width)	40(4mm) / 60(6mm) / 100(10mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	S2M252	126	252	O	-	S2M348	174	348	O	-
	S2M254	127	254	O	-	S2M350	175	350	O	-
	S2M256	128	256	O	-	S2M354	177	354	O	-
	S2M258	129	258	O	-	S2M360	180	360	O	O
	S2M260	130	260	O	O	S2M370	185	370	O	O
	S2M262	131	262	O	-	S2M372	186	372	O	-
	S2M264	132	264	O	-	S2M374	187	374	O	-
	S2M266	133	266	O	-	S2M376	188	376	O	-
	S2M268	134	268	O	-	S2M380	190	380	O	-
	S2M270	135	270	O	-	S2M386	193	386	O	-
	S2M272	136	272	O	-	S2M390	195	390	O	-
	S2M274	137	274	O	-	S2M396	198	396	O	O
	S2M276	138	276	O	-	S2M400	200	400	O	-
	S2M278	139	278	O	-	S2M408	204	408	O	-
	S2M280	140	280	O	O	S2M410	205	410	O	-
	S2M284	142	284	O	-	S2M426	213	426	O	-
	S2M286	143	286	O	-	S2M430	215	430	O	-
	S2M288	144	288	O	-	S2M434	217	434	O	-
	S2M290	145	290	O	O	S2M436	218	436	O	O
	S2M292	146	292	O	-	S2M438	219	438	O	-
	S2M296	148	296	O	-	S2M440	220	440	O	-
	S2M300	150	300	O	-	S2M442	221	442	O	-
	S2M302	151	302	O	-	S2M444	222	444	O	-
	S2M304	152	304	O	-	S2M448	224	448	O	O
	S2M306	153	306	O	-	S2M452	226	452	O	-
	S2M308	154	308	O	-	S2M456	228	456	O	-
	S2M310	155	310	O	-	S2M460	230	460	O	-
	S2M312	156	312	O	-	S2M468	234	468	O	-
	S2M314	157	314	O	-	S2M474	237	474	O	-
	S2M316	158	316	O	-	S2M480	240	480	O	-
	S2M318	159	318	O	-	S2M486	243	486	O	O
	S2M320	160	320	O	O	S2M488	244	488	-	O
	S2M322	161	322	O	-	S2M494	247	494	O	-
	S2M324	162	324	O	-	S2M500	250	500	O	-
	S2M326	163	326	O	-	S2M520	260	520	O	O
	S2M328	164	328	O	-	S2M530	265	530	O	-
	S2M330	165	330	O	O	S2M550	275	550	O	-
	S2M334	167	334	O	-	S2M560	280	560	O	O
	S2M338	169	338	O	-	S2M572	286	572	O	O
	S2M340	170	340	O	-	S2M580	290	580	-	O
	S2M342	171	342	O	-	S2M586	293	586	O	-
	S2M344	172	344	O	-	S2M594	297	594	O	-

Nominal Model	S2M									
Pitch	2.0(mm)									
Code (Width)	40(4mm) / 60(6mm) / 100(10mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	S2M600	300	600	O	-	S2M1290	645	1290	O	-
	S2M604	302	604	O	-	S2M1420	710	1420	O	-
	S2M630	315	630	O	O	S2M1524	762	1524	O	-
	S2M638	319	638	O	-					
	S2M640	320	640	O	-					
	S2M648	324	648	O	-					
	S2M656	328	656	O	-					
	S2M660	330	660	O	-					
	S2M672	336	672	O	-					
	S2M676	338	676	O	-					
	S2M694	347	694	O	-					
	S2M710	355	710	O	-					
	S2M726	363	726	O	-					
	S2M740	370	740	O	-					
	S2M752	376	752	O	-					
	S2M796	398	796	O	-					
	S2M800	400	800	O	O					
	S2M810	405	810	O	-					
	S2M822	411	822	O	-					
	S2M826	413	826	O	-					
	S2M848	424	848	O	-					
	S2M856	428	856	O	-					
	S2M862	431	862	O	-					
	S2M866	433	866	O	-					
	S2M880	440	880	O	-					
	S2M882	441	882	O	-					
	S2M900	450	900	O	-					
	S2M910	455	910	O	-					
	S2M930	465	930	O	-					
	S2M944	472	944	O	-					
	S2M976	488	976	O	-					
	S2M984	492	984	O	O					
	S2M1016	508	1016	O	-					
	S2M1062	531	1062	O	-					
	S2M1066	533	1066	O	-					
	S2M1100	550	1100	O	-					
	S2M1136	568	1136	O	-					
	S2M1140	570	1140	O	-					
	S2M1196	598	1196	O	O					
	S2M1224	612	1224	O	-					
	S2M1250	625	1250	O	O					
	S2M1274	637	1274	O	O					

