Innovation in Motion
TSUBAKI

TSUBAKI SYNCHRONOUS BELTS & BELT SPROCKETS

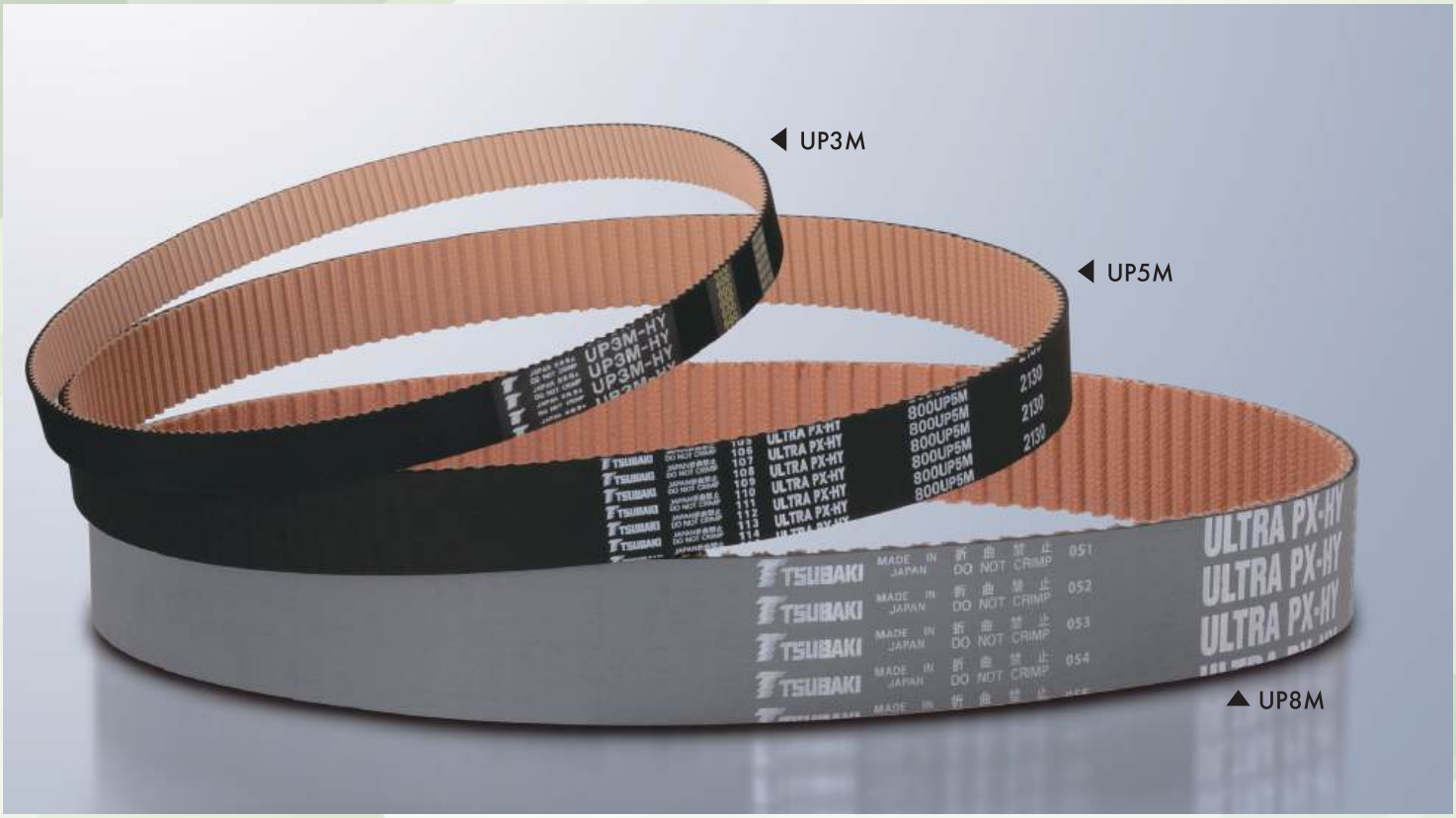
Catalog ver.3

TSUBAKI ECO LINK

Tsubaki's Highest-grade Synchronous Belts

Ultra PX Belts HY Type

Single-unit orders available as of January 2026



Previously, purchases were available only in lot quantities.

You can purchase just one belt, exactly when you need it!

Previously, it took time to confirm prices and delivery...

Standardization enables smooth and quick purchasing!

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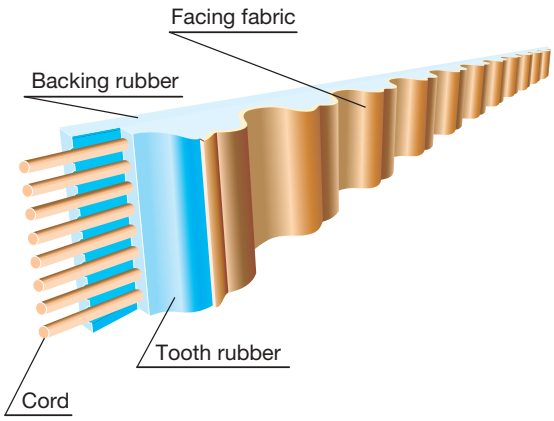
Structure and Tooth Profile of Synchronous Belts

Structure

Backing rubber	Durable and wear-resistant Chloroprene rubber (High strength Synthetic rubber) protects the core wires and enables long life.
Cord	High-tensile glass fiber (or aramid fiber) with extremely low elongation has been used to enable high-precision transmission.
Tooth rubber	Tooth rubber integrally molded with backing rubber enables high-load synchronous transmission.
Facing fabric	Wear resistance and self-lube enable smooth meshing and low noise.



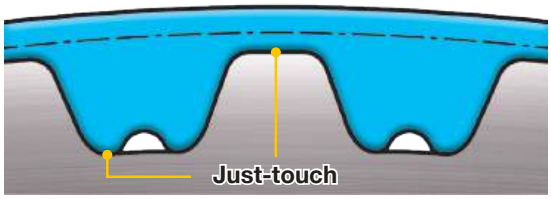
Tooth Profile

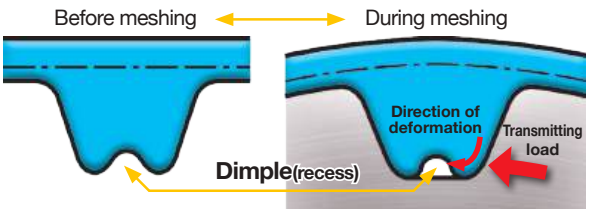
Adopts a rational curvilinear tooth profile based on precise meshing theory.

High-precision transmission
"Just-Touch System"
for ideal power transmission

×

Low noise drive
"Dimples"
for absorbing impact energy

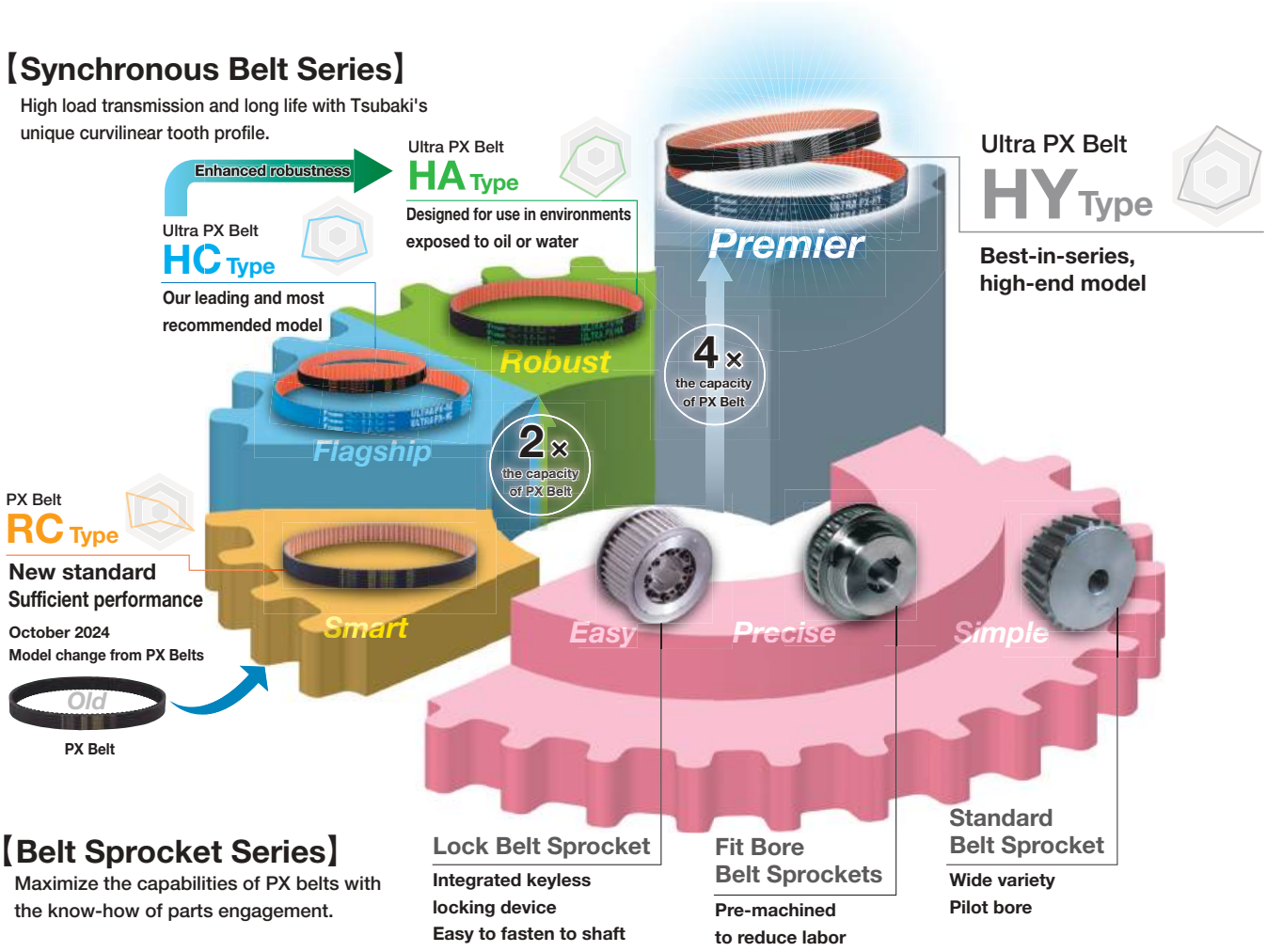


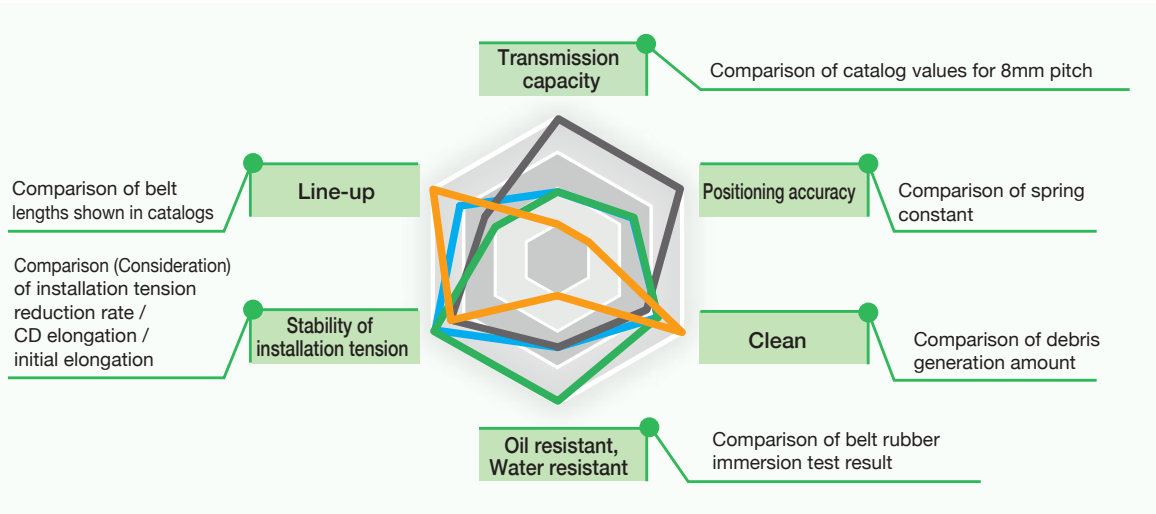


When Tsubaki Synchronous Belts are used, the tooth tips and tooth roots come into contact without clearance (Just-Touch System). This eliminates polygonal action and suppresses rotational fluctuation, enabling high-precision power transmission. It also minimizes backlash, maintaining high positioning accuracy.

During meshing, deformation of the belt tooth tips absorbs impact energy, resulting in significant reduction in noise.

Features of each series





Ultra PX Belts HC Type

P.19~

HC Type is the high performance model of ULTRA PX belts. The use of various high-strength materials enables higher load transmission, longer life and compact design. This is a new-generation synchronous belt that pursues the performance required for belts.

Features

UP3M-HC	(Belt pitch 3.00 mm)
UP5M-HC	(Belt pitch 5.00 mm)
UP8M-HC	(Belt pitch 8.00 mm)
UP14M-HC	(Belt pitch 14.00 mm)

1 High Precision

Enabled high-precision transmission even at low preset tension without reducing the installation tension.

2 High Strength

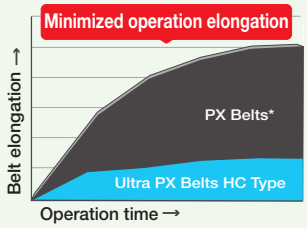
Enables higher transmission loads and more compact design.

3 Clean

Improved wear resistance of the tooth fabric has suppressed the scattering of wear debris.

High Precision

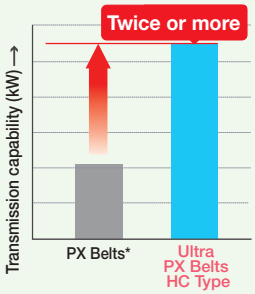
- Extremely little operation elongation
- No need to reconfigure the belt tension



Operation time & belt elongation

High Strength

- Enhances the transmission capacity significantly
- Enables transmission of high loads
- Enables the reduction of width, as well as space saving



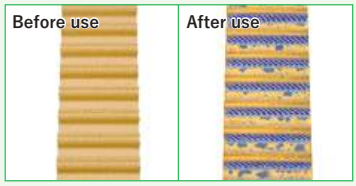
Comparison of transmission capability

Clean

- Enhances wear resistance
- Reduces the scattering of wear debris

Color

- Quite obvious wear conditions
- Easy to determine the timing of replacement



The UP3M and UP5M use black rubber.

Note:The PX belt* use for comparison is the model prior to the model change.

Ultra PX Belts HA Type (Oil resistant / Water resistant type)

P.27~

HA Type is the belt that oil and water resistance added on the HC type. It enables high-strength and high-precision transmission even in an environment exposed to oil or water.

Features

UP5M-HA (Belt pitch 5.00 mm)
UP8M-HA (Belt pitch 8.00 mm)

Made to order.
The model numbers for belt length and width combinations listed in this catalog can be ordered from a single belt.

UP14M-HA (Belt pitch 14.00 mm)
Made to order. Sold in lots.
Please contact your local Tsubaki representative for details on lot quantities.

1 Oil resistant / Water resistant

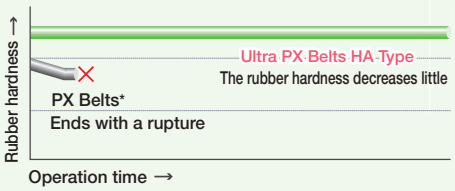
Oil- and water-resistant rubber is used which minimizes deterioration of the belt, even in environments where it is exposed to oil and water.

2 High strength and high precision

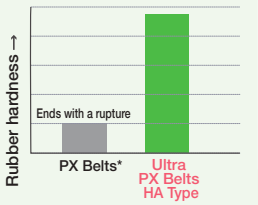
This belt features equivalent transmission capability to the Ultra PX Belts HC type.
Besides, it features very little operation elongation, allowing high-precision transmission.

Oil resistant

- The use of materials with superior oil resistance minimizes degradation of material properties, even in oil-rich environments.



A change in rubber hardness in an environment exposed to oil



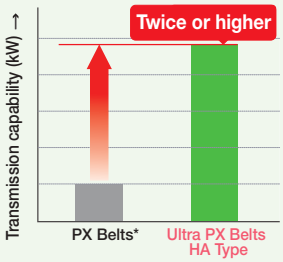
The result of durability test in an environment exposed to oil

Water resistant

- Superior water resistance enables use even in moist environments
  (The water resistance has improved compared to the PX Belts Water resistant type)

High Strength

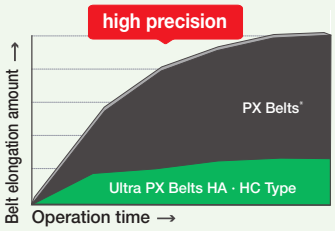
- The transmission capacity that is equivalent to that of the Ultra PX Belts HC Type



Comparison of transmission capacity

High Precision

- The operation elongation after installation is extremely little, as is the case with the Ultra PX Belts HC Type



Extremely little operation elongation

Orders can be placed from a minimum of one piece

- The models with the combination of belt length and width that are shown in the catalogs of UP5M-HA and UP8M-HA can be ordered from a minimum of one piece

The oil resistance of the Ultra PX Belts HA Type
Because the oil resistance of this belt is based on the results of the various types of tests that we conducted using general lubricants and cutting oils, it does not guarantee the resistance to all types of oils and the condition of use etc. For compatibility with the respective types of oils and the condition of use, please check with an actual product or contact a Tsubaki representative.

Note: PX Belts* are the models before the model change.

Ultra PX Belts HY Type

P.33~

The Ultra PX Belts HY Type has achieved a significant enhancement of strength and rigidity with the hybrid cord made by specially treating carbon fiber and high-strength glass fiber.

Features

UP3M-HY (Belt pitch 3.00 mm)
UP5M-HY (Belt pitch 5.00 mm)
UP8M-HY (Belt pitch 8.00 mm)

Made to order.
Except for some model numbers, belt length and width combinations listed in this catalog can be ordered from a single belt.

UP14M-HY (Belt pitch 14.00 mm)
Made to order.
Please order in lot.
Please contact your local Tsubaki representative for details on lot quantities.
UP14M-HY requires dedicated Belt Sprockets (made to order).

1 Ultra-high strength

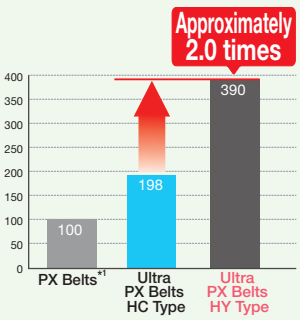
The hybrid cord is made of specially-processed rigid carbon and glass fibers enabling high transmission capability.

2 Ultra-high rigidity

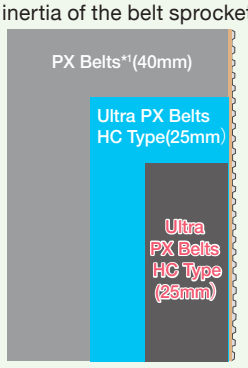
A hybrid cord reduces load elongation and enables high-speed large load transmission.
It allows high-speed operation of the equipment by remarkably shortening the attenuation time and reducing the maximum amplitude.

High Transmission Capacity

- Higher transmission capacity (Approximately 1.3 to 2.0 times)
- Reduction in width and pitch → Realizes compact transmission unit
- Reduction in weight → Achieves a reduction in the inertia of the belt sprockets



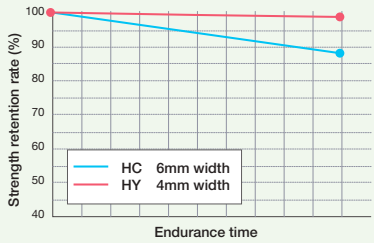
Transmission capacity (Comparison of index)



Comparison of the width of belts with the same transmission capacity

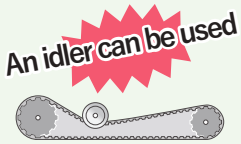
Achievement of both high rigidity and flex resistance

- High strength retention rate is achieved even under high-speed and high-load operation



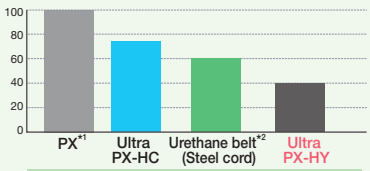
Resistance to flex fatigue

- A rear idler can be used

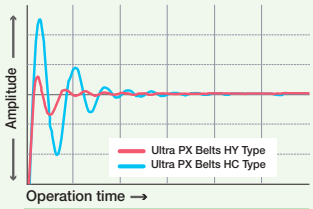


High Rigidity

- Reduction in load elongation (reduced spring constant) → Achieves high speed and high load operation
- Enhancement in stopping accuracy → Achieves an increase in machine speed through significant reduction in the attenuation time and the maximum amplitude



Spring constant (Comparison of index)



Damping property

Low noise

- The impact absorption effect that is produced by the hybrid cord using a low-friction tooth fabric and a special structure achieves a reduction in noise
  →Achieves quiet and clean operation

[1] PX Belts* are the models before the model change.
[2] Urethane belts were discontinued in April 2015.

PX Belts RC Type

P.45~

PX Belt RC Type is based on the PX belt which has a rational curvilinear tooth profile derived from the precise meshing theory with improved component materials. It has up-graded into a clean and eco-friendly synchronous belt.

Features

P5M-RC	(Belt pitch	5.00 mm)
P8M-RC	(Belt pitch	8.00 mm)
P14M-RC	(Belt pitch	14.00 mm)

1 Visualization of Lifespan

With the change of the facing fabric from black to beige, wear has become more visible, making it easier to see the tooth lifespan.

2 Clean

Changing the facing fabric processing reduces the wear debris, allowing for cleaner transmission.

3 Extended Lifespan

Due to increased bending fatigue resistance, longer lifespan can be expected with a multi-axis layout.*1

4 Reduction of operational elongation

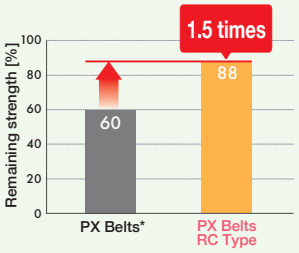
Reduced elongation allows less frequent belt adjustment.*2

Visualization of lifespan

- Changing the facing fabric from black to beige
- Wear has become more visible, making it easier to see the tooth lifespan.

Extended Lifespan

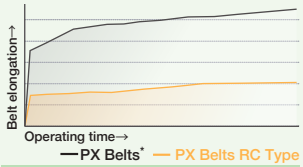
- Increased flexion fatigue resistance
- Bending Resistance 1.5 times*3



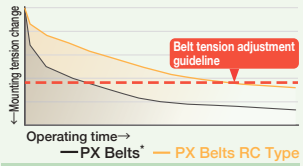
Bending fatigue

Reduction of operational elongation

- Reduces the frequency of re-tensioning.*2



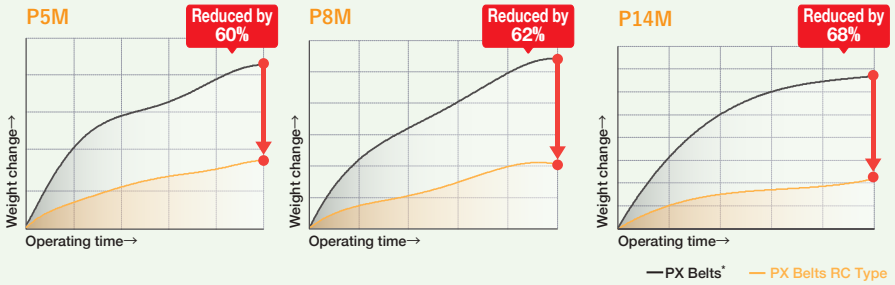
Belt elongation amount



Change in mounting tension

Clean

- Wear debris scattering is reduced by more than 60%.*3



Weight change

Increased Flexibility

- Improved flexibility while maintaining fracture strength.*3
- Easy belt installation*1

[1] Excluding P2M, P3M, P14M
[2] Excluding P2M, P3M [3] PX Belt Ratio
* Note: PX Belts* are the models before the model change.

PX Belts SHINAYAKA 530

P.41~

A flexible type belt that generates minimal wear debris. "SHINAYAKA" means flexible in Japanese.

Features

P2M-530 (Belt pitch 2.00 mm)
P3M-530 (Belt pitch 3.00 mm)

1 Low dust

SHINAYAKA 530 belt is suitable for clean drives, as there is very minimal wear debris generated from the belt.

2 Flexible

SHINAYAKA 530 belt is flexible enough, which allows for low installation tension and reduces the load on the mounting shaft, resulting in minimal energy loss.

PX Belts Water resistant Type

P.51~

A belt that can be used in contact with water

Features

P5M-W (Belt pitch 5.00 mm)
P8M-W (Belt pitch 8.00 mm)

1 Suitable for use in wet environments

Using materials with superior water resistance enables use in environments exposed to water, which was difficult to achieve with previous synchronous belts.

2 Clean, low noise and high precision

Open-Ended Belts

P.55~

It is open-ended with a cut-out.

Features

P2M-RC	(Belt pitch 2.00 mm)
P3M-RC, UP3M-HC	(Belt pitch 3.00 mm)
P5M-RC, UP5M-HC · HA · HY	(Belt pitch 5.00 mm)
P8M-RC, UP8M-HC · HA · HY	(Belt pitch 8.00 mm)

1 Suitable for reciprocating movement

Suitable for reciprocating movement, such as a cart drive or the opening/closing of a door.

2 Can be used on long-span drives

Long-span drive is available.

3 Wide variety of products available

In addition to PX belts, Ultra PX belts HC, HA, and HY types and PX belts RC type are also available to meet a variety of needs.

Products

Standard Belt Sprockets

P.57~

Tsubaki Standard Belt Sprockets are easy-to-use pilot bore-type belt sprockets.
We offer a rich array of products and have a wide range of products in stock.

Features

1 Curvilinear tooth profile

Rational curvilinear tooth profile based on precise meshing theory is adopted.

2 High precision

Allows high-precision transmission by engaging with the belt, where the tooth tips and tooth bottoms are just in contact with each other.

3 Wide Variety of lineup

Belt Sprockets Fit Bore

Belt sprocket with standardized machining of shaft holes, keys, and taps, which can be arranged only by part number.

Features

P.63~

1. Smart
Processes are indicated by symbols.
Easy to order by model number.

2. Smooth
No drawing needs to be prepared for order placement.

3. Speedy
Ready to use as soon as you receive it.

Stock item

Processed to meet frequently requested specifications. Available for immediate delivery with just the model number.

1 High versatility

2 Shaft hole, keyway, and tapped hole are already machined

Made to order

Standardized machining process of shaft hole, keyway, tapped hole, and surface treatment. These are short delivery products that can be ordered with simple symbols.

1 Reduction of labor and costs

This eliminates the need for preparing drawings and additional processing arrangements, contributing to labor and cost reductions.

2 Standardized machining specifications including aluminum materials and surface treatments

Lock Belt Sprockets

P.69~

Lock Belt Sprockets are belt sprockets with an integrated keyless locking device that achieves easy locking and high-precision transmission. We offer four types according to applications to meet various needs.

Features

Lock Belt Sprockets S Type

Lock Belt Sprockets S Type Plated

Lock Belt Sprockets C Type

Lock Belt Sprockets N Type

1 No-wobbling after tightening

Shaft and Belt Sprockets are firmly fastened.

2 Easy phase adjustment, mounting and dismounting

Fewer mounting bolts, no need for axial detent.

3 Calculation-free selection

No additional machining arrangements needed-ordering by model number only.

S Type

Standard model.

S Type Plated

Dry fastening with improved corrosion resistance and no need for lubricant.

S Type Aluminum

Contributes to weight reduction and inertia reduction.

C Type

The clamp mechanism supports small-diameter shafts.

N Type

Easy locking with a single nut.

Endless Belt Applications

HY Type

Industrial Robot

- High transmission capacity
- High speed and high precision
- High damping characteristics

HC Type

CT (Computed Tomography Scanner)

- High precision
- Low noise
- Clean operation

HC Type HY Type

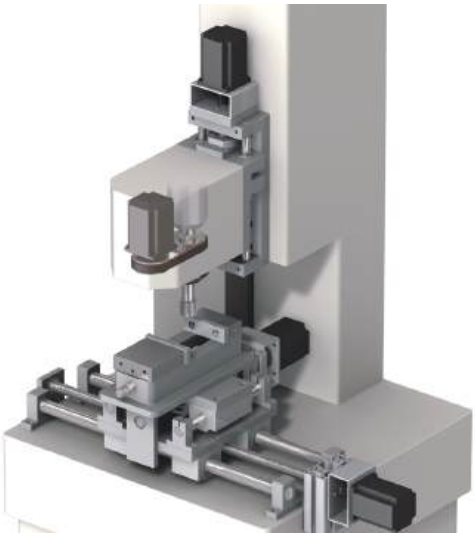
Single-Axis Slider

- High transmission capacity
- High speed and high precision

HA Type

Machine Tool (Honing Machine)

- Oil resistance
- High strength



Open-Ended Belt Applications

HA Type

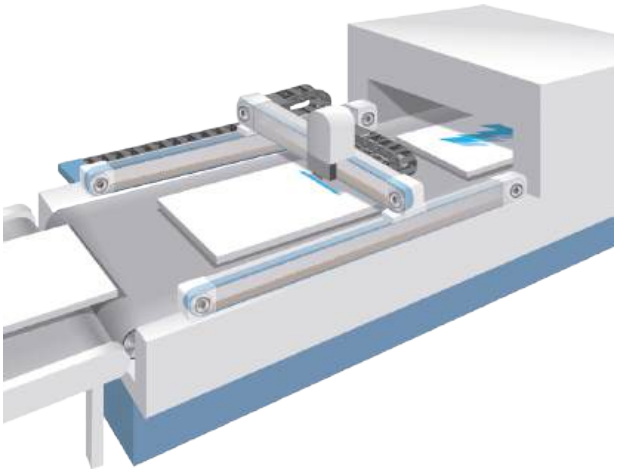
Platform Screen Doors

- No lubrication
- Water resistance
- High strength

HC Type

Large-Format Printer

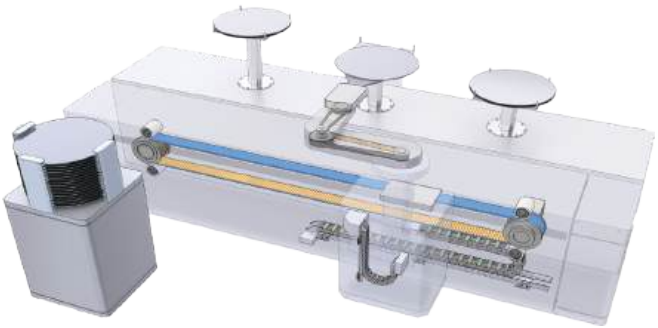
- No lubrication
- Lightweight
- High speed



HC Type HY Type

Semiconductor Wafer Transfer System

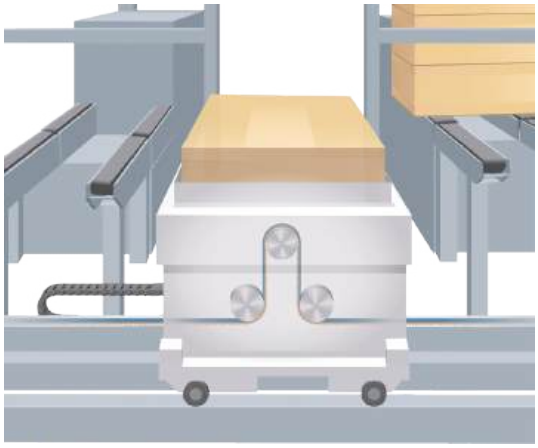
- High transmission capacity
- High speed and high precision
- High damping characteristics



HC Type

Cart Conveyance

- No lubrication
- High speed



Before use

Please read before use.

Before using the product, read catalogs and instruction manuals carefully. While using the product, pay full attention to the following items, and handle the product properly. Safety signs preceding the description of each item reflect the degree of seriousness of each item. The definitions of these safety signs are as follows:

⚠ **Warning**	Improper handling may cause death or serious injury to the user.
⚠ **Caution**	Improper handling may cause injury to the user or property damage only.

Use and Applications

⚠ **Warning** Always install a separate safety device when bodily injury or serious property damage is likely to occur if the equipment spins, runs by itself, or stops due to belt breakage.

⚠ **Warning** Do not use the belts for suspension or traction.

⚠ **Warning** Provide an ionizing system if there is a risk of fire or malfunction of the control device due to static electricity generated by the belt transmission device.

⚠ **Caution** Insulation characteristics vary depending on the belt type, please contact a Tsubaki representative.

⚠ **Caution** For details on the presence of substances restricted for use in specific industries or applications, please contact a Tsubaki representative.

⚠ **Caution** Never perform additional work on the belt, as this may impair the quality and performance.

Function and Performance

⚠ **Caution** Do not use the belt outside the application and allowable range specified in the catalog and design materials for each belt. It may cause premature failure.

⚠ **Caution** Adhesion of water, oil, chemicals, paint, dust, or other substances to the belt or belt sprocket may cause degradation of transmission power and premature failure of the belt or belt sprocket.

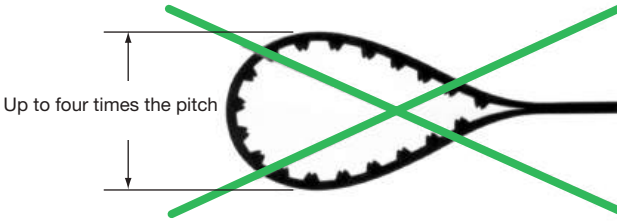
⚠ **Caution** Synchronous belts may generate loud noise during high-speed operation. In that case, install a soundproof cover.

Storage and Transportation

⚠ **Caution** Use appropriate transportation equipment or devices when transporting or handling heavy belts or belt sprockets. Lifting by hand may cause back pain or other injuries.

⚠ **Caution** Do not forcibly bend the belt or place heavy objects on it during transportation or storage. It may cause bending tendency or scratches to the belt, resulting in premature failure.

⚠ **Caution** Do not fold the synchronous belt into a small size. The limit diameter for bending is four times the pitch. If you bend it to a small diameter, the cord inside the belt will break and the performance will be significantly degraded.



⚠ **Caution** The synchronous belt wraps around the tooth surface of the belt sprockets and transmits power, so the tooth surface is also an important component.
When handling the synchronous belt and belt sprockets, be careful not to scratch the tooth surface.

⚠ **Caution** Store the belt and belt sprockets in a low humidity environment at a temperature between -10 and 40°C, and avoid direct sunlight during storage.

Installation and Operation

Warning Always install a safety cover on rotating parts including the belt and belt sprocket. There is a risk of getting hair, gloves, clothing, etc. caught in the belt or belt sprocket. In addition, there is a risk of injury due to the belt breakage or belt sprocket failure.

Warning For maintenance, inspection and replacement of belts and belt sprockets, follow the points below.
1.Always turn off the switch and stop the belt and belt sprocket before performing any work.
2.If there is a risk of the belt sprocket moving due to removing the belt, secure the belt sprocket before performing the work.
3.Make sure that the switch does not accidentally turn on during the work.

Caution When replacing a belt or belt sprocket, please use the same type as the one that was previously used. Using a different type may cause premature damage.

Caution If there is misalignment in the belt sprocket, it may cause early belt failure or flange detachment. Please make the necessary adjustments.

Caution Loosen the belt tension before replacing a belt. Forcing the belt over the flange or prying the belt with a screwdriver may cause premature failure of the belt sprocket.

Caution Please use the appropriate tension for the belt installation according to the catalog or design materials. Improper tension may cause early belt failure or shaft damage.

Caution When adding processing to the belt sprocket, carry out the following:
1.Remove burrs and sharp corners from the processed area.
2.Ensure dimensional accuracy after processing.
3.Ensure belt sprocket strength after processing.

Caution When assembling the flange to the belt sprocket, please ensure that there are no foreign objects in the fitting area between the belt sprocket body and the flange, and fix it so that there is no wobbling. Improper fixing may cause the flange to detach.
Flanges should not be used with belt sprockets made by other manufacturers or other applications. This product is designed to be used with Tsubaki belt sprockets.

Service life

Caution As the belt is a chemical product, it undergoes material aging over time. It is recommended to replace at most every five years for optimal performance.

Inspection

Caution Inspect the belts and belt sprockets periodically and replace them if any abnormality is observed.

Handling of used products

Caution Please do not burn the belt. Harmful gases may be generated.

Warranty

1.Warranty Period

Products manufactured by Tsubakimoto Chain Co. (“Products”) are warranted against defects in materials and workmanship for eighteen (18) months from the date of shipment from the factory or twelve (12) months from the date the Products are first placed into operation (calculated from the date the Products have been installed on the customer’s equipment), whichever comes first.

2. Scope of Warranty

During the warranty period, if defects arise in the Products when installed, used, and maintained correctly in accordance to Tsubakimoto Chain’s catalogs, installation manuals (including any documents specially prepared and provided to the customer) and the like, Tsubakimoto Chain will repair or replace such defective Products thereof free of charge upon confirmation of said defect by Tsubakimoto Chain. This warranty shall only apply to Products received, and Tsubakimoto Chain shall not be liable for the following costs and/or damages (including installation manuals or other documents specially prepared and provided to the customer):

(1) Costs required for removing the defective Products from or re-installing the replacement Products on the customer’s equipment for replacement or repair of the defective Product, as well as any associated installation costs.
(2) Costs required to transport the customer’s equipment, if needed, to a repair shop or the like.
(3) Any consequential or indirect damages or loss of profits or benefits the customer may incur due to the defects or repair of the Products.

3. Out of Warranty Service and Repair

Regardless of the warranty period, Tsubakimoto Chain will provide investigation, repair, and/or manufacture of the Products for a fee should the Products experience problems or anomalies under the following situations.

(1) Placement, installation (including connecting and disconnecting), lubrication, or maintenance of the Products not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(2) Use of the Products (including operating conditions, environment, and allowances) not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(3) Inappropriate disassembly, modification, or processing of the Products by the customer.
(4) Use of the Products with damaged or worn products.
(5) When the operating conditions exceed the performance of the Products as selected using the Tsubakimoto Chain selection method.
(6) Use of the Products in conditions other than what have been discussed.
(7) When consumables such as bearings, oil seals, and lubricant in the Products deplete, wear, or degrade.
(8) When secondary damage occurs to the Products due to initial or primary damage or failure to the customer’s equipment.
(9) Damage or failure of the Products due to forces majeure such as natural disasters.
(10) Damage or failure of the Products due to unlawful conduct by third parties.
(11) Damage or failure of the Products due to causes not attributable to Tsubakimoto Chain.

Product List

Synchronous Belts

Series	Type		Endless	Long (Open-Ended)	Sales Unit
	Model	Pitch mm			
Ultra PX Belts HC Type	**UP3M-HC**	3.00	○	○	Single-belt sales
	UP5M-HC	5.00	○	○	Single-belt sales
	UP8M-HC	8.00	○	○	Single-belt sales
	UP14M-HC	14.00	○		Single-belt sales
Ultra PX Belts HA Type (Oil resistant/ Water resistant)	**UP5M-HA**	5.00	○	○	Single-belt sales
	UP8M-HA	8.00	○	○	Single-belt sales
	UP14M-HA	14.00	○		Lot sales
Ultra PX Belts HY Type	**UP3M-HY**	3.00	○		Single-belt sales*
	UP5M-HY	5.00	○	○	Single-belt sales*
	UP8M-HY	8.00	○	○	Single-belt sales*
	UP14M-HY	14.00	○		Lot sales
PX Belts SHINAYAKA 530	**P2M-530**	2.00	○		Single-belt sales
	P3M-530	3.00	○		Single-belt sales
PX Belts RC Type	**P2M-RC**	2.00		○	Single-belt sales
	P3M-RC	3.00		○	Single-belt sales
	P5M-RC	5.00	○	○	Single-belt sales
	P8M-RC	8.00	○	○	Single-belt sales
	P14M-RC	14.00	○		Single-belt sales
PX Belts Water resistant Type	**P5M-W**	5.00	○		Single-belt sales
	P8M-W	8.00	○		Single-belt sales

*Lot-based sales are available for some models.

Glossary

1. Installation tension	The tension applied to synchronous belts during installation or re-tensioning, considering changes in belt tension. Proper tension is required to maximize belt performance and ensure stable transmission.
2. Standard Transmission Capacity Standard Transmission Torque	Reference values for the power or torque that standard synchronous belts can transmit under standard conditions. Select the belt so the design power or torque does not exceed these values.
3. Belt width	A key factor to determines the belt-belt sprocket engagement area based on the maximum dimension of belt width. Wider belt widths suits for high loads and high torque, while narrower belt widths are for light loads and space-saving designs.
4. Belt length	The total circumferential length measured along the pitch line of the belt.

Belt Sprockets

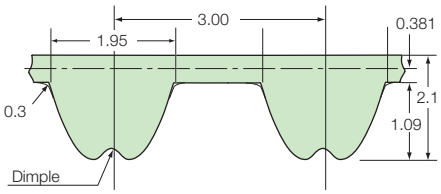
Series	Model	Pitch mm	Type					Materials	
			AF	A	BF	B	DF	Carbon steel	Aluminum
Standard Belt Sprockets	**P2M**	2			○	○	○		○
	P3M	3			○	○	○	○	○
	P5M	5	○	○	○	○		○	○
	P8M	8	○	○	○	○		○	○
	P14M	14	○	○	○	○		○	
Standard Belt Sprockets (Cylindrical Belt Sprocket)	**P2M**	2	○	○	○	○	○		○
	P3M	3	○	○	○	○	○		○
	P5M	5	○	○	○	○	○		○
Belt Sprockets Fit Bore Stock item	**P5M**	5	○		○			○	
	P8M	8	○		○			○	
Belt Sprockets Fit Bore	**P3M**	3	○		○				○
	P5M	5	○		○			○	○
	P8M	8	○		○			○	○
	P14M	14	○		○			○	
Lock Belt Sprockets S Type	**P5M**	5	○		○			○	
	P8M	8	○		○			○	
	P14M	14	○			○		○	
Lock Belt Sprockets S Type Aluminum	**P5M**	5	○		○				○
	P8M	8	○						○
Lock Belt Sprockets S Type Plated	**P5M**	5	○					○	
	P8M	8	○					○	
	P14M	14	○					○	
Lock Belt Sprockets C Type	**P2M**	2			○				○
	P3M	3			○			○	○
	P5M	5			○			○	○
Lock Belt Sprockets N Type	**P3M**	3			○				○
	P5M	5	○		○			○	

Glossary

1. Pitch diameter	The pitch circle coincides with the pitch line of the belt when wrapped around the pulley.
2. Outside diameter	The maximum outer diameter of the Belt Sprockets. An important reference dimension for ensuring correct meshing with the Synchronous Belts.
3. Pitch line differential	The radial distance between the pitch line and the outside diameter of a toothed pulley (Belt Sprockets). It is a design reference dimension for correct meshing of Synchronous Belts and Belt Sprockets, and influences meshing accuracy, service life, noise, and vibration.
4. Flange	A guide component attached to the side of the Belt Sprockets to prevent the Synchronous Belts from running off.

UP3M-HC (Pitch : 3.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 300 UP 3M 6 – HC

- BG: Rubber belt
- 300: Belt length mm
- UP: Series
- 3M: Pitch
- 6: Belt width mm
- HC: Type

■ Materials

Rubber : High-strength Chloroprene rubber (black)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P3M
Operating temperature range : -15 to 80°C
Electro conductivity : No
Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
6	2.2	29 {3.0}	40 {4.1}
10		52 {5.3}	72 {7.3}
15		82 {8.4}	114 {11.6}

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■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG120UP3M	40	BG225UP3M	75	BG315UP3M	105	BG423UP3M	141	BG600UP3M	200	BG891UP3M	297
BG123UP3M	41	BG228UP3M	76	BG318UP3M	106	BG426UP3M	142	BG618UP3M	206	BG918UP3M	306
BG132UP3M	44	BG231UP3M	77	BG327UP3M	109	BG432UP3M	144	BG633UP3M	211	BG933UP3M	311
BG138UP3M	46	BG234UP3M	78	BG330UP3M	110	BG438UP3M	146	BG651UP3M	217	BG948UP3M	316
BG141UP3M	47	BG237UP3M	79	BG339UP3M	113	BG447UP3M	149	BG660UP3M	220	BG957UP3M	319
BG144UP3M	48	BG240UP3M	80	BG342UP3M	114	BG450UP3M	150	BG675UP3M	225	BG972UP3M	324
BG147UP3M	49	BG243UP3M	81	BG345UP3M	115	BG453UP3M	151	BG681UP3M	227	BG981UP3M	327
BG150UP3M	50	BG246UP3M	82	BG351UP3M	117	BG459UP3M	153	BG687UP3M	229	BG1005UP3M	335
BG153UP3M	51	BG252UP3M	84	BG354UP3M	118	BG471UP3M	157	BG693UP3M	231	BG1023UP3M	341
BG159UP3M	53	BG255UP3M	85	BG360UP3M	120	BG477UP3M	159	BG699UP3M	233	BG1041UP3M	347
BG162UP3M	54	BG264UP3M	88	BG363UP3M	121	BG483UP3M	161	BG702UP3M	234	BG1050UP3M	350
BG171UP3M	57	BG267UP3M	89	BG369UP3M	123	BG486UP3M	162	BG705UP3M	235	BG1059UP3M	353
BG174UP3M	58	BG270UP3M	90	BG372UP3M	124	BG489UP3M	163	BG720UP3M	240	BG1080UP3M	360
BG177UP3M	59	BG273UP3M	91	BG378UP3M	126	BG501UP3M	167	BG738UP3M	246	BG1110UP3M	370
BG183UP3M	61	BG276UP3M	92	BG381UP3M	127	BG504UP3M	168	BG753UP3M	251	BG1170UP3M	390
BG186UP3M	62	BG279UP3M	93	BG384UP3M	128	BG507UP3M	169	BG756UP3M	252	BG1191UP3M	397
BG192UP3M	64	BG285UP3M	95	BG387UP3M	129	BG510UP3M	170	BG789UP3M	263	BG1281UP3M	427
BG195UP3M	65	BG288UP3M	96	BG393UP3M	131	BG516UP3M	172	BG804UP3M	268	BG1305UP3M	435
BG198UP3M	66	BG291UP3M	97	BG396UP3M	132	BG525UP3M	175	BG822UP3M	274	BG1338UP3M	446
BG201UP3M	67	BG294UP3M	98	BG399UP3M	133	BG537UP3M	179	BG828UP3M	276	BG1344UP3M	448
BG207UP3M	69	BG300UP3M	100	BG402UP3M	134	BG552UP3M	184	BG852UP3M	284	BG1380UP3M	460
BG210UP3M	70	BG303UP3M	101	BG405UP3M	135	BG561UP3M	187	BG861UP3M	287	BG1443UP3M	481
BG213UP3M	71	BG306UP3M	102	BG411UP3M	137	BG570UP3M	190	BG870UP3M	290	BG1638UP3M	546
BG219UP3M	73	BG309UP3M	103	BG414UP3M	138	BG579UP3M	193	BG879UP3M	293	BG1689UP3M	563
BG222UP3M	74	BG312UP3M	104	BG420UP3M	140	BG588UP3M	196	BG885UP3M	295	BG1749UP3M	583
										BG1893UP3M	631
										BG1947UP3M	649

• All items are made to order products.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
10	9.55	12	**18**	17.19	21	**26**	24.83	31	**40**	38.20	45
12	11.46	15	**20**	19.10	25	**28**	26.74	32	**48**	45.84	52
14	13.37	17	**22**	21.01	28	**30**	28.65	34	**50**	47.75	55
15	14.32	17	**24**	22.92	29	**32**	30.56	36	**60**	57.30	65
16	15.28	17	**25**	23.87	31	**36**	34.38	43			

Belt Sprocket types and Dimensions p.58

UP3M-HC (Pitch : 3.00 mm)

■ Standard Transmission Capacity (Belt width 6 mm)

W

Number of teeth of small belt sprocket	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	11.46	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	45.84	47.75	57.30
Small belt sprocket rpm																		
20	1.74	2.39	2.72	3.04	3.69	4.30	4.92	5.51	5.82	6.12	6.70	7.29	7.88	9.01	10.1	12.2	12.7	15.3
40	3.23	4.48	5.07	5.66	6.87	8.00	9.18	10.3	10.9	11.4	12.5	13.6	14.7	16.8	18.8	22.8	23.7	28.5
60	4.65	6.41	7.29	8.11	9.87	11.4	13.2	14.7	15.6	16.4	18.0	19.5	21.1	24.1	27.1	32.7	34.1	40.9
100	7.33	10.1	11.4	12.8	15.5	18.0	20.7	23.2	24.5	25.8	28.2	30.8	33.1	37.9	42.5	51.4	53.5	64.4
200	13.4	18.4	21.0	23.7	28.5	33.3	38.1	42.7	45.0	47.4	52.0	56.4	61.0	69.6	77.9	94.3	98.5	118
400	24.3	33.5	38.1	42.7	52.0	60.3	69.1	77.5	82.1	85.9	94.3	103	111	127	142	171	179	215
600	35.2	47.8	54.1	61.0	72.9	85.5	98.1	109	116	121	133	145	157	179	201	243	253	304
800	43.6	60.3	68.7	77.1	93.0	109	125	140	148	155	170	185	199	229	256	309	323	388
1000	52.4	73.3	82.8	93.2	112	131	150	169	178	186	205	223	241	276	309	373	389	467
1200	62.9	86.7	98.1	108	132	155	177	197	210	220	241	261	283	323	363	439	458	549
1400	71.9	99.7	113	126	153	176	202	227	239	252	277	302	324	371	418	505	524	631
1450	74.4	103	115	131	158	182	210	234	248	260	286	311	336	384	430	520	541	650
1500	77.0	105	119	134	162	189	217	242	255	269	295	322	344	394	443	536	558	671
1600	80.5	111	127	141	171	199	228	255	272	283	313	340	367	421	469	568	592	711
1750	88.0	121	138	154	185	216	249	279	293	310	339	369	396	455	510	614	642	770
1800		124	140	157	190	223	256	285	302	317	347	379	407	466	522	632	658	790
2000		136	155	174	210	245	281	314	331	350	381	415	448	513	576	694	725	870
2400		161	184	201	246	284	329	367	387	407	445	488	523	601	671	810	847	1020
3000			223	245	299	349	399	446	471	497	541	591	638	729	817	987	1020	1230
3600			256	287	351	404	464	520	551	577	630	686	743	849	950	1140	1190	1430
4000			281	314	381	444	507	570	603	629	691	754	813	926	1040	1250	1300	1560
5000			335	372	456	529	608	681	718	754	828	896	969	1110	1240	1490	1550	1840
6000				434	522	610	691	779	823	867	949	1020	1110	1260	1410	1690	1770	2090
8000					645	754	855	964	1010	1060	1160	1270	1360	1540	1730	2050	2130	2500
10000						880	995	1120	1180	1240	1350	1470	1580	1780	1980	2330	2410	2780
12000						981	1130	1260	1330	1380	1520	1650	1750	1990	2190	2530	2600	2920
14000							1250	1380	1450	1530	1660	1790	1910	2130	2330	2650	2700	2920

■ Standard Transmission Torque (Belt width 6 mm)

N · m

Number of teeth of small belt sprocket	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	11.46	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	45.84	47.75	57.30
Small belt sprocket rpm																		
20	0.830	1.14	1.30	1.45	1.76	2.05	2.35	2.63	2.78	2.92	3.20	3.48	3.76	4.30	4.82	5.82	6.08	7.30
40	0.770	1.07	1.21	1.35	1.64	1.91	2.19	2.45	2.59	2.72	2.99	3.25	3.50	4.00	4.49	5.44	5.66	6.81
60	0.740	1.02	1.16	1.29	1.57	1.82	2.10	2.34	2.48	2.61	2.86	3.11	3.35	3.84	4.31	5.20	5.42	6.51
100	0.700	0.960	1.09	1.22	1.48	1.72	1.98	2.21	2.34	2.46	2.69	2.94	3.16	3.62	4.06	4.91	5.11	6.15
200	0.640	0.880	1.00	1.13	1.36	1.59	1.82	2.04	2.15	2.26	2.48	2.69	2.91	3.32	3.72	4.50	4.70	5.65
400	0.580	0.800	0.910	1.02	1.24	1.44	1.65	1.85	1.96	2.05	2.25	2.45	2.64	3.03	3.40	4.09	4.27	5.14
600	0.560	0.760	0.860	0.970	1.16	1.36	1.56	1.74	1.84	1.93	2.12	2.31	2.49	2.85	3.20	3.86	4.03	4.84
800	0.520	0.720	0.820	0.920	1.11	1.30	1.49	1.67	1.76	1.85	2.03	2.21	2.38	2.73	3.06	3.69	3.85	4.63
1000	0.500	0.700	0.790	0.890	1.07	1.25	1.43	1.61	1.70	1.78	1.96	2.13	2.30	2.63	2.95	3.56	3.71	4.46
1200	0.500	0.690	0.780	0.860	1.05	1.23	1.41	1.57	1.67	1.75	1.92	2.08	2.25	2.57	2.89	3.49	3.64	4.37
1400	0.490	0.680	0.770	0.860	1.04	1.20	1.38	1.55	1.63	1.72	1.89	2.06	2.21	2.53	2.85	3.44	3.57	4.30
1450	0.490	0.680	0.760	0.860	1.04	1.20	1.38	1.54	1.63	1.71	1.88	2.05	2.21	2.53	2.83	3.42	3.56	4.28
1500	0.490	0.670	0.760	0.850	1.03	1.20	1.38	1.54	1.62	1.71	1.88	2.05	2.19	2.51	2.82	3.41	3.55	4.27
1600	0.480	0.660	0.760	0.840	1.02	1.19	1.36	1.52	1.62	1.69	1.87	2.03	2.19	2.51	2.80	3.39	3.53	4.24
1750	0.480	0.660	0.750	0.840	1.01	1.18	1.36	1.52	1.60	1.69	1.85	2.01	2.16	2.48	2.78	3.35	3.50	4.20
1800		0.660	0.740	0.830	1.01	1.18	1.36	1.51	1.60	1.68	1.84	2.01	2.16	2.47	2.77	3.35	3.49	4.19
2000		0.650	0.740	0.830	1.00	1.17	1.34	1.50	1.58	1.67	1.82	1.98	2.14	2.45	2.75	3.31	3.46	4.15
2400		0.640	0.730	0.800	0.980	1.13	1.31	1.46	1.54	1.62	1.77	1.94	2.08	2.39	2.67	3.22	3.37	4.04
3000			0.710	0.780	0.950	1.11	1.27	1.42	1.50	1.58	1.72	1.88	2.03	2.32	2.60	3.14	3.26	3.91
3600			0.680	0.760	0.930	1.07	1.23	1.38	1.46	1.53	1.67	1.82	1.97	2.25	2.52	3.03	3.16	3.79
4000			0.670	0.750	0.910	1.06	1.21	1.36	1.44	1.50	1.65	1.80	1.94	2.21	2.47	2.99	3.10	3.72
5000			0.640	0.710	0.870	1.01	1.16	1.30	1.37	1.44	1.58	1.71	1.85	2.12	2.36	2.84	2.96	3.52
6000				0.690	0.830	0.970	1.10	1.24	1.31	1.38	1.51	1.63	1.76	2.01	2.25	2.69	2.81	3.32
8000					0.770	0.900	1.02	1.15	1.21	1.27	1.39	1.51	1.62	1.84	2.06	2.45	2.54	2.98
10000						0.840	0.950	1.07	1.13	1.18	1.29	1.40	1.51	1.70	1.89	2.22	2.30	2.65
12000						0.780	0.900	1.00	1.06	1.10	1.21	1.31	1.39	1.58	1.74	2.01	2.07	2.32
14000							0.850	0.940	0.990	1.04	1.13	1.22	1.30	1.45	1.59	1.81	1.84	1.99

■ Belt Width Factor

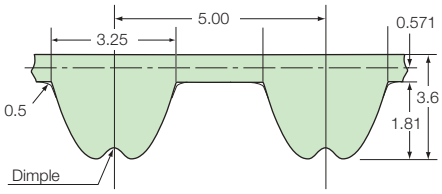
Belt width mm	6	10	15
Width factor	1.00	1.79	2.84

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.

UP5M-HC (Pitch : 5.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 500 UP 5M 10 – HC

- BG: Rubber belt
- 500: Belt length mm
- UP: Series
- 5M: Pitch
- 10: Belt width mm
- HC: Type

■ Materials

Rubber : High-strength Chloroprene rubber (black)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P5M
Operating temperature range : -15 to 80°C
Electro conductivity : No
Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
10	4.1	108 {11.0}	147 {15.0}
15		171 {17.4}	232 {23.7}
25		307 {31.3}	418 {42.6}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG175UP5M	35	**BG490UP5M**	98	**BG695UP5M**	139	**BG1000UP5M**	200	BG1585UP5M	317
BG215UP5M	43	**BG500UP5M**	100	**BG700UP5M**	140	**BG1025UP5M**	205	**BG1595UP5M**	319
BG225UP5M	45	**BG515UP5M**	103	**BG710UP5M**	142	**BG1050UP5M**	210	**BG1615UP5M**	323
BG255UP5M	51	**BG520UP5M**	104	**BG725UP5M**	145	**BG1060UP5M**	212	BG1650UP5M	330
BG260UP5M	52	**BG525UP5M**	105	**BG730UP5M**	146	BG1080UP5M	216	**BG1675UP5M**	335
BG275UP5M	55	**BG530UP5M**	106	**BG740UP5M**	148	**BG1090UP5M**	218	**BG1700UP5M**	340
BG295UP5M	59	**BG545UP5M**	109	**BG750UP5M**	150	**BG1125UP5M**	225	**BG1800UP5M**	360
BG300UP5M	60	**BG550UP5M**	110	**BG765UP5M**	153	BG1145UP5M	229	**BG1870UP5M**	374
BG310UP5M	62	**BG555UP5M**	111	**BG770UP5M**	154	**BG1150UP5M**	230	**BG1910UP5M**	382
BG320UP5M	64	**BG560UP5M**	112	**BG775UP5M**	155	**BG1160UP5M**	232	**BG1960UP5M**	392
BG325UP5M	65	**BG565UP5M**	113	**BG780UP5M**	156	**BG1180UP5M**	236	**BG2000UP5M**	400
BG340UP5M	68	**BG570UP5M**	114	**BG800UP5M**	160	**BG1195UP5M**	239	BG2050UP5M	410
BG345UP5M	69	**BG575UP5M**	115	**BG810UP5M**	162	**BG1220UP5M**	244	BG2080UP5M	416
BG350UP5M	70	**BG595UP5M**	119	**BG830UP5M**	166	**BG1225UP5M**	245	BG2120UP5M	424
BG370UP5M	74	**BG600UP5M**	120	**BG835UP5M**	167	**BG1250UP5M**	250	BG2160UP5M	432
BG375UP5M	75	**BG605UP5M**	121	**BG850UP5M**	170	**BG1260UP5M**	252	BG2200UP5M	440
BG390UP5M	78	**BG625UP5M**	125	**BG865UP5M**	173	**BG1270UP5M**	254	BG2455UP5M	491
BG400UP5M	80	**BG635UP5M**	127	**BG880UP5M**	176	**BG1295UP5M**	259	BG2645UP5M	529
BG420UP5M	84	BG640UP5M	128	**BG900UP5M**	180	**BG1350UP5M**	270	BG2725UP5M	545
BG425UP5M	85	**BG645UP5M**	129	**BG905UP5M**	181	**BG1390UP5M**	278	BG2795UP5M	559
BG430UP5M	86	**BG650UP5M**	130	**BG920UP5M**	184	**BG1420UP5M**	284	BG3050UP5M	610
BG440UP5M	88	**BG670UP5M**	134	**BG940UP5M**	188	**BG1490UP5M**	298	BG3150UP5M	630
BG450UP5M	90	**BG675UP5M**	135	**BG950UP5M**	190	BG1495UP5M	299	BG3930UP5M	786
BG470UP5M	94	BG680UP5M	136	**BG965UP5M**	193	**BG1530UP5M**	306		
BG475UP5M	95	**BG690UP5M**	138	**BG985UP5M**	197	**BG1550UP5M**	310		

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
12	19.10	23	**22**	35.01	43	**30**	47.75	55	**48**	76.39	82
14	22.28	28	**24**	38.20	44	**32**	50.93	55	**50**	79.58	86
16	25.46	31	**25**	39.79	45	**36**	57.30	64	**60**	95.49	103
18	28.65	36	**26**	41.38	47	**40**	63.66	67	**72**	114.59	120
20	31.83	36	**28**	44.56	52	**44**	70.03	74			

Belt Sprocket types and Dimensions p.59

UP5M-HC (Pitch : 5.00 mm)

■ Standard Transmission Capacity (Belt width 10 mm)

W

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	10.1	12.2	14.8	16.9	19.1	21.4	23.8	26.2	28.7	31.3	33.9	39.4	45.2	51.3	57.6	60.8	78.2	101
40	19.0	22.9	27.7	31.8	36.0	40.3	44.8	49.3	54.0	58.9	63.8	74.2	85.0	96.4	108	114	147	187
60	26.6	32.1	38.9	44.6	50.5	56.5	62.7	69.1	75.7	82.6	89.6	104	119	135	152	161	206	267
100	41.4	49.9	60.3	69.2	78.4	87.7	97.4	107	118	128	139	162	185	210	236	249	321	420
200	76.3	92.0	111	128	145	162	180	198	215	237	257	298	342	388	436	460	592	774
400	141	170	206	236	267	299	332	366	401	437	474	550	631	715	804	849	1090	1430
500	172	207	251	287	325	364	404	446	489	532	577	670	769	872	979	1030	1330	1740
600	202	243	295	338	382	427	475	524	574	625	678	788	903	1020	1150	1220	1560	2050
800	260	314	381	436	493	552	614	676	740	806	874	1020	1160	1320	1480	1570	2020	2640
1000	316	382	463	531	600	673	747	822	901	982	1070	1240	1420	1610	1810	1910	2450	3210
1200	376	454	551	630	713	800	886	977	1070	1170	1270	1470	1680	1910	2150	2270	2910	3810
1400	436	525	637	729	826	924	1030	1130	1240	1350	1470	1700	1950	2210	2480	2630	3370	4410
1450		544	658	755	854	957	1060	1170	1280	1400	1520	1760	2020	2290	2570	2710	3490	4560
1500		561	679	779	883	988	1100	1210	1320	1440	1570	1820	2080	2360	2650	2800	3600	4710
1600		598	724	831	940	1050	1170	1290	1410	1540	1670	1930	2220	2510	2820	2980	3830	5010
1750		653	790	908	1020	1150	1280	1400	1540	1680	1820	2110	2420	2740	3080	3250	4180	5460
1800			813	932	1050	1180	1310	1440	1580	1720	1870	2170	2490	2820	3160	3340	4290	5600
2000			903	1030	1170	1310	1450	1600	1750	1910	2070	2410	2760	3120	3510	3710	4730	6200
2400			1070	1220	1390	1550	1720	1900	2080	2260	2450	2850	3260	3700	4150	4380	5610	7290
3000				1520	1710	1920	2130	2350	2570	2800	3030	3520	4030	4560	5110	5390	6850	8890
3600				1800	2030	2270	2520	2780	3040	3310	3580	4150	4740	5360	6000	6320	7880	10250
4000					2250	2510	2790	3070	3360	3650	3960	4580	5230	5900	6580	6930	8500	11070
5000					2740	3070	3400	3750	4090	4450	4810	5540	6300	7070	7840	8230	9880	
6000					3220	3580	3970	4360	4760	5150	5560	6370	7180	8000	8780	9160		
8000							5000	5460	5910	6360	6800	7630	8360	8990	9560	9880		
10000								6320	6750	7160	7520	8080	8670	9070				
12000								6830	7140	7400	7680	8060						
14000								6850	7200	7410								

■ Standard Transmission Torque (Belt width 10 mm)

N · m

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	4.81	5.80	7.04	8.06	9.13	10.2	11.4	12.5	13.7	14.9	16.2	18.8	21.6	24.5	27.5	29.0	37.3	48.3
40	4.53	5.47	6.62	7.59	8.59	9.61	10.7	11.8	12.9	14.1	15.2	17.7	20.3	23.0	25.9	27.3	35.1	44.5
60	4.23	5.11	6.19	7.09	8.03	8.99	9.98	11.0	12.1	13.1	14.3	16.6	19.0	21.5	24.2	25.5	32.8	42.5
100	3.95	4.76	5.76	6.61	7.48	8.37	9.30	10.3	11.2	12.2	13.3	15.4	17.7	20.0	22.5	23.8	30.6	40.1
200	3.64	4.39	5.32	6.10	6.91	7.73	8.58	9.46	10.3	11.3	12.3	14.2	16.3	18.5	20.8	22.0	28.2	37.0
400	3.36	4.05	4.91	5.63	6.37	7.13	7.92	8.73	9.56	10.4	11.3	13.1	15.1	17.1	19.2	20.3	26.1	34.1
500	3.28	3.95	4.79	5.48	6.21	6.95	7.72	8.51	9.33	10.2	11.0	12.8	14.7	16.6	18.7	19.8	25.4	33.2
600	3.21	3.86	4.69	5.38	6.07	6.80	7.55	8.34	9.13	9.95	10.8	12.5	14.4	16.3	18.3	19.3	24.9	32.5
800	3.10	3.75	4.54	5.20	5.88	6.59	7.32	8.06	8.83	9.62	10.4	12.1	13.9	15.8	17.7	18.7	24.1	31.5
1000	3.02	3.65	4.42	5.07	5.73	6.42	7.13	7.85	8.60	9.37	10.2	11.8	13.5	15.4	17.2	18.2	23.4	30.6
1200	2.99	3.61	4.38	5.01	5.67	6.36	7.05	7.77	8.51	9.28	10.1	11.7	13.4	15.2	17.1	18.0	23.2	30.3
1400	2.97	3.58	4.34	4.97	5.63	6.30	7.00	7.72	8.45	9.21	9.99	11.6	13.3	15.1	16.9	17.9	23.0	30.1
1450		3.58	4.33	4.97	5.62	6.30	6.99	7.71	8.45	9.20	9.98	11.6	13.3	15.1	16.9	17.9	23.0	30.0
1500		3.57	4.32	4.96	5.62	6.29	6.99	7.70	8.43	9.19	9.96	11.6	13.3	15.0	16.9	17.8	22.9	30.0
1600		3.57	4.32	4.96	5.61	6.28	6.97	7.68	8.41	9.17	9.95	11.5	13.2	15.0	16.8	17.8	22.9	29.9
1750		3.56	4.31	4.95	5.59	6.26	6.96	7.66	8.40	9.15	9.91	11.5	13.2	15.0	16.8	17.8	22.8	29.8
1800			4.31	4.94	5.58	6.25	6.94	7.65	8.39	9.14	9.91	11.5	13.2	15.0	16.8	17.7	22.8	29.7
2000			4.31	4.93	5.58	6.25	6.93	7.64	8.37	9.12	9.89	11.5	13.2	14.9	16.7	17.7	22.6	29.6
2400			4.25	4.86	5.51	6.17	6.84	7.55	8.26	9.00	9.76	11.3	13.0	14.7	16.5	17.4	22.3	29.0
3000				4.83	5.45	6.10	6.78	7.47	8.18	8.90	9.65	11.2	12.8	14.5	16.3	17.2	21.8	28.3
3600				4.76	5.38	6.02	6.68	7.36	8.06	8.77	9.50	11.0	12.6	14.2	15.9	16.8	20.9	27.2
4000					5.36	6.00	6.65	7.32	8.01	8.72	9.44	10.9	12.5	14.1	15.7	16.5	20.3	26.4
5000					5.24	5.87	6.50	7.15	7.81	8.49	9.18	10.6	12.0	13.5	15.0	15.7	18.9	
6000					5.12	5.70	6.31	6.93	7.57	8.20	8.84	10.1	11.4	12.7	14.0	14.6		
8000							5.97	6.51	7.05	7.59	8.11	9.10	9.98	10.7	11.4	11.8		
10000								6.03	6.44	6.83	7.18	7.71	8.28	8.66				
12000								5.43	5.68	5.89	6.11	6.41						
14000								4.67	4.91	5.05								

■ Belt Width Factor

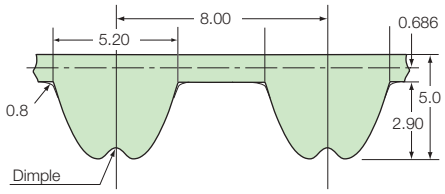
Belt width mm	10	15	20	25	30	35	40
Width factor	1.00	1.58	2.20	2.84	3.49	4.17	4.85

Notes:
Avoid using, as it may shorten the belt life.