Nominal Model	S3M									
Pitch	3.0(mm)									
Code (Width)	60(6mm) / 100(10mm) / 150(15mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	S3M96	32	96	O	-	S3M264	88	264	O	O
	S3M102	34	102	O	O	S3M267	89	267	O	-
	S3M114	38	114	O	-	S3M270	90	270	O	-
	S3M120	40	120	O	-	S3M273	91	273	O	-
	S3M123	41	123	O	-	S3M276	92	276	O	O
	S3M129	43	129	O	-	S3M279	93	279	O	-
	S3M132	44	132	O	-	S3M282	94	282	O	-
	S3M141	47	141	O	O	S3M285	95	285	O	-
	S3M144	48	144	O	O	S3M288	96	288	O	-
	S3M147	49	147	O	-	S3M291	97	291	O	-
	S3M150	50	150	O	-	S3M300	100	300	O	O
	S3M156	52	156	O	-	S3M303	101	303	O	-
	S3M159	53	159	O	-	S3M306	102	306	O	-
	S3M162	54	162	O	O	S3M309	103	309	O	-
	S3M168	56	168	O	-	S3M312	104	312	O	O
	S3M171	57	171	O	-	S3M315	105	315	O	-
	S3M174	58	174	O	O	S3M318	106	318	O	O
	S3M177	59	177	O	O	S3M327	109	327	O	O
	S3M180	60	180	O	O	S3M330	110	330	O	-
	S3M186	62	186	O	O	S3M333	111	333	O	-
	S3M189	63	189	O	O	S3M339	113	339	O	-
	S3M192	64	192	O	O	S3M345	115	345	O	O
	S3M195	65	195	O	-	S3M348	116	348	O	-
	S3M198	66	198	O	-	S3M351	117	351	O	-
	S3M201	67	201	O	O	S3M354	118	354	O	-
	S3M204	68	204	O	-	S3M357	119	357	O	-
	S3M207	69	207	O	-	S3M360	120	360	O	O
	S3M210	70	210	O	O	S3M363	121	363	O	O
	S3M213	71	213	O	O	S3M366	122	366	O	-
	S3M216	72	216	O	-	S3M369	123	369	O	O
	S3M219	73	219	O	O	S3M372	124	372	O	-
	S3M222	74	222	O	-	S3M375	125	375	O	O
	S3M225	75	225	O	O	S3M378	126	378	O	-
	S3M228	76	228	O	-	(D)S3M384	128	384	O	-
	S3M231	77	231	O	-	(D)S3M387	129	387	O	O
	S3M234	78	234	O	-	(D)S3M390	130	390	O	-
	S3M237	79	237	O	-	(D)S3M393	131	393	O	-
	S3M246	82	246	O	O	(D)S3M396	132	396	O	-
	S3M249	83	249	-	O	(D)S3M399	133	399	O	-
	S3M252	84	252	O	O	S3M402	134	402	-	O
	S3M255	85	255	O	O	(D)S3M405	135	405	O	O
	S3M258	86	258	O	-	(D)S3M408	136	408	O	O

Nominal Model	S3M									
Pitch	3.0(mm)									
Code (Width)	60(6mm) / 100(10mm) / 150(15mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	(D)S3M414	138	414	O	-	(D)S3M591	197	591	O	O
	(D)S3M417	139	417	O	-	(D)S3M597	199	597	O	-
	(D)S3M420	140	420	O	O	(D)S3M600	200	600	O	O
	S3M423	141	423	O	-	(D)S3M603	201	603	O	-
	(D)S3M426	142	426	O	-	(D)S3M609	203	609	O	-
	(D)S3M432	144	432	O	O	(D)S3M612	204	612	O	-
	(D)S3M435	145	435	O	-	(D)S3M621	207	621	O	-
	(D)S3M444	148	444	O	-	S3M624	208	624	O	-
	(D)S3M447	149	447	O	-	(D)S3M633	211	633	O	O
	(D)S3M453	151	453	O	O	(D)S3M645	215	645	O	O
	(D)S3M456	152	456	O	-	(D)S3M648	216	648	O	-
	(D)S3M459	153	459	O	-	(D)S3M657	219	657	O	-
	(D)S3M468	156	468	O	-	(D)S3M660	220	660	O	-
	(D)S3M471	157	471	O	-	(D)S3M663	221	663	O	-
	(D)S3M474	158	474	O	O	(D)S3M666	222	666	O	-
	(D)S3M480	160	480	O	-	(D)S3M672	224	672	O	-
	S3M483	161	483	O	O	(D)S3M681	227	681	O	O
	(D)S3M486	162	486	O	-	(D)S3M687	229	687	O	-
	(D)S3M492	164	492	O	-	(D)S3M699	233	699	O	-
	(D)S3M498	166	498	O	-	(D)S3M720	240	720	O	-
	(D)S3M501	167	501	O	O	(D)S3M726	242	726	O	-
	(D)S3M504	168	504	O	-	(D)S3M741	247	741	O	O
	(D)S3M507	169	507	O	-	(D)S3M750	250	750	O	O
	(D)S3M510	170	510	O	-	(D)S3M753	251	753	O	-
	(D)S3M513	171	513	O	-	(D)S3M756	252	756	O	-
	(D)S3M516	172	516	O	-	(D)S3M759	253	759	O	-
	(D)S3M519	173	519	O	O	(D)S3M762	254	762	O	-
	(D)S3M522	174	522	O	-	(D)S3M765	255	765	O	-
	(D)S3M525	175	525	O	-	(D)S3M774	258	774	O	-
	(D)S3M528	176	528	O	-	(D)S3M786	262	786	O	-
	(D)S3M537	179	537	O	O	(D)S3M789	263	789	O	-
	(D)S3M540	180	540	O	O	(D)S3M804	268	804	O	-
	(D)S3M543	181	543	O	-	(D)S3M810	270	810	O	-
	(D)S3M549	183	549	O	-	(D)S3M819	273	819	O	-
	(D)S3M552	184	552	O	-	(D)S3M825	275	825	O	-
	(D)S3M564	188	564	O	O	S3M831	277	831	O	-
	S3M570	190	570	O	-	(D)S3M837	279	837	O	-
	(D)S3M573	191	573	O	-	(D)S3M852	284	852	O	-
	S3M576	192	576	O	-	(D)S3M858	286	858	O	-
	(D)S3M579	193	579	O	-	(D)S3M882	294	882	O	-
	S3M582	194	582	O	-	(D)S3M888	296	888	O	-
	(D)S3M588	196	588	O	-	(D)S3M894	298	894	O	-