Selection and Design p.109

UP8M-HC (Pitch : 8.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 800 UP 8M 40 – HC

- BG: Rubber belt
- 800: Belt length mm
- UP: Series
- 8M: Pitch
- 40: Belt width mm
- HC: Type

■ Materials

Rubber : High-strength Synthetic rubber (blue)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Belt Sprocket: PX Belt Sprockets P8M
Operating temperature range : -15 to 80°C
Electro conductivity : No
Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
15	5.1	177 {18.0}	235 {24.0}
25		317 {32.3}	421 {42.9}
40		540 {55.1}	717 {73.1}
60		859 {87.6}	1140 {116.2}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG480UP8M	60	**BG856UP8M**	107	**BG1264UP8M**	158	BG2104UP8M	263
BG512UP8M	64	**BG880UP8M**	110	**BG1280UP8M**	160	BG2160UP8M	270
BG520UP8M	65	**BG896UP8M**	112	**BG1304UP8M**	163	BG2240UP8M	280
BG536UP8M	67	**BG912UP8M**	114	**BG1320UP8M**	165	BG2256UP8M	282
BG560UP8M	70	**BG920UP8M**	115	**BG1344UP8M**	168	BG2304UP8M	288
BG576UP8M	72	**BG936UP8M**	117	**BG1352UP8M**	169	BG2320UP8M	290
BG584UP8M	73	**BG944UP8M**	118	**BG1360UP8M**	170	BG2400UP8M	300
BG600UP8M	75	**BG960UP8M**	120	**BG1400UP8M**	175	BG2456UP8M	307
BG616UP8M	77	**BG984UP8M**	123	**BG1424UP8M**	178	BG2496UP8M	312
BG632UP8M	79	**BG1000UP8M**	125	**BG1440UP8M**	180	BG2600UP8M	325
BG640UP8M	80	**BG1032UP8M**	129	**BG1480UP8M**	185	BG2712UP8M	339
BG656UP8M	82	**BG1040UP8M**	130	**BG1520UP8M**	190	BG2768UP8M	346
BG680UP8M	85	**BG1056UP8M**	132	**BG1576UP8M**	197	BG2800UP8M	350
BG688UP8M	86	**BG1080UP8M**	135	**BG1600UP8M**	200	BG2896UP8M	362
BG712UP8M	89	**BG1096UP8M**	137	**BG1640UP8M**	205	BG2944UP8M	368
BG720UP8M	90	**BG1120UP8M**	140	**BG1680UP8M**	210	BG3048UP8M	381
BG752UP8M	94	**BG1128UP8M**	141	**BG1760UP8M**	220	BG3200UP8M	400
BG760UP8M	95	**BG1152UP8M**	144	**BG1800UP8M**	225	BG3304UP8M	413
BG776UP8M	97	**BG1160UP8M**	145	**BG1816UP8M**	227	BG3440UP8M	430
BG800UP8M	100	**BG1192UP8M**	149	**BG1888UP8M**	236	BG3600UP8M	450
BG816UP8M	102	**BG1200UP8M**	150	**BG1904UP8M**	238	BG3920UP8M	490
BG824UP8M	103	**BG1208UP8M**	151	**BG1960UP8M**	245	BG4400UP8M	550
BG832UP8M	104	**BG1216UP8M**	152	**BG2000UP8M**	250		
BG840UP8M	105	BG1240UP8M	155	BG2032UP8M	254		
BG848UP8M	106	**BG1248UP8M**	156	BG2064UP8M	258		

- Bold font except belt width 60mm: Stock item.
- All belt width 60mm and fine font: Made to order item.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
20	50.93	55	**32**	81.49	86	**50**	127.32	135
22	56.02	62	**34**	86.58	91	**60**	152.79	158
24	61.12	66	**36**	91.67	97	**64**	162.97	170
26	66.21	73	**40**	101.86	107	**72**	183.35	190
28	71.30	79	**44**	112.05	119			
30	76.39	82	**48**	122.23	127			

Belt Sprocket types and Dimensions p.60

UP8M-HC (Pitch : 8.00 mm)

■ Standard Transmission Capacity (Belt width 15 mm)

kW

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	0.117	0.128	0.138	0.149	0.160	0.173	0.186	0.198	0.211	0.223	0.238	0.266	0.294	0.308	0.351	0.383	0.415	0.479
40	0.213	0.235	0.256	0.277	0.299	0.324	0.350	0.374	0.395	0.416	0.440	0.491	0.544	0.572	0.651	0.704	0.768	0.885
60	0.288	0.321	0.352	0.385	0.416	0.453	0.488	0.523	0.556	0.591	0.630	0.706	0.780	0.812	0.930	1.00	1.09	1.26
100	0.450	0.504	0.547	0.600	0.653	0.707	0.750	0.803	0.857	0.921	0.975	1.08	1.20	1.26	1.45	1.57	1.70	1.96
200	0.794	0.880	0.977	1.06	1.16	1.25	1.34	1.44	1.54	1.64	1.75	1.94	2.16	2.27	2.60	2.84	3.07	3.57
300	1.11	1.23	1.36	1.49	1.61	1.74	1.87	2.01	2.15	2.29	2.43	2.72	3.02	3.18	3.66	3.98	4.31	5.03
400	1.39	1.54	1.70	1.87	2.02	2.20	2.36	2.53	2.71	2.89	3.07	3.45	3.84	4.03	4.63	5.05	5.48	6.39
500	1.65	1.83	2.03	2.22	2.41	2.62	2.83	3.03	3.25	3.46	3.68	4.13	4.59	4.83	5.57	6.07	6.60	7.69
600	1.90	2.11	2.33	2.56	2.79	3.02	3.26	3.50	3.74	3.99	4.25	4.77	5.31	5.59	6.44	7.05	7.65	8.94
700	2.14	2.38	2.63	2.88	3.14	3.40	3.67	3.94	4.22	4.50	4.80	5.39	6.01	6.31	7.30	7.97	8.67	10.1
800	2.37	2.64	2.90	3.19	3.48	3.77	4.07	4.37	4.68	5.00	5.32	5.98	6.67	7.02	8.11	8.87	9.66	11.3
900	2.58	2.87	3.18	3.48	3.79	4.12	4.46	4.78	5.13	5.47	5.83	6.56	7.32	7.71	8.91	9.75	10.6	12.4
1000	2.79	3.10	3.44	3.76	4.11	4.46	4.82	5.18	5.54	5.93	6.31	7.12	7.94	8.36	9.68	10.6	11.5	13.5
1100	3.00	3.35	3.70	4.07	4.44	4.82	5.20	5.59	5.99	6.41	6.84	7.70	8.59	9.05	10.5	11.5	12.5	14.7
1200	3.22	3.59	3.97	4.36	4.77	5.16	5.58	6.01	6.43	6.88	7.33	8.26	9.24	9.73	11.3	12.4	13.5	15.8
1300	3.42	3.82	4.22	4.65	5.06	5.51	5.95	6.41	6.86	7.34	7.82	8.82	9.87	10.4	12.1	13.2	14.4	16.9
1400	3.63	4.05	4.48	4.93	5.37	5.84	6.31	6.79	7.30	7.81	8.32	9.38	10.5	11.1	12.8	14.1	15.4	18.0
1450	3.73	4.16	4.61	5.06	5.53	6.00	6.49	6.99	7.50	8.02	8.55	9.65	10.8	11.4	13.2	14.5	15.8	18.6
1500	3.83	4.27	4.74	5.20	5.68	6.17	6.67	7.19	7.71	8.25	8.81	9.93	11.1	11.7	13.6	14.9	16.3	19.1
1600	4.01	4.49	4.96	5.47	5.98	6.49	7.02	7.57	8.13	8.69	9.28	10.5	11.7	12.4	14.4	15.8	17.2	20.2
1750	4.31	4.81	5.33	5.87	6.43	6.97	7.55	8.14	8.74	9.36	9.97	11.3	12.6	13.3	15.5	17.0	18.6	21.8
1800	4.40	4.93	5.46	6.00	6.57	7.13	7.72	8.32	8.95	9.56	10.2	11.5	12.9	13.6	15.9	17.4	19.0	22.4
2000	4.77	5.35	5.92	6.53	7.13	7.77	8.40	9.06	9.75	10.4	11.1	12.6	14.1	14.9	17.3	19.1	20.8	24.5
2400	5.52	6.15	6.84	7.52	8.24	8.98	9.74	10.5	11.3	12.1	12.9	14.7	16.4	17.3	20.2	22.3	24.3	28.8
2800	6.19	6.93	7.70	8.50	9.30	10.1	11.0	11.9	12.8	13.7	14.7	16.6	18.7	19.7	23.1	25.4	27.8	32.9
3000	6.53	7.33	8.15	8.98	9.83	10.7	11.6	12.6	13.5	14.5	15.5	17.6	19.8	20.9	24.5	27.0	29.5	35.0
3600	7.29	8.16	9.11	10.0	11.0	12.0	13.1	14.1	15.2	16.4	17.5	19.9	22.4	23.7	27.8	30.6	33.6	39.8
4000	7.74	8.71	9.68	10.7	11.7	12.8	13.9	15.1	16.2	17.5	18.7	21.3	24.0	25.4	29.8	32.9	36.1	42.9
5000	8.69	9.79	10.9	12.1	13.3	14.6	15.8	17.2	18.5	20.0	21.4	24.4	27.6	29.3	34.4	38.0		
6000	9.50	10.8	11.9	13.3	14.7	16.0	17.5	19.0	20.5	22.1	23.8	27.1	30.7	32.5	38.4	42.5		

■ Standard Transmission Torque (Belt width 15 mm)

N · m

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	55.9	60.9	66.0	71.1	76.1	82.7	88.7	94.5	100	107	114	127	140	147	167	183	198	228
40	50.8	56.1	61.1	66.2	71.3	77.4	83.6	89.1	94.2	99.3	105	117	130	137	155	168	183	211
60	45.9	51.0	56.1	61.2	66.3	72.0	77.7	83.3	88.4	94.1	100	112	124	129	148	160	173	201
100	42.9	48.1	52.2	57.2	62.4	67.5	71.6	76.7	81.8	87.9	93.0	103	114	121	138	150	163	187
200	37.9	42.0	46.6	50.7	55.3	59.4	64.1	68.7	73.3	78.4	83.6	92.8	103	108	124	135	147	170
300	35.3	39.1	43.2	47.3	51.3	55.4	59.5	64.1	68.5	72.9	77.4	86.6	96.2	101	116	127	137	160
400	33.2	36.8	40.6	44.5	48.3	52.4	56.3	60.4	64.8	68.9	73.3	82.2	91.6	96.2	111	121	131	152
500	31.5	35.0	38.7	42.4	46.1	50.0	54.0	57.9	62.0	66.0	70.2	78.9	87.7	92.2	106	116	126	147
600	30.2	33.6	37.1	40.7	44.3	48.1	51.9	55.7	59.5	63.5	67.6	75.9	84.4	88.9	102	112	122	142
700	29.2	32.4	35.8	39.3	42.8	46.4	50.1	53.8	57.5	61.4	65.4	73.5	81.9	86.1	99.5	109	118	138
800	28.2	31.5	34.7	38.0	41.5	44.9	48.5	52.2	55.9	59.6	63.5	71.4	79.6	83.8	96.8	106	115	135
900	27.4	30.5	33.7	37.0	40.2	43.7	47.3	50.7	54.4	58.1	61.8	69.6	77.6	81.8	94.5	103	113	132
1000	26.7	29.6	32.9	35.9	39.3	42.5	46.0	49.5	52.9	56.6	60.3	67.9	75.8	79.8	92.4	101	110	129
1100	26.0	29.1	32.1	35.3	38.5	41.8	45.2	48.5	52.0	55.7	59.3	66.8	74.6	78.5	91.0	99.5	109	127
1200	25.6	28.6	31.6	34.7	37.9	41.1	44.4	47.8	51.1	54.7	58.3	65.7	73.5	77.4	89.8	98.3	107	126
1300	25.1	28.0	31.0	34.1	37.2	40.4	43.7	47.0	50.4	53.9	57.4	64.8	72.5	76.3	88.5	97.0	106	124
1400	24.8	27.6	30.6	33.6	36.6	39.8	43.1	46.3	49.8	53.2	56.7	63.9	71.5	75.4	87.6	95.9	105	123
1450	24.6	27.4	30.3	33.3	36.4	39.5	42.7	46.0	49.4	52.8	56.3	63.5	71.1	75.0	87.0	95.4	104	122
1500	24.4	27.2	30.1	33.1	36.1	39.3	42.4	45.8	49.0	52.5	56.1	63.2	70.7	74.6	86.5	94.9	104	122
1600	23.9	26.8	29.6	32.7	35.7	38.7	41.9	45.2	48.5	51.9	55.3	62.5	69.9	73.7	85.7	94.0	103	121
1750	23.5	26.3	29.1	32.0	35.1	38.0	41.2	44.4	47.7	51.0	54.4	61.5	68.9	72.7	84.4	92.7	101	119
1800	23.3	26.1	29.0	31.8	34.9	37.8	41.0	44.1	47.5	50.7	54.2	61.2	68.6	72.3	84.1	92.3	101	119
2000	22.8	25.5	28.2	31.2	34.0	37.1	40.1	43.3	46.5	49.8	53.1	60.1	67.3	71.1	82.7	90.9	99.3	117
2400	21.9	24.5	27.2	29.9	32.8	35.7	38.7	41.8	44.9	48.1	51.5	58.3	65.3	69.0	80.4	88.5	96.8	114
2800	21.1	23.6	26.3	29.0	31.7	34.5	37.5	40.5	43.6	46.7	50.0	56.7	63.7	67.3	78.6	86.6	94.8	112
3000	20.8	23.3	25.9	28.6	31.3	34.1	37.1	40.0	43.1	46.2	49.5	56.1	63.0	66.6	77.9	85.8	94.0	111
3600	19.3	21.6	24.2	26.6	29.2	31.9	34.7	37.5	40.3	43.4	46.4	52.7	59.4	62.8	73.6	81.2	89.0	106
4000	18.5	20.8	23.1	25.5	28.0	30.6	33.3	36.0	38.7	41.7	44.6	50.8	57.2	60.6	71.1	78.4	86.1	102
5000	16.6	18.7	20.9	23.1	25.4	27.8	30.2	32.9	35.4	38.1	40.8	46.6	52.7	55.9	65.6	72.6		
6000	15.1	17.2	19.0	21.1	23.3	25.5	27.8	30.2	32.7	35.2	37.8	43.2	48.8	51.8	61.1	67.6		

■ Belt Width Factor

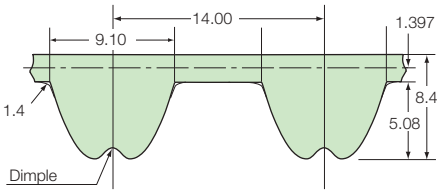
Belt width mm	15	20	25	30	35	40	45	50	55	60
Width factor	1.00	1.38	1.79	2.20	2.62	3.05	3.49	3.94	4.39	4.85

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

Selection and Design p.109

UP14M-HC (Pitch : 14.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 1400 UP 14M 60 – HC

- BG: Rubber belt
- 1400: Belt length mm
- UP: Series
- 14M: Pitch
- 60: Belt width mm
- HC: Type

■ Materials

Rubber : High-strength Synthetic rubber (blue)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P14M
Operating temperature range : -15 to 80°C
Electro conductivity : No
Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
40	8.4	794 {81.0}	1050 {107.1}
60		1255 {128.0}	1659 {169.2}
80		1747 {178.1}	2310 {235.6}
100		2255 {229.9}	2982 {304.1}
120		2771 {282.6}	3665 {373.7}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG1120UP14M	80	**BG1960UP14M**	140	BG3850UP14M	275
BG1176UP14M	84	BG2002UP14M	143	BG4004UP14M	286
BG1190UP14M	85	BG2100UP14M	150	BG4382UP14M	313
BG1246UP14M	89	BG2198UP14M	157	BG4508UP14M	322
BG1344UP14M	96	BG2240UP14M	160		
BG1400UP14M	100	BG2310UP14M	165		
BG1456UP14M	104	BG2380UP14M	170		
BG1540UP14M	110	BG2450UP14M	175		
BG1610UP14M	115	BG2590UP14M	185		
BG1652UP14M	118	BG2660UP14M	190		
BG1680UP14M	120	BG2800UP14M	200		
BG1736UP14M	124	BG2940UP14M	210		
BG1778UP14M	127	BG3150UP14M	225		
BG1806UP14M	129	BG3360UP14M	240		
BG1890UP14M	135	BG3500UP14M	250		

• Both bold font and belt width 40mm, 60mm : Stock item Both fine font and belt width 80mm, 100mm, 120mm : Made to order item.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
28	124.78	136	**38**	169.34	181	**50**	222.82	234
30	133.69	145	**40**	178.25	190	**56**	249.55	–
32	142.60	154	**42**	187.17	198	**60**	267.38	–
34	151.52	163	**44**	196.08	207	**64**	285.21	–
36	160.43	171	**48**	213.90	225	**72**	320.86	–

Belt Sprocket types and Dimensions p.61

UP14M-HC (Pitch : 14.00 mm)

■ Standard Transmission Capacity (Belt width 40 mm)

kW

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	1.06	1.15	1.23	1.33	1.42	1.50	1.59	1.68	1.76	1.85	1.93	2.02	2.27	2.44	2.62	2.95
40	2.02	2.20	2.37	2.53	2.71	2.87	3.04	3.20	3.36	3.53	3.69	3.86	4.34	4.67	5.00	5.64
60	2.94	3.20	3.44	3.68	3.94	4.17	4.42	4.65	4.89	5.13	5.37	5.60	6.30	6.78	7.26	8.19
100	4.70	5.11	5.50	5.88	6.30	6.67	7.06	7.44	7.81	8.20	8.58	8.96	10.1	10.8	11.6	13.1
200	8.69	9.46	10.2	11.0	11.8	12.5	13.2	14.0	14.7	15.4	16.1	16.9	19.0	20.4	21.9	24.8
400	15.9	17.3	18.7	19.9	21.3	22.6	23.9	25.2	26.5	27.8	29.1	30.4	34.1	36.7	39.3	44.4
500	19.3	20.9	22.6	24.0	25.8	27.3	28.8	30.3	31.8	33.4	34.9	36.6	41.1	44.1	47.2	53.3
600	22.6	24.6	26.3	28.2	30.1	31.8	33.7	35.4	37.2	39.1	40.9	42.7	47.9	51.5	55.2	62.2
800	29.2	31.7	34.1	36.3	38.8	41.1	43.3	45.7	47.8	50.3	52.6	55.0	61.8	66.4	71.1	80.2
1000	34.9	37.8	40.8	43.7	46.9	49.6	52.5	55.3	58.2	61.1	64.0	67.0	75.2	81.0	86.7	98.0
1200	40.9	44.6	48.0	51.5	55.3	58.5	61.9	65.3	68.8	72.1	75.6	78.9	88.8	95.6	102	116
1400	47.0	51.3	55.3	59.3	63.6	67.5	71.5	75.3	79.3	83.3	87.3	91.5	103	111	119	134
1450	48.3	52.8	56.9	61.1	65.7	69.7	73.7	77.8	82.0	86.0	90.1	94.3	106	114	122	138
1500	49.8	54.5	58.6	63.0	67.7	71.9	76.1	80.2	84.5	88.8	93.1	97.4	110	118	127	143
1600	51.7	57.0	61.6	66.2	71.5	76.0	80.4	85.0	89.6	94.2	98.7	104	117	126	135	153
1750	54.7	60.6	65.8	71.0	77.0	82.2	86.8	92.0	97.0	102	108	113	127	137	148	167
1800	56.2	62.2	67.5	73.1	79.2	84.2	89.1	94.6	99.8	105	110	115	130	141	152	172
2000	61.4	68.6	74.6	80.7	87.8	93.5	98.6	105	111	116	122	128	144	156	168	191
2400	71.0	80.0	87.4	95.0	104	111	118	125	133	139	145	152	172	187	201	229
3000					125	133	142	151	160	170	180	189	215	233	251	286
3600							147	156	164	175	185	196	229	251	274	316
4000										180	190	202	234	260	286	332

■ Standard Transmission Torque (Belt width 40 mm)

N · m

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	506	550	585	633	677	718	760	800	841	883	923	964	1084	1166	1248	1409
40	483	525	565	604	647	685	725	764	803	843	881	920	1035	1113	1192	1346
60	468	509	548	585	626	664	703	740	777	816	854	891	1002	1078	1155	1303
100	449	488	525	561	601	637	674	710	746	783	819	855	961	1035	1108	1250
200	415	452	487	523	562	594	631	667	702	733	769	805	907	974	1046	1184
400	380	414	445	476	509	540	571	602	632	664	694	725	815	877	939	1059
500	369	399	431	459	492	521	549	579	607	638	667	698	784	842	902	1017
600	360	392	419	448	479	506	536	563	592	622	651	679	762	819	878	989
800	349	378	406	434	463	490	517	545	570	601	628	656	737	793	848	957
1000	333	361	390	417	447	474	501	528	555	583	611	639	718	773	827	936
1200	326	355	382	410	440	465	492	520	547	573	602	628	707	760	815	920
1400	320	350	377	404	434	460	487	513	541	568	595	624	701	755	809	914
1450	318	348	375	402	433	459	485	512	540	566	593	621	699	753	806	911
1500	317	347	373	401	431	458	484	510	538	565	592	620	697	751	805	910
1600	309	340	368	395	426	454	480	507	534	562	589	618	696	751	805	910
1750	298	331	359	387	420	448	474	502	529	558	588	615	694	750	805	910
1800	298	330	358	387	420	446	473	502	529	555	586	612	691	748	805	910
2000	293	328	356	385	419	446	470	502	528	554	584	609	688	747	802	909
2400	282	318	348	378	414	441	469	499	528	552	578	605	686	743	800	909
3000					397	424	453	481	510	541	571	602	683	740	799	909
3600							390	413	435	463	491	521	608	667	726	839
4000										428	454	481	559	620	683	793

■ Belt Width Factor

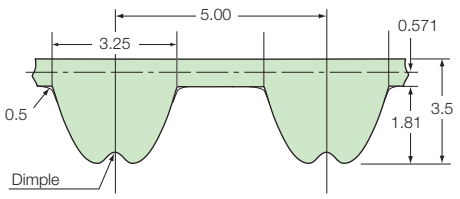
Belt width mm	40	60	80	100	120
Width factor	1.00	1.58	2.20	2.84	3.49

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

UP5M-HA (Pitch : 5.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 500 UP 5M 10 –HA

- BG: Rubber belt
- 500: Belt length mm
- UP: Series
- 5M: Pitch
- 10: Belt width mm
- HA: Type

■ Materials

Rubber : High-strength Synthetic rubber
(Oil resistant / Water resistant Specification)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Oil resistant, water resistant : Yes In oily and wet (Included water solubility coolant liquid) environment but cannot be soaked.
Belt Sprocket : PX Belt Sprockets P5M
Operating temperature range* : 0 to 60°C
Electro conductivity : No
*Allow to use in higher operating temperature.
Please contact a Tsubaki representative.

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
10	3.4	108 {11.0}	147 {15.0}
15		171 {17.4}	232 {23.7}
25		307 {31.3}	418 {42.6}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG475UP5M	95	BG690UP5M	138	BG985UP5M	197	BG1550UP5M	310
BG490UP5M	98	BG695UP5M	139	BG1000UP5M	200	BG1585UP5M	317
BG500UP5M	100	BG700UP5M	140	BG1025UP5M	205	BG1595UP5M	319
BG515UP5M	103	BG710UP5M	142	BG1050UP5M	210	BG1615UP5M	323
BG520UP5M	104	BG725UP5M	145	BG1060UP5M	212	BG1650UP5M	330
BG525UP5M	105	BG730UP5M	146	BG1080UP5M	216	BG1675UP5M	335
BG530UP5M	106	BG740UP5M	148	BG1090UP5M	218	BG1700UP5M	340
BG545UP5M	109	BG750UP5M	150	BG1125UP5M	225	BG1800UP5M	360
BG550UP5M	110	BG765UP5M	153	BG1145UP5M	229	BG1870UP5M	374
BG555UP5M	111	BG770UP5M	154	BG1150UP5M	230	BG1910UP5M	382
BG560UP5M	112	BG775UP5M	155	BG1160UP5M	232	BG1960UP5M	392
BG565UP5M	113	BG780UP5M	156	BG1180UP5M	236	BG2000UP5M	400
BG570UP5M	114	BG800UP5M	160	BG1195UP5M	239	BG2050UP5M	410
BG575UP5M	115	BG810UP5M	162	BG1220UP5M	244	BG2080UP5M	416
BG595UP5M	119	BG830UP5M	166	BG1225UP5M	245	BG2120UP5M	424
BG600UP5M	120	BG835UP5M	167	BG1250UP5M	250	BG2160UP5M	432
BG605UP5M	121	BG850UP5M	170	BG1260UP5M	252	BG2200UP5M	440
BG625UP5M	125	BG865UP5M	173	BG1270UP5M	254	BG2455UP5M	491
BG635UP5M	127	BG880UP5M	176	BG1295UP5M	259	BG2645UP5M	529
BG640UP5M	128	BG900UP5M	180	BG1350UP5M	270	BG2725UP5M	545
BG645UP5M	129	BG905UP5M	181	BG1390UP5M	278	BG2795UP5M	559
BG650UP5M	130	BG920UP5M	184	BG1420UP5M	284	BG3050UP5M	610
BG670UP5M	134	BG940UP5M	188	BG1490UP5M	298	BG3150UP5M	630
BG675UP5M	135	BG950UP5M	190	BG1495UP5M	299	BG3930UP5M	786
BG680UP5M	136	BG965UP5M	193	BG1530UP5M	306		

• All items are made to order products.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
12	19.10	23	**22**	35.01	43	**30**	47.75	55	**48**	76.39	82
14	22.28	28	**24**	38.20	44	**32**	50.93	55	**50**	79.58	86
16	25.46	31	**25**	39.79	45	**36**	57.30	64	**60**	95.49	103
18	28.65	36	**26**	41.38	47	**40**	63.66	67	**72**	114.59	120
20	31.83	36	**28**	44.56	52	**44**	70.03	74			

Belt Sprocket types and Dimensions p.59

UP5M-HA (Pitch : 5.00 mm)

■ Standard Transmission Capacity (Belt width 10 mm)

W

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	10.1	12.2	14.8	16.9	19.1	21.4	23.8	26.2	28.7	31.3	33.9	39.4	45.2	51.3	57.6	60.8	78.2	101
40	19.0	22.9	27.7	31.8	36.0	40.3	44.8	49.3	54.0	58.9	63.8	74.2	85.0	96.4	108	114	147	187
60	26.6	32.1	38.9	44.6	50.5	56.5	62.7	69.1	75.7	82.6	89.6	104	119	135	152	161	206	267
100	41.4	49.9	60.3	69.2	78.4	87.7	97.4	107	118	128	139	162	185	210	236	249	321	420
200	76.3	92.0	111	128	145	162	180	198	215	237	257	298	342	388	436	460	592	774
400	141	170	206	236	267	299	332	366	401	437	474	550	631	715	804	849	1090	1430
500	172	207	251	287	325	364	404	446	489	532	577	670	769	872	979	1030	1330	1740
600	202	243	295	338	382	427	475	524	574	625	678	788	903	1020	1150	1220	1560	2050
800	260	314	381	436	493	552	614	676	740	806	874	1020	1160	1320	1480	1570	2020	2640
1000	316	382	463	531	600	673	747	822	901	982	1070	1240	1420	1610	1810	1910	2450	3210
1200	376	454	551	630	713	800	886	977	1070	1170	1270	1470	1680	1910	2150	2270	2910	3810
1400	436	525	637	729	826	924	1030	1130	1240	1350	1470	1700	1950	2210	2480	2630	3370	4410
1450		544	658	755	854	957	1060	1170	1280	1400	1520	1760	2020	2290	2570	2710	3490	4560
1500		561	679	779	883	988	1100	1210	1320	1440	1570	1820	2080	2360	2650	2800	3600	4710
1600		598	724	831	940	1050	1170	1290	1410	1540	1670	1930	2220	2510	2820	2980	3830	5010
1750		653	790	908	1020	1150	1280	1400	1540	1680	1820	2110	2420	2740	3080	3250	4180	5460
1800			813	932	1050	1180	1310	1440	1580	1720	1870	2170	2490	2820	3160	3340	4290	5600
2000			903	1030	1170	1310	1450	1600	1750	1910	2070	2410	2760	3120	3510	3710	4730	6200
2400			1070	1220	1390	1550	1720	1900	2080	2260	2450	2850	3260	3700	4150	4380	5610	7290
3000				1520	1710	1920	2130	2350	2570	2800	3030	3520	4030	4560	5110	5390	6850	8890
3600				1800	2030	2270	2520	2780	3040	3310	3580	4150	4740	5360	6000	6320	7880	10250
4000					2250	2510	2790	3070	3360	3650	3960	4580	5230	5900	6580	6930	8500	11070
5000					2740	3070	3400	3750	4090	4450	4810	5540	6300	7070	7840	8230	9880	
6000					3220	3580	3970	4360	4760	5150	5560	6370	7180	8000	8780	9160		
8000							5000	5460	5910	6360	6800	7630	8360	8990	9560	9880		
10000								6320	6750	7160	7520	8080	8670	9070				
12000								6830	7140	7400	7680	8060						
14000								6850	7200	7410								

■ Standard Transmission Torque (Belt width 10 mm)

N · m

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	4.81	5.80	7.04	8.06	9.13	10.2	11.4	12.5	13.7	14.9	16.2	18.8	21.6	24.5	27.5	29.0	37.3	48.3
40	4.53	5.47	6.62	7.59	8.59	9.61	10.7	11.8	12.9	14.1	15.2	17.7	20.3	23.0	25.9	27.3	35.1	44.5
60	4.23	5.11	6.19	7.09	8.03	8.99	9.98	11.0	12.1	13.1	14.3	16.6	19.0	21.5	24.2	25.5	32.8	42.5
100	3.95	4.76	5.76	6.61	7.48	8.37	9.30	10.3	11.2	12.2	13.3	15.4	17.7	20.0	22.5	23.8	30.6	40.1
200	3.64	4.39	5.32	6.10	6.91	7.73	8.58	9.46	10.3	11.3	12.3	14.2	16.3	18.5	20.8	22.0	28.2	37.0
400	3.36	4.05	4.91	5.63	6.37	7.13	7.92	8.73	9.56	10.4	11.3	13.1	15.1	17.1	19.2	20.3	26.1	34.1
500	3.28	3.95	4.79	5.48	6.21	6.95	7.72	8.51	9.33	10.2	11.0	12.8	14.7	16.6	18.7	19.8	25.4	33.2
600	3.21	3.86	4.69	5.38	6.07	6.80	7.55	8.34	9.13	9.95	10.8	12.5	14.4	16.3	18.3	19.3	24.9	32.5
800	3.10	3.75	4.54	5.20	5.88	6.59	7.32	8.06	8.83	9.62	10.4	12.1	13.9	15.8	17.7	18.7	24.1	31.5
1000	3.02	3.65	4.42	5.07	5.73	6.42	7.13	7.85	8.60	9.37	10.2	11.8	13.5	15.4	17.2	18.2	23.4	30.6
1200	2.99	3.61	4.38	5.01	5.67	6.36	7.05	7.77	8.51	9.28	10.1	11.7	13.4	15.2	17.1	18.0	23.2	30.3
1400	2.97	3.58	4.34	4.97	5.63	6.30	7.00	7.72	8.45	9.21	9.99	11.6	13.3	15.1	16.9	17.9	23.0	30.1
1450		3.58	4.33	4.97	5.62	6.30	6.99	7.71	8.45	9.20	9.98	11.6	13.3	15.1	16.9	17.9	23.0	30.0
1500		3.57	4.32	4.96	5.62	6.29	6.99	7.70	8.43	9.19	9.96	11.6	13.3	15.0	16.9	17.8	22.9	30.0
1600		3.57	4.32	4.96	5.61	6.28	6.97	7.68	8.41	9.17	9.95	11.5	13.2	15.0	16.8	17.8	22.9	29.9
1750		3.56	4.31	4.95	5.59	6.26	6.96	7.66	8.40	9.15	9.91	11.5	13.2	15.0	16.8	17.8	22.8	29.8
1800			4.31	4.94	5.58	6.25	6.94	7.65	8.39	9.14	9.91	11.5	13.2	15.0	16.8	17.7	22.8	29.7
2000			4.31	4.93	5.58	6.25	6.93	7.64	8.37	9.12	9.89	11.5	13.2	14.9	16.7	17.7	22.6	29.6
2400			4.25	4.86	5.51	6.17	6.84	7.55	8.26	9.00	9.76	11.3	13.0	14.7	16.5	17.4	22.3	29.0
3000				4.83	5.45	6.10	6.78	7.47	8.18	8.90	9.65	11.2	12.8	14.5	16.3	17.2	21.8	28.3
3600				4.76	5.38	6.02	6.68	7.36	8.06	8.77	9.50	11.0	12.6	14.2	15.9	16.8	20.9	27.2
4000					5.36	6.00	6.65	7.32	8.01	8.72	9.44	10.9	12.5	14.1	15.7	16.5	20.3	26.4
5000					5.24	5.87	6.50	7.15	7.81	8.49	9.18	10.6	12.0	13.5	15.0	15.7	18.9	
6000					5.12	5.70	6.31	6.93	7.57	8.20	8.84	10.1	11.4	12.7	14.0	14.6		
8000							5.97	6.51	7.05	7.59	8.11	9.10	9.98	10.7	11.4	11.8		
10000								6.03	6.44	6.83	7.18	7.71	8.28	8.66				
12000								5.43	5.68	5.89	6.11	6.41						
14000								4.67	4.91	5.05								

■ Belt Width Factor

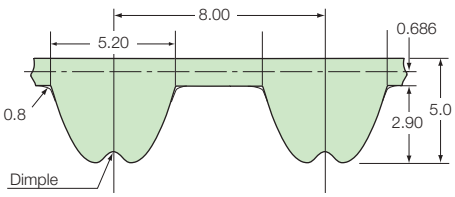
Belt width mm	10	15	20	25	30	35	40
Width factor	1.00	1.58	2.20	2.84	3.49	4.17	4.85

Notes:
Avoid using, as it may shorten the belt life.

Selection and Design p.109

UP8M-HA (Pitch : 8.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 1000 UP 8M 15 – HA

- BG: Rubber belt
- 1000: Belt length mm
- UP: Series
- 8M: Pitch
- 15: Belt width mm
- HA: Type

■ Materials

Rubber : High-strength Synthetic rubber
(Oil resistant / Water resistant Specification)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Oil resistant, water resistant : Yes In oily and wet (Included water solubility coolant liquid) environment but cannot be soaked.
Belt Sprocket : PX Belt Sprockets P8M
Operating temperature range* : 0 to 60°C
Electro conductivity : No
*Allow to use in higher operating temperature.
Please contact a Tsubaki representative.

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
15	4.7	177 {18.0}	235 {24.0}
25		317 {32.3}	421 {42.9}
40		540 {55.1}	717 {73.1}
60		859 {87.6}	1140 {116.2}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG480UP8M	60	BG856UP8M	107	BG1264UP8M	158	BG2104UP8M	263
BG512UP8M	64	BG880UP8M	110	BG1280UP8M	160	BG2160UP8M	270
BG520UP8M	65	BG896UP8M	112	BG1304UP8M	163	BG2240UP8M	280
BG536UP8M	67	BG912UP8M	114	BG1320UP8M	165	BG2256UP8M	282
BG560UP8M	70	BG920UP8M	115	BG1344UP8M	168	BG2304UP8M	288
BG576UP8M	72	BG936UP8M	117	BG1352UP8M	169	BG2320UP8M	290
BG584UP8M	73	BG944UP8M	118	BG1360UP8M	170	BG2400UP8M	300
BG600UP8M	75	BG960UP8M	120	BG1400UP8M	175	BG2456UP8M	307
BG616UP8M	77	BG984UP8M	123	BG1424UP8M	178	BG2496UP8M	312
BG632UP8M	79	BG1000UP8M	125	BG1440UP8M	180	BG2600UP8M	325
BG640UP8M	80	BG1032UP8M	129	BG1480UP8M	185	BG2712UP8M	339
BG656UP8M	82	BG1040UP8M	130	BG1520UP8M	190	BG2768UP8M	346
BG680UP8M	85	BG1056UP8M	132	BG1576UP8M	197	BG2800UP8M	350
BG688UP8M	86	BG1080UP8M	135	BG1600UP8M	200	BG2896UP8M	362
BG712UP8M	89	BG1096UP8M	137	BG1640UP8M	205	BG2944UP8M	368
BG720UP8M	90	BG1120UP8M	140	BG1680UP8M	210	BG3048UP8M	381
BG752UP8M	94	BG1128UP8M	141	BG1760UP8M	220	BG3200UP8M	400
BG760UP8M	95	BG1152UP8M	144	BG1800UP8M	225	BG3304UP8M	413
BG776UP8M	97	BG1160UP8M	145	BG1816UP8M	227	BG3440UP8M	430
BG800UP8M	100	BG1192UP8M	149	BG1888UP8M	236	BG3600UP8M	450
BG816UP8M	102	BG1200UP8M	150	BG1904UP8M	238	BG3920UP8M	490
BG824UP8M	103	BG1208UP8M	151	BG1960UP8M	245	BG4400UP8M	550
BG832UP8M	104	BG1216UP8M	152	BG2000UP8M	250		
BG840UP8M	105	BG1240UP8M	155	BG2032UP8M	254		
BG848UP8M	106	BG1248UP8M	156	BG2064UP8M	258		

• All items are made to order products.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
20	50.93	55	**32**	81.49	86	**50**	127.32	135
22	56.02	62	**34**	86.58	91	**60**	152.79	158
24	61.12	66	**36**	91.67	97	**64**	162.97	170
26	66.21	73	**40**	101.86	107	**72**	183.35	190
28	71.30	79	**44**	112.05	119			
30	76.39	82	**48**	122.23	127			

Belt Sprocket types and Dimensions p.60

UP8M-HA (Pitch : 8.00 mm)

■ Standard Transmission Capacity (Belt width 15 mm)

kW

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.6	152.79	162.97	183.35
Small belt sprocket rpm																		
20	0.117	0.128	0.138	0.149	0.160	0.173	0.186	0.198	0.211	0.223	0.238	0.266	0.294	0.308	0.351	0.383	0.415	0.479
40	0.213	0.235	0.256	0.277	0.299	0.324	0.350	0.374	0.395	0.416	0.440	0.491	0.544	0.572	0.651	0.704	0.768	0.885
60	0.288	0.321	0.352	0.385	0.416	0.453	0.488	0.523	0.556	0.591	0.630	0.706	0.780	0.812	0.930	1.00	1.09	1.26
100	0.450	0.504	0.547	0.600	0.653	0.707	0.750	0.803	0.857	0.921	0.975	1.08	1.20	1.26	1.45	1.57	1.70	1.96
200	0.794	0.880	0.977	1.06	1.16	1.25	1.34	1.44	1.54	1.64	1.75	1.94	2.16	2.27	2.60	2.84	3.07	3.57
300	1.11	1.23	1.36	1.49	1.61	1.74	1.87	2.01	2.15	2.29	2.43	2.72	3.02	3.18	3.66	3.98	4.31	5.03
400	1.39	1.54	1.70	1.87	2.02	2.20	2.36	2.53	2.71	2.89	3.07	3.45	3.84	4.03	4.63	5.05	5.48	6.39
500	1.65	1.83	2.03	2.22	2.41	2.62	2.83	3.03	3.25	3.46	3.68	4.13	4.59	4.83	5.57	6.07	6.60	7.69
600	1.90	2.11	2.33	2.56	2.79	3.02	3.26	3.50	3.74	3.99	4.25	4.77	5.31	5.59	6.44	7.05	7.65	8.94
700	2.14	2.38	2.63	2.88	3.14	3.40	3.67	3.94	4.22	4.50	4.80	5.39	6.01	6.31	7.30	7.97	8.67	10.1
800	2.37	2.64	2.90	3.19	3.48	3.77	4.07	4.37	4.68	5.00	5.32	5.98	6.67	7.02	8.11	8.87	9.66	11.3
900	2.58	2.87	3.18	3.48	3.79	4.12	4.46	4.78	5.13	5.47	5.83	6.56	7.32	7.71	8.91	9.75	10.6	12.4
1000	2.79	3.10	3.44	3.76	4.11	4.46	4.82	5.18	5.54	5.93	6.31	7.12	7.94	8.36	9.68	10.6	11.5	13.5
1100	3.00	3.35	3.70	4.07	4.44	4.82	5.20	5.59	5.99	6.41	6.84	7.70	8.59	9.05	10.5	11.5	12.5	14.7
1200	3.22	3.59	3.97	4.36	4.77	5.16	5.58	6.01	6.43	6.88	7.33	8.26	9.24	9.73	11.3	12.4	13.5	15.8
1300	3.42	3.82	4.22	4.65	5.06	5.51	5.95	6.41	6.86	7.34	7.82	8.82	9.87	10.4	12.1	13.2	14.4	16.9
1400	3.63	4.05	4.48	4.93	5.37	5.84	6.31	6.79	7.30	7.81	8.32	9.38	10.5	11.1	12.8	14.1	15.4	18.0
1450	3.73	4.16	4.61	5.06	5.53	6.00	6.49	6.99	7.50	8.02	8.55	9.65	10.8	11.4	13.2	14.5	15.8	18.6
1500	3.83	4.27	4.74	5.20	5.68	6.17	6.67	7.19	7.71	8.25	8.81	9.93	11.1	11.7	13.6	14.9	16.3	19.1
1600	4.01	4.49	4.96	5.47	5.98	6.49	7.02	7.57	8.13	8.69	9.28	10.5	11.7	12.4	14.4	15.8	17.2	20.2
1750	4.31	4.81	5.33	5.87	6.43	6.97	7.55	8.14	8.74	9.36	9.97	11.3	12.6	13.3	15.5	17.0	18.6	21.8
1800	4.40	4.93	5.46	6.00	6.57	7.13	7.72	8.32	8.95	9.56	10.2	11.5	12.9	13.6	15.9	17.4	19.0	22.4
2000	4.77	5.35	5.92	6.53	7.13	7.77	8.40	9.06	9.75	10.4	11.1	12.6	14.1	14.9	17.3	19.1	20.8	24.5
2400	5.52	6.15	6.84	7.52	8.24	8.98	9.74	10.5	11.3	12.1	12.9	14.7	16.4	17.3	20.2	22.3	24.3	28.8
2800	6.19	6.93	7.70	8.50	9.30	10.1	11.0	11.9	12.8	13.7	14.7	16.6	18.7	19.7	23.1	25.4	27.8	32.9
3000	6.53	7.33	8.15	8.98	9.83	10.7	11.6	12.6	13.5	14.5	15.5	17.6	19.8	20.9	24.5	27.0	29.5	35.0
3600	7.29	8.16	9.11	10.0	11.0	12.0	13.1	14.1	15.2	16.4	17.5	19.9	22.4	23.7	27.8	30.6	33.6	39.8
4000	7.74	8.71	9.68	10.7	11.7	12.8	13.9	15.1	16.2	17.5	18.7	21.3	24.0	25.4	29.8	32.9	36.1	42.9
5000	8.69	9.79	10.9	12.1	13.3	14.6	15.8	17.2	18.5	20.0	21.4	24.4	27.6	29.3	34.4	38.0		
6000	9.50	10.8	11.9	13.3	14.7	16.0	17.5	19.0	20.5	22.1	23.8	27.1	30.7	32.5	38.4	42.5		

■ Standard Transmission Torque (Belt width 15 mm)

N · m

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.6	152.79	162.97	183.35
Small belt sprocket rpm																		
20	55.9	60.9	66.0	71.1	76.1	82.7	88.7	94.5	100	107	114	127	140	147	167	183	198	228
40	50.8	56.1	61.1	66.2	71.3	77.4	83.6	89.1	94.2	99.3	105	117	130	137	155	168	183	211
60	45.9	51.0	56.1	61.2	66.3	72.0	77.7	83.3	88.4	94.1	100	112	124	129	148	160	173	201
100	42.9	48.1	52.2	57.2	62.4	67.5	71.6	76.7	81.8	87.9	93.0	103	114	121	138	150	163	187
200	37.9	42.0	46.6	50.7	55.3	59.4	64.1	68.7	73.3	78.4	83.6	92.8	103	108	124	135	147	170
300	35.3	39.1	43.2	47.3	51.3	55.4	59.5	64.1	68.5	72.9	77.4	86.6	96.2	101	116	127	137	160
400	33.2	36.8	40.6	44.5	48.3	52.4	56.3	60.4	64.8	68.9	73.3	82.2	91.6	96.2	111	121	131	152
500	31.5	35.0	38.7	42.4	46.1	50.0	54.0	57.9	62.0	66.0	70.2	78.9	87.7	92.2	106	116	126	147
600	30.2	33.6	37.1	40.7	44.3	48.1	51.9	55.7	59.5	63.5	67.6	75.9	84.4	88.9	102	112	122	142
700	29.2	32.4	35.8	39.3	42.8	46.4	50.1	53.8	57.5	61.4	65.4	73.5	81.9	86.1	99.5	109	118	138
800	28.2	31.5	34.7	38.0	41.5	44.9	48.5	52.2	55.9	59.6	63.5	71.4	79.6	83.8	96.8	106	115	135
900	27.4	30.5	33.7	37.0	40.2	43.7	47.3	50.7	54.4	58.1	61.8	69.6	77.6	81.8	94.5	103	113	132
1000	26.7	29.6	32.9	35.9	39.3	42.5	46.0	49.5	52.9	56.6	60.3	67.9	75.8	79.8	92.4	101	110	129
1100	26.0	29.1	32.1	35.3	38.5	41.8	45.2	48.5	52.0	55.7	59.3	66.8	74.6	78.5	91.0	99.5	109	127
1200	25.6	28.6	31.6	34.7	37.9	41.1	44.4	47.8	51.1	54.7	58.3	65.7	73.5	77.4	89.8	98.3	107	126
1300	25.1	28.0	31.0	34.1	37.2	40.4	43.7	47.0	50.4	53.9	57.4	64.8	72.5	76.3	88.5	97.0	106	124
1400	24.8	27.6	30.6	33.6	36.6	39.8	43.1	46.3	49.8	53.2	56.7	63.9	71.5	75.4	87.6	95.9	105	123
1450	24.6	27.4	30.3	33.3	36.4	39.5	42.7	46.0	49.4	52.8	56.3	63.5	71.1	75.0	87.0	95.4	104	122
1500	24.4	27.2	30.1	33.1	36.1	39.3	42.4	45.8	49.0	52.5	56.1	63.2	70.7	74.6	86.5	94.9	104	122
1600	23.9	26.8	29.6	32.7	35.7	38.7	41.9	45.2	48.5	51.9	55.3	62.5	69.9	73.7	85.7	94.0	103	121
1750	23.5	26.3	29.1	32.0	35.1	38.0	41.2	44.4	47.7	51.0	54.4	61.5	68.9	72.7	84.4	92.7	101	119
1800	23.3	26.1	29.0	31.8	34.9	37.8	41.0	44.1	47.5	50.7	54.2	61.2	68.6	72.3	84.1	92.3	101	119
2000	22.8	25.5	28.2	31.2	34.0	37.1	40.1	43.3	46.5	49.8	53.1	60.1	67.3	71.1	82.7	90.9	99.3	117
2400	21.9	24.5	27.2	29.9	32.8	35.7	38.7	41.8	44.9	48.1	51.5	58.3	65.3	69.0	80.4	88.5	96.8	114
2800	21.1	23.6	26.3	29.0	31.7	34.5	37.5	40.5	43.6	46.7	50.0	56.7	63.7	67.3	78.6	86.6	94.8	112
3000	20.8	23.3	25.9	28.6	31.3	34.1	37.1	40.0	43.1	46.2	49.5	56.1	63.0	66.6	77.9	85.8	94.0	111
3600	19.3	21.6	24.2	26.6	29.2	31.9	34.7	37.5	40.3	43.4	46.4	52.7	59.4	62.8	73.6	81.2	89.0	106
4000	18.5	20.8	23.1	25.5	28.0	30.6	33.3	36.0	38.7	41.7	44.6	50.8	57.2	60.6	71.1	78.4	86.1	102
5000	16.6	18.7	20.9	23.1	25.4	27.8	30.2	32.9	35.4	38.1	40.8	46.6	52.7	55.9	65.6	72.6		
6000	15.1	17.2	19.0	21.1	23.3	25.5	27.8	30.2	32.7	35.2	37.8	43.2	48.8	51.8	61.1	67.6		

■ Belt Width Factor

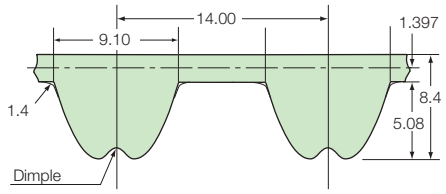
Belt width mm	15	20	25	30	35	40	45	50	55	60
Width factor	1.00	1.38	1.79	2.20	2.62	3.05	3.49	3.94	4.39	4.85

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

Selection and Design p.109

UP14M-HA (Pitch : 14.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 1400 UP 14M 60 – HA

- BG: Rubber belt
- 1400: Belt length mm
- UP: Series
- 14M: Pitch
- 60: Belt width mm
- HA: Type

■ Materials

Rubber : High-strength Synthetic rubber
(Oil resistant / Water resistant Specification)
Tooth Fabric : Wear-resistant Fabric
Cord : High strength fiberglass

■ Specifications and Features

Oil resistant, water resistant : Yes In oily and wet (Included water solubility coolant liquid) environment but cannot be soaked.
Belt Sprocket : PX Belt Sprockets P14M
Operating temperature range* : 0 to 60°C
Electro conductivity : No
*Allow to use in higher operating temperature.
Please contact a Tsubaki representative.

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
40	7.9	794 {81.0}	1050 {107.1}
60		1255 {128.0}	1659 {169.2}
80		1747 {178.1}	2310 {235.6}
100		2255 {229.9}	2982 {304.1}
120		2771 {282.6}	3665 {373.7}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG1120UP14M	80	BG1960UP14M	140	BG3850UP14M	275
BG1176UP14M	84	BG2002UP14M	143	BG4004UP14M	286
BG1190UP14M	85	BG2100UP14M	150	BG4382UP14M	313
BG1246UP14M	89	BG2198UP14M	157	BG4508UP14M	322
BG1344UP14M	96	BG2240UP14M	160		
BG1400UP14M	100	BG2310UP14M	165		
BG1456UP14M	104	BG2380UP14M	170		
BG1540UP14M	110	BG2450UP14M	175		
BG1610UP14M	115	BG2590UP14M	185		
BG1652UP14M	118	BG2660UP14M	190		
BG1680UP14M	120	BG2800UP14M	200		
BG1736UP14M	124	BG2940UP14M	210		
BG1778UP14M	127	BG3150UP14M	225		
BG1806UP14M	129	BG3360UP14M	240		
BG1890UP14M	135	BG3500UP14M	250		

• Made to order•sales in lot. Please contact a Tsubaki repreventative.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
28	124.78	136	**38**	169.34	181	**50**	222.82	234
30	133.69	145	**40**	178.25	190	**56**	249.55	–
32	142.60	154	**42**	187.17	198	**60**	267.38	–
34	151.52	163	**44**	196.08	207	**64**	285.21	–
36	160.43	171	**48**	213.90	225	**72**	320.86	–

Belt Sprocket types and Dimensions p.61

UP14M-HA (Pitch : 14.00 mm)

■ Standard Transmission Capacity (Belt width 40 mm)

kW

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	1.06	1.15	1.23	1.33	1.42	1.50	1.59	1.68	1.76	1.85	1.93	2.02	2.27	2.44	2.62	2.95
40	2.02	2.20	2.37	2.53	2.71	2.87	3.04	3.20	3.36	3.53	3.69	3.86	4.34	4.67	5.00	5.64
60	2.94	3.20	3.44	3.68	3.94	4.17	4.42	4.65	4.89	5.13	5.37	5.60	6.30	6.78	7.26	8.19
100	4.70	5.11	5.50	5.88	6.30	6.67	7.06	7.44	7.81	8.20	8.58	8.96	10.1	10.8	11.6	13.1
200	8.69	9.46	10.2	11.0	11.8	12.5	13.2	14.0	14.7	15.4	16.1	16.9	19.0	20.4	21.9	24.8
400	15.9	17.3	18.7	19.9	21.3	22.6	23.9	25.2	26.5	27.8	29.1	30.4	34.1	36.7	39.3	44.4
500	19.3	20.9	22.6	24.0	25.8	27.3	28.8	30.3	31.8	33.4	34.9	36.6	41.1	44.1	47.2	53.3
600	22.6	24.6	26.3	28.2	30.1	31.8	33.7	35.4	37.2	39.1	40.9	42.7	47.9	51.5	55.2	62.2
800	29.2	31.7	34.1	36.3	38.8	41.1	43.3	45.7	47.8	50.3	52.6	55.0	61.8	66.4	71.1	80.2
1000	34.9	37.8	40.8	43.7	46.9	49.6	52.5	55.3	58.2	61.1	64.0	67.0	75.2	81.0	86.7	98.0
1200	40.9	44.6	48.0	51.5	55.3	58.5	61.9	65.3	68.8	72.1	75.6	78.9	88.8	95.6	102	116
1400	47.0	51.3	55.3	59.3	63.6	67.5	71.5	75.3	79.3	83.3	87.3	91.5	103	111	119	134
1450	48.3	52.8	56.9	61.1	65.7	69.7	73.7	77.8	82.0	86.0	90.1	94.3	106	114	122	138
1500	49.8	54.5	58.6	63.0	67.7	71.9	76.1	80.2	84.5	88.8	93.1	97.4	110	118	127	143
1600	51.7	57.0	61.6	66.2	71.5	76.0	80.4	85.0	89.6	94.2	98.7	104	117	126	135	153
1750	54.7	60.6	65.8	71.0	77.0	82.2	86.8	92.0	97.0	102	108	113	127	137	148	167
1800	56.2	62.2	67.5	73.1	79.2	84.2	89.1	94.6	99.8	105	110	115	130	141	152	172
2000	61.4	68.6	74.6	80.7	87.8	93.5	98.6	105	111	116	122	128	144	156	168	191
2400	71.0	80.0	87.4	95.0	104	111	118	125	133	139	145	152	172	187	201	229
3000					125	133	142	151	160	170	180	189	215	233	251	286
3600							147	156	164	175	185	196	229	251	274	316
4000										180	190	202	234	260	286	332

■ Standard Transmission Torque (Belt width 40 mm)

N · m

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	506	550	585	633	677	718	760	800	841	883	923	964	1080	1170	1250	1410
40	483	525	565	604	647	685	725	764	803	843	881	920	1030	1110	1190	1350
60	468	509	548	585	626	664	703	740	777	816	854	891	1000	1080	1150	1300
100	449	488	525	561	601	637	674	710	746	783	819	855	961	1030	1110	1250
200	415	452	487	523	562	594	631	667	702	733	769	805	907	974	1050	1180
400	380	414	445	476	509	540	571	602	632	664	694	725	815	877	939	1060
500	369	399	431	459	492	521	549	579	607	638	667	698	784	842	902	1020
600	360	392	419	448	479	506	536	563	592	622	651	679	762	819	878	989
800	349	378	406	434	463	490	517	545	570	601	628	656	737	793	848	957
1000	333	361	390	417	447	474	501	528	555	583	611	639	718	773	827	936
1200	326	355	382	410	440	465	492	520	547	573	602	628	707	760	815	920
1400	320	350	377	404	434	460	487	513	541	568	595	624	701	755	809	914
1450	318	348	375	402	433	459	485	512	540	566	593	621	699	753	806	911
1500	317	347	373	401	431	458	484	510	538	565	592	620	697	751	805	910
1600	309	340	368	395	426	454	480	507	534	562	589	618	696	751	805	910
1750	298	331	359	387	420	448	474	502	529	558	588	615	694	750	805	910
1800	298	330	358	387	420	446	473	502	529	555	586	612	691	748	805	910
2000	293	328	356	385	419	446	470	502	528	554	584	609	688	747	802	909
2400	282	318	348	378	414	441	469	499	528	552	578	605	686	743	800	909
3000					397	424	453	481	510	541	571	602	683	740	799	909
3600							390	413	435	463	491	521	608	667	726	839
4000										428	454	481	559	620	683	793

■ Belt Width Factor

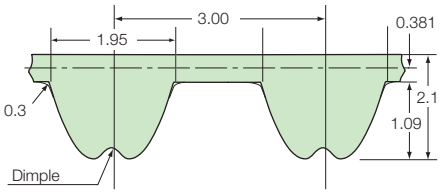
Belt width mm	40	60	80	100	120
Width factor	1.00	1.58	2.20	2.84	3.49

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

UP3M-HY (Pitch : 3.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 600 UP 3M 10 – HY

- BG: Rubber belt
- 600: Belt length mm
- UP: Series
- 3M: Pitch
- 10: Belt width mm
- HY: Type

■ Materials

Rubber : High-strength Chloroprene rubber (black)

Tooth Fabric : Wear-resistant Fabric

Cord : Hybrid of carbon fiber and high strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P3M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
6	2.6	39 {4.0}	47 {4.8}
10		68 {6.9}	82 {8.4}
15		105 {10.7}	127 {13.0}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG312UP3M	104	BG420UP3M	140	BG588UP3M	196	BG885UP3M	295	BG1749UP3M	583
BG315UP3M	105	BG423UP3M	141	BG600UP3M	200	BG891UP3M	297	BG1893UP3M	631
BG318UP3M	106	BG426UP3M	142	BG618UP3M	206	BG918UP3M	306	BG1947UP3M	649
BG327UP3M	109	BG432UP3M	144	BG633UP3M	211	BG933UP3M	311		
BG330UP3M	110	BG438UP3M	146	BG651UP3M	217	BG948UP3M	316		
BG339UP3M	113	BG447UP3M	149	BG660UP3M	220	BG957UP3M	319		
BG342UP3M	114	BG450UP3M	150	BG675UP3M	225	BG972UP3M	324		
BG345UP3M	115	BG453UP3M	151	BG681UP3M	227	BG981UP3M	327		
BG351UP3M	117	BG459UP3M	153	BG687UP3M	229	BG1005UP3M	335		
BG354UP3M	118	BG471UP3M	157	BG693UP3M	231	BG1023UP3M	341		
BG360UP3M	120	BG477UP3M	159	BG699UP3M	233	BG1041UP3M	347		
BG363UP3M	121	BG483UP3M	161	BG702UP3M	234	BG1050UP3M	350		
BG369UP3M	123	BG486UP3M	162	BG705UP3M	235	BG1059UP3M	353		
BG372UP3M	124	BG489UP3M	163	BG720UP3M	240	BG1080UP3M	360		
BG378UP3M	126	BG501UP3M	167	BG738UP3M	246	BG1110UP3M	370		
BG381UP3M	127	BG504UP3M	168	BG753UP3M	251	BG1170UP3M	390		
BG384UP3M	128	BG507UP3M	169	BG756UP3M	252	BG1191UP3M	397		
BG387UP3M	129	BG510UP3M	170	BG789UP3M	263	BG1281UP3M	427		
BG393UP3M	131	BG516UP3M	172	BG804UP3M	268	BG1305UP3M	435		
BG396UP3M	132	BG525UP3M	175	BG822UP3M	274	BG1338UP3M	446		
BG399UP3M	133	BG537UP3M	179	BG828UP3M	276	BG1344UP3M	448		
BG402UP3M	134	BG552UP3M	184	BG852UP3M	284	BG1380UP3M	460		
BG405UP3M	135	BG561UP3M	187	BG861UP3M	287	BG1443UP3M	481		
BG411UP3M	137	BG570UP3M	190	BG870UP3M	290	BG1638UP3M	546		
BG414UP3M	138	BG579UP3M	193	BG879UP3M	293	BG1689UP3M	563		

• Made to order. Sold in lots. Please contact your local Tsubaki representative for details on lot quantities.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
10	9.55	12	**18**	17.19	21	**26**	24.83	31	**40**	38.20	45
12	11.46	15	**20**	19.10	25	**28**	26.74	32	**48**	45.84	52
14	13.37	17	**22**	21.01	28	**30**	28.65	34	**50**	47.75	55
15	14.32	17	**24**	22.92	29	**32**	30.56	36	**60**	57.30	65
16	15.28	17	**25**	23.87	31	**36**	34.38	43			

Belt Sprocket types and Dimensions p.58

UP3M-HY (Pitch : 3.00 mm)

■ Standard Transmission Capacity (Belt width 6 mm)

W

Number of teeth of small belt sprocket	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	11.46	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	45.84	47.75	57.3
Small belt sprocket rpm																		
20	2.64	3.65	4.15	4.65	5.66	6.64	7.61	8.57	9.05	9.53	10.5	11.4	12.3	14.2	15.9	19.4	20.2	24.3
40	4.86	6.75	7.67	8.59	10.4	12.2	14.0	15.8	16.7	17.6	19.4	21.1	22.8	26.2	29.5	36.0	37.6	45.2
60	6.91	9.55	10.9	12.2	14.8	17.4	20.0	22.5	23.8	25.0	27.5	30.0	32.4	37.2	41.9	51.0	53.2	63.9
100	10.7	14.9	17.0	19.0	23.0	27.0	31.0	35.0	36.9	38.9	42.7	46.5	50.3	57.7	65.0	79.0	82.4	98.8
200	19.7	27.2	31.0	34.8	42.1	49.4	56.8	63.9	67.5	71.0	77.9	84.9	91.8	105	118	144	150	179
400	36.0	49.9	57.0	63.7	77.5	91.4	105	118	124	131	144	157	170	195	220	267	279	335
600	51.5	71.0	80.5	90.5	110	129	148	168	177	187	205	224	242	278	313	381	397	476
800	65.4	91.4	104	116	142	166	190	215	226	238	262	286	308	354	398	484	505	604
1000	78.6	110	126	140	171	200	229	259	272	287	315	344	371	425	479	580	606	724
1200	93.0	127	145	163	199	234	269	303	319	337	370	404	436	499	562	683	712	842
1400	107	145	164	188	227	267	307	346	365	384	422	461	497	571	641	777	811	952
1450	111	149	170	191	234	275	316	355	375	395	434	474	512	586	659	799	832	984
1500	115	154	174	196	242	284	324	368	388	409	449	489	528	605	680	825	856	1010
1600	121	164	186	208	253	297	340	384	406	426	469	511	553	635	714	863	902	1060
1750	130	176	200	224	271	319	367	413	436	458	504	550	596	684	770	930	970	1130
1800	134	179	206	230	277	326	373	422	445	470	515	562	607	698	784	943	990	1150
2000	145	197	222	249	304	356	406	459	484	509	559	608	656	752	844	1020	1060	1260
2400	166	226	259	289	352	412	473	531	561	588	646	702	757	862	966	1160	1210	1450
3000	195	267	305	343	415	487	559	629	663	698	764	833	896	1020	1150	1380	1430	1680
3600	219	309	351	396	483	566	649	728	769	807	886	962	1030	1180	1320	1560	1630	1900
4000	230	331	381	427	524	616	704	792	838	880	964	1050	1120	1280	1420	1680	1760	2020
5000	262	382	440	498	613	723	833	938	1000	1040	1140	1240	1330	1510	1670	1950	2020	2290
6000	270	421	497	566	704	842	949	1070	1140	1180	1320	1430	1550	1740	1900	2220	2280	2520
8000	293	439	520	629	830	1010	1160	1330	1410	1470	1630	1790	1910	2150	2360	2620	2700	2920
10000											1910	2080	2240	2500	2700	3000	3080	3290
12000												2330	2510	2800	2990	3300	3380	3510
14000													2830	3070	3270	3500	3550	3640

■ Standard Transmission Torque (Belt width 6 mm)

N · m

Number of teeth of small belt sprocket	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	11.46	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	45.84	47.75	57.3
Small belt sprocket rpm																		
20	1.26	1.74	1.98	2.22	2.70	3.17	3.63	4.09	4.32	4.55	5.00	5.45	5.89	6.76	7.61	9.26	9.66	11.6
40	1.16	1.61	1.83	2.05	2.49	2.92	3.35	3.78	3.99	4.20	4.62	5.04	5.45	6.26	7.05	8.60	8.97	10.8
60	1.10	1.52	1.73	1.94	2.36	2.77	3.18	3.58	3.78	3.98	4.37	4.77	5.15	5.92	6.67	8.12	8.47	10.2
100	1.02	1.42	1.62	1.81	2.20	2.58	2.96	3.34	3.52	3.71	4.08	4.44	4.80	5.51	6.20	7.54	7.87	9.43
200	0.940	1.30	1.48	1.66	2.01	2.36	2.71	3.05	3.22	3.39	3.72	4.05	4.38	5.02	5.64	6.85	7.14	8.53
400	0.860	1.19	1.36	1.52	1.85	2.18	2.50	2.81	2.97	3.13	3.44	3.75	4.05	4.65	5.24	6.38	6.66	7.99
600	0.820	1.13	1.28	1.44	1.75	2.06	2.36	2.67	2.82	2.97	3.26	3.56	3.85	4.42	4.98	6.06	6.32	7.58
800	0.780	1.09	1.24	1.39	1.69	1.98	2.27	2.56	2.70	2.84	3.13	3.41	3.68	4.22	4.75	5.77	6.02	7.21
1000	0.750	1.05	1.20	1.34	1.63	1.91	2.19	2.47	2.60	2.74	3.01	3.28	3.54	4.06	4.57	5.54	5.78	6.91
1200	0.740	1.01	1.15	1.30	1.58	1.86	2.14	2.41	2.54	2.68	2.94	3.21	3.47	3.97	4.47	5.43	5.66	6.70
1400	0.730	0.990	1.12	1.28	1.55	1.82	2.09	2.36	2.49	2.62	2.88	3.14	3.39	3.89	4.37	5.30	5.53	6.49
1450	0.730	0.980	1.12	1.26	1.54	1.81	2.08	2.34	2.47	2.60	2.86	3.12	3.37	3.86	4.34	5.26	5.48	6.48
1500	0.730	0.980	1.11	1.25	1.54	1.81	2.06	2.34	2.47	2.60	2.86	3.11	3.36	3.85	4.33	5.25	5.45	6.44
1600	0.720	0.980	1.11	1.24	1.51	1.77	2.03	2.29	2.42	2.54	2.80	3.05	3.30	3.79	4.26	5.15	5.38	6.30
1750	0.710	0.960	1.09	1.22	1.48	1.74	2.00	2.25	2.38	2.50	2.75	3.00	3.25	3.73	4.20	5.07	5.29	6.16
1800	0.710	0.950	1.09	1.22	1.47	1.73	1.98	2.24	2.36	2.49	2.73	2.98	3.22	3.70	4.16	5.00	5.25	6.10
2000	0.690	0.940	1.06	1.19	1.45	1.70	1.94	2.19	2.31	2.43	2.67	2.90	3.13	3.59	4.03	4.87	5.08	6.02
2400	0.660	0.900	1.03	1.15	1.40	1.64	1.88	2.11	2.23	2.34	2.57	2.79	3.01	3.43	3.84	4.62	4.80	5.75
3000	0.620	0.850	0.970	1.09	1.32	1.55	1.78	2.00	2.11	2.22	2.43	2.65	2.85	3.26	3.65	4.38	4.55	5.36
3600	0.580	0.820	0.930	1.05	1.28	1.50	1.72	1.93	2.04	2.14	2.35	2.55	2.72	3.13	3.49	4.13	4.32	5.04
4000	0.550	0.790	0.910	1.02	1.25	1.47	1.68	1.89	2.00	2.10	2.30	2.50	2.67	3.06	3.39	4.00	4.19	4.83
5000	0.500	0.730	0.840	0.950	1.17	1.38	1.59	1.79	1.91	1.99	2.17	2.36	2.53	2.89	3.18	3.73	3.85	4.38
6000	0.430	0.670	0.790	0.900	1.12	1.34	1.51	1.71	1.81	1.88	2.10	2.27	2.46	2.77	3.02	3.53	3.63	4.01
8000	0.350	0.524	0.620	0.750	0.990	1.21	1.39	1.59	1.68	1.75	1.95	2.13	2.28	2.57	2.81	3.13	3.22	3.48
10000											1.82	1.99	2.14	2.39	2.58	2.86	2.94	3.14
12000												1.85	2.00	2.23	2.38	2.63	2.69	2.79
14000													1.93	2.09	2.23	2.39	2.42	2.48

■ Belt Width Factor

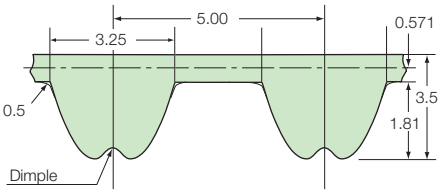
Belt width mm	6	10	15
Width factor	1.00	1.74	2.70

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.