Nominal Model	S3M									
Pitch	3.0(mm)									
Code (Width)	60(6mm) / 100(10mm) / 150(15mm)									
Size	Model No.	Number of teeth	Length (mm)	Material		Model No.	Number of teeth	Length (mm)	Material	
				Rubber(G)	Polyurethane (U)				Rubber(G)	Polyurethane (U)
	(D)S3M900	300	900	O	-					
	(D)S3M909	303	909	O	-					
	(D)S3M918	306	918	O	-					
	(D)S3M927	309	927	O	-					
	(D)S3M954	318	954	O	-					
	(D)S3M999	333	999	O	-					
	(D)S3M1005	335	1005	O	-					
	(D)S3M1014	338	1014	O	-					
	(D)S3M1035	345	1035	O	-					
	(D)S3M1050	350	1050	O	-					
	(D)S3M1080	360	1080	O	-					
	(D)S3M1119	373	1119	O	-					
	(D)S3M1170	390	1170	O	-					
	(D)S3M1203	401	1203	O	-					
	(D)S3M1221	407	1221	O	-					
	(D)S3M1236	412	1236	O	-					
	(D)S3M1245	415	1245	O	-					
	(D)S3M1260	420	1260	O	-					
	(D)S3M1290	430	1290	O	-					
	(D)S3M1299	433	1299	O	-					
	(D)S3M1326	442	1326	O	-					
	(D)S3M1332	444	1332	O	-					
	(D)S3M1401	467	1401	O	-					
	(D)S3M1419	473	1419	O	-					
	(D)S3M1521	507	1521	O	-					
	S3M1560	520	1560	-	O					
	(D)S3M1572	524	1572	O	-					
	(D)S3M1596	532	1596	O	-					
	(D)S3M1680	560	1680	O	-					
	(D)S3M1788	596	1788	O	-					
	(D)S3M2100	700	2100	O	-					
	(D)S3M2115	705	2115	O	-					

Nominal Model	S5M					
Pitch	5.0(mm)					
Code (Width)	100(10mm) / 150(15mm) / 250(25mm)					
Size	Model No.	Number of teeth	Length (mm)	Model No.	Number of teeth	Length (mm)
	S5M225	45	225	(D)S5M695	139	695
	S5M230	46	230	(D)S5M700	140	700
	S5M255	51	255	(D)S5M710	142	710
	S5M260	52	260	(D)S5M720	144	720
	S5M295	59	295	(D)S5M725	145	725
	S5M300	60	300	(D)S5M730	146	730
	S5M305	61	305	(D)S5M740	148	740
	S5M320	64	320	(D)S5M750	150	750
	S5M325	65	325	(D)S5M765	153	765
	S5M340	68	340	(D)S5M780	156	780
	S5M350	70	350	(D)S5M800	160	800
	S5M360	72	360	(D)S5M810	162	810
	S5M370	74	370	(D)S5M830	166	830
	S5M375	75	375	(D)S5M845	169	845
	S5M380	76	380	(D)S5M850	170	850
	S5M390	78	390	(D)S5M870	174	870
	(D)S5M400	80	400	(D)S5M890	178	890
	(D)S5M415	83	415	(D)S5M900	180	900
	(D)S5M425	85	425	S5M930	186	930
	(D)S5M435	87	435	(D)S5M950	190	950
	(D)S5M440	88	440	(D)S5M975	195	975
	(D)S5M450	90	450	(D)S5M1000	200	1000
	(D)S5M475	95	475	(D)S5M1025	205	1025
	(D)S5M490	98	490	(D)S5M1050	210	1050
	(D)S5M500	100	500	(D)S5M1055	211	1055
	(D)S5M520	104	520	(D)S5M1085	217	1085
	(D)S5M525	105	525	(D)S5M1090	218	1090
	(D)S5M530	106	530	(D)S5M1100	220	1100
	(D)S5M545	109	545	(D)S5M1105	221	1105
	(D)S5M550	110	550	(D)S5M1115	223	1115
	(D)S5M560	112	560	(D)S5M1120	224	1120
	(D)S5M575	115	575	(D)S5M1125	225	1125
	(D)S5M590	118	590	(D)S5M1135	227	1135
	(D)S5M595	119	595	(D)S5M1145	229	1145
	(D)S5M600	120	600	(D)S5M1160	232	1160
	(D)S5M625	125	625	(D)S5M1165	233	1165
	S5M640	128	640	(D)S5M1195	239	1195
	(D)S5M650	130	650	(D)S5M1225	245	1225
	(D)S5M665	133	665	(D)S5M1250	250	1250
	(D)S5M670	134	670	(D)S5M1270	254	1270
	(D)S5M675	135	675	(D)S5M1295	259	1295
	(D)S5M690	138	690	(D)S5M1350	270	1350

Nominal Model	S5M					
Pitch	5.0(mm)					
Code (Width)	100(10mm) / 150(15mm) / 250(25mm)					
Size	Model No.	Number of teeth	Length (mm)	Model No.	Number of teeth	Length (mm)
	(D)S5M1420	284	1420			
	(D)S5M1475	295	1475			
	(D)S5M1500	300	1500			
	(D)S5M1505	301	1505			
	(D)S5M1530	306	1530			
	(D)S5M1595	319	1595			
	(D)S5M1605	321	1605			
	(D)S5M1680	336	1680			
	(D)S5M1715	343	1715			
	(D)S5M1800	360	1800			
	(D)S5M2000	400	2000			
	(D)S5M2145	429	2145			
	(D)S5M2255	451	2255			
	S5M2480	496	2480			
	(D)S5M2525	505	2525			

Super Torque Timing Pulley

Nominal Model Code of Super Torque Timing Pulley

P	28	S5M	0100	B
①	②	③	④	⑤

①
Pulley
P

②
Teeth of pulley
※Please refer to the specification of each tooth profile for details.

③
Tooth Profile
S2M
S3M
S5M

④
Nominal width(mm)X10
For example, the code for 10mm in width for S5M B type pulley is 100.
※Please refer to the tooth profile for details.