UP5M-HY (Pitch : 5.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 600 UP 5M 15 – HY

- BG: Rubber belt
- 600: Belt length mm
- UP: Series
- 5M: Pitch
- 15: Belt width mm
- HY: Type

■ Materials

Rubber : High-strength Synthetic rubber (black)
Tooth Fabric : Wear-resistant Fabric
Cord : Hybrid of carbon fiber and high strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P5M
Operating temperature range : -15 to 80°C
Electro conductivity : No
Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
10	3.5	125 {12.7}	165 {16.8}
15		194 {19.8}	256 {26.1}
25		338 {34.5}	446 {45.5}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG600UP5M	120	BG900UP5M	180	BG1350UP5M	270	BG2725UP5M	545
BG635UP5M	127	BG905UP5M	181	BG1390UP5M	278	BG2795UP5M	559
BG640UP5M	128	BG920UP5M	184	BG1420UP5M	284	BG3050UP5M	610
BG645UP5M	129	BG940UP5M	188	BG1490UP5M	298	BG3150UP5M	630
BG650UP5M	130	BG950UP5M	190	BG1495UP5M	299	BG3930UP5M	786
BG680UP5M	136	BG965UP5M	193	BG1530UP5M	306		
BG690UP5M	138	BG985UP5M	197	BG1550UP5M	310		
BG695UP5M	139	BG1000UP5M	200	BG1585UP5M	317		
BG700UP5M	140	BG1025UP5M	205	BG1595UP5M	319		
BG710UP5M	142	BG1050UP5M	210	BG1615UP5M	323		
BG725UP5M	145	BG1060UP5M	212	BG1650UP5M	330		
BG730UP5M	146	BG1080UP5M	216	BG1675UP5M	335		
BG740UP5M	148	BG1090UP5M	218	BG1700UP5M	340		
BG750UP5M	150	BG1125UP5M	225	BG1800UP5M	360		
BG765UP5M	153	BG1145UP5M	229	BG1870UP5M	374		
BG770UP5M	154	BG1150UP5M	230	BG1910UP5M	382		
BG775UP5M	155	BG1160UP5M	232	BG1960UP5M	392		
BG780UP5M	156	BG1180UP5M	236	BG2000UP5M	400		
BG800UP5M	160	BG1195UP5M	239	BG2050UP5M	410		
BG810UP5M	162	BG1220UP5M	244	BG2080UP5M	416		
BG830UP5M	166	BG1225UP5M	245	BG2120UP5M	424		
BG835UP5M	167	BG1250UP5M	250	BG2160UP5M	432		
BG850UP5M	170	BG1260UP5M	252	BG2200UP5M	440		
BG865UP5M	173	BG1270UP5M	254	BG2455UP5M	491		
BG880UP5M	176	BG1295UP5M	259	BG2645UP5M	529		

• Made to order. Sold in lots. Please contact your local Tsubaki representative for details on lot quantities.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
12	19.10	23	**22**	35.01	43	**30**	47.75	55	**48**	76.39	82
14	22.28	28	**24**	38.20	44	**32**	50.93	55	**50**	79.58	86
16	25.46	31	**25**	39.79	45	**36**	57.30	64	**60**	95.49	103
18	28.65	36	**26**	41.38	47	**40**	63.66	67	**72**	114.59	120
20	31.83	36	**28**	44.56	52	**44**	70.03	74			

Belt Sprocket types and Dimensions p.59

UP5M-HY (Pitch : 5.00 mm)

■ Standard Transmission Capacity (Belt width 10 mm)

kW

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	0.0128	0.0186	0.0240	0.0296	0.0352	0.0408	0.0464	0.0519	0.0575	0.0630	0.0686	0.0796	0.0906	0.101	0.112	0.118	0.146	0.176
40	0.0224	0.0329	0.0432	0.0535	0.0638	0.0741	0.0844	0.0947	0.105	0.115	0.125	0.145	0.166	0.186	0.206	0.216	0.266	0.323
60	0.0311	0.0459	0.0608	0.0756	0.0904	0.105	0.120	0.135	0.149	0.164	0.178	0.207	0.236	0.265	0.293	0.307	0.378	0.461
100	0.0469	0.0699	0.0937	0.117	0.140	0.163	0.186	0.209	0.232	0.255	0.278	0.323	0.368	0.413	0.458	0.480	0.589	0.720
200	0.0821	0.124	0.168	0.211	0.254	0.297	0.339	0.382	0.423	0.466	0.507	0.591	0.674	0.757	0.838	0.879	1.08	1.32
400	0.144	0.219	0.303	0.382	0.461	0.539	0.617	0.695	0.773	0.850	0.927	1.08	1.23	1.38	1.54	1.61	1.96	2.42
500	0.172	0.263	0.366	0.461	0.558	0.653	0.748	0.843	0.938	1.03	1.13	1.31	1.50	1.68	1.87	1.96	2.38	2.94
600	0.199	0.304	0.427	0.539	0.652	0.764	0.876	0.988	1.10	1.21	1.32	1.54	1.76	1.97	2.19	2.30	2.79	3.45
800	0.251	0.399	0.544	0.690	0.835	0.980	1.12	1.27	1.41	1.55	1.69	1.98	2.26	2.54	2.81	2.95	3.63	4.45
1000	0.302	0.490	0.665	0.852	1.03	1.22	1.40	1.58	1.74	1.92	2.09	2.44	2.79	3.14	3.47	3.65	4.51	5.52
1200	0.344	0.578	0.791	1.01	1.23	1.45	1.67	1.88	2.08	2.29	2.50	2.91	3.33	3.75	4.14	4.35	5.38	6.58
1400	0.392	0.663	0.912	1.17	1.42	1.68	1.93	2.18	2.41	2.65	2.90	3.38	3.87	4.36	4.80	5.05	6.23	7.61
1450	0.403	0.684	0.942	1.21	1.47	1.74	1.99	2.25	2.49	2.75	3.00	3.50	4.00	4.51	4.97	5.22	6.43	7.86
1500	0.413	0.704	0.973	1.25	1.51	1.79	2.06	2.32	2.58	2.84	3.10	3.61	4.14	4.66	5.13	5.39	6.64	8.11
1600	0.434	0.744	1.03	1.33	1.61	1.91	2.19	2.47	2.74	3.02	3.30	3.85	4.40	4.96	5.45	5.73	7.06	8.61
1750	0.466	0.801	1.12	1.44	1.75	2.07	2.38	2.68	2.99	3.29	3.59	4.19	4.80	5.40	5.93	6.24	7.67	9.35
1800	0.475	0.820	1.15	1.48	1.79	2.13	2.44	2.75	3.07	3.38	3.69	4.30	4.93	5.55	6.09	6.41	7.87	9.59
2000	0.513	0.895	1.26	1.63	1.97	2.35	2.69	3.03	3.39	3.73	4.08	4.76	5.44	6.13	6.71	7.07	8.67	10.5
2400	0.576	1.03	1.48	1.91	2.32	2.77	3.17	3.58	4.03	4.43	4.84	5.64	6.46	7.27	7.92	8.34	10.2	12.4
3000	0.669	1.22	1.76	2.30	2.83	3.36	3.88	4.40	4.91	5.42	5.92	6.91	7.87	8.81	9.72	10.2	12.3	14.8
3600	0.705	1.37	2.02	2.67	3.31	3.93	4.56	5.17	5.77	6.36	6.95	8.09	9.20	10.3	11.3	11.8	14.2	16.8
4000	0.780	1.45	2.18	2.90	3.60	4.30	4.98	5.65	6.32	6.96	7.60	8.84	10.0	11.2	12.3	12.8	15.3	18.0
5000	0.880	1.56	2.49	3.39	4.28	5.14	5.98	6.80	7.61	8.39	9.14	10.6	12.0	13.3	14.5	15.0	17.6	19.9
6000	0.970	1.64	2.73	3.80	4.83	5.83	6.79	7.72	8.62	9.49	10.3	11.9	13.3	14.6	15.8	16.3	18.5	21.2
8000		1.72	2.93	4.33	5.66	6.91	8.09	9.19	10.2	11.2	12.1	13.7	14.9	15.9	16.8	17.2	19.5	22.2
10000		1.80	3.12	4.75	5.97	7.40	8.70	9.85	10.9	11.9	13.0	14.9	16.0	17.0	17.9	18.3	20.6	
12000			3.30	4.82	6.20	7.83	9.22	10.5	11.4	12.8	13.8	16.0	17.1	17.8	18.7	19.2		
14000			3.48	4.90	6.47	7.97	9.45	10.8	12.1	13.8	14.8	16.9	17.9	18.7				

■ Standard Transmission Torque (Belt width 10 mm)

N · m

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. 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	95.49	114.59
Small belt sprocket rpm																		
20	6.10	8.88	11.5	14.1	16.8	19.5	22.1	24.8	27.4	30.1	32.7	38.0	43.2	48.4	53.6	56.2	69.5	84.2
40	5.34	7.85	10.3	12.8	15.2	17.7	20.1	22.6	25.0	27.5	29.9	34.7	39.5	44.3	49.1	51.5	63.4	77.2
60	4.94	7.31	9.67	12.0	14.4	16.7	19.1	21.4	23.7	26.0	28.4	33.0	37.5	42.1	46.6	48.9	60.1	73.3
100	4.48	6.67	8.94	11.2	13.4	15.6	17.8	20.0	22.2	24.4	26.5	30.9	35.2	39.4	43.7	45.8	56.2	68.7
200	3.92	5.90	8.04	10.1	12.1	14.2	16.2	18.2	20.2	22.2	24.2	28.2	32.2	36.1	40.0	42.0	51.3	63.0
400	3.43	5.22	7.23	9.11	11.0	12.9	14.7	16.6	18.4	20.3	22.1	25.8	29.4	33.1	36.6	38.4	46.8	57.7
500	3.29	5.02	6.98	8.81	10.7	12.5	14.3	16.1	17.9	19.7	21.5	25.1	28.6	32.1	35.6	37.4	45.5	56.1
600	3.17	4.84	6.79	8.58	10.4	12.2	13.9	15.7	17.5	19.2	21.0	24.5	27.9	31.4	34.8	36.5	44.4	54.8
800	3.00	4.76	6.49	8.23	9.96	11.7	13.4	15.1	16.8	18.5	20.2	23.6	26.9	30.3	33.6	35.2	43.3	53.1
1000	2.88	4.68	6.35	8.13	9.86	11.6	13.4	15.1	16.6	18.3	20.0	23.3	26.6	30.0	33.1	34.8	43.1	52.7
1200	2.74	4.60	6.29	8.06	9.77	11.5	13.3	14.9	16.5	18.2	19.9	23.2	26.5	29.8	33.0	34.6	42.8	52.3
1400	2.67	4.52	6.22	7.99	9.68	11.5	13.1	14.8	16.5	18.1	19.8	23.1	26.4	29.7	32.7	34.4	42.5	51.9
1450	2.65	4.50	6.20	7.97	9.66	11.4	13.1	14.8	16.4	18.1	19.7	23.0	26.4	29.7	32.7	34.4	42.4	51.7
1500	2.63	4.48	6.19	7.95	9.64	11.4	13.1	14.8	16.4	18.1	19.7	23.0	26.3	29.6	32.6	34.3	42.3	51.6
1600	2.59	4.44	6.15	7.92	9.59	11.4	13.0	14.7	16.4	18.0	19.7	23.0	26.3	29.6	32.5	34.2	42.1	51.4
1750	2.54	4.37	6.10	7.86	9.52	11.3	13.0	14.6	16.3	17.9	19.6	22.9	26.2	29.5	32.4	34.0	41.8	51.0
1800	2.52	4.35	6.09	7.84	9.50	11.3	12.9	14.6	16.3	17.9	19.6	22.8	26.1	29.4	32.3	34.0	41.7	50.9
2000	2.45	4.27	6.02	7.77	9.40	11.2	12.8	14.5	16.2	17.8	19.5	22.7	26.0	29.3	32.0	33.7	41.4	50.3
2400	2.29	4.11	5.88	7.61	9.21	11.0	12.6	14.2	16.0	17.6	19.3	22.4	25.7	28.9	31.5	33.2	40.5	49.1
3000	2.13	3.88	5.61	7.32	9.02	10.7	12.4	14.0	15.6	17.2	18.8	22.0	25.0	28.0	30.9	32.4	39.3	47.0
3600	1.87	3.63	5.36	7.08	8.77	10.4	12.1	13.7	15.3	16.9	18.4	21.5	24.4	27.2	30.0	31.3	37.7	44.6
4000	1.80	3.46	5.20	6.91	8.60	10.3	11.9	13.5	15.1	16.6	18.1	21.1	24.0	26.7	29.3	30.6	36.6	42.9
5000	1.68	2.98	4.75	6.48	8.17	9.81	11.4	13.0	14.5	16.0	17.5	20.2	22.9	25.3	27.6	28.7	33.5	38.0
6000	1.54	2.61	4.35	6.05	7.68	9.27	10.8	12.3	13.7	15.1	16.4	18.9	21.2	23.2	25.1	25.9	29.4	33.6
8000		2.05	3.50	5.17	6.75	8.24	9.65	11.0	12.2	13.4	14.4	16.3	17.8	19.0	20.1	20.5	23.3	26.5
10000		1.72	2.98	4.22	5.70	7.06	8.30	9.40	10.4	11.3	12.4	14.2	15.3	16.2	17.1	17.5	19.7	
12000			2.62	3.83	4.93	6.23	7.33	8.32	9.08	10.1	11.0	12.7	13.6	14.2	14.9	15.3		
14000			2.37	3.34	4.41	5.43	6.44	7.36	8.26	9.37	10.1	11.5	12.2	12.7				

■ Belt Width Factor

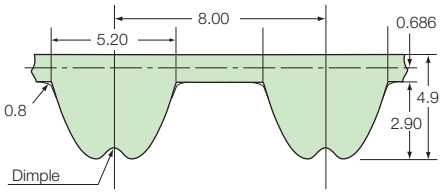
Belt width mm	10	15	20	25	30	35	40
Width factor	1.00	1.55	2.12	2.70	3.30	3.90	4.51

Notes:
Avoid using, as it may shorten the belt life.

Selection and Design p.109

UP8M-HY (Pitch : 8.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 1000 UP 8M 40 – HY

- BG: Rubber belt
- 1000: Belt length mm
- UP: Series
- 8M: Pitch
- 40: Belt width mm
- HY: Type

■ Materials

Rubber : High-strength Synthetic rubber (gray)

Tooth Fabric : Wear-resistant Fabric

Cord : Hybrid of carbon fiber and high strength fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P8M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
15	4.5	255 {26.0}	290 {29.6}
25		444 {45.3}	505 {51.5}
40		740 {75.5}	841 {85.8}
60		1150 {117.3}	1308 {133.4}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG760UP8M	95	BG1152UP8M	144	BG1800UP8M	225	BG3304UP8M	413
BG776UP8M	97	BG1160UP8M	145	BG1816UP8M	227	BG3440UP8M	430
BG800UP8M	100	BG1192UP8M	149	BG1888UP8M	236	BG3600UP8M	450
BG816UP8M	102	BG1200UP8M	150	BG1904UP8M	238	BG3920UP8M	490
BG824UP8M	103	BG1208UP8M	151	BG1960UP8M	245	BG4400UP8M	550
BG832UP8M	104	BG1216UP8M	152	BG2000UP8M	250		
BG840UP8M	105	BG1240UP8M	155	BG2032UP8M	254		
BG848UP8M	106	BG1248UP8M	156	BG2064UP8M	258		
BG856UP8M	107	BG1264UP8M	158	BG2104UP8M	263		
BG880UP8M	110	BG1280UP8M	160	BG2160UP8M	270		
BG896UP8M	112	BG1304UP8M	163	BG2240UP8M	280		
BG912UP8M	114	BG1320UP8M	165	BG2256UP8M	282		
BG920UP8M	115	BG1344UP8M	168	BG2304UP8M	288		
BG936UP8M	117	BG1352UP8M	169	BG2320UP8M	290		
BG944UP8M	118	BG1360UP8M	170	BG2400UP8M	300		
BG960UP8M	120	BG1400UP8M	175	BG2456UP8M	307		
BG984UP8M	123	BG1424UP8M	178	BG2496UP8M	312		
BG1000UP8M	125	BG1440UP8M	180	BG2600UP8M	325		
BG1032UP8M	129	BG1480UP8M	185	BG2712UP8M	339		
BG1040UP8M	130	BG1520UP8M	190	BG2768UP8M	346		
BG1056UP8M	132	BG1576UP8M	197	BG2800UP8M	350		
BG1080UP8M	135	BG1600UP8M	200	BG2896UP8M	362		
BG1096UP8M	137	BG1640UP8M	205	BG2944UP8M	368		
BG1120UP8M	140	BG1680UP8M	210	BG3048UP8M	381		
BG1128UP8M	141	BG1760UP8M	220	BG3200UP8M	400		

• Made to order. Sold in lots. Please contact your local Tsubaki representative for details on lot quantities.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
20	50.93	55	**32**	81.49	86	**50**	127.32	135
22	56.02	62	**34**	86.58	91	**60**	152.79	158
24	61.12	66	**36**	91.67	97	**64**	162.97	170
26	66.21	73	**40**	101.86	107	**72**	183.35	190
28	71.30	79	**44**	112.05	119			
30	76.39	82	**48**	122.23	127			

Belt Sprocket types and Dimensions p.60

UP8M-HY (Pitch : 8.00 mm)

■ Standard Transmission Capacity (Belt width 15 mm)

kW

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	0.144	0.166	0.184	0.203	0.220	0.238	0.256	0.273	0.290	0.306	0.322	0.354	0.384	0.399	0.441	0.468	0.494	0.541
40	0.280	0.322	0.358	0.393	0.428	0.463	0.496	0.529	0.562	0.594	0.626	0.683	0.746	0.772	0.857	0.909	0.959	1.05
60	0.407	0.468	0.521	0.573	0.624	0.674	0.723	0.771	0.818	0.865	0.911	1.00	1.09	1.13	1.25	1.32	1.40	1.54
100	0.658	0.758	0.843	0.927	1.01	1.09	1.17	1.25	1.32	1.40	1.47	1.62	1.76	1.83	2.02	2.14	2.25	2.47
200	1.21	1.37	1.53	1.69	1.85	2.00	2.15	2.29	2.44	2.58	2.72	2.98	3.24	3.35	3.71	3.94	4.13	4.54
300	1.69	1.92	2.14	2.36	2.58	2.79	3.00	3.21	3.41	3.60	3.78	4.13	4.48	4.65	5.14	5.44	5.73	6.30
400	2.15	2.44	2.72	2.99	3.24	3.53	3.78	4.03	4.27	4.51	4.74	5.20	5.67	5.86	6.48	6.88	7.19	7.89
500	2.59	2.91	3.25	3.59	3.89	4.23	4.53	4.83	5.13	5.42	5.74	6.29	6.83	7.05	7.77	8.26	8.66	9.42
600	2.98	3.38	3.76	4.15	4.53	4.89	5.25	5.61	5.95	6.30	6.63	7.28	7.90	8.20	9.05	9.59	10.1	10.9
700	3.37	3.80	4.24	4.70	5.13	5.54	5.94	6.36	6.75	7.15	7.53	8.26	8.98	9.32	10.3	10.9	11.4	12.4
800	3.74	4.24	4.73	5.22	5.70	6.17	6.63	7.07	7.52	7.95	8.38	9.21	10.0	10.4	11.4	12.1	12.7	13.8
900	4.09	4.64	5.19	5.72	6.25	6.77	7.27	7.77	8.26	8.74	9.21	10.1	11.0	11.4	12.5	13.2	13.9	15.1
1000	4.42	5.03	5.65	6.22	6.78	7.35	7.93	8.43	9.01	9.54	10.1	11.0	12.0	12.4	13.6	14.4	15.1	16.4
1100	4.74	5.42	6.07	6.72	7.35	7.94	8.57	9.16	9.74	10.3	10.9	11.9	12.9	13.3	14.7	15.5	16.3	17.7
1200	5.07	5.78	6.49	7.18	7.86	8.49	9.18	9.81	10.4	11.0	11.6	12.8	13.9	14.3	15.7	16.6	17.4	18.8
1300	5.35	6.13	6.88	7.61	8.34	9.00	9.74	10.4	11.1	11.7	12.4	13.6	14.7	15.2	16.7	17.6	18.5	20.0
1400	5.68	6.50	7.26	8.08	8.84	9.52	10.3	11.0	11.7	12.4	13.1	14.3	15.5	16.1	17.6	18.6	19.5	21.1
1450	5.82	6.65	7.44	8.28	9.02	9.78	10.6	11.3	12.0	12.7	13.4	14.7	15.9	16.5	18.0	19.0	20.1	21.6
1500	5.94	6.82	7.65	8.49	9.29	10.0	10.8	11.6	12.3	13.0	13.7	15.0	16.3	16.9	18.4	19.5	20.5	22.0
1600	6.22	7.14	8.03	8.90	9.76	10.5	11.4	12.2	13.0	13.7	14.4	15.8	17.1	17.8	19.3	20.4	21.4	23.1
1750	6.60	7.63	8.60	9.52	10.4	11.3	12.1	13.0	13.8	14.6	15.4	16.9	18.3	18.9	20.6	21.9	22.8	24.4
1800	6.75	7.75	8.73	9.69	10.6	11.5	12.4	13.3	14.1	15.0	15.7	17.2	18.7	19.3	21.0	22.3	23.2	24.7
2000	7.21	8.32	9.39	10.5	11.5	12.3	13.4	14.4	15.3	16.1	17.0	18.6	20.1	20.8	22.7	23.8	24.8	26.5
2400	8.07	9.35	10.6	11.8	13.0	14.0	15.3	16.4	17.4	18.4	19.4	21.2	22.9	23.6	25.8	27.0	27.9	29.5
2800	8.71	10.2	11.6	13.1	14.4	15.5	17.0	18.2	19.3	20.4	21.5	23.4	25.2	26.0	28.2	29.4	30.4	31.9
3000	9.05	10.6	12.1	13.6	15.0	16.2	17.7	18.9	20.1	21.3	22.4	24.4	26.3	27.1	29.4	30.6	31.7	33.2
3600	9.92	11.6	13.2	14.8	16.3	17.8	19.2	20.6	22.0	23.2	24.5	26.8	29.0	29.9	32.7	34.0	35.2	36.9
4000	10.2	12.0	13.7	15.3	16.9	18.5	20.0	21.4	22.8	24.2	25.5	27.9	30.2	31.2	34.1	35.7	37.2	39.5
5000	10.7	12.6	14.5	16.3	18.1	19.7	21.4	23.0	24.5	26.0	27.4	30.1	32.6	33.7	36.9	38.8		
6000	10.6	12.4	14.3	16.2	17.9	19.6	21.2	22.9	24.4	25.9	27.4	30.1	32.7	33.9	37.2	39.2		

■ Standard Transmission Torque (Belt width 15 mm)

N · m

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	68.7	79.1	87.9	96.7	105	114	122	130	138	146	154	169	183	190	211	223	236	258
40	66.7	76.8	85.4	93.8	102	110	118	126	134	142	149	163	178	184	205	217	229	251
60	64.7	74.5	82.9	91.1	99.2	107	115	123	130	138	145	159	173	179	199	211	222	245
100	62.8	72.4	80.5	88.5	96.3	104	112	119	126	134	141	155	168	174	193	204	215	236
200	57.7	65.5	73.2	80.7	88.1	95.3	103	109	116	123	130	142	155	160	177	188	197	217
300	53.8	61.1	68.2	75.2	82.1	88.9	95.5	102	108	115	120	131	143	148	164	173	182	200
400	51.4	58.3	65.0	71.3	77.4	84.2	90.2	96.1	102	108	113	124	135	140	155	164	172	188
500	49.5	55.6	62.1	68.5	74.3	80.8	86.4	92.2	97.9	104	110	120	130	135	148	158	165	180
600	47.4	53.7	59.8	66.0	72.0	77.8	83.6	89.2	94.7	100	106	116	126	130	144	153	161	174
700	45.9	51.8	57.8	64.1	69.9	75.6	81.0	86.7	92.1	97.5	103	113	122	127	141	148	156	169
800	44.6	50.6	56.4	62.3	68.0	73.6	79.1	84.4	89.7	94.9	100	110	119	124	136	144	151	165
900	43.4	49.2	55.0	60.7	66.3	71.8	77.1	82.4	87.6	92.7	97.7	107	117	121	133	140	147	160
1000	42.2	48.0	53.9	59.4	64.7	70.2	75.7	80.5	86.0	91.1	96.0	105	114	119	130	137	144	157
1100	41.1	47.0	52.7	58.3	63.8	68.9	74.4	79.5	84.5	89.1	94.2	103	112	116	127	135	142	153
1200	40.3	46.0	51.6	57.1	62.5	67.5	73.0	78.0	83.0	87.8	92.5	102	110	114	125	132	139	150
1300	39.3	45.0	50.5	55.9	61.2	66.1	71.5	76.5	81.3	86.1	90.7	99.7	108	112	123	129	136	147
1400	38.7	44.3	49.5	55.1	60.3	64.9	70.4	75.2	80.0	84.6	89.1	97.8	106	110	120	127	133	144
1450	38.3	43.8	49.0	54.5	59.4	64.4	69.7	74.5	79.2	83.8	88.2	96.7	105	108	119	125	132	142
1500	37.8	43.4	48.7	54.0	59.1	63.8	69.0	73.8	78.4	82.9	87.3	95.6	104	107	117	124	130	140
1600	37.1	42.6	47.9	53.1	58.2	62.9	68.0	72.7	77.3	81.7	86.1	94.4	102	106	115	122	128	138
1750	36.0	41.6	46.9	51.9	56.8	61.4	66.2	70.9	75.4	79.7	83.9	92.0	99.6	103	113	119	124	133
1800	35.8	41.1	46.3	51.4	56.4	60.9	65.9	70.5	75.0	79.3	83.5	91.4	98.9	102	112	118	123	131
2000	34.4	39.7	44.8	49.9	54.7	58.9	64.1	68.5	72.9	77.0	81.1	88.7	95.8	99.1	108	114	119	127
2400	32.1	37.2	42.2	47.1	51.8	55.8	60.8	65.1	69.2	73.2	77.0	84.3	90.9	94.0	103	107	111	118
2800	29.7	34.8	39.7	44.5	49.1	53.0	57.8	61.9	65.8	69.6	73.2	79.9	86.0	88.8	96.2	100	104	109
3000	28.8	33.7	38.5	43.2	47.7	51.5	56.2	60.2	64.0	67.7	71.2	77.7	83.6	86.3	93.5	97.4	101	106
3600	26.3	30.7	35.0	39.2	43.3	47.2	51.0	54.7	58.2	61.6	64.9	71.1	76.8	79.4	86.6	90.2	93.3	97.9
4000	24.4	28.6	32.7	36.6	40.4	44.1	47.7	51.1	54.5	57.7	60.8	66.6	72.0	74.5	81.3	85.3	88.7	94.2
5000	20.5	24.1	27.7	31.1	34.5	37.7	40.8	43.9	46.8	49.6	52.3	57.5	62.2	64.4	70.5	74.0		
6000	16.8	19.8	22.8	25.7	28.5	31.2	33.8	36.4	38.8	41.2	43.6	47.9	52.0	53.9	59.2	62.3		

■ Belt Width Factor

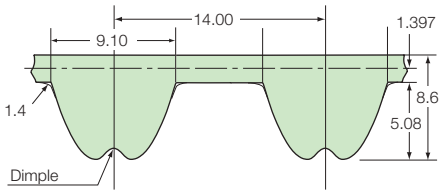
Belt width mm	15	20	25	30	35	40	45	50	55	60
Width factor	1.00	1.36	1.74	2.12	2.51	2.90	3.30	3.70	4.11	4.51

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

Selection and Design p.109

UP14M-HY (Pitch : 14.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 3500 UP 14M 100 – HY

- BG: Rubber belt
- 3500: Belt length mm
- UP: Series
- 14M: Pitch
- 100: Belt width mm
- HY: Type

■ Materials

Rubber : High-strength Synthetic rubber (gray)

Tooth Fabric : Wear-resistant Fabric

Cord : Hybrid of carbon fiber and high strength fiberglass

■ Specifications and Features

Belt Sprocket: Unusable PX Belt Sprockets P14M

Usable special belt sprockets

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width × m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
40	8.1	1020 {104.0}	1225 {124.9}
60		1581 {161.2}	1899 {193.6}
80		2162 {220.5}	2597 {264.8}
100		2754 {280.8}	3308 {337.3}
120		3366 {343.2}	4043 {412.3}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG1120UP14M	80	BG1960UP14M	140	BG3850UP14M	275
BG1176UP14M	84	BG2002UP14M	143	BG4004UP14M	286
BG1190UP14M	85	BG2100UP14M	150	BG4382UP14M	313
BG1246UP14M	89	BG2198UP14M	157	BG4508UP14M	322
BG1344UP14M	96	BG2240UP14M	160		
BG1400UP14M	100	BG2310UP14M	165		
BG1456UP14M	104	BG2380UP14M	170		
BG1540UP14M	110	BG2450UP14M	175		
BG1610UP14M	115	BG2590UP14M	185		
BG1652UP14M	118	BG2660UP14M	190		
BG1680UP14M	120	BG2800UP14M	200		
BG1736UP14M	124	BG2940UP14M	210		
BG1778UP14M	127	BG3150UP14M	225		
BG1806UP14M	129	BG3360UP14M	240		
BG1890UP14M	135	BG3500UP14M	250		

• Made to order•sales in lot, Please contact your local Tsubaki representative.

■ Belt-Sprocket Dimensions (Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
28	124.78	136	**38**	169.34	181	**50**	222.82	234
30	133.69	145	**40**	178.25	190	**56**	249.55	–
32	142.60	154	**42**	187.17	198	**60**	267.38	–
34	151.52	163	**44**	196.08	207	**64**	285.21	–
36	160.43	171	**48**	213.90	225	**72**	320.86	–

Belt Sprocket types and Dimensions p.61

• PX Belt Sprocket for P14M cannot be used. Special belt sprocket is required (Made to order item).

UP14M-HY (Pitch : 14.00 mm)

■ Standard Transmission Capacity (Belt width 40 mm)

kW

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.9	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	1.37	1.48	1.57	1.67	1.75	1.84	1.92	2.00	2.08	2.17	2.24	2.32	2.56	2.72	2.88	3.20
40	2.74	2.95	3.13	3.33	3.49	3.67	3.83	4.00	4.17	4.33	4.48	4.64	5.13	5.44	5.76	6.39
60	4.10	4.41	4.69	4.99	5.23	5.50	5.75	6.00	6.24	6.49	6.71	6.96	7.68	8.15	8.62	9.58
100	6.83	7.35	7.80	8.31	8.71	9.16	9.57	9.98	10.4	10.8	11.2	11.6	12.8	13.6	14.4	16.0
200	12.2	13.3	14.2	15.1	15.8	16.6	17.3	18.1	18.8	19.6	20.2	21.0	23.1	24.5	25.8	28.6
400	21.6	23.7	25.6	27.2	28.4	29.8	31.1	32.4	33.7	35.1	36.2	37.5	41.2	43.5	45.9	50.5
500	25.9	28.4	30.8	32.7	34.3	35.8	37.5	39.0	40.5	42.2	43.6	45.0	49.4	52.3	55.1	60.4
600	29.9	33.0	35.9	38.1	39.8	41.6	43.6	45.3	47.1	49.0	50.6	52.3	57.3	60.6	63.8	69.8
800	37.5	41.7	45.5	48.3	50.5	52.6	55.1	57.3	59.5	61.9	63.9	66.1	72.3	76.4	80.2	87.6
1000	44.6	49.8	54.6	57.9	60.4	63.1	66.0	68.6	71.2	74.2	76.6	79.1	86.3	91.0	95.7	104.0
1200	51.3	57.5	63.2	67.0	70.0	72.9	76.4	79.5	82.3	85.7	88.5	91.4	99.7	105	110	120
1400	57.6	64.7	71.6	75.8	79.2	82.4	86.4	89.8	93.1	96.8	100	103	112	118	124	134
1450	59.1	66.5	73.7	78.1	81.4	84.8	88.7	92.4	95.7	99.5	103	106	115	122	127	138
1500	60.7	68.4	75.6	80.1	83.6	87.2	91.1	94.8	98.2	102	106	109	119	125	131	141
1600	63.7	71.7	79.6	84.3	88.0	91.5	95.9	99.7	103	107	111	114	125	131	137	148
1750	68.0	76.8	85.4	90.6	94.4	98.1	103	107	111	115	119	123	133	140	147	159
1800	69.4	78.6	87.3	92.6	96.7	101	105	109	113	118	122	125	136	144	150	162
2000	75.0	85.1	94.9	101	105	109	114	119	123	128	132	136	148	155	162	175
2400	85.5	97.6	109	116	121	125	131	136	141	147	152	156	169	178	186	199
3000	99.9	115	130	138	143	148	156	162	167	174	179	184	200	209	218	233
3600	110	127	145	153	160	165	173	179	186	193	199	205	221	231	241	256
4000	114	133	152	160	168	174	181	188	194	202	208	214	231	241	251	266

■ Standard Transmission Torque (Belt width 40 mm)

N · m

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	654	704	748	796	834	877	916	956	995	1040	1070	1110	1220	1300	1380	1530
40	653	703	747	795	833	876	915	955	994	1030	1070	1110	1220	1300	1370	1530
60	652	702	746	794	832	875	914	954	993	1030	1070	1110	1220	1300	1370	1520
100	652	702	745	793	831	874	913	953	992	1030	1070	1110	1220	1300	1370	1520
200	584	633	678	721	755	793	828	863	898	934	966	1000	1100	1170	1230	1360
400	516	565	610	648	678	711	743	774	804	837	865	894	982	1040	1100	1200
500	494	543	588	625	654	684	715	745	774	805	832	860	944	998	1050	1150
600	476	525	571	606	633	662	693	721	749	779	805	832	912	964	1020	1110
800	448	497	543	576	602	628	658	684	710	739	763	789	863	911	957	1050
1000	426	475	521	553	577	602	630	655	680	708	731	755	824	869	913	993
1200	408	457	503	533	557	580	608	632	655	682	704	727	793	836	877	952
1400	393	441	488	517	540	562	589	612	635	660	682	703	766	807	846	916
1450	389	438	485	514	536	558	584	608	630	655	677	698	760	801	839	908
1500	386	435	481	510	532	555	580	603	625	650	672	693	755	794	832	900
1600	380	428	475	503	525	546	572	595	617	641	662	683	743	782	820	885
1750	371	419	466	494	515	535	561	583	604	629	649	669	728	766	802	865
1800	368	417	463	491	513	534	558	580	601	625	645	665	723	761	796	858
2000	358	406	453	480	500	521	545	566	586	610	630	649	705	741	775	834
2400	340	388	435	461	480	499	522	542	562	584	603	621	674	707	739	792
3000	318	366	414	438	456	472	495	514	531	553	570	587	635	666	695	741
3600	291	338	384	406	424	438	458	475	492	511	528	543	586	613	639	678
4000	272	318	362	383	400	415	432	448	463	482	497	511	551	576	599	634

■ Belt Width Factor

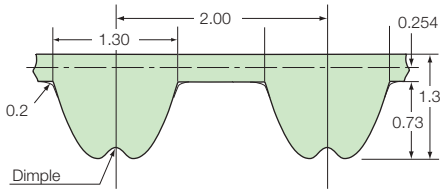
Belt width mm	40	60	80	100	120
Width factor	1.00	1.55	2.12	2.70	3.30

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

P2M-530 (Pitch : 2.00 mm)

■ Belt Tooth Profile and Dimensions*



■ Model Numbering Example

BG 200 P 2M 6 – 530

- BG: Rubber belt
- 200: Belt length mm
- P: Series
- 2M: Pitch
- 6: Belt width mm
- 530: Type

■ Materials*

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric (Low debris specification)

Cord : Fiberglass

*The same applies to the PX belt RC type, open-ended belt.