⑤
Type of pulley
A：A type
B：B type
C：C type
□：Rod type

※Please refer to the tooth profile for details.

Pulley Tooth Profile Specification

Tooth Profile	Width						Material		
	4mm	6mm	10mm	15mm	25mm	Rod type[Note 1]	A、B type	C type	Rod type
S2M[Note 2]	A、B、C	A、B、C	A、B、C	-	-	O	-	-	Aluminum
S3M[Note 3]	-	-	A、B、C	A、B、C	-	O	Aluminum	Aluminum	Aluminum
S5M[Note 4]	-	-	A、B	A、B	A、B	O	Aluminum/ Steel	-	Steel

Note 1. Rod type is a 100mm long round cylinder product.

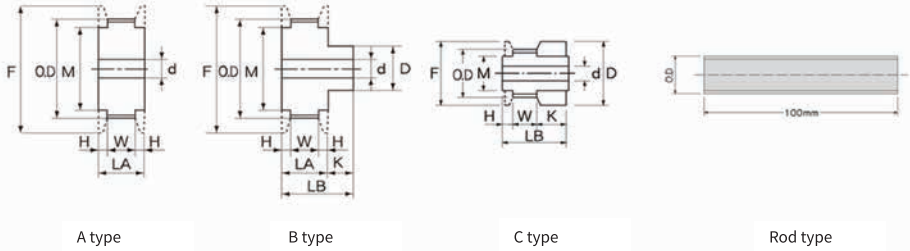
Note 2. S30 teeth and below sizes of S2M are available only in rod type and C type. Also, 32 teeth and above sizes are available only in A or B type.

Types A, B, and C for S2M pulley are customized products and the corresponding materials can be selected according to customer needs.

Note 3. 22 teeth and below sizes of S3M are available only in rod type and C type. Also, 24 teeth and above sizes are available only in A or B type.

Note 4.The material for 25mm in width of S5M is steel.

Pulley Type



A type　B type　C type　Rod type

Pulley Specification

Rod type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Thickness of the flange	Outer diameter of the flange (F)	Inner diameter of the flange (M)
S2M	P14S2M1000	14	100mm Rod type	Aluminum	8.91	8.40	F-10	13	6
	P15S2M1000	15	100mm Rod type	Aluminum	9.55	9.04	F-10	13	6
	P16S2M1000	16	100mm Rod type	Aluminum	10.19	9.68	F-10	15	8
	P18S2M1000	18	100mm Rod type	Aluminum	11.46	10.95	F-10	15	8
	P20S2M1000	20	100mm Rod type	Aluminum	12.73	12.22	F-10	16	10
	P22S2M1000	22	100mm Rod type	Aluminum	14.01	13.50	F-10	18	11
	P24S2M1000	24	100mm Rod type	Aluminum	15.28	14.77	F-10	20	12
	P25S2M1000	25	100mm Rod type	Aluminum	15.92	15.41	F-10	23	12
	P26S2M1000	26	100mm Rod type	Aluminum	16.55	16.04	F-10	23	12
	P28S2M1000	28	100mm Rod type	Aluminum	17.83	17.32	F-10	23	13
	P30S2M1000	30	100mm Rod type	Aluminum	19.10	18.59	F-10	23	13
	P32S2M1000	32	100mm Rod type	Aluminum	20.37	19.86	F-10	25	14
	P36S2M1000	36	100mm Rod type	Aluminum	22.92	22.41	F-10	26	16
	P40S2M1000	40	100mm Rod type	Aluminum	25.46	24.96	F-10	31	20
	P44S2M1000	44	100mm Rod type	Aluminum	28.01	27.50	F-10	33	22
	P48S2M1000	48	100mm Rod type	Aluminum	30.56	30.05	F-10	35	22
	P50S2M1000	50	100mm Rod type	Aluminum	31.83	31.32	F-10	35	22
	P60S2M1000	60	100mm Rod type	Aluminum	38.20	37.69	F-10	44	32
S3M	P14S3M1000	14	100mm Rod type	Aluminum	13.37	12.61	F-10	16	10
	P15S3M1000	15	100mm Rod type	Aluminum	14.32	13.56	F-10	18	11
	P16S3M1000	16	100mm Rod type	Aluminum	15.28	14.52	F-10	20	12
	P18S3M1000	18	100mm Rod type	Aluminum	17.19	16.43	F-10	23	12
	P20S3M1000	20	100mm Rod type	Aluminum	19.10	18.34	F-10	23	13
	P22S3M1000	22	100mm Rod type	Aluminum	21.01	20.25	F-10	25	14
	P24S3M1000	24	100mm Rod type	Aluminum	22.92	22.16	F-10	26	16
	P25S3M1000	25	100mm Rod type	Aluminum	23.87	23.11	F-10	28	18
	P26S3M1000	26	100mm Rod type	Aluminum	24.83	24.07	F-10	28	18
	P28S3M1000	28	100mm Rod type	Aluminum	26.74	25.98	F-10	31	20
	P30S3M1000	30	100mm Rod type	Aluminum	28.65	27.89	F-10	33	22
	P32S3M1000	32	100mm Rod type	Aluminum	30.56	29.80	F-10	35	22
	P36S3M1000	36	100mm Rod type	Aluminum	34.38	33.62	F-10	40	28
	P40S3M1000	40	100mm Rod type	Aluminum	38.20	37.44	F-10	44	32
	P44S3M1000	44	100mm Rod type	Aluminum	42.02	41.25	F-10	47	34
	P48S3M1000	48	100mm Rod type	Aluminum	45.84	45.07	F-10	48	36
	P50S3M1000	50	100mm Rod type	Aluminum	47.75	46.98	F-10	51	36
	P60S3M1000	60	100mm Rod type	Aluminum	57.30	56.53	F-10	61	41