■ Specifications and Features*

Belt Sprocket : PX Belt Sprockets P2M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
4	1.4	5.9 {0.6}	7.8 {0.8}
6		9.4 {1.0}	12 {1.2}
10		17 {1.7}	22 {2.2}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG80P2M	40	**BG172P2M**	86	**BG274P2M**	137	**BG416P2M**	208	**BG754P2M**	377
BG84P2M	42	**BG176P2M**	88	**BG280P2M**	140	**BG420P2M**	210	**BG764P2M**	382
BG88P2M	44	**BG180P2M**	90	**BG284P2M**	142	**BG424P2M**	212	**BG774P2M**	387
BG98P2M	49	**BG186P2M**	93	**BG290P2M**	145	**BG426P2M**	213	**BG788P2M**	394
BG100P2M	50	**BG190P2M**	95	BG296P2M	148	**BG434P2M**	217	**BG800P2M**	400
BG112P2M	56	**BG196P2M**	98	BG298P2M	149	**BG440P2M**	220	**BG808P2M**	404
BG116P2M	58	**BG200P2M**	100	**BG300P2M**	150	**BG448P2M**	224	**BG824P2M**	412
BG118P2M	59	**BG204P2M**	102	**BG302P2M**	151	**BG464P2M**	232	**BG846P2M**	423
BG124P2M	62	**BG208P2M**	104	**BG310P2M**	155	**BG488P2M**	244	**BG866P2M**	433
BG126P2M	63	**BG212P2M**	106	**BG318P2M**	159	**BG490P2M**	245	**BG898P2M**	449
BG132P2M	66	**BG214P2M**	107	**BG320P2M**	160	**BG500P2M**	250	**BG900P2M**	450
BG134P2M	67	**BG216P2M**	108	**BG324P2M**	162	**BG516P2M**	258	**BG940P2M**	470
BG136P2M	68	**BG220P2M**	110	**BG328P2M**	164	**BG520P2M**	260	**BG956P2M**	478
BG140P2M	70	**BG224P2M**	112	**BG330P2M**	165	**BG530P2M**	265	**BG992P2M**	496
BG142P2M	71	**BG230P2M**	115	**BG334P2M**	167	**BG560P2M**	280	**BG1040P2M**	520
BG144P2M	72	**BG234P2M**	117	**BG340P2M**	170	**BG576P2M**	288	**BG1110P2M**	555
BG146P2M	73	**BG236P2M**	118	**BG348P2M**	174	**BG590P2M**	295	**BG1150P2M**	575
BG152P2M	76	**BG240P2M**	120	**BG354P2M**	177	**BG600P2M**	300	**BG1158P2M**	579
BG154P2M	77	**BG244P2M**	122	**BG360P2M**	180	**BG630P2M**	315	**BG1182P2M**	591
BG160P2M	80	**BG246P2M**	123	**BG370P2M**	185	**BG638P2M**	319	**BG1192P2M**	596
BG162P2M	81	**BG250P2M**	125	**BG378P2M**	189	**BG656P2M**	328	**BG1242P2M**	621
BG164P2M	82	**BG258P2M**	129	**BG380P2M**	190	**BG676P2M**	338	**BG1410P2M**	705
BG166P2M	83	**BG262P2M**	131	**BG390P2M**	195	**BG680P2M**	340	**BG1526P2M**	763
BG168P2M	84	**BG266P2M**	133	**BG400P2M**	200	**BG704P2M**	352	**BG1700P2M**	850
BG170P2M	85	**BG270P2M**	135	**BG408P2M**	204	**BG710P2M**	355	**BG1820P2M**	910

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
14	8.91	12	**22**	14.01	17	**30**	19.10	26	**42**	26.74	32
15	9.55	13	**24**	15.28	17	**32**	20.37	28	**44**	28.01	34
16	10.19	13	**25**	15.92	21	**34**	21.65	28	**48**	30.56	36
18	11.46	15	**26**	16.55	21	**36**	22.92	29	**50**	31.83	39
20	12.73	17	**28**	17.83	25	**40**	25.46	32	**60**	38.20	45

Belt Sprocket types and Dimensions p.57

P2M-530 (Pitch : 2.00 mm)

■ Standard Transmission Capacity*
(Belt width 4 mm)

W

Number of teeth of small belt sprocket	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	42	44	48	50	60
Pitch circle dia. 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	31.83	38.20
Small belt sprocket rpm																				
20	0.461	0.482	0.524	0.587	0.670	0.754	0.838	0.880	0.943	1.03	1.13	1.24	1.34	1.47	1.74	1.86	1.99	2.30	2.45	3.31
40	0.838	0.880	0.964	1.09	1.22	1.38	1.55	1.63	1.76	1.89	2.10	2.26	2.47	2.68	3.14	3.39	3.65	4.19	4.44	5.99
60	1.19	1.26	1.38	1.57	1.76	1.95	2.20	2.33	2.51	2.70	2.95	3.21	3.52	3.83	4.46	4.84	5.15	5.91	6.29	8.42
100	1.89	1.99	2.10	2.41	2.72	3.04	3.46	3.56	3.77	4.19	4.61	5.03	5.45	5.97	6.91	7.44	7.96	9.11	9.64	12.9
200	3.35	3.56	3.77	4.40	5.03	5.66	6.29	6.50	6.91	7.54	8.17	9.01	9.85	10.7	12.4	13.2	14.2	16.1	17.2	22.6
400	5.87	6.29	6.70	7.96	8.80	10.1	10.9	11.7	12.2	13.4	14.7	15.9	17.2	18.9	21.8	23.5	24.7	28.1	29.8	39.0
600	8.17	8.80	9.43	10.7	12.6	13.8	15.7	16.3	17.0	18.9	20.7	22.0	23.9	25.8	30.2	32.1	33.9	38.3	40.9	53.4
800	10.1	10.9	11.7	14.2	15.9	17.6	19.3	21.0	21.8	23.5	26.0	27.7	30.2	32.7	37.7	40.2	42.7	47.8	51.1	66.2
1000	12.6	13.6	14.7	16.8	18.9	21.0	23.0	24.1	26.2	28.3	30.4	33.5	35.6	38.8	44.0	47.1	50.3	56.6	59.7	77.5
1200	13.8	15.1	16.3	18.9	21.4	23.9	27.7	28.9	30.2	32.7	35.2	39.0	41.5	45.3	51.5	54.1	57.8	65.4	67.9	88.0
1400	16.1	17.6	19.1	22.0	24.9	27.9	30.8	32.3	33.7	36.7	39.6	44.0	46.9	49.9	57.2	61.6	64.5	71.9	76.3	96.8
1450	16.7	18.2	19.7	22.8	25.8	28.9	31.9	33.4	33.4	38.0	41.0	44.1	48.6	51.6	59.2	62.3	66.8	74.4	79.0	100
1500	17.3	18.9	20.4	23.6	26.7	28.3	33.0	34.6	34.6	39.3	42.4	45.6	48.7	53.4	59.7	64.4	67.6	75.4	80.1	102
1600	18.4	20.1	21.8	23.5	26.8	30.2	33.5	35.2	36.9	40.2	43.6	48.6	52.0	55.3	63.7	67.0	72.1	80.5	83.8	107
1750	20.2	20.2	22.0	25.7	29.3	33.0	36.7	38.5	38.5	44.0	47.7	51.3	55.0	58.7	67.8	71.5	75.2	84.3	89.8	114
1800	18.9	20.7	22.6	26.4	30.2	33.9	37.7	39.6	39.6	45.3	49.0	52.8	56.6	60.3	67.9	73.5	77.3	86.7	90.5	115
2000	21.0	23.0	25.1	29.3	33.5	35.6	39.8	41.9	44.0	48.2	52.4	56.6	60.8	65.0	73.3	79.6	83.8	92.2	98.5	123
2400	25.1	27.7	27.7	32.7	37.7	42.7	45.3	47.8	50.3	55.3	60.3	65.4	70.4	75.4	85.5	90.5	95.5	106	111	138
3000		31.4	34.6	37.7	44.0	50.3	53.4	56.6	59.7	66.0	72.3	75.4	81.7	88.0	97.4	104	110	123	126	157
3600		37.7	37.7	45.3	49.0	56.6	64.1	64.1	67.9	75.4	79.2	86.7	94.3	98.1	109	117	124	136	143	173
4000		37.7	41.9	50.3	54.5	62.9	67.0	71.2	75.4	79.6	88.0	92.2	101	105	117	126	130	147	151	184
5000			47.1	57.6	62.9	73.3	78.6	83.8	89.0	94.3	99.5	110	115	120	136	141	152	162	173	204
6000			56.6	62.9	75.4	81.7	88.0	94.3	101	107	113	119	132	138	151	157	170	182	189	220
8000				75.4	92.2	101	109	117	117	126	134	142	151	159	176	184	193	210	210	243
10000				94.3	105	115	126	136	136	147	157	168	178	189	199	210	210	230	230	251
12000					113	126	138	151	151	163	176	189	189	201	214	226	226	239	239	251
14000					132	147	147	161	161	176	191	205	205	220	235	235	235	249	264	264

■ Standard Transmission Torque*
(Belt width 4 mm)

N・m

Number of teeth of small belt sprocket	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	42	44	48	50	60
Pitch circle dia. 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	31.83	38.20
Small belt sprocket rpm																				
20	0.220	0.230	0.250	0.280	0.320	0.360	0.400	0.420	0.450	0.490	0.540	0.590	0.640	0.700	0.830	0.890	0.950	1.10	1.17	1.58
40	0.200	0.210	0.230	0.260	0.290	0.330	0.370	0.390	0.420	0.450	0.500	0.540	0.590	0.640	0.750	0.810	0.870	1.00	1.06	1.43
60	0.190	0.200	0.220	0.250	0.280	0.310	0.350	0.370	0.400	0.430	0.470	0.510	0.560	0.610	0.710	0.770	0.820	0.940	1.00	1.34
100	0.180	0.190	0.200	0.230	0.260	0.290	0.330	0.340	0.360	0.400	0.440	0.480	0.520	0.570	0.660	0.710	0.760	0.870	0.920	1.23
200	0.160	0.170	0.180	0.210	0.240	0.270	0.300	0.310	0.330	0.360	0.390	0.430	0.470	0.510	0.590	0.630	0.680	0.770	0.820	1.08
400	0.140	0.150	0.160	0.190	0.210	0.240	0.260	0.280	0.290	0.320	0.350	0.380	0.410	0.450	0.520	0.560	0.590	0.670	0.710	0.930
600	0.130	0.140	0.150	0.170	0.200	0.220	0.250	0.260	0.270	0.300	0.330	0.350	0.380	0.410	0.480	0.510	0.540	0.610	0.650	0.850
800	0.120	0.130	0.140	0.170	0.190	0.210	0.230	0.250	0.260	0.280	0.310	0.330	0.360	0.390	0.450	0.480	0.510	0.570	0.610	0.790
1000	0.120	0.130	0.140	0.160	0.180	0.200	0.220	0.230	0.250	0.270	0.290	0.320	0.340	0.370	0.420	0.450	0.480	0.540	0.570	0.740
1200	0.110	0.120	0.130	0.150	0.170	0.190	0.220	0.230	0.240	0.260	0.280	0.310	0.330	0.360	0.410	0.430	0.460	0.520	0.540	0.700
1400	0.110	0.120	0.130	0.150	0.170	0.190	0.210	0.220	0.230	0.250	0.270	0.300	0.320	0.340	0.390	0.420	0.440	0.490	0.520	0.660
1450	0.110	0.120	0.130	0.150	0.170	0.190	0.210	0.220	0.220	0.250	0.270	0.290	0.320	0.340	0.390	0.410	0.440	0.490	0.520	0.660
1500	0.110	0.120	0.130	0.150	0.170	0.180	0.210	0.220	0.220	0.250	0.270	0.290	0.310	0.340	0.380	0.410	0.430	0.480	0.510	0.650
1600	0.110	0.120	0.130	0.140	0.160	0.180	0.200	0.210	0.220	0.240	0.260	0.290	0.310	0.330	0.380	0.400	0.430	0.480	0.500	0.640
1750	0.110	0.110	0.120	0.140	0.160	0.180	0.200	0.210	0.210	0.240	0.260	0.280	0.300	0.320	0.370	0.390	0.410	0.460	0.490	0.620
1800	0.100	0.110	0.120	0.140	0.160	0.180	0.200	0.210	0.210	0.240	0.260	0.280	0.300	0.320	0.360	0.390	0.410	0.460	0.480	0.610
2000	0.100	0.110	0.120	0.140	0.160	0.170	0.190	0.200	0.210	0.230	0.250	0.270	0.290	0.310	0.350	0.380	0.400	0.440	0.470	0.589
2400	0.100	0.110	0.110	0.130	0.150	0.170	0.180	0.190	0.200	0.220	0.240	0.260	0.280	0.300	0.340	0.360	0.380	0.420	0.440	0.550
3000		0.100	0.110	0.120	0.140	0.160	0.170	0.180	0.190	0.210	0.230	0.240	0.260	0.280	0.310	0.330	0.350	0.390	0.400	0.500
3600		0.100	0.100	0.120	0.130	0.150	0.170	0.170	0.180	0.200	0.210	0.230	0.250	0.260	0.290	0.310	0.330	0.360	0.380	0.460
4000		0.090	0.100	0.120	0.130	0.150	0.160	0.170	0.180	0.190	0.210	0.220	0.240	0.250	0.280	0.300	0.310	0.350	0.360	0.440
5000			0.090	0.110	0.120	0.140	0.150	0.160	0.170	0.180	0.190	0.210	0.220	0.230	0.260	0.270	0.290	0.310	0.330	0.390
6000			0.090	0.100	0.120	0.130	0.140	0.150	0.160	0.170	0.180	0.190	0.210	0.220	0.240	0.250	0.270	0.290	0.300	0.350
8000				0.090	0.110	0.120	0.130	0.140	0.140	0.150	0.160	0.170	0.180	0.190	0.210	0.220	0.230	0.250	0.250	0.290
10000				0.090	0.100	0.110	0.120	0.130	0.130	0.140	0.150	0.160	0.170	0.180	0.190	0.200	0.200	0.220	0.220	0.240
12000					0.090	0.100	0.110	0.120	0.120	0.130	0.140	0.150	0.150	0.160	0.170	0.180	0.180	0.190	0.190	0.200
14000					0.090	0.100	0.100	0.110	0.110	0.120	0.130	0.140	0.140	0.150	0.160	0.160	0.160	0.170	0.180	0.180

■ Belt Width Factor*

Belt width mm	4	6	10
Width factor	1.00	1.58	2.84

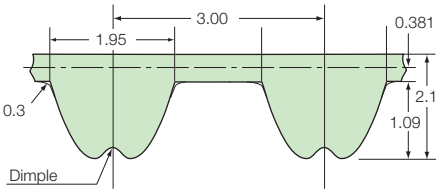
Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.

*The same applies to the PX belt RC type, open-ended belt.

P3M-530 (Pitch : 3.00 mm)

■ Belt Tooth Profile and Dimensions*



■ Model Numbering Example

BG 300 P 3M 6 – 530

- BG: Rubber belt
- 300: Belt length mm
- P: Series
- 3M: Pitch
- 6: Belt width mm
- 530: Type

■ Materials*

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric (Low debris specification)

Cord : Fiberglass

*The same applies to the PX belt RC type, open-ended belt.

■ Specifications and Features*

Belt Sprocket : PX Belt Sprockets P3M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
6	2.0	20 {2.0}	26 {2.7}
10		36 {3.7}	47 {4.8}
15		57 {5.8}	74 {7.5}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG120P3M	40	**BG225P3M**	75	BG315P3M	105	**BG447P3M**	149	**BG693P3M**	231	**BG1041P3M**	347
BG123P3M	41	BG228P3M	76	**BG318P3M**	106	**BG450P3M**	150	**BG699P3M**	233	**BG1050P3M**	350
BG132P3M	44	**BG231P3M**	77	BG327P3M	109	**BG453P3M**	151	**BG702P3M**	234	**BG1059P3M**	353
BG138P3M	46	**BG234P3M**	78	**BG330P3M**	110	**BG459P3M**	153	**BG705P3M**	235	**BG1080P3M**	360
BG141P3M	47	**BG237P3M**	79	**BG339P3M**	113	BG471P3M	157	**BG720P3M**	240	**BG1110P3M**	370
BG144P3M	48	**BG240P3M**	80	BG342P3M	114	**BG477P3M**	159	**BG738P3M**	246	**BG1170P3M**	390
BG147P3M	49	**BG243P3M**	81	**BG345P3M**	115	**BG483P3M**	161	**BG753P3M**	251	**BG1191P3M**	397
BG150P3M	50	**BG246P3M**	82	BG351P3M	117	**BG486P3M**	162	**BG756P3M**	252	**BG1281P3M**	427
BG153P3M	51	**BG252P3M**	84	**BG354P3M**	118	**BG489P3M**	163	**BG789P3M**	263	**BG1305P3M**	435
BG159P3M	53	**BG255P3M**	85	**BG360P3M**	120	**BG501P3M**	167	**BG804P3M**	268	**BG1338P3M**	446
BG162P3M	54	**BG264P3M**	88	**BG363P3M**	121	**BG504P3M**	168	BG822P3M	274	**BG1344P3M**	448
BG171P3M	57	BG267P3M	89	**BG369P3M**	123	**BG507P3M**	169	**BG852P3M**	284	**BG1380P3M**	460
BG174P3M	58	**BG270P3M**	90	**BG372P3M**	124	**BG510P3M**	170	**BG861P3M**	287	**BG1443P3M**	481
BG177P3M	59	**BG273P3M**	91	**BG378P3M**	126	**BG525P3M**	175	BG870P3M	290	**BG1638P3M**	546
BG183P3M	61	**BG276P3M**	92	**BG384P3M**	128	**BG537P3M**	179	**BG879P3M**	293	**BG1689P3M**	563
BG186P3M	62	**BG279P3M**	93	**BG387P3M**	129	**BG552P3M**	184	BG885P3M	295	**BG1749P3M**	583
BG192P3M	64	**BG285P3M**	95	**BG393P3M**	131	**BG561P3M**	187	**BG891P3M**	297	**BG1893P3M**	631
BG195P3M	65	**BG288P3M**	96	**BG399P3M**	133	**BG588P3M**	196	**BG918P3M**	306	**BG1947P3M**	649
BG198P3M	66	**BG291P3M**	97	**BG402P3M**	134	**BG600P3M**	200	**BG933P3M**	311		
BG201P3M	67	**BG294P3M**	98	**BG405P3M**	135	BG618P3M	206	**BG948P3M**	316		
BG207P3M	69	**BG300P3M**	100	**BG411P3M**	137	**BG633P3M**	211	**BG957P3M**	319		
BG210P3M	70	**BG303P3M**	101	**BG420P3M**	140	**BG660P3M**	220	**BG972P3M**	324		
BG213P3M	71	**BG306P3M**	102	**BG423P3M**	141	**BG675P3M**	225	BG981P3M	327		
BG219P3M	73	**BG309P3M**	103	**BG432P3M**	144	**BG681P3M**	227	**BG1005P3M**	335		
BG222P3M	74	**BG312P3M**	104	**BG438P3M**	146	**BG687P3M**	229	**BG1023P3M**	341		

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
10	9.55	12	**18**	17.19	21	**26**	24.83	31	**40**	38.20	45
12	11.46	15	**20**	19.10	25	**28**	26.74	32	**48**	45.84	52
14	13.37	17	**22**	21.01	28	**30**	28.65	34	**50**	47.75	55
15	14.32	17	**24**	22.92	29	**32**	30.56	36	**60**	57.30	65
16	15.28	17	**25**	23.87	31	**36**	34.38	43			

Belt Sprocket types and Dimensions p.58

P3M-530 (Pitch : 3.00 mm)

■ Standard Transmission Capacity*
(Belt width 6 mm)

W

Number of teeth of small belt sprocket	10	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	9.55	11.46	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	38.2	45.84	47.75	57.30
Small belt sprocket rpm																			
20	1.01	1.26	1.49	1.61	1.74	2.01	2.28	2.58	2.87	3.04	3.18	3.52	3.86	4.19	4.92	5.70	7.40	7.84	10.3
40	1.84	2.26	2.72	2.98	3.18	3.69	4.19	4.74	5.28	5.57	5.87	6.45	7.08	7.71	9.05	10.5	13.5	14.4	18.8
60	2.64	3.27	3.90	4.21	4.53	5.28	5.97	6.73	7.54	7.92	8.36	9.18	10.1	10.9	12.8	14.8	19.2	20.4	26.7
100	4.09	5.03	5.97	6.50	7.02	8.17	9.32	10.5	11.6	12.3	13.0	14.2	15.6	17.0	19.9	23.0	29.8	31.5	41.2
200	7.33	9.01	10.9	11.7	12.8	14.7	16.8	18.9	21.0	22.2	23.3	25.6	28.1	30.6	35.8	41.3	53.4	56.6	73.1
400	13.0	15.9	19.3	21.0	22.6	26.0	29.8	33.5	37.3	39.4	41.5	45.7	49.9	54.1	63.3	73.3	94.3	100	130
600	17.6	22.0	26.4	28.9	31.4	36.5	41.5	46.5	52.2	54.7	57.2	63.5	69.1	75.4	88.0	102	131	138	180
800	21.8	27.7	33.5	36.0	39.4	45.3	52.0	58.7	65.4	68.7	72.1	79.6	87.2	94.7	111	127	164	173	225
1000	26.2	32.5	39.8	43.0	47.1	54.5	61.8	70.2	77.5	81.7	85.9	95.3	104	113	132	152	195	206	267
1200	30.2	37.7	45.3	50.3	54.1	62.9	71.7	80.5	89.3	94.3	99.3	109	119	129	152	175	225	238	308
1400	35.2	42.5	51.3	55.7	60.1	70.4	80.7	90.9	101	107	111	123	135	147	172	197	252	267	345
1450	36.5	44.1	53.2	57.7	62.3	72.9	82.0	92.7	103	109	115	126	138	150	176	202	260	273	354
1500	37.7	44.0	53.4	59.7	64.4	73.9	84.9	95.9	107	112	118	130	141	154	181	207	266	281	363
1600	40.2	46.9	57.0	62.0	67.0	77.1	88.8	101	112	117	124	136	149	163	189	218	278	295	381
1750	44.0	49.5	60.5	66.0	71.5	82.5	95.3	106	119	127	132	145	160	174	202	233	299	315	407
1800		50.9	62.2	67.9	73.5	84.9	96.2	109	123	128	136	149	162	177	207	238	304	322	415
2000		54.5	67.0	73.3	79.6	92.2	105	119	132	138	147	161	176	191	224	258	329	348	448
2400		62.9	75.4	83.0	90.5	106	121	136	151	158	168	184	201	219	256	294	375	397	510
3000			91.1	97.4	107	123	141	160	179	189	198	217	236	258	299	343	440	465	597
3600			102	113	121	140	162	181	204	211	223	245	268	290	339	392	498	524	675
4000			109	122	130	151	172	193	218	230	239	264	289	314	365	419	532	566	721
5000			126	141	152	178	199	225	251	267	278	309	335	367	424	487	618	655	833
6000				157	170	195	226	258	283	302	314	346	377	409	478	547	691	729	930
8000					201	235	268	302	344	360	377	411	453	494	570	654	821	863	1100
10000						272	304	346	388	409	430	471	513	555	650	733	932	974	1240
12000						302	339	390	427	453	478	515	566	616	717	805	1020	1070	1350
14000							367	411	469	484	513	557	616	660	763	865	1090	1140	1420

■ Standard Transmission Torque*
(Belt width 6 mm)

N・m

Number of teeth of small belt sprocket	10	12	14	15	16	18	20	22	24	25	26	28	30	32	36	40	48	50	60
Pitch circle dia. mm	9.55	11.46	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	38.2	45.84	47.75	57.30
Small belt sprocket rpm																			
20	0.480	0.600	0.710	0.770	0.830	0.960	1.09	1.23	1.37	1.45	1.52	1.68	1.84	2.00	2.35	2.72	3.53	3.74	4.90
40	0.440	0.540	0.650	0.710	0.760	0.880	1.00	1.13	1.26	1.33	1.40	1.54	1.69	1.84	2.16	2.50	3.23	3.43	4.48
60	0.420	0.520	0.620	0.670	0.720	0.840	0.950	1.07	1.20	1.26	1.33	1.46	1.60	1.74	2.04	2.36	3.06	3.24	4.24
100	0.390	0.480	0.570	0.620	0.670	0.780	0.890	1.00	1.11	1.17	1.24	1.36	1.49	1.62	1.90	2.20	2.84	3.01	3.93
200	0.350	0.430	0.520	0.560	0.610	0.700	0.800	0.900	1.00	1.06	1.11	1.22	1.34	1.46	1.71	1.97	2.55	2.70	3.49
400	0.310	0.380	0.460	0.500	0.540	0.620	0.710	0.800	0.890	0.940	0.990	1.09	1.19	1.29	1.51	1.75	2.25	2.39	3.10
600	0.280	0.350	0.420	0.460	0.500	0.580	0.660	0.740	0.830	0.870	0.910	1.01	1.10	1.20	1.40	1.62	2.08	2.20	2.86
800	0.260	0.330	0.400	0.430	0.470	0.540	0.620	0.700	0.780	0.820	0.860	0.950	1.04	1.13	1.32	1.52	1.96	2.07	2.69
1000	0.250	0.310	0.380	0.410	0.450	0.520	0.590	0.670	0.740	0.780	0.820	0.910	0.990	1.08	1.26	1.45	1.86	1.97	2.55
1200	0.240	0.300	0.360	0.400	0.430	0.500	0.570	0.640	0.710	0.750	0.790	0.870	0.950	1.03	1.21	1.39	1.79	1.89	2.45
1400	0.240	0.290	0.350	0.380	0.410	0.480	0.550	0.620	0.690	0.730	0.760	0.840	0.920	1.00	1.17	1.34	1.72	1.82	2.35
1450	0.240	0.290	0.350	0.380	0.410	0.480	0.540	0.610	0.680	0.720	0.760	0.830	0.910	0.990	1.16	1.33	1.71	1.80	2.33
1500	0.240	0.280	0.340	0.380	0.410	0.470	0.540	0.610	0.680	0.710	0.750	0.830	0.900	0.980	1.15	1.32	1.69	1.79	2.31
1600	0.240	0.280	0.340	0.370	0.400	0.460	0.530	0.600	0.670	0.700	0.740	0.810	0.890	0.970	1.13	1.30	1.66	1.76	2.27
1750	0.240	0.270	0.330	0.360	0.390	0.450	0.520	0.580	0.650	0.690	0.720	0.790	0.870	0.950	1.10	1.27	1.63	1.72	2.22
1800		0.270	0.330	0.360	0.390	0.450	0.510	0.580	0.650	0.680	0.720	0.790	0.860	0.940	1.10	1.26	1.61	1.71	2.20
2000		0.260	0.320	0.350	0.380	0.440	0.500	0.570	0.630	0.660	0.700	0.770	0.840	0.910	1.07	1.23	1.57	1.66	2.14
2400		0.250	0.300	0.330	0.360	0.420	0.480	0.540	0.600	0.630	0.670	0.730	0.800	0.870	1.02	1.17	1.49	1.58	2.03
3000			0.290	0.310	0.340	0.390	0.450	0.510	0.570	0.600	0.630	0.690	0.750	0.820	0.950	1.09	1.40	1.48	1.90
3600			0.270	0.300	0.320	0.370	0.430	0.480	0.540	0.560	0.590	0.650	0.710	0.770	0.900	1.04	1.32	1.39	1.79
4000			0.260	0.290	0.310	0.360	0.410	0.460	0.520	0.550	0.570	0.630	0.690	0.750	0.870	1.00	1.27	1.35	1.72
5000			0.240	0.270	0.290	0.340	0.380	0.430	0.480	0.510	0.530	0.590	0.640	0.700	0.810	0.930	1.18	1.25	1.59
6000				0.250	0.270	0.310	0.360	0.410	0.450	0.480	0.500	0.550	0.600	0.650	0.760	0.870	1.10	1.16	1.48
8000					0.240	0.280	0.320	0.360	0.410	0.430	0.450	0.490	0.540	0.590	0.680	0.780	0.980	1.03	1.31
10000						0.260	0.290	0.330	0.370	0.390	0.410	0.450	0.490	0.530	0.620	0.700	0.890	0.930	1.18
12000						0.240	0.270	0.310	0.340	0.360	0.380	0.410	0.450	0.490	0.570	0.640	0.810	0.850	1.07
14000							0.250	0.280	0.320	0.330	0.350	0.380	0.420	0.450	0.520	0.590	0.740	0.780	0.970

■ Belt Width Factor*

Belt width mm	6	10	15
Width factor	1.00	1.79	2.84

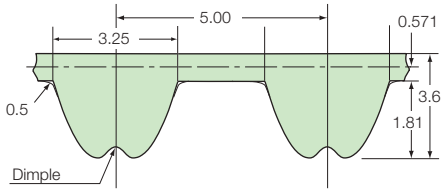
Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.

*The same applies to the PX belt RC type, open-ended belt.

P5M-RC (Pitch : 5.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 500 P 5M 10—RC

- BG: Rubber belt
- 500: Belt length mm
- P: Series
- 5M: Pitch
- 10: Belt width mm
- RC: Type

■ Material

Rubber : Chloroprene rubber

Tooth Fabric: Nylon fabric (Low debris specification)

Cord : Fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P5M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
10	3.8	97 {9.9}	132 {13.5}
15		154 {15.7}	209 {21.3}
25		276 {28.2}	376 {38.4}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG175P5M	35	**BG490P5M**	98	**BG695P5M**	139	**BG1000P5M**	200	BG1585P5M	317
BG215P5M	43	**BG500P5M**	100	**BG700P5M**	140	**BG1025P5M**	205	**BG1595P5M**	319
BG225P5M	45	**BG515P5M**	103	**BG710P5M**	142	**BG1050P5M**	210	**BG1615P5M**	323
BG255P5M	51	**BG520P5M**	104	**BG725P5M**	145	**BG1060P5M**	212	**BG1675P5M**	335
BG260P5M	52	**BG525P5M**	105	**BG730P5M**	146	BG1080P5M	216	**BG1700P5M**	340
BG275P5M	55	**BG530P5M**	106	**BG740P5M**	148	**BG1090P5M**	218	**BG1800P5M**	360
BG295P5M	59	**BG545P5M**	109	**BG750P5M**	150	**BG1125P5M**	225	**BG1870P5M**	374
BG300P5M	60	**BG550P5M**	110	**BG765P5M**	153	BG1145P5M	229	**BG1910P5M**	382
BG310P5M	62	**BG555P5M**	111	**BG770P5M**	154	**BG1150P5M**	230	**BG1960P5M**	392
BG320P5M	64	**BG560P5M**	112	**BG775P5M**	155	**BG1160P5M**	232	**BG2000P5M**	400
BG325P5M	65	**BG565P5M**	113	**BG780P5M**	156	**BG1180P5M**	236	**BG2080P5M**	416
BG340P5M	68	**BG570P5M**	114	**BG800P5M**	160	**BG1195P5M**	239	**BG2160P5M**	432
BG345P5M	69	**BG575P5M**	115	**BG810P5M**	162	**BG1220P5M**	244	**BG2200P5M**	440
BG350P5M	70	**BG595P5M**	119	**BG830P5M**	166	**BG1225P5M**	245	BG2455P5M	491
BG370P5M	74	**BG600P5M**	120	**BG835P5M**	167	**BG1250P5M**	250	**BG2645P5M**	529
BG375P5M	75	**BG605P5M**	121	**BG850P5M**	170	**BG1260P5M**	252	BG2725P5M	545
BG390P5M	78	**BG625P5M**	125	**BG865P5M**	173	**BG1270P5M**	254	BG2795P5M	559
BG400P5M	80	**BG635P5M**	127	**BG880P5M**	176	**BG1295P5M**	259	**BG3050P5M**	610
BG420P5M	84	BG640P5M	128	**BG900P5M**	180	**BG1350P5M**	270	**BG3150P5M**	630
BG425P5M	85	**BG645P5M**	129	**BG905P5M**	181	**BG1390P5M**	278	**BG3930P5M**	786
BG430P5M	86	**BG650P5M**	130	**BG920P5M**	184	**BG1420P5M**	284		
BG440P5M	88	**BG670P5M**	134	**BG940P5M**	188	**BG1490P5M**	298		
BG450P5M	90	**BG675P5M**	135	**BG950P5M**	190	BG1495P5M	299		
BG470P5M	94	BG680P5M	136	**BG965P5M**	193	**BG1530P5M**	306		
BG475P5M	95	**BG690P5M**	138	**BG985P5M**	197	**BG1550P5M**	310		

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
12	19.10	23	**22**	35.01	43	**30**	47.75	55	**48**	76.39	82
14	22.28	28	**24**	38.20	44	**32**	50.93	55	**50**	79.58	86
16	25.46	31	**25**	39.79	45	**36**	57.30	64	**60**	95.49	103
18	28.65	36	**26**	41.38	47	**40**	63.66	67	**72**	114.59	120
20	31.83	36	**28**	44.56	52	**44**	70.03	74			

Belt Sprocket types and Dimensions p.59

P5M-RC (Pitch : 5.00 mm)

■ Standard Transmission Capacity (Belt width 10 mm)

W

Small belt sprocket rpm \ Number of teeth of small belt sprocket	12	14	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. mm	19.10	22.28	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	57.3	63.66	70.03	76.39	79.58	95.49	114.59
20	5.59	6.89	8.28	9.70	11.2	12.7	14.3	15.1	16.0	17.7	19.5	21.3	25.1	29.2	33.5	38.0	40.3	52.9	69.9
40	10.3	12.7	15.3	17.9	20.6	23.4	26.3	27.8	29.4	32.5	35.7	39.1	46.1	53.5	61.4	69.6	73.8	96.8	128
60	14.7	18.2	21.7	25.5	29.3	33.3	37.5	39.6	41.8	46.2	50.9	55.6	65.5	76.0	87.1	98.8	105	137	181
100	22.9	28.2	33.8	39.6	45.6	51.8	58.2	61.5	64.8	71.8	78.9	86.2	102	118	135	153	162	212	279
200	41.5	51.1	61.0	71.4	82.1	93.5	105	111	117	129	142	155	182	211	242	273	290	379	498
400	74.2	91.4	109	127	147	166	187	197	208	230	252	275	323	374	427	483	512	667	874
500	89.0	110	131	153	176	200	224	237	249	276	302	329	387	447	511	578	612	797	1040
600	104	128	152	178	204	231	260	274	289	319	350	382	448	518	592	668	708	920	1200
800	131	161	192	225	257	292	328	345	364	401	440	480	563	650	742	838	888	1150	1510
1000	157	193	229	268	308	349	391	412	434	479	525	572	670	773	882	995	1050	1370	1780
1200	181	223	265	309	355	402	450	475	500	552	605	659	772	890	1010	1140	1210	1570	2040
1400	204	251	299	349	400	453	507	535	563	622	681	742	868	1000	1140	1280	1360	1760	2290
1450		258	307	359	412	466	521	550	579	638	699	761	892	1030	1170	1320	1400	1810	2350
1500		266	316	368	423	478	536	564	594	655	718	781	915	1050	1200	1350	1430	1850	2410
1600		278	332	387	444	503	563	593	624	687	753	820	960	1110	1260	1420	1500	1940	2520
1750		299	356	414	475	537	601	634	669	737	807	878	1030	1180	1350	1520	1600	2070	2690
1800			364	424	487	549	615	649	683	752	824	896	1050	1210	1370	1550	1640	2110	2750
2000			394	459	526	595	666	702	740	813	890	970	1130	1310	1480	1670	1770	2280	2960
2400			453	525	603	681	762	805	845	930	1020	1110	1290	1490	1690	1900	2010	2590	3360
3000				622	710	805	899	946	996	1090	1200	1300	1520	1740	1980	2230	2350	3020	3910
3600				709	811	916	1020	1080	1130	1240	1360	1480	1720	1980	2240	2520	2660	3410	4400
4000					876	985	1100	1160	1220	1340	1460	1590	1850	2120	2410	2700	2850	3650	4710
5000					1020	1150	1280	1350	1420	1560	1700	1850	2150	2460	2780	3120	3290	4200	5400
6000						1300	1450	1530	1600	1760	1920	2080	2410	2760	3120	3490	3680	4680	5990
8000							1740	1830	1920	2100	2290	2480	2870	3280	3700	4120	4340	5490	
10000								2100	2190	2400	2610	2820	3260	3710	4160	4640			
12000								2310	2430	2650	2880	3110	3580						
14000									2630	2870	3110	3360							

■ Standard Transmission Torque (Belt width 10 mm)

N・m

Small belt sprocket rpm \ Number of teeth of small belt sprocket	12	14	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. mm	19.10	22.28	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	57.3	63.66	70.03	76.39	79.58	95.49	114.59
20	2.67	3.29	3.95	4.63	5.34	6.07	6.83	7.23	7.63	8.44	9.29	10.2	12.0	13.9	16.0	18.1	19.3	25.3	33.4
40	2.46	3.04	3.64	4.26	4.91	5.58	6.28	6.64	7.01	7.76	8.53	9.33	11.0	12.8	14.6	16.6	17.6	23.1	30.5
60	2.34	2.89	3.45	4.05	4.66	5.30	5.96	6.30	6.65	7.35	8.09	8.84	10.4	12.1	13.9	15.7	16.7	21.8	28.8
100	2.19	2.69	3.23	3.78	4.35	4.94	5.56	5.87	6.19	6.85	7.53	8.23	9.69	11.2	12.9	14.6	15.5	20.2	26.7
200	1.98	2.44	2.91	3.41	3.92	4.46	5.01	5.29	5.58	6.16	6.77	7.39	8.70	10.1	11.5	13.1	13.8	18.1	23.8
400	1.77	2.18	2.60	3.04	3.50	3.97	4.46	4.71	4.96	5.48	6.01	6.56	7.71	8.92	10.2	11.5	12.2	15.9	20.9
500	1.70	2.10	2.50	2.92	3.36	3.81	4.28	4.52	4.76	5.26	5.77	6.29	7.39	8.54	9.76	11.0	11.7	15.2	19.9
600	1.65	2.03	2.42	2.83	3.25	3.68	4.13	4.36	4.60	5.08	5.57	6.07	7.13	8.24	9.41	10.6	11.3	14.6	19.2
800	1.56	1.92	2.29	2.68	3.07	3.48	3.91	4.12	4.34	4.79	5.25	5.73	6.72	7.76	8.85	10.0	10.6	13.7	18.0
1000	1.50	1.84	2.19	2.56	2.94	3.33	3.73	3.93	4.14	4.57	5.01	5.46	6.40	7.38	8.42	9.50	10.1	13.1	17.0
1200	1.44	1.77	2.11	2.46	2.82	3.20	3.58	3.78	3.98	4.39	4.81	5.24	6.14	7.08	8.07	9.10	9.64	12.5	16.3
1400	1.39	1.71	2.04	2.38	2.73	3.09	3.46	3.65	3.84	4.24	4.64	5.06	5.92	6.82	7.77	8.76	9.27	12.0	15.6
1450		1.70	2.02	2.36	2.71	3.07	3.43	3.62	3.81	4.20	4.60	5.01	5.87	6.76	7.70	8.68	9.19	11.9	15.5
1500		1.69	2.01	2.34	2.69	3.04	3.41	3.59	3.78	4.17	4.57	4.97	5.82	6.71	7.64	8.61	9.11	11.8	15.3
1600		1.66	1.98	2.31	2.65	3.00	3.36	3.54	3.72	4.10	4.49	4.89	5.73	6.60	7.51	8.47	8.96	11.6	15.1
1750		1.63	1.94	2.26	2.59	2.93	3.28	3.46	3.65	4.02	4.40	4.79	5.60	6.45	7.34	8.27	8.75	11.3	14.7
1800			1.93	2.25	2.58	2.91	3.26	3.44	3.62	3.99	4.37	4.75	5.56	6.40	7.29	8.21	8.68	11.2	14.6
2000			1.88	2.19	2.51	2.84	3.18	3.35	3.53	3.88	4.25	4.63	5.41	6.23	7.08	7.98	8.44	10.9	14.1
2400			1.80	2.09	2.40	2.71	3.03	3.20	3.36	3.70	4.05	4.41	5.15	5.92	6.73	7.57	8.01	10.3	13.4
3000				1.98	2.26	2.56	2.86	3.01	3.17	3.48	3.81	4.14	4.83	5.55	6.30	7.08	7.48	9.62	12.4
3600				1.88	2.15	2.43	2.71	2.86	3.00	3.30	3.61	3.92	4.57	5.24	5.95	6.68	7.06	9.05	11.7
4000					2.09	2.35	2.63	2.77	2.91	3.20	3.49	3.79	4.42	5.07	5.74	6.45	6.81	8.72	11.2
5000					1.95	2.20	2.45	2.58	2.71	2.98	3.25	3.53	4.10	4.69	5.31	5.95	6.28	8.02	10.3
6000						2.07	2.31	2.43	2.55	2.80	3.05	3.31	3.84	4.39	4.96	5.55	5.86	7.45	9.53
8000							2.08	2.18	2.29	2.51	2.73	2.96	3.43	3.91	4.41	4.92	5.18	6.55	
10000								2.00	2.09	2.29	2.49	2.69	3.11	3.54	3.97	4.43			
12000								1.84	1.93	2.11	2.29	2.47	2.85						
14000									1.79	1.96	2.12	2.29							

■ Belt Width Factor

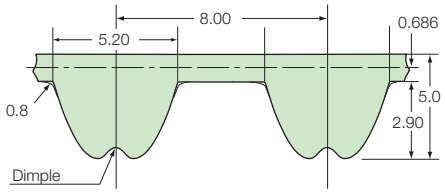
Belt width mm	10	15	20	25
Width factor	1.00	1.58	2.20	2.84

Notes:
Avoid using, as it may shorten the belt life.