Rod type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Thickness of the flange	Outer diameter of the flange (F)	Inner diameter of the flange (M)
S5M	P14S5M1000	14	100mm Rod type	Steel	22.28	21.32	F-10	26	16
	P15S5M1000	15	100mm Rod type	Steel	23.87	22.91	F-10	28	18
	P16S5M1000	16	100mm Rod type	Steel	25.46	24.50	F-10	31	20
	P18S5M1000	18	100mm Rod type	Steel	28.65	27.69	F-10	33	22
	P20S5M1000	20	100mm Rod type	Steel	31.83	30.87	F-10	35	22
	P22S5M1000	22	100mm Rod type	Steel	35.01	34.05	F 10	40	28
	P24S5M1000	24	100mm Rod type	Steel	38.20	37.24	F-10	44	32
	P25S5M1000	25	100mm Rod type	Steel	39.79	38.83	F-10	44	32
	P26S5M1000	26	100mm Rod type	Steel	41.38	40.42	F-10	47	34
	P28S5M1000	28	100mm Rod type	Steel	44.56	43.60	F-10	48	36
	P30S5M1000	30	100mm Rod type	Steel	47.75	46.79	F-16（15）	51	36
	P32S5M1000	32	100mm Rod type	Steel	50.93	49.97	F-16（15）	54	41
	P36S5M1000	36	100mm Rod type	Steel	57.30	56.34	F-16（15）	61	41
	P40S5M1000	40	100mm Rod type	Steel	63.66	62.70	F-16（15）	69	50
	P44S5M1000	44	100mm Rod type	Steel	70.03	69.07	F-16（15）	74	53
	P48S5M1000	48	100mm Rod type	Steel	76.39	75.43	F-16（15）	83	63
	P50S5M1000	50	100mm Rod type	Steel	79.58	78.62	F-16（15）	86	66
	P60S5M1000	60	100mm Rod type	Steel	95.49	94.53	F-16（15）	99	78

※ The value in ( ) for thickness of the flange is for aluminum.

A、B、C type

Tooth Profile	Width for the belt (mm)	Width for the pulley LA (mm)	Full width LB (mm)	Width for tooth W(mm)	Width for the flange H(mm)
S2M	4	9	17	5	2
	6	11	19	7	2
	10	15	23	11	2
S3M	10	15	23	11	2
	15	21	29	17	2
S5M	10	16	28	11	2.5
	15	22	34	17	2.5
	25	32	44	27	2.5

A、B、C type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Width for the hub K(mm)	Outer diameter for the hub D(mm)	Minimum shaft hole diameter d (mm)	Thickness of the flange	Outer diameter of the flange (F)	Inner diameter of the flange(M)
S2M※	P14S2M	14	C	-	8.91	8.40	10	13	-	F-10	13	6
	P15S2M	15	C	-	9.55	9.04	10	13	-	F-10	13	6
	P16S2M	16	C	-	10.19	9.68	10	15	-	F-10	15	8
	P18S2M	18	C	-	11.46	10.95	10	15	-	F-10	15	8
	P20S2M	20	C	-	12.73	12.22	10	16	-	F-10	16	10
	P22S2M	22	C	-	14.01	13.50	10	18	-	F-10	18	11
	P24S2M	24	C	-	15.28	14.77	10	20	-	F-10	20	12
	P25S2M	25	C	-	15.92	15.41	10	23	-	F-10	23	12
	P26S2M	26	C	-	16.55	16.04	10	23	-	F-10	23	12
	P28S2M	28	C	-	17.83	17.32	10	23	-	F-10	23	13
	P30S2M	30	C	-	19.10	18.59	10	23	-	F-10	23	13
	P32S2M	32	A・B	-	20.37	19.86	8	12	-	F-10	25	14
	P36S2M	36	A・B	-	22.92	22.41	8	14	-	F-10	26	16
	P40S2M	40	A・B	-	25.46	24.96	8	18	-	F-10	31	20
	P44S2M	44	A・B	-	28.01	27.50	8	20	-	F-10	33	22
	P48S2M	48	A・B	-	30.56	30.05	8	20	-	F-10	35	22
	P50S2M	50	A・B	-	31.83	31.32	8	20	-	F-10	35	22
	P60S2M	60	A・B	-	38.20	37.69	8	30	-	F-10	44	32

A、B、C type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Width for the hub K(mm)	Outer diameter for the hub D(mm)	Minimum shaft hole diameter d (mm)	Thickness of the flange	Outer diameter of the flange (F)	Inner diameter of the flange(M)
S3M	P14S3M	14	C	Aluminum	13.37	12.61	10	16	4	F-10	16	10
	P15S3M	15	C	Aluminum	14.32	13.56	10	18	4	F-10	18	11
	P16S3M	16	C	Aluminum	15.28	14.52	10	20	4	F-10	20	12
	P18S3M	18	C	Aluminum	17.19	16.43	10	23	4	F-10	23	12
	P20S3M	20	C	Aluminum	19.10	18.34	10	23	4	F-10	23	13
	P22S3M	22	C	Aluminum	21.01	20.25	10	25	4	F-10	25	14
	P24S3M	24	A・B	Aluminum	22.92	22.16	8	14	4	F-10	26	16
	P25S3M	25	A・B	Aluminum	23.87	23.11	8	16	6	F-10	28	18
	P26S3M	26	A・B	Aluminum	24.83	24.07	8	16	6	F-10	28	18
	P28S3M	28	A・B	Aluminum	26.74	25.98	8	18	6	F-10	31	20
	P30S3M	30	A・B	Aluminum	28.65	27.89	8	20	6	F-10	33	22
	P32S3M	32	A・B	Aluminum	30.56	29.80	8	20	6	F-10	35	22
	P36S3M	36	A・B	Aluminum	34.38	33.62	8	26	6	F-10	40	28
	P40S3M	40	A・B	Aluminum	38.20	37.44	8	30	8	F-10	44	32
	P44S3M	44	A・B	Aluminum	42.02	41.25	8	32	8	F-10	47	34
	P48S3M	48	A・B	Aluminum	45.84	45.07	8	34	8	F-10	48	36
	P50S3M	50	A・B	Aluminum	47.75	46.98	8	34	8	F-10	51	36
	P60S3M	60	A・B	Aluminum	57.30	56.53	8	39	8	F-10	61	41
S5M	P14S5M	14	A・B	Aluminum /Steel	22.28	21.32	12	14	7	F-10	26	16
	P15S5M	15	A・B	Aluminum /Steel	23.87	22.91	12	15	7	F-10	28	18
	P16S5M	16	A・B	Aluminum /Steel	25.46	24.50	12	17	7	F-10	31	20
	P18S5M	18	A・B	Aluminum /Steel	28.65	27.69	12	19	7	F-10	33	22
	P20S5M	20	A・B	Aluminum /Steel	31.83	30.87	12	19	7	F-10	35	22
	P22S5M	22	A・B	Aluminum /Steel	35.01	34.05	12	25	7	F-10	40	28
	P24S5M	24	A・B	Aluminum /Steel	38.20	37.24	12	29	7	F-10	44	32
	P25S5M	25	A・B	Aluminum /Steel	39.79	38.83	12	29	7	F-10	44	32
	P26S5M	26	A・B	Aluminum /Steel	41.38	40.42	12	31	8	F-10	47	34
	P28S5M	28	A・B	Aluminum /Steel	44.56	43.60	12	33	8	F-10	48	36
	P30S5M	30	A・B	Aluminum /Steel	47.75	46.79	12	33	10	F-16 (15)	51	36
	P32S5M	32	A・B	Aluminum /Steel	50.93	49.97	12	38	10	F-16 (15)	54	41
	P36S5M	36	A・B	Aluminum /Steel	57.30	56.34	12	38	10	F-16 (15)	61	41
	P40S5M	40	A・B	Aluminum /Steel	63.66	62.70	12	47	10	F-16 (15)	69	50
	P44S5M	44	A・B	Aluminum /Steel	70.03	69.07	12	50	12	F-16 (15)	74	53
	P48S5M	48	A・B	Aluminum /Steel	76.39	75.43	12	60	12	F-16 (15)	83	63
	P50S5M	50	A・B	Aluminum /Steel	79.58	78.62	12	63	12	F-16 (15)	86	66
	P60S5M	60	A・B	Aluminum /Steel	95.49	94.53	12	75	12	F-16 (15)	99	78

※ The value in ( ) for thickness of the flange is for aluminum.

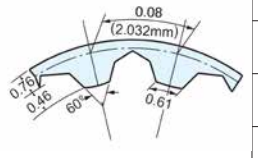
Trapezoidal Type Timing Belt

Nominal Model Code of Trapezoidal Type Timing Belt

125	T80	6.4	U
①	②	③	④

①	②	③	④
Number of teeth	Tooth Profile	Nominal width (mm)	Material
※Please refer to the specification of belt for details.	T80	3.2	U：Polyurethane
		4.8	
		6.4	
		9.5	
		※Please refer to the specification of tooth profile for details.	

Belt Tooth Profile Specification

Tooth Profile	Cross-section size	Maximum speed (m/sec)Note 1	Tooth Profile	Standard Width		Minimum size for the pulley (mm)	Maximum transmission power(kW)Note 2	Material
	Pitch(mm)			Nominal Model	Width (mm)			
T80 U	2.032	30(40)		3.2	3.2	6	0.2	Polyurethane (U)
				4.8	4.8			
				6.4	6.4			
				9.5	9.5			

Note1. The value in ( ) is the limit design value, please try to avoid this choice.

Note2. Even if the tooth profile remains the same, the maximum transmission power will vary based on the belt width and the revolution speed. Therefore, the table above serves as a general reference. For accurate design, please calculate the correct values by using the design data.

Belt Specification

Nominal Model	T80					
Pitch	2.032(mm)					
Code (Width)	3.2(3.2mm) / 4.8(4.8mm) / 6.4(6.4mm) / 9.5(9.5mm)					
Size	Model No.	Number of teeth	Length(mm)	Model No.	Number of teeth	Length (mm)
	30T80	30	60.96	110T80	110	223.52
	35T80	35	71.12	112T80	112	227.58
	40T80	40	81.28	114T80	114	231.65
	45T80	45	91.44	115T80	115	233.68
	46T80	46	93.47	118T80	118	239.78
	48T80	48	97.54	120T80	120	243.84
	50T80	50	101.60	121T80	121	245.87
	52T80	52	105.66	122T80	122	247.90
	53T80	53	107.70	123T80	123	249.94
	54T80	54	109.73	124T80	124	251.97
	55T80	55	111.76	125T80	125	254.00
	56T80	56	113.79	126T80	126	256.03
	57T80	57	115.82	130T80	130	264.16
	59T80	59	119.89	132T80	132	268.22
	60T80	60	121.92	135T80	135	274.32
	63T80	63	128.02	140T80	140	284.48
	65T80	65	132.08	142T80	142	288.54
	67T80	67	136.14	144T80	144	292.61
	68T80	68	138.18	145T80	145	294.64
	70T80	70	142.24	148T80	148	300.74
	71T80	71	144.27	150T80	150	304.80
	72T80	72	146.30	155T80	155	314.96
	73T80	73	148.34	156T80	156	316.99
	74T80	74	150.37	157T80	157	319.02
	75T80	75	152.40	160T80	160	325.12
	77T80	77	156.46	165T80	165	335.28
	78T80	78	158.50	170T80	170	345.44
	80T80	80	162.56	175T80	175	355.60
	81T80	81	164.59	180T80	180	365.76
	82T80	82	166.62	184T80	184	373.89
	83T80	83	168.66	185T80	185	375.92
	85T80	85	172.72	190T80	190	386.08
	87T80	87	176.78	195T80	195	396.24
	88T80	88	178.82	200T80	200	406.40
	89T80	89	180.85	205T80	205	416.56
	90T80	90	182.88	208T80	208	422.66
	91T80	91	184.91	210T80	210	426.72
	93T80	93	188.98	212T80	212	430.78
	94T80	94	191.01	215T80	215	436.88
	95T80	95	193.04	219T80	219	445.01
	97T80	97	197.10	220T80	220	447.04
	98T80	98	199.14	221T80	221	449.07
	100T80	100	203.20	224T80	224	455.17
	102T80	102	207.26	225T80	225	457.20
	103T80	103	209.30	228T80	228	463.30
	104T80	104	211.33	230T80	230	467.36
	105T80	105	213.36	231T80	231	469.39
	106T80	106	215.39	232T80	232	471.42
	108T80	108	219.46	235T80	235	477.52