Selection and Design p.109

P8M-RC (Pitch : 8.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 800 P 8M 40−RC

- BG: Rubber belt
- 800: Belt length mm
- P: Series
- 8M: Pitch
- 40: Belt width mm
- RC: Type

■ Material

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric (Low debris specification)

Cord : Fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P8M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
15	5.1	203 {20.6}	265 {27.0}
25		363 {37.0}	473 {48.3}
40		617 {63.0}	807 {82.3}
60		982 {100.1}	1283 {130.9}

Selection and Design p.109
Open-ended Belts p.55

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG376P8M	47	**BG832P8M**	104	**BG1216P8M**	152	BG2032P8M	254
BG392P8M	49	**BG840P8M**	105	**BG1248P8M**	156	**BG2064P8M**	258
BG440P8M	55	**BG848P8M**	106	**BG1264P8M**	158	BG2104P8M	263
BG480P8M	60	**BG856P8M**	107	**BG1280P8M**	160	**BG2160P8M**	270
BG512P8M	64	**BG880P8M**	110	**BG1304P8M**	163	**BG2240P8M**	280
BG520P8M	65	**BG896P8M**	112	**BG1320P8M**	165	**BG2256P8M**	282
BG536P8M	67	**BG912P8M**	114	**BG1344P8M**	168	BG2304P8M	288
BG560P8M	70	**BG920P8M**	115	**BG1352P8M**	169	**BG2320P8M**	290
BG576P8M	72	**BG936P8M**	117	**BG1360P8M**	170	**BG2400P8M**	300
BG584P8M	73	**BG944P8M**	118	**BG1400P8M**	175	**BG2456P8M**	307
BG600P8M	75	**BG960P8M**	120	**BG1424P8M**	178	**BG2496P8M**	312
BG616P8M	77	**BG984P8M**	123	**BG1440P8M**	180	**BG2600P8M**	325
BG632P8M	79	**BG1000P8M**	125	**BG1480P8M**	185	BG2712P8M	339
BG640P8M	80	**BG1032P8M**	129	**BG1520P8M**	190	BG2768P8M	346
BG656P8M	82	**BG1040P8M**	130	**BG1576P8M**	197	**BG2800P8M**	350
BG680P8M	85	**BG1056P8M**	132	**BG1600P8M**	200	BG2896P8M	362
BG688P8M	86	**BG1080P8M**	135	**BG1640P8M**	205	**BG2944P8M**	368
BG712P8M	89	**BG1096P8M**	137	**BG1680P8M**	210	**BG3048P8M**	381
BG720P8M	90	**BG1120P8M**	140	**BG1760P8M**	220	**BG3200P8M**	400
BG752P8M	94	**BG1128P8M**	141	**BG1800P8M**	225	**BG3304P8M**	413
BG760P8M	95	**BG1152P8M**	144	**BG1816P8M**	227	BG3440P8M	430
BG776P8M	97	**BG1160P8M**	145	**BG1888P8M**	236	**BG3600P8M**	450
BG800P8M	100	**BG1192P8M**	149	**BG1904P8M**	238	**BG3920P8M**	490
BG816P8M	102	**BG1200P8M**	150	**BG1960P8M**	245	**BG4400P8M**	550
BG824P8M	103	**BG1208P8M**	151	**BG2000P8M**	250		

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
20	50.93	55	**32**	81.49	86	**50**	127.32	135
22	56.02	62	**34**	86.58	91	**60**	152.79	158
24	61.12	66	**36**	91.67	97	**64**	162.97	170
26	66.21	73	**40**	101.86	107	**72**	183.35	190
28	71.30	79	**44**	112.05	119			
30	76.39	82	**48**	122.23	127			

Belt Sprocket types and Dimensions p.60

P8M-RC (Pitch : 8.00 mm)

■ Standard Transmission Capacity (Belt width 15 mm)

kW

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	0.041	0.042	0.043	0.045	0.047	0.049	0.052	0.055	0.058	0.063	0.067	0.076	0.087	0.094	0.119	0.133	0.149	0.182
40	0.079	0.081	0.083	0.087	0.091	0.095	0.100	0.106	0.113	0.121	0.128	0.147	0.168	0.180	0.225	0.251	0.283	0.349
60	0.118	0.121	0.125	0.129	0.135	0.142	0.149	0.158	0.168	0.180	0.190	0.218	0.249	0.268	0.329	0.368	0.417	0.515
100	0.194	0.199	0.207	0.214	0.225	0.236	0.248	0.262	0.279	0.297	0.316	0.361	0.410	0.443	0.536	0.599	0.680	0.845
200	0.385	0.395	0.410	0.427	0.449	0.470	0.494	0.523	0.557	0.592	0.628	0.719	0.814	0.877	1.05	1.18	1.34	1.67
300	0.577	0.591	0.613	0.639	0.672	0.703	0.739	0.783	0.831	0.886	0.937	1.07	1.22	1.30	1.56	1.76	1.98	2.46
400	0.767	0.787	0.815	0.850	0.894	0.936	0.984	1.04	1.10	1.17	1.25	1.42	1.61	1.71	2.06	2.32	2.60	3.23
500	0.956	0.982	1.02	1.06	1.12	1.17	1.23	1.30	1.37	1.46	1.56	1.76	1.99	2.12	2.54	2.86	3.20	3.98
600	1.14	1.18	1.22	1.27	1.34	1.40	1.47	1.56	1.64	1.74	1.85	2.09	2.37	2.52	3.02	3.39	3.79	4.70
700	1.33	1.37	1.42	1.48	1.56	1.63	1.71	1.81	1.92	2.03	2.15	2.42	2.74	2.91	3.47	3.89	4.36	5.39
800	1.51	1.56	1.62	1.69	1.77	1.85	1.95	2.06	2.18	2.31	2.45	2.75	3.10	3.30	3.92	4.40	4.90	6.05
900	1.70	1.75	1.82	1.89	1.99	2.08	2.19	2.31	2.44	2.59	2.74	3.07	3.46	3.67	4.36	4.87	5.44	6.68
1000	1.89	1.95	2.02	2.10	2.20	2.31	2.43	2.55	2.70	2.85	3.03	3.39	3.81	4.04	4.78	5.33	5.94	7.29
1100	2.07	2.14	2.21	2.31	2.42	2.53	2.67	2.80	2.96	3.13	3.31	3.71	4.15	4.40	5.19	5.79	6.44	7.88
1200	2.26	2.33	2.41	2.51	2.63	2.76	2.89	3.05	3.21	3.39	3.58	4.01	4.48	4.74	5.59	6.22	6.91	8.44
1300	2.43	2.51	2.61	2.72	2.84	2.98	3.12	3.29	3.46	3.66	3.86	4.31	4.81	5.08	5.98	6.64	7.36	8.97
1400	2.61	2.70	2.80	2.91	3.05	3.20	3.35	3.52	3.71	3.91	4.13	4.60	5.13	5.42	6.36	7.05	7.80	9.48
1450	2.70	2.79	2.89	3.02	3.15	3.31	3.46	3.65	3.83	4.04	4.26	4.75	5.28	5.57	6.53	7.24	8.01	9.72
1500	2.78	2.88	2.99	3.11	3.25	3.41	3.57	3.76	3.96	4.17	4.39	4.88	5.44	5.74	6.72	7.44	8.22	9.95
1600	2.96	3.06	3.17	3.31	3.45	3.62	3.80	3.99	4.19	4.42	4.66	5.17	5.74	6.05	7.07	7.81	8.62	10.4
1750	3.20	3.32	3.45	3.60	3.75	3.92	4.12	4.33	4.54	4.78	5.03	5.57	6.18	6.50	7.56	8.34	9.18	11.0
1800	3.29	3.40	3.53	3.69	3.85	4.03	4.22	4.43	4.66	4.90	5.15	5.71	6.31	6.64	7.71	8.51	9.36	11.2
2000	3.58	3.72	3.87	4.04	4.23	4.42	4.64	4.86	5.10	5.36	5.63	6.21	6.86	7.20	8.32	9.15	10.0	12.0
2400	4.12	4.29	4.49	4.70	4.92	5.15	5.40	5.65	5.92	6.21	6.51	7.15	7.84	8.20	9.37	10.2	11.1	13.1
2800	4.53	4.76	4.99	5.24	5.50	5.78	6.05	6.34	6.64	6.95	7.27	7.94	8.65	9.03	10.2	11.0	11.9	13.8
3000	4.69	4.94	5.20	5.48	5.76	6.05	6.34	6.64	6.95	7.28	7.60	8.29	9.00	9.37	10.5	11.4	12.2	14.0
3600		5.25	5.60	5.96	6.30	6.65	7.00	7.35	7.70	8.05	8.41	9.11	9.80	10.2	11.2	11.9	12.6	14.2
4000			5.65	6.07	6.48	6.87	7.26	7.64	8.02	8.38	8.74	9.44	10.1	10.4	11.4	11.9	12.8	14.3
5000				6.20	6.63	7.00	7.33	7.74	8.06	8.47	8.85	9.51	10.2	10.6	11.6			
6000				6.37	6.72	7.10	7.46	7.89	8.19	8.56	8.96	9.70	10.4	10.8				

■ Standard Transmission Torque (Belt width 15 mm)

N・m

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	19.7	20.1	20.6	21.4	22.4	23.6	24.6	26.0	27.9	29.8	31.8	36.2	41.6	44.8	56.7	63.4	71.2	87.1
40	18.9	19.4	19.9	20.6	21.6	22.7	23.8	25.2	26.9	28.8	30.5	35.0	40.0	43.0	53.7	59.9	67.6	83.3
60	18.7	19.2	19.8	20.5	21.5	22.6	23.7	25.1	26.7	28.6	30.3	34.8	39.6	42.6	52.3	58.5	66.3	81.9
100	18.6	19.0	19.7	20.4	21.5	22.5	23.6	25.0	26.7	28.3	30.1	34.5	39.1	42.3	51.1	57.2	64.9	80.6
200	18.4	18.8	19.6	20.4	21.4	22.4	23.6	25.0	26.6	28.3	30.0	34.3	38.8	41.8	50.2	56.5	63.9	79.6
300	18.4	18.8	19.5	20.3	21.4	22.4	23.5	24.9	26.4	28.2	29.8	34.1	38.7	41.3	49.7	56.0	62.9	78.3
400	18.3	18.8	19.4	20.3	21.3	22.3	23.5	24.8	26.3	28.0	29.7	33.9	38.3	40.8	49.2	55.3	61.9	77.2
500	18.2	18.7	19.4	20.2	21.3	22.3	23.4	24.8	26.2	27.9	29.7	33.6	37.9	40.5	48.6	54.7	61.2	75.9
600	18.2	18.7	19.4	20.2	21.2	22.2	23.4	24.7	26.2	27.7	29.5	33.3	37.7	40.1	48.0	53.9	60.3	74.7
700	18.1	18.7	19.3	20.2	21.2	22.2	23.4	24.6	26.1	27.7	29.4	33.0	37.4	39.7	47.3	53.1	59.4	73.5
800	18.1	18.7	19.3	20.1	21.2	22.1	23.3	24.6	26.0	27.5	29.3	32.8	37.0	39.3	46.8	52.5	58.5	72.1
900	18.0	18.6	19.3	20.1	21.1	22.1	23.3	24.5	25.9	27.4	29.1	32.6	36.7	38.9	46.2	51.7	57.7	70.9
1000	18.0	18.6	19.2	20.1	21.0	22.0	23.2	24.4	25.8	27.2	28.9	32.3	36.4	38.5	45.6	50.9	56.7	69.6
1100	18.0	18.5	19.2	20.0	21.0	22.0	23.1	24.3	25.6	27.1	28.7	32.2	36.0	38.2	45.0	50.2	55.9	68.4
1200	17.9	18.5	19.2	20.0	20.9	22.0	23.0	24.2	25.6	27.0	28.5	31.9	35.6	37.7	44.5	49.5	55.0	67.1
1300	17.8	18.5	19.1	20.0	20.9	21.9	22.9	24.1	25.4	26.9	28.4	31.6	35.3	37.3	43.9	48.8	54.1	65.9
1400	17.8	18.4	19.1	19.9	20.8	21.8	22.9	24.0	25.3	26.7	28.2	31.4	35.0	36.9	43.3	48.0	53.2	64.6
1450	17.7	18.4	19.1	19.9	20.7	21.8	22.8	24.0	25.2	26.6	28.1	31.3	34.8	36.7	43.0	47.7	52.7	64.0
1500	17.7	18.4	19.0	19.8	20.7	21.7	22.7	23.9	25.2	26.5	27.9	31.1	34.6	36.5	42.7	47.3	52.3	63.3
1600	17.6	18.3	18.9	19.7	20.6	21.6	22.7	23.8	25.0	26.4	27.8	30.8	34.2	36.1	42.2	46.6	51.4	62.1
1750	17.5	18.1	18.8	19.6	20.5	21.4	22.5	23.6	24.8	26.1	27.4	30.4	33.7	35.5	41.2	45.5	50.1	60.2
1800	17.4	18.0	18.7	19.5	20.4	21.4	22.4	23.5	24.7	26.0	27.3	30.3	33.5	35.2	40.9	45.1	49.6	59.6
2000	17.1	17.7	18.5	19.3	20.2	21.1	22.1	23.2	24.3	25.6	26.9	29.6	32.7	34.4	39.7	43.7	47.8	57.1
2400	16.4	17.1	17.9	18.7	19.5	20.5	21.5	22.5	23.6	24.7	25.9	28.4	31.2	32.6	37.3	40.7	44.2	52.1
2800	15.5	16.2	17.0	17.9	18.7	19.7	20.6	21.6	22.6	23.7	24.8	27.1	29.5	30.8	34.8	37.6	40.7	47.1
3000	14.9	15.7	16.6	17.4	18.3	19.2	20.2	21.1	22.1	23.2	24.2	26.4	28.6	29.8	33.5	36.1	38.8	44.6
3600		13.9	14.9	15.8	16.7	17.6	18.6	19.5	20.4	21.4	22.3	24.1	26.0	26.9	29.7	31.5	33.4	37.7
4000			13.5	14.5	15.5	16.4	17.3	18.2	19.1	20.0	20.9	22.5	24.1	24.9	27.1	28.4	30.5	34.2
5000				11.8	12.7	13.4	14.0	14.8	15.4	16.2	16.9	18.1	19.6	20.2	22.2			
6000				10.1	10.7	11.3	11.9	12.6	13.0	13.6	14.3	15.4	16.6	17.1				

■ Belt Width Factor

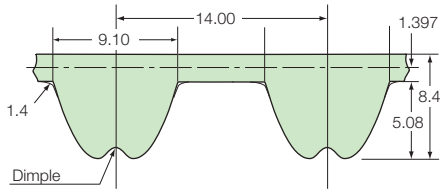
Belt width mm	15	20	25	40	60
Width factor	1.00	1.38	1.79	3.05	4.85

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

Selection and Design p.109

P14M-RC (Pitch : 14.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example

BG 1400 P 14M 60 – RC

- BG: Rubber belt
- 1400: Belt length mm
- P: Series
- 14M: Pitch
- 60: Belt width mm
- RC: Type

■ Material

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric (Low debris specification)

Cord : Fiberglass

■ Specifications and Features

Belt Sprocket : PX Belt Sprockets P14M

Operating temperature range : -15 to 80°C

Electro conductivity : No

Oil resistant, Water resistant : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
40	8.6	990 {101.0}	1310 {133.6}
60		1564 {159.5}	2070 {211.1}
80		2178 {222.1}	2882 {293.9}
100		2812 {286.7}	3720 {379.3}
120		3455 {352.3}	4572 {466.2}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG1120P14M	80	**BG1960P14M**	140	**BG3850P14M**	275
BG1176P14M	84	**BG2002P14M**	143	**BG4004P14M**	286
BG1190P14M	85	**BG2100P14M**	150	BG4382P14M	313
BG1246P14M	89	BG2198P14M	157	**BG4508P14M**	322
BG1344P14M	96	**BG2240P14M**	160		
BG1400P14M	100	**BG2310P14M**	165		
BG1456P14M	104	**BG2380P14M**	170		
BG1540P14M	110	**BG2450P14M**	175		
BG1610P14M	115	**BG2590P14M**	185		
BG1652P14M	118	**BG2660P14M**	190		
BG1680P14M	120	**BG2800P14M**	200		
BG1736P14M	124	BG2940P14M	210		
BG1778P14M	127	**BG3150P14M**	225		
BG1806P14M	129	**BG3360P14M**	240		
BG1890P14M	135	**BG3500P14M**	250		

• Bold Font : Stock item Fine Font : Made to order item.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
28	124.78	136	**38**	169.34	181	**50**	222.82	234
30	133.69	145	**40**	178.25	190	**56**	249.55	–
32	142.60	154	**42**	187.17	198	**60**	267.38	–
34	151.52	163	**44**	196.08	207	**64**	285.21	–
36	160.43	171	**48**	213.90	225	**72**	320.86	–

Belt Sprocket types and Dimensions p.61

P14M-RC (Pitch : 14.00 mm)

■ Standard Transmission Capacity (Belt width 40 mm)

kW

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	0.377	0.466	0.557	0.633	0.700	0.777	0.834	0.902	0.952	0.995	1.03	1.07	1.19	1.26	1.32	1.44
40	0.745	0.918	1.10	1.25	1.38	1.54	1.65	1.77	1.85	1.94	2.02	2.11	2.33	2.48	2.60	2.85
60	1.10	1.36	1.64	1.84	2.03	2.28	2.44	2.60	2.73	2.86	3.00	3.12	3.44	3.66	3.85	4.23
100	1.82	2.22	2.70	3.03	3.33	3.64	3.92	4.19	4.40	4.60	4.84	5.03	5.59	5.96	6.26	6.91
200	3.60	4.34	5.02	5.63	6.18	6.75	7.34	7.85	8.30	8.74	9.18	9.59	10.7	11.4	11.9	13.1
400	6.73	8.21	9.57	10.8	11.9	13.0	13.9	14.8	15.7	16.4	17.2	17.9	19.6	20.8	21.8	23.6
500	8.31	10.1	11.7	13.2	14.6	15.8	17.0	18.0	19.0	19.9	20.7	21.5	23.6	24.9	26.0	28.0
600	9.90	12.0	13.9	15.6	17.2	18.6	19.9	21.1	22.2	23.2	24.1	25.0	27.3	28.6	29.8	31.9
800	13.0	15.7	18.0	20.1	22.1	23.8	25.3	26.7	27.9	29.0	30.1	31.1	33.5	35.0	36.2	38.3
1000	16.0	19.2	22.0	24.4	26.6	28.5	30.2	31.6	33.0	34.2	35.2	36.2	38.6	40.0	41.2	43.2
1200	18.9	22.5	25.6	28.3	30.7	32.6	34.4	35.9	37.3	38.5	39.6	40.5	42.8	43.9	44.9	46.7
1400	21.6	25.6	29.0	32.0	34.4	36.6	38.4	39.8	41.2	42.2	43.3	44.1	46.1	47.0	47.7	49.0
1450	22.4	26.5	29.9	32.8	35.3	37.4	39.3	40.7	42.0	43.1	44.0	44.8	46.6	47.6	48.3	49.6
1500	23.0	27.3	30.8	33.6	36.2	38.3	40.2	41.6	42.9	43.8	44.9	45.6	47.3	48.1	48.9	49.8
1600	24.4	28.8	32.3	35.4	37.9	40.0	41.8	43.2	44.4	45.4	46.2	47.1	48.4	49.1	49.6	50.5
1750	26.3	30.9	34.6	37.8	40.4	42.4	44.1	45.4	46.5	47.4	48.1	48.7	50.0	50.4	50.6	51.5
1800	26.9	31.6	35.4	38.5	40.9	43.0	44.8	46.1	47.2	48.0	48.8	49.3	50.3	50.7	50.9	51.8
2000	29.4	34.3	38.3	41.5	43.8	45.9	47.4	48.5	49.5	50.2	50.8	51.0	51.4	51.6	52.1	53.1
2400	34.3	39.4	43.4	46.5	48.8	50.5	51.8	52.6	53.1	53.6	53.8	54.1	54.6	54.9	55.4	55.6
3000	40.6	46.0	50.2	52.7	54.3	55.6	56.2	56.8	57.1	57.1	57.5	57.8	58.1			
3600	46.5	51.8	55.2	57.1	58.3	58.7	59.4	59.8	60.6							
4000	49.9	55.0	58.0	59.3	60.1	60.5	60.9									

■ Standard Transmission Torque (Belt width 40 mm)

N・m

Number of teeth of small belt sprocket	28	30	32	34	36	38	40	42	44	46	48	50	56	60	64	72
Pitch circle dia. mm	124.78	133.69	142.60	151.52	160.43	169.34	178.25	187.17	196.08	204.99	213.90	222.82	249.55	267.38	285.21	320.86
Small belt sprocket rpm																
20	180	222	266	302	334	371	398	430	455	475	494	512	567	601	631	689
40	178	219	263	298	329	367	394	422	442	463	483	503	556	591	620	680
60	176	216	261	293	323	363	389	414	434	456	477	496	547	583	613	674
100	174	212	258	289	318	347	374	400	420	439	462	480	533	569	598	660
200	172	207	239	269	295	322	350	375	396	417	438	458	509	542	570	625
400	161	196	228	258	284	309	332	354	374	392	410	426	469	497	521	564
500	159	193	224	253	279	302	324	344	363	380	396	411	451	476	497	535
600	158	191	221	248	274	296	316	335	352	369	384	398	434	456	475	508
800	156	187	215	240	264	284	302	318	333	346	360	371	400	417	432	458
1000	153	183	210	233	254	272	288	302	315	326	336	345	369	382	393	412
1200	150	179	204	225	244	260	274	286	297	306	315	322	340	349	358	372
1400	147	175	198	218	234	249	262	272	281	288	295	301	314	320	325	334
1450	147	175	197	216	232	246	259	268	277	284	290	295	307	313	318	326
1500	146	174	196	214	230	243	256	265	273	279	286	290	301	306	311	317
1600	145	172	193	211	226	238	249	258	265	271	276	281	289	293	296	301
1750	143	169	189	206	220	231	240	247	254	259	263	266	273	275	276	281
1800	142	168	188	204	217	228	237	244	250	255	259	262	267	269	270	275
2000	140	164	183	198	209	219	226	231	236	239	242	243	245	246	248	254
2400	136	157	173	185	194	201	206	209	211	213	214	215	217	218	220	221
3000	129	146	160	168	173	177	179	181	182	182	183	184	185			
3600	123	137	146	152	155	156	158	159	161							
4000	119	131	138	141	143	144	145									

■ Belt Width Factor

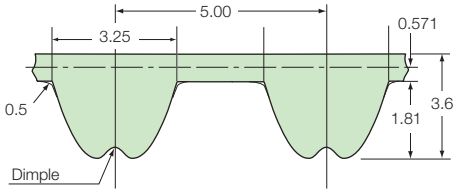
Belt width mm	40	60	80	100	120
Width factor	1.00	1.58	2.20	2.84	3.49

Selection and Design p.109

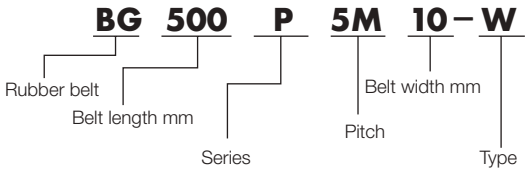
Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

P5M-W (Pitch : 5.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example



■ Material

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric

Cord : Aramid fiber

■ Specifications and Features

Water resistant : Yes In wet environment but cannot be soaked.

Belt Sprocket : PX Belt Sprockets P5M

Oil resistant : No

Operating temperature range : -15 to 80°C

Electro conductivity : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
10	3.5	108 {11.0}	147 {15.0}
15		171 {17.4}	232 {23.7}
25		307 {31.3}	418 {42.6}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG215P5M	43	BG440P5M	88	BG625P5M	125	BG800P5M	160	BG1125P5M	225	BG1595P5M	319
BG225P5M	45	BG450P5M	90	BG635P5M	127	BG810P5M	162	BG1145P5M	229	BG1615P5M	323
BG255P5M	51	BG470P5M	94	BG640P5M	128	BG830P5M	166	BG1150P5M	230	BG1675P5M	335
BG260P5M	52	BG475P5M	95	BG645P5M	129	BG835P5M	167	BG1160P5M	232	BG1700P5M	340
BG275P5M	55	BG490P5M	98	BG650P5M	130	BG850P5M	170	BG1180P5M	236	BG1800P5M	360
BG295P5M	59	BG500P5M	100	BG670P5M	134	BG865P5M	173	BG1195P5M	239	BG1870P5M	374
BG300P5M	60	BG515P5M	103	BG675P5M	135	BG880P5M	176	BG1220P5M	244	BG1910P5M	382
BG310P5M	62	BG520P5M	104	BG680P5M	136	BG900P5M	180	BG1225P5M	245	BG1960P5M	392
BG320P5M	64	BG525P5M	105	BG690P5M	138	BG905P5M	181	BG1250P5M	250	BG2000P5M	400
BG325P5M	65	BG530P5M	106	BG695P5M	139	BG920P5M	184	BG1260P5M	252	BG2080P5M	416
BG340P5M	68	BG545P5M	109	BG700P5M	140	BG940P5M	188	BG1270P5M	254	BG2160P5M	432
BG345P5M	69	BG550P5M	110	BG710P5M	142	BG950P5M	190	BG1295P5M	259	BG2200P5M	440
BG350P5M	70	BG555P5M	111	BG725P5M	145	BG965P5M	193	BG1350P5M	270	BG2455P5M	491
BG370P5M	74	BG560P5M	112	BG730P5M	146	BG985P5M	197	BG1390P5M	278	BG2645P5M	529
BG375P5M	75	BG565P5M	113	BG740P5M	148	BG1000P5M	200	BG1420P5M	284	BG2725P5M	545
BG390P5M	78	BG570P5M	114	BG750P5M	150	BG1025P5M	205	BG1490P5M	298	BG2795P5M	559
BG400P5M	80	BG575P5M	115	BG765P5M	153	BG1050P5M	210	BG1495P5M	299	BG3050P5M	610
BG420P5M	84	BG595P5M	119	BG770P5M	154	BG1060P5M	212	BG1530P5M	306	BG3150P5M	630
BG425P5M	85	BG600P5M	120	BG775P5M	155	BG1080P5M	216	BG1550P5M	310	BG3930P5M	786
BG430P5M	86	BG605P5M	121	BG780P5M	156	BG1090P5M	218	BG1585P5M	317		

• All items are made to order products.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
12	19.10	23	**22**	35.01	43	**30**	47.75	55	**48**	76.39	82
14	22.28	28	**24**	38.20	44	**32**	50.93	55	**50**	79.58	86
16	25.46	31	**25**	39.79	45	**36**	57.30	64	**60**	95.49	103
18	28.65	36	**26**	41.38	47	**40**	63.66	67	**72**	114.59	120
20	31.83	36	**28**	44.56	52	**44**	70.03	74			

Belt Sprocket types and Dimensions p.59

P5M-W (Pitch : 5.00 mm)

■ Standard Transmission Capacity (Belt width 10 mm)

W

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. mm	19.10	22.28	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	79.58	95.49	114.59
Small belt sprocket rpm																			
20	6.71	8.27	9.93	11.6	13.4	15.3	17.2	18.2	19.2	21.2	23.4	25.5	30.1	35.0	40.2	45.6	48.4	63.5	83.9
40	12.4	15.3	18.3	21.4	24.7	28.1	31.6	33.4	35.3	39.0	42.9	46.9	55.3	64.2	73.6	83.5	88.6	116	153
60	17.7	21.8	26.0	30.5	35.2	40.0	45.0	47.5	50.2	55.4	61.0	66.7	78.6	91.2	104	119	126	165	217
100	27.5	33.8	40.6	47.5	54.7	62.1	69.9	73.8	77.8	86.1	94.7	103	122	141	162	183	194	254	335
200	49.8	61.4	73.2	85.7	98.6	112	126	133	140	155	170	186	219	253	290	328	348	454	597
400	89.0	110	131	153	176	200	224	237	249	276	302	330	388	449	512	579	615	800	1050
500	107	132	157	184	211	239	269	284	299	331	363	395	465	537	614	693	735	956	1250
600	124	153	183	213	245	278	312	329	347	383	420	458	538	622	710	802	849	1100	1450
800	157	193	230	270	309	350	393	414	436	482	528	576	676	780	890	1010	1070	1380	1810
1000	189	231	275	322	370	419	469	494	520	575	630	686	805	928	1060	1190	1260	1640	2140
1200	217	267	318	371	425	483	540	570	600	662	726	791	926	1070	1220	1370	1450	1880	2450
1400	245	301	359	419	480	544	609	642	676	746	817	891	1040	1200	1370	1540	1630	2110	2750
1450		310	368	430	494	560	625	660	695	766	839	913	1070	1230	1400	1580	1680	2170	2820
1500		319	379	441	507	573	643	677	713	786	862	937	1100	1270	1440	1620	1720	2220	2890
1600		334	398	465	533	603	676	712	748	825	903	984	1150	1330	1510	1700	1800	2330	3030
1750		359	427	497	570	645	722	761	803	884	968	1050	1230	1420	1610	1820	1930	2490	3230
1800			437	509	584	659	738	778	819	903	989	1070	1260	1450	1650	1860	1960	2540	3300
2000			473	551	631	714	800	842	888	976	1070	1160	1360	1570	1780	2010	2120	2740	3550
2400			543	631	724	818	914	966	1010	1120	1220	1330	1550	1790	2030	2280	2420	3110	4030
3000				747	852	966	1080	1140	1200	1310	1440	1560	1820	2090	2380	2670	2820	3630	4690
3600				851	973	1100	1230	1290	1360	1490	1630	1770	2070	2370	2690	3020	3200	4100	5280
4000					1050	1180	1320	1390	1460	1610	1760	1910	2220	2550	2890	3240	3420	4390	5650
5000					1230	1380	1540	1620	1700	1870	2040	2220	2580	2950	3340	3740	3950	5040	6470
6000						1560	1740	1830	1920	2110	2300	2500	2900	3310	3740	4190	4420	5620	7190
8000							2090	2190	2300	2520	2750	2980	3450	3930	4440	4950	5210	6590	
10000								2510	2630	2880	3130	3380	3910	4450	4990	5570			
12000								2780	2910	3180	3450	3730	4300						
14000									3150	3450	3730	4030							

■ Standard Transmission Torque (Belt width 10 mm)

N・m

Number of teeth of small belt sprocket	12	14	16	18	20	22	24	25	26	28	30	32	36	40	44	48	50	60	72
Pitch circle dia. mm	19.10	22.28	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	79.58	95.49	114.59
Small belt sprocket rpm																			
20	3.20	3.95	4.74	5.56	6.41	7.28	8.20	8.68	9.16	10.1	11.1	12.2	14.4	16.7	19.2	21.8	23.1	30.3	40.1
40	2.95	3.65	4.37	5.11	5.89	6.70	7.54	7.97	8.41	9.31	10.2	11.2	13.2	15.3	17.6	19.9	21.1	27.7	36.6
60	2.81	3.47	4.14	4.86	5.59	6.36	7.15	7.56	7.98	8.82	9.71	10.6	12.5	14.5	16.6	18.9	20.0	26.2	34.5
100	2.63	3.23	3.88	4.54	5.22	5.93	6.67	7.04	7.43	8.22	9.04	9.88	11.6	13.5	15.4	17.5	18.6	24.3	32.0
200	2.38	2.93	3.49	4.09	4.70	5.35	6.01	6.35	6.70	7.39	8.12	8.87	10.4	12.1	13.8	15.7	16.6	21.7	28.5
400	2.12	2.62	3.12	3.65	4.20	4.76	5.35	5.65	5.95	6.58	7.21	7.87	9.25	10.7	12.2	13.8	14.7	19.1	25.0
500	2.04	2.52	3.00	3.50	4.03	4.57	5.14	5.42	5.71	6.31	6.92	7.55	8.87	10.2	11.7	13.2	14.0	18.3	23.9
600	1.98	2.44	2.90	3.40	3.90	4.42	4.96	5.23	5.52	6.10	6.68	7.28	8.56	9.89	11.3	12.8	13.5	17.6	23.0
800	1.87	2.30	2.75	3.22	3.68	4.18	4.69	4.94	5.21	5.75	6.30	6.88	8.06	9.31	10.6	12.0	12.7	16.5	21.6
1000	1.80	2.21	2.63	3.07	3.53	4.00	4.48	4.72	4.97	5.48	6.01	6.55	7.68	8.86	10.1	11.4	12.1	15.7	20.4
1200	1.73	2.12	2.53	2.95	3.38	3.84	4.30	4.54	4.78	5.27	5.77	6.29	7.37	8.50	9.68	10.9	11.6	15.0	19.5
1400	1.67	2.05	2.45	2.86	3.28	3.71	4.15	4.38	4.61	5.09	5.57	6.07	7.10	8.18	9.32	10.5	11.1	14.4	18.7
1450		2.04	2.42	2.83	3.25	3.68	4.12	4.34	4.57	5.04	5.52	6.01	7.04	8.11	9.24	10.4	11.0	14.3	18.6
1500		2.03	2.41	2.81	3.23	3.65	4.09	4.31	4.54	5.00	5.48	5.96	6.98	8.05	9.17	10.3	10.9	14.1	18.4
1600		1.99	2.38	2.77	3.18	3.60	4.03	4.25	4.46	4.92	5.39	5.87	6.88	7.92	9.01	10.2	10.8	13.9	18.1
1750		1.96	2.33	2.71	3.11	3.52	3.94	4.15	4.38	4.82	5.28	5.75	6.72	7.74	8.81	9.92	10.5	13.6	17.6
1800			2.32	2.70	3.10	3.49	3.91	4.13	4.34	4.79	5.24	5.70	6.67	7.68	8.75	9.85	10.4	13.5	17.5
2000			2.26	2.63	3.01	3.41	3.82	4.02	4.24	4.66	5.10	5.56	6.49	7.48	8.50	9.58	10.1	13.1	17.0
2400			2.16	2.51	2.88	3.25	3.64	3.84	4.03	4.44	4.86	5.29	6.18	7.10	8.08	9.08	9.61	12.4	16.0
3000				2.38	2.71	3.07	3.43	3.61	3.80	4.18	4.57	4.97	5.80	6.66	7.56	8.50	8.98	11.5	14.9
3600				2.26	2.58	2.92	3.25	3.43	3.60	3.96	4.33	4.70	5.48	6.29	7.14	8.02	8.47	10.9	14.0
4000					2.51	2.82	3.16	3.32	3.49	3.84	4.19	4.55	5.30	6.08	6.89	7.74	8.17	10.5	13.5
5000					2.34	2.64	2.94	3.10	3.25	3.58	3.90	4.24	4.92	5.63	6.37	7.14	7.54	9.62	12.4
6000						2.48	2.77	2.92	3.06	3.36	3.66	3.97	4.61	5.27	5.95	6.66	7.03	8.94	11.4
8000							2.50	2.62	2.75	3.01	3.28	3.55	4.12	4.69	5.29	5.90	6.22	7.86	
10000								2.40	2.51	2.75	2.99	3.23	3.73	4.25	4.76	5.32			
12000								2.21	2.32	2.53	2.75	2.96	3.42						
14000									2.15	2.35	2.54	2.75							

■ Belt Width Factor

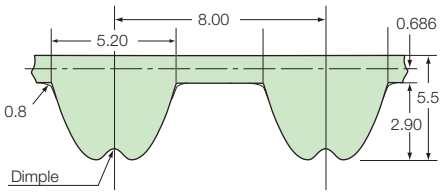
Belt width mm	10	15	25
Width factor	1.00	1.58	2.84

Selection and Design p.109

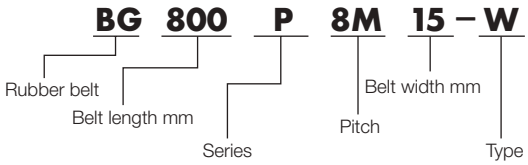
Notes:
Avoid using, as it may shorten the belt life.