Nominal Model	T80					
Pitch	2.032(mm)					
Code (Width)	3.2(3.2mm) / 4.8(4.8mm) / 6.4(6.4mm) / 9.5(9.5mm)					
Size	Model No.	Number of teeth	Length (mm)	Model No.	Number of teeth	Length (mm)
	236T80	236	479.55	500T80	500	1,016.00
	239T80	239	485.65	515T80	515	1,046.48
	240T80	240	487.68	550T80	550	1,117.60
	245T80	245	497.84			
	248T80	248	503.94			
	249T80	249	505.97			
	250T80	250	508.00			
	255T80	255	518.16			
	256T80	256	520.19			
	260T80	260	528.32			
	262T80	262	532.38			
	265T80	265	538.48			
	270T80	270	548.64			
	275T80	275	558.80			
	277T80	277	562.86			
	279T80	279	566.93			
	280T80	280	568.96			
	285T80	285	579.12			
	288T80	288	585.22			
	290T80	290	589.28			
	295T80	295	599.44			
	296T80	296	601.47			
	300T80	300	609.60			
	304T80	304	617.73			
	310T80	310	629.92			
	312T80	312	633.98			
	315T80	315	640.08			
	318T80	318	646.18			
	320T80	320	650.24			
	324T80	324	658.37			
	330T80	330	670.56			
	336T80	336	682.75			
	340T80	340	690.88			
	344T80	344	699.01			
	350T80	350	711.20			
	355T80	355	721.36			
	358T80	358	727.46			
	360T80	360	731.52			
	370T80	370	751.84			
	380T80	380	772.16			
	390T80	390	792.48			
	397T80	397	806.70			
	400T80	400	812.80			
	403T80	403	818.90			
	420T80	420	853.44			
	430T80	430	873.76			
	434T80	434	881.89			
	442T80	442	898.14			
	474T80	474	963.17			

Trapezoidal Type Timing Pulley

Nominal Model Code of Trapezoidal Type Timing Pulley

P	10	MXL	6.4	B
①	②	③	④	⑤

①
Pulley
P

②
Teeth of pulley
※Please refer to the specification of pulley for details.

③
Tooth Profile
MXL

④
Nominal width(mm)
6.4：B type
100：Rod type
※Please refer to the specification of tooth profile for details.

⑤
Type of pulley
B：B type
□：Rod type
※Please refer to the specification of tooth profile for details.

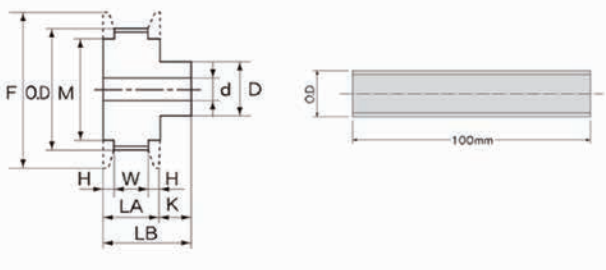
Pulley Tooth Profile Specification

Tooth Profile	Nominal width	Rod type[Note 1]	Material	
	6.4mm		B type	Rod Type
MXL	B type	O	Aluminum	Aluminum

Note 1. Rod type is a 100mm long round cylinder product.

Note 2.Special customizations for material, shape, and processing are available. Please ensure that the specified pulley is used.

Pulley Type



B type　　Rod type

Pulley Specification

Rod type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Thickness of the flange	Outer diameter of the flange(F)	Inner diameter of the flange(M)
MXL	P10MXL100	10	100mm Rod type	Aluminum	6.47	5.96	-	-	-
	P12MXL100	12	100mm Rod type	Aluminum	7.76	7.25	-	-	-
	P13MXL100	13	100mm Rod type	Aluminum	8.41	7.90	F-10	13	6
	P14MXL100	14	100mm Rod type	Aluminum	9.06	8.55	F-10	13	6
	P15MXL100	15	100mm Rod type	Aluminum	9.70	9.19	F-10	13	6
	P16MXL100	16	100mm Rod type	Aluminum	10.35	9.84	F-10	15	8
	P17MXL100	17	100mm Rod type	Aluminum	11.00	10.49	F-10	15	8
	P18MXL100	18	100mm Rod type	Aluminum	11.64	11.13	F-10	15	8
	P19MXL100	19	100mm Rod type	Aluminum	12.29	11.78	F-10	16	10
	P20MXL100	20	100mm Rod type	Aluminum	12.94	12.43	F-10	18	11
	P21MXL100	21	100mm Rod type	Aluminum	13.58	13.07	F-10	18	11
	P22MXL100	22	100mm Rod type	Aluminum	14.23	13.72	F-10	18	11
	P23MXL100	23	100mm Rod type	Aluminum	14.88	14.37	F-10	20	12
	P24MXL100	24	100mm Rod type	Aluminum	15.52	15.02	F-10	20	12
	P25MXL100	25	100mm Rod type	Aluminum	16.17	15.66	F-10	23	12
	P26MXL100	26	100mm Rod type	Aluminum	16.82	16.31	F-10	23	12
	P27MXL100	27	100mm Rod type	Aluminum	17.46	16.96	F-10	23	13
	P28MXL100	28	100mm Rod type	Aluminum	18.11	17.60	F-10	23	13
	P30MXL100	30	100mm Rod type	Aluminum	19.40	18.90	F-10	23	13
	P32MXL100	32	100mm Rod type	Aluminum	20.70	20.19	F-10	26	16
	P34MXL100	34	100mm Rod type	Aluminum	21.99	21.48	F-10	26	16
	P36MXL100	36	100mm Rod type	Aluminum	23.29	22.78	F-10	28	18
	P38MXL100	38	100mm Rod type	Aluminum	24.58	24.07	F-10	28	18
	P40MXL100	40	100mm Rod type	Aluminum	25.87	25.36	F-10	31	20
	P42MXL100	42	100mm Rod type	Aluminum	27.17	26.66	F-10	33	22
	P44MXL100	44	100mm Rod type	Aluminum	28.46	27.95	F-10	33	22
	P48MXL100	48	100mm Rod type	Aluminum	31.05	30.54	F-10	35	22
	P50MXL100	50	100mm Rod type	Aluminum	32.34	31.83	F-10	38	26
	P52MXL100	52	100mm Rod type	Aluminum	33.63	33.13	F-10	38	26
	P54MXL100	54	100mm Rod type	Aluminum	34.93	34.42	F-10	40	28
	P56MXL100	56	100mm Rod type	Aluminum	36.22	35.71	F-10	40	28
	P60MXL100	60	100mm Rod type	Aluminum	38.81	38.30	F-10	44	32
	P64MXL100	64	100mm Rod type	Aluminum	41.40	40.89	F-10	47	34
	P70MXL100	70	100mm Rod type	Aluminum	45.28	44.77	F-10	51	36
	P72MXL100	72	100mm Rod type	Aluminum	46.57	46.06	F-10	51	36
	P80MXL100	80	100mm Rod type	Aluminum	51.74	51.24	F-10	57	41
	P84MXL100	84	100mm Rod type	Aluminum	54.33	53.82	F-10	61	41
	P96MXL100	96	100mm Rod type	Aluminum	62.09	61.59	F-10	69	50
	P100MXL100	100	100mm Rod type	Aluminum	64.68	64.17	F-10	69	50
	P120MXL100	120	100mm Rod type	Aluminum	77.62	77.11	F-10	86	66

B type

Width for the belt(mm)	Width for the pulley LA (mm)	Full width LB(mm)	Width for tooth W (mm)	Width for the flange H(mm)
6.4	11	36 teeth and below sizes：16 40 teeth and above sizes：18	7	2

B type

Tooth Profile	Model No.	Number of teeth	Pulley type	Material	Pitch diameter PD(mm)	Outer diameter O.D(mm)	Width for the hub K(mm)	Outer diameter for the hub D(mm	Minimum shaft hole diameter d(mm)	Thickness of the flange	Outer diameter of the flange(F)	Inner diameter of the flange(M)
MXL	P20MXL6.4B	20	B	Aluminum	12.94	12.43	5	9	3	F-10	18	11
	P21MXL6.4B	21	B	Aluminum	13.58	13.07	5	9	3	F-10	18	11
	P22MXL6.4B	22	B	Aluminum	14.23	13.72	5	9	3	F-10	18	11
	P23MXL6.4B	23	B	Aluminum	14.88	14.37	5	10	3	F-10	20	12
	P24MXL6.4B	24	B	Aluminum	15.52	15.02	5	10	3	F-10	20	12
	P25MXL6.4B	25	B	Aluminum	16.17	15.66	5	10	3	F-10	23	12
	P26MXL6.4B	26	B	Aluminum	16.82	16.31	5	10	3	F-10	23	12
	P27MXL6.4B	27	B	Aluminum	17.46	16.96	5	11	4	F-10	23	13
	P28MXL6.4B	28	B	Aluminum	18.11	17.60	5	11	4	F-10	23	13
	P30MXL6.4B	30	B	Aluminum	19.40	18.90	5	11	4	F-10	23	13
	P32MXL6.4B	32	B	Aluminum	20.70	20.19	5	13	4	F-10	26	16
	P36MXL6.4B	36	B	Aluminum	23.29	22.78	5	15	5	F-10	28	18
	P40MXL6.4B	40	B	Aluminum	25.87	25.36	7	17	5	F-10	31	20
	P48MXL6.4B	48	B	Aluminum	31.05	30.54	7	18	5	F-10	35	22
	P60MXL6.4B	60	B	Aluminum	38.81	38.30	7	28	5	F-10	44	32
	P72MXL6.4B	72	B	Aluminum	46.57	46.06	7	30	5	F-10	51	36
	P84MXL6.4B	84	B	Aluminum	54.33	53.82	7	35	5	F-10	61	41
	P96MXL6.4B	96	B	Aluminum	62.09	61.59	7	42	5	F-10	69	50
	P120MXL6.4B	120	B	Aluminum	77.62	77.11	7	56	5	F-10	86	66

Timing Belt & Pulley

TBI MOTION

TBIMOTION

TBI MOTION INTELLIGENCE CO., LTD.
No. 123, Sanduo Rd., Shulin Dist., New Taipei City 23876, Taiwan
T. +886-2-2689-2696 F. +886-2-2688-5933 M. tbimotion.intell@tbimotion.com