P8M-W (Pitch : 8.00 mm)

■ Belt Tooth Profile and Dimensions



■ Model Numbering Example



■ Material

Rubber : Chloroprene rubber

Tooth Fabric : Nylon fabric

Cord : Aramid fiber

■ Specifications and Features

Water resistant : Yes In wet environment but cannot be soaked.

Belt Sprocket : PX Belt Sprockets P8M

Oil resistant : No

Operating temperature range : -15 to 80°C

Electro conductivity : No

■ Belt Width / Unit Mass / Installation Tension

Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
15	5.6	225 {22.9}	294 {30.0}
25		403 {41.1}	526 {53.6}
40		686 {70.0}	897 {91.5}
60		1091 {111.3}	1426 {145.4}

Selection and Design p.109

■ Belt Length

Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth	Belt length	No. of teeth
BG376P8M	47	BG760P8M	95	BG1056P8M	132	BG1424P8M	178	BG2256P8M	282
BG392P8M	49	BG776P8M	97	BG1080P8M	135	BG1440P8M	180	BG2304P8M	288
BG440P8M	55	BG800P8M	100	BG1096P8M	137	BG1480P8M	185	BG2320P8M	290
BG480P8M	60	BG816P8M	102	BG1120P8M	140	BG1520P8M	190	BG2400P8M	300
BG512P8M	64	BG824P8M	103	BG1128P8M	141	BG1576P8M	197	BG2456P8M	307
BG520P8M	65	BG832P8M	104	BG1152P8M	144	BG1600P8M	200	BG2496P8M	312
BG536P8M	67	BG840P8M	105	BG1160P8M	145	BG1640P8M	205	BG2600P8M	325
BG560P8M	70	BG848P8M	106	BG1192P8M	149	BG1680P8M	210	BG2712P8M	339
BG576P8M	72	BG856P8M	107	BG1200P8M	150	BG1760P8M	220	BG2768P8M	346
BG584P8M	73	BG880P8M	110	BG1208P8M	151	BG1800P8M	225	BG2800P8M	350
BG600P8M	75	BG896P8M	112	BG1216P8M	152	BG1816P8M	227	BG2896P8M	362
BG616P8M	77	BG912P8M	114	BG1248P8M	156	BG1888P8M	236	BG2944P8M	368
BG632P8M	79	BG920P8M	115	BG1264P8M	158	BG1904P8M	238	BG3048P8M	381
BG640P8M	80	BG936P8M	117	BG1280P8M	160	BG1960P8M	245	BG3200P8M	400
BG656P8M	82	BG944P8M	118	BG1304P8M	163	BG2000P8M	250	BG3304P8M	413
BG680P8M	85	BG960P8M	120	BG1320P8M	165	BG2032P8M	254	BG3440P8M	430
BG688P8M	86	BG984P8M	123	BG1344P8M	168	BG2064P8M	258	BG3600P8M	450
BG712P8M	89	BG1000P8M	125	BG1352P8M	169	BG2104P8M	263	BG3920P8M	490
BG720P8M	90	BG1032P8M	129	BG1360P8M	170	BG2160P8M	270	BG4400P8M	550
BG752P8M	94	BG1040P8M	130	BG1400P8M	175	BG2240P8M	280		

• All items are made to order products.

■ Belt-Sprocket Dimensions(Reference)

mm

No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.	No. of teeth	Pitch circle dia.	Flange outer dia.
20	50.93	55	**32**	81.49	86	**50**	127.32	135
22	56.02	62	**34**	86.58	91	**60**	152.79	158
24	61.12	66	**36**	91.67	97	**64**	162.97	170
26	66.21	73	**40**	101.86	107	**72**	183.35	190
28	71.30	79	**44**	112.05	119			
30	76.39	82	**48**	122.23	127			

Belt Sprocket types and Dimensions p.60

P8M-W (Pitch : 8.00 mm)

■ Standard Transmission Capacity (Belt width 15 mm)

kW

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	0.050	0.051	0.052	0.054	0.056	0.059	0.062	0.065	0.070	0.075	0.080	0.091	0.105	0.113	0.143	0.159	0.179	0.219
40	0.095	0.097	0.100	0.104	0.109	0.114	0.120	0.127	0.135	0.145	0.154	0.176	0.201	0.216	0.270	0.301	0.340	0.419
60	0.141	0.145	0.149	0.155	0.163	0.171	0.179	0.189	0.202	0.216	0.229	0.262	0.299	0.321	0.394	0.441	0.500	0.618
100	0.233	0.239	0.248	0.257	0.270	0.283	0.297	0.315	0.335	0.356	0.379	0.434	0.492	0.531	0.643	0.719	0.816	1.01
200	0.463	0.474	0.492	0.512	0.538	0.564	0.593	0.628	0.669	0.711	0.754	0.863	0.976	1.05	1.26	1.42	1.61	2.00
300	0.693	0.709	0.736	0.767	0.806	0.844	0.887	0.939	0.997	1.06	1.12	1.29	1.46	1.56	1.87	2.11	2.37	2.95
400	0.920	0.944	0.978	1.02	1.07	1.12	1.18	1.25	1.32	1.41	1.50	1.70	1.93	2.05	2.47	2.78	3.11	3.88
500	1.15	1.18	1.22	1.27	1.34	1.40	1.47	1.56	1.65	1.76	1.87	2.11	2.39	2.55	3.05	3.44	3.84	4.77
600	1.37	1.41	1.46	1.52	1.60	1.68	1.77	1.87	1.97	2.09	2.23	2.51	2.84	3.03	3.62	4.07	4.55	5.64
700	1.60	1.64	1.70	1.77	1.87	1.95	2.05	2.17	2.30	2.43	2.58	2.90	3.29	3.50	4.17	4.67	5.23	6.46
800	1.82	1.88	1.94	2.02	2.13	2.23	2.35	2.47	2.62	2.77	2.94	3.30	3.72	3.96	4.71	5.28	5.88	7.26
900	2.04	2.11	2.18	2.27	2.39	2.50	2.63	2.77	2.93	3.10	3.29	3.69	4.15	4.40	5.23	5.85	6.53	8.02
1000	2.26	2.34	2.42	2.52	2.65	2.77	2.92	3.07	3.24	3.42	3.63	4.07	4.57	4.85	5.74	6.40	7.13	8.75
1100	2.48	2.56	2.66	2.77	2.90	3.04	3.20	3.36	3.55	3.75	3.97	4.45	4.98	5.28	6.23	6.95	7.72	9.46
1200	2.71	2.79	2.89	3.02	3.15	3.31	3.47	3.66	3.86	4.07	4.30	4.81	5.38	5.69	6.71	7.46	8.29	10.1
1300	2.92	3.02	3.13	3.26	3.41	3.58	3.75	3.94	4.15	4.39	4.63	5.17	5.77	6.09	7.18	7.97	8.84	10.8
1400	3.13	3.24	3.36	3.50	3.66	3.83	4.02	4.23	4.45	4.70	4.96	5.53	6.15	6.50	7.63	8.46	9.36	11.4
1450	3.24	3.35	3.47	3.62	3.78	3.97	4.16	4.37	4.60	4.84	5.12	5.70	6.34	6.69	7.84	8.69	9.62	11.7
1500	3.34	3.46	3.58	3.73	3.90	4.09	4.29	4.51	4.75	5.01	5.27	5.86	6.53	6.88	8.06	8.92	9.86	11.9
1600	3.55	3.67	3.81	3.97	4.14	4.34	4.56	4.78	5.03	5.30	5.59	6.21	6.88	7.26	8.48	9.37	10.3	12.5
1750	3.84	3.98	4.14	4.31	4.50	4.71	4.94	5.19	5.45	5.74	6.03	6.69	7.42	7.80	9.07	10.0	11.0	13.2
1800	3.95	4.08	4.24	4.42	4.62	4.83	5.07	5.31	5.59	5.88	6.18	6.85	7.58	7.97	9.26	10.2	11.2	13.5
2000	4.30	4.46	4.65	4.85	5.07	5.30	5.56	5.83	6.12	6.43	6.76	7.45	8.23	8.64	9.99	11.0	12.0	14.3
2400	4.94	5.15	5.39	5.64	5.90	6.18	6.48	6.78	7.11	7.45	7.81	8.58	9.41	9.84	11.2	12.3	13.3	15.7
2800	5.44	5.71	5.99	6.29	6.60	6.93	7.27	7.61	7.97	8.34	8.73	9.53	10.4	10.8	12.2	13.2	14.3	16.6
3000	5.63	5.93	6.24	6.58	6.91	7.26	7.60	7.97	8.34	8.74	9.12	9.95	10.8	11.2	12.6	13.6	14.6	16.8
3600		6.30	6.72	7.15	7.57	7.99	8.40	8.82	9.24	9.66	10.1	10.9	11.8	12.2	13.4	14.3	15.1	17.1
4000			6.79	7.28	7.77	8.25	8.71	9.17	9.63	10.1	10.5	11.3	12.1	12.5	13.6	14.3	15.3	17.2
5000				7.44	7.96	8.40	8.80	9.28	9.67	10.2	10.6	11.4	12.3	12.7	14.0			
6000				7.64	8.06	8.52	8.95	9.47	9.83	10.3	10.8	11.6	12.5	12.9				

■ Standard Transmission Torque (Belt width 15 mm)

N・m

Number of teeth of small belt sprocket	20	22	24	26	28	30	32	34	36	38	40	44	48	50	56	60	64	72
Pitch circle dia. mm	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	142.60	152.79	162.97	183.35
Small belt sprocket rpm																		
20	23.6	24.1	24.7	25.6	26.9	28.3	29.5	31.2	33.5	35.8	38.1	43.5	49.9	53.7	68.0	76.1	85.5	105
40	22.6	23.2	23.9	24.8	26.0	27.3	28.6	30.2	32.3	34.5	36.7	42.0	48.0	51.6	64.5	71.8	81.2	100
60	22.5	23.1	23.8	24.6	25.9	27.2	28.5	30.1	32.1	34.3	36.4	41.7	47.5	51.1	62.8	70.2	79.6	98.3
100	22.3	22.8	23.7	24.5	25.8	27.0	28.4	30.0	32.0	34.0	36.2	41.4	47.0	50.7	61.4	68.6	77.9	96.7
200	22.1	22.6	23.5	24.4	25.7	26.9	28.3	30.0	31.9	33.9	36.0	41.2	46.6	50.2	60.3	67.8	76.7	95.6
300	22.0	22.6	23.4	24.4	25.7	26.8	28.2	29.9	31.7	33.8	35.8	41.0	46.4	49.6	59.6	67.3	75.5	94.0
400	22.0	22.5	23.3	24.3	25.6	26.8	28.2	29.8	31.6	33.6	35.7	40.7	46.0	49.0	59.0	66.4	74.3	92.6
500	21.9	22.5	23.3	24.3	25.6	26.7	28.1	29.7	31.5	33.5	35.6	40.3	45.5	48.6	58.3	65.6	73.4	91.1
600	21.8	22.4	23.2	24.2	25.5	26.7	28.1	29.7	31.4	33.3	35.4	39.9	45.2	48.1	57.6	64.7	72.4	89.7
700	21.8	22.4	23.2	24.2	25.4	26.6	28.0	29.6	31.3	33.2	35.2	39.6	44.8	47.7	56.8	63.7	71.3	88.2
800	21.7	22.4	23.2	24.2	25.4	26.5	28.0	29.5	31.3	33.0	35.1	39.4	44.4	47.2	56.2	63.0	70.2	86.6
900	21.6	22.3	23.1	24.1	25.3	26.5	27.9	29.4	31.1	32.9	34.9	39.1	44.1	46.7	55.4	62.0	69.2	85.1
1000	21.6	22.3	23.1	24.1	25.3	26.4	27.8	29.3	30.9	32.7	34.7	38.8	43.7	46.3	54.7	61.1	68.1	83.5
1100	21.6	22.2	23.0	24.0	25.2	26.4	27.8	29.2	30.8	32.6	34.4	38.6	43.2	45.8	54.1	60.3	67	82.0
1200	21.5	22.2	23.0	24.0	25.1	26.4	27.6	29.1	30.7	32.3	34.2	38.2	42.8	45.2	53.4	59.4	66	80.5
1300	21.4	22.1	23.0	24.0	25.0	26.3	27.5	28.9	30.5	32.2	34.0	37.9	42.4	44.7	52.7	58.5	64.9	79.0
1400	21.3	22.1	22.9	23.8	25.0	26.1	27.4	28.8	30.3	32.0	33.8	37.7	42.0	44.3	52.0	57.6	63.8	77.5
1450	21.3	22.1	22.9	23.8	24.9	26.1	27.4	28.8	30.3	31.9	33.7	37.5	41.7	44.0	51.6	57.2	63.3	76.8
1500	21.2	22.0	22.8	23.8	24.8	26.0	27.3	28.7	30.2	31.9	33.5	37.3	41.5	43.8	51.3	56.8	62.8	76.0
1600	21.2	21.9	22.7	23.7	24.7	25.9	27.2	28.5	30.0	31.6	33.3	37.0	41.1	43.3	50.6	55.9	61.7	74.5
1750	21.0	21.7	22.6	23.5	24.6	25.7	27.0	28.3	29.7	31.3	32.9	36.5	40.5	42.5	49.5	54.6	60.1	72.3
1800	20.9	21.6	22.5	23.5	24.5	25.6	26.9	28.2	29.6	31.2	32.8	36.3	40.2	42.3	49.1	54.1	59.6	71.5
2000	20.5	21.3	22.2	23.1	24.2	25.3	26.5	27.8	29.2	30.7	32.3	35.6	39.3	41.2	47.7	52.4	57.4	68.5
2400	19.7	20.5	21.4	22.4	23.5	24.6	25.8	27.0	28.3	29.6	31.1	34.1	37.4	39.1	44.7	48.8	53.1	62.5
2800	18.5	19.5	20.4	21.4	22.5	23.6	24.8	26.0	27.2	28.4	29.8	32.5	35.4	37.0	41.8	45.2	48.8	56.5
3000	17.9	18.9	19.9	20.9	22.0	23.1	24.2	25.4	26.5	27.8	29.0	31.7	34.4	35.8	40.2	43.4	46.6	53.5
3600		16.7	17.8	18.9	20.1	21.2	22.3	23.4	24.5	25.6	26.7	29.0	31.2	32.3	35.6	37.8	40.1	45.3
4000			16.2	17.4	18.6	19.7	20.8	21.9	23.0	24.0	25.0	27.0	28.9	29.9	32.5	34.1	36.6	41.1
5000				14.2	15.2	16.0	16.8	17.7	18.5	19.4	20.3	21.8	23.5	24.2	26.7			
6000				12.2	12.8	13.5	14.2	15.1	15.6	16.3	17.1	18.5	19.9	20.6				

■ Belt Width Factor

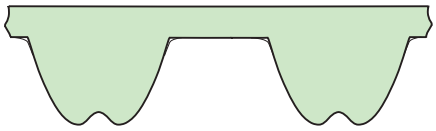
Belt width mm	15	25	40	60
Width factor	1.00	1.79	3.05	4.85

Selection and Design p.109

Notes:
Avoid using, as it may shorten the belt life.
The belt sprocket speed increases to 33m/s or over in this area. It may cause the belt sprocket vibrate. Please adjust it in the good balance.

PX / Ultra PX Belts

■ Belt Tooth Profile



*Tooth profile, dimensions, materials, specifications and characteristics are

HC Type Pages 19-24
HA Type Pages 27-30
HY Type Pages 35-38
PX Belt RC Type Pages 41-48

■ Model Numbering Example

<By Standard Length (Unit)>

BG—UP 8M 25 — HC — T50M

Rubber belt / Series / Pitch / Belt width mm / Type / Standard length m

Type (Ultra PX belt and PX belt RC Type only)
HC:HC type, HA:Oil resistant / Water resistant type
HY:HY type, RC:RC type

<Meter Length*>

BG - UP 5M 25 — HC — H + 12.3M

Rubber belt / Series / Pitch / Belt width mm / Type / Belt length m (To one decimal place)

Type (Ultra PX belt and PX belt RC Type only)
HC:HC type, HA:Oil resistant / Water resistant type
HY:HY type, RC:RC type

<By No. of Teeth>

BG —UP 5M 25 — HY — 1234Y

Rubber belt / Series / Pitch / Belt width mm / Type / No. of teeth (Integer)

Type (Ultra PX belt and PX belt RC Type only)
HC:HC type, HA:Oil resistant / Water resistant type
HY:HY type, RC:RC type

*If the belt length (m) has more than two decimal places, please select by tooth number.

Series	Type	Pitch	Belt width mm	Standard length m	Meter	No. of teeth
Ultra PX Belt	HC Type	UP3M	6	● 110	●	○
			10	● 65	●	○
			15	● 45	●	○
		UP5M	10	● 130	●	○
			15	● 85	●	○
			20	● 65	●	○
			25	● 50	●	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	–	–
		UP8M	15	● 85	●	○
			20	● 65	●	○
			25	● 50	●	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	○	○
			45	○ 30	–	–
			50	○ 27	–	–
			55	○ 24	–	–
			60	○ 22	○	○
	HA Type	UP5M	10	○ 130	–	–
			15	● 85	●	○
			20	○ 65	–	–
			25	● 50	●	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	–	–
		UP8M	15	● 85	●	○
			20	○ 65	–	–
			25	● 50	●	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	–	–
			45	○ 30	–	–
			50	○ 27	–	–
			55	○ 24	–	–
			60	○ 22	–	–

Series	Type	Pitch	Belt width mm	Standard length m	Meter	No. of teeth
Ultra PX Belt	HY Type	UP5M	10	○ 130	–	–
			15	○ 85	○	○
			20	○ 65	–	–
			25	○ 50	○	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	–	–
		UP8M	15	○ 85	○	○
			20	○ 65	–	–
			25	○ 50	○	○
			30	○ 42	–	–
			35	○ 35	–	–
			40	○ 32	○	○
			45	○ 30	–	–
			50	○ 27	–	–
			55	○ 24	–	–
			60	○ 22	○	○
PX Belt	RC Type	P2M	4	● 105	●	○
			6	● 70	●	○
			10	● 45	●	○
		P3M	6	● 110	●	○
			10	● 65	●	○
			15	● 45	●	○
		P5M	10	● 130	●	○
			15	● 85	●	○
			20	● 65	●	○
			25	● 50	●	○
		P8M	15	● 85	●	○
			20	● 65	●	○
			25	● 50	●	○

●: Stock item

○: MTO item

By Meter Length : We will ship lengths equal to or greater than your ordered length.

*For cutting length, please refer to the table on the left "Meter Length Cutting Tolerance".

By number of teeth: We will measure and ship the ordered number of teeth.

■ Meter Length Cutting Tolerance

Belt length	Tolerance mm
2.0m or below	+60 0
Over 2.0m, 10.0m or below	+240 0
Over 10.0m, 50.0m or below	+1000 0
Over 50.0m	—

PX / Ultra PX Belts

■ Belt Width / Unit Mass / Installation Tension

• Ultra PX Belts HC Type

Type (Pitch)	Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
UP3M-HC	6	2.2	29 {3.0}	40 {4.1}
	10		52 {5.3}	72 {7.3}
	15		82 {8.4}	114 {11.6}
UP5M-HC	10	4.1	108 {11.0}	147 {15.0}
	15		171 {17.4}	232 {23.7}
	20		238 {24.3}	323 {32.9}
	25		307 {31.3}	418 {42.6}
	30		377 {38.4}	513 {52.3}
	35		450 {45.9}	613 {62.5}
	40		524 {53.4}	713 {72.7}
UP8M-HC	15	5.1	177 {18.0}	235 {24.0}
	20		244 {24.9}	324 {33.0}
	25		317 {32.3}	421 {42.9}
	30		389 {39.7}	517 {52.7}
	35		464 {47.3}	616 {62.8}
	40		540 {55.1}	717 {73.1}
	45		618 {63.0}	820 {83.6}
	50		697 {71.1}	926 {94.4}
	55		777 {79.2}	1032 {105.2}
	60		859 {87.6}	1140 {116.2}

• Ultra PX Belts HY Type

Type (Pitch)	Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
UP5M-HY	10	3.5	125 {12.7}	165 {16.8}
	15		194 {19.8}	256 {26.1}
	20		265 {27.0}	350 {35.7}
	25		338 {34.5}	446 {45.5}
	30		413 {42.1}	545 {55.6}
	35		488 {49.8}	644 {65.7}
	40		564 {57.5}	744 {75.9}
UP8M-HY	15	4.5	255 {26.0}	290 {29.6}
	20		347 {35.4}	394 {40.2}
	25		444 {45.3}	505 {51.5}
	30		541 {55.2}	615 {62.7}
	35		640 {65.3}	728 {74.2}
	40		740 {75.5}	841 {85.8}
	45		842 {85.9}	957 {97.6}
	50		944 {96.3}	1073 {109.4}
	55		1048 {106.9}	1192 {121.6}
	60		1150 {117.3}	1308 {133.4}

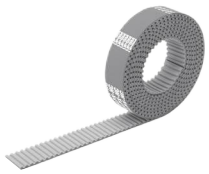
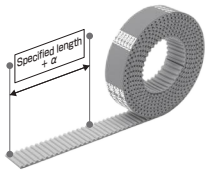
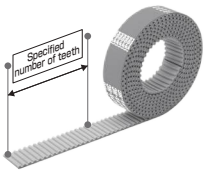
• Ultra PX Belts HA Type

Type (Pitch)	Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
UP5M-HA	10	3.4	108 {11.0}	147 {15.0}
	15		171 {17.4}	232 {23.7}
	20		238 {24.3}	323 {32.9}
	25		307 {31.3}	418 {42.6}
	30		377 {38.4}	513 {52.3}
	35		450 {45.9}	613 {62.5}
	40		524 {53.4}	713 {72.7}
UP8M-HA	15	4.7	177 {18.0}	235 {24.0}
	20		244 {24.9}	324 {33.0}
	25		317 {32.3}	421 {42.9}
	30		389 {39.7}	517 {52.7}
	35		464 {47.3}	616 {62.8}
	40		540 {55.1}	717 {73.1}
	45		618 {63.0}	820 {83.6}
	50		697 {71.1}	926 {94.4}
	55		777 {79.2}	1032 {105.2}
	60		859 {87.6}	1140 {116.2}

• PX Belts RC Type

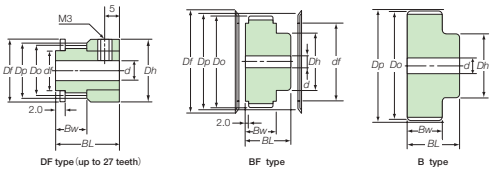
Type (Pitch)	Belt width mm	Unit mass g/(mm width ×m length)	Installation tension N {kgf} Recommended	Installation tension N {kgf} Max.
P2M-RC	4	1.4	5.9 {0.6}	7.8 {0.8}
	6		9.4 {1.0}	12 {1.2}
	10		17 {1.7}	22 {2.2}
P3M-RC	6	2.0	20 {2.0}	26 {2.7}
	10		36 {3.7}	47 {4.8}
	15		57 {5.8}	74 {7.5}
P5M-RC	10	3.8	97 {9.9}	132 {13.5}
	15		154 {15.7}	209 {21.3}
	20		214 {21.8}	291 {29.6}
	25		276 {28.2}	376 {38.4}
P8M-RC	15	5.1	203 {20.6}	265 {27.0}
	20		280 {28.5}	365 {37.3}
	25		363 {37.0}	473 {48.3}

■ Open-Ended Belts offer three length ordering options

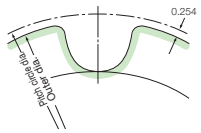
Standard Length (Unit)		Ideal for cost reduction through bulk ordering
Meter Length		Specify the required length in 0.1 m units; It will be shipped with a length equal to or longer than the ordered length Note: Please refer to the "Meter length tolerence" table on the left for allowable cutting tolerances.
Number of Teeth		The belt is cut to the specified number of teeth, allowing immediate installation.

P2M (Pitch : 2.00 mm)

■ Design Type



■ Tooth Profile



■ Materials

Aluminum

■ Model Numbering Example

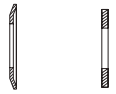
PT 20 P 2M 6 DF–A

- PT: Belt Sprocket
- 20: No.of groove
- P: PX
- 2M: Series
- 6: Belt width mm
- DF: Design type
- A: Material A:Aluminum

■ Flange Model Numbering Example

PT A S 10 170 100

- PT: Belt Sprocket
- A: Material A:Aluminum
- S: Type
- 10: Thickness *t* ex:1.0 mm
- 170: Outer dia. *Df* ex:17.0 mm
- 100: Inner dia. *df* ex:10.0 mm



■ Types and Dimensions

mm

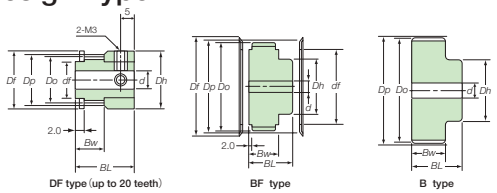
No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Bore size *d* Min.	Bore size *d* Max.	Flange model No.	Type and Materials P2M4 Aluminum	P2M6 Aluminum	P2M10 Aluminum
14	8.91	8.40	12	3	4	PTAS1012055	DF	**DF**	DF
15	9.55	9.04	13		5	PTAS1013070	DF	**DF**	DF
16	10.19	9.68					DF	**DF**	DF
17	10.82	10.31	15		6	PTAS1015080	DF	DF	DF
18	11.46	10.95					DF	**DF**	DF
19	12.10	11.59					DF	DF	DF
20	12.73	12.22	17	4	6.35	PTAS10170100	DF	**DF**	DF
21	13.37	12.86					DF	DF	DF
22	14.01	13.50					DF	**DF**	DF
23	14.64	14.13					DF	DF	DF
24	15.28	14.77					DF	**DF**	DF
25	15.92	15.41	21			PTAS10210133	DF	**DF**	DF
26	16.55	16.04					DF	**DF**	DF
27	17.19	16.68					DF	DF	DF
28	17.83	17.32	12	5		PTAS10250150	BF	**BF**	BF
29	18.46	17.95			8	PTAF10260150	BF	BF	BF
30	19.10	18.59					BF	**BF**	BF
31	19.74	19.23					BF	BF	BF
32	20.37	19.86				PTAF10280160	BF	**BF**	BF
33	21.01	20.50					BF	BF	BF
34	21.65	21.14	14		9		BF	**BF**	BF
35	22.28	21.77				PTAF10290180	BF	BF	BF
36	22.92	22.41					BF	**BF**	BF
37	23.55	23.05	16			PTAF10310190	BF	BF	BF
38	24.19	23.68					BF	BF	BF
39	24.83	24.32			10		BF	BF	BF
40	25.46	24.96				PTAF10320212	BF	**BF**	BF
41	26.10	25.59	18				BF	BF	BF
42	26.74	26.23			12		BF	**BF**	BF
43	27.37	26.87				PTAF10340230	BF	BF	BF
44	28.01	27.50					BF	**BF**	BF
45	28.65	28.14					BF	BF	BF
46	29.28	28.78				PTAF10360224	BF	BF	BF
47	29.92	29.41					BF	BF	BF
48	30.56	30.05					BF	**BF**	BF
49	31.19	30.69				PTAF10390265	BF	BF	BF
50	31.83	31.32	22		15		BF	**BF**	BF
56	35.65	35.14	24		16	PTAF10430300	BF	BF	BF
60	38.20	37.69	28		19	PTAF10450335	BF	**BF**	BF
64	40.74	40.24		10		–	B	B	B
72	45.84	45.33	34	12	22	–	B	B	B
80	50.93	50.42				–	B	B	B
84	53.48	52.97	36		24	–	B	B	B
90	57.30	56.79				–	B	B	B
96	61.12	60.61	38	15	25	–	B	B	B
112	71.30	70.79				–	B	B	B

No. of teeth	P2M4 *Bw*	P2M4 *BL*	P2M6 *Bw*	P2M6 *BL*	P2M10 *Bw*	P2M10 *BL*
14 to 27	7	17	9.5	20	14	24
28 to 112	9	17	11.5	20	16	24

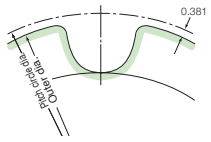
- Bold Font : Stock item Fine Font : Made to order item.
- Shaft bore of stock item are finished in accordance with the minimum diameter of the shaft to be used (Shaft bore tolerance 0 to 28 μm).
- Stocked BF type flanges are not assembled.
- The belt sprokets for the P2M6 can also be used for the P2M4 belts.
- Belt sprockets of any type, dimension, number of teeth, or material other than the ones shown in the above table can also be fabricated (made to order item).

P3M (Pitch : 3.00 mm)

■ Design Type



■ Tooth Profile



■ Materials

Aluminum

Carbon steel

■ Model Numbering Example

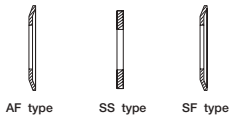
PT 20 P 3M 10 DF–A

- PT: Belt Sprocket
- 20: No.of groove
- P: Series
- 3M: Pitch
- 10: Belt width mm
- DF: Design type
- A: Material (A:Aluminum, blank:Carbon steel)

■ Flange Model Numbering Example

PT S F 10 280 160

- PT: Belt Sprocket
- S: Material (S:Cold rolled steel, A:Aluminum)
- F: Type
- 10: Thickness *t* ex:1.0 mm
- 280: Outer dia. *Df* ex:28.0 mm
- 160: Inner dia. *df* ex:16.0 mm



■ Types and Dimensions

mm

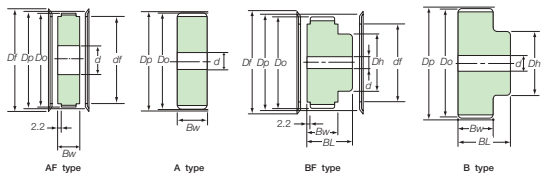
No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Bore size *d* Min.	Bore size *d* Max.	Flange model No.	Type and Materials P3M6 Carbon steel	P3M6 Aluminum	P3M10 Carbon steel	P3M10 Aluminum	P3M15 Carbon steel	P3M15 Aluminum
10	9.55	8.79	12	4	4	PTSS1012055	DF		**DF**		**DF**	
11	10.50	9.74	13		5	PTSS1013070	DF		DF		DF	
12	11.46	10.70	15			PTSS1015080	DF		**DF**		**DF**	
13	12.41	11.65					DF		DF		DF	
14	13.37	12.61	17		6.35	PTSS10170100	DF		**DF**		**DF**	
15	14.32	13.56					DF		**DF**		**DF**	
16	15.28	14.52					DF		**DF**		**DF**	
17	16.23	15.47	21			PTSS10210133	DF		DF		DF	
18	17.19	16.43					DF		**DF**		**DF**	
19	18.14	17.38	25			PT*S10250150	DF		DF		DF	
20	19.10	18.34					DF		**DF**		**DF**	
21	20.05	19.29	12				BF	BF	BF	BF	BF	BF
22	21.01	20.25		5	8	PT*F10280160	BF	BF	**BF**	**BF**	**BF**	**BF**
23	21.96	21.20	14				BF	BF	BF	BF	BF	BF
24	22.92	22.16			9	PT*F10290180	BF	BF	**BF**	**BF**	**BF**	**BF**
25	23.87	23.11				PT*F10310190	BF	BF	**BF**	**BF**	**BF**	**BF**
26	24.83	24.07	16		10		BF	BF	**BF**	**BF**	**BF**	**BF**
27	25.78	25.02				PT*F10320212	BF	BF	BF	BF	BF	BF
28	26.74	25.98	18	6	12		BF	BF	**BF**	**BF**	**BF**	**BF**
29	27.69	26.93				PT*F10340230	BF	BF	BF	BF	BF	BF
30	28.65	27.89					BF	BF	**BF**	**BF**	**BF**	**BF**
31	29.60	28.84				PT*F10360224	BF	BF	BF	BF	BF	BF
32	30.56	29.80					BF	BF	**BF**	**BF**	**BF**	**BF**
33	31.51	30.75	22		15	PTAF10390265		BF		BF		BF
34	32.47	31.71						BF		BF		BF
35	33.42	32.66	24		16			BF		BF		BF
36	34.38	33.62				PTAF10430300		BF		**BF**		**BF**
37	35.33	34.57						BF		BF		BF
38	36.29	35.53	26					BF		BF		BF
39	37.24	36.48			18	PTAF10440310		BF		BF		BF
40	38.20	37.44				PTAF10450335		BF		**BF**		**BF**
41	39.15	38.39	28	10				BF		BF		BF
42	40.11	39.35				PTAF10470355		BF		BF		BF
43	41.06	40.30	32		20	PTAF10480375		BF		BF		BF
44	42.02	41.25						BF		BF		BF
45	42.97	42.21	35		22	PTAF10520375		BF		BF		BF
46	43.93	43.16						BF		BF		BF
47	44.88	44.12	36		24	PTAF10520400		BF		BF		BF
48	45.84	45.07						BF		**BF**		**BF**
49	46.79	46.03		12		PTAF10550425		BF		BF		BF
50	47.75	46.98						BF		**BF**		**BF**
56	53.48	52.71	40		26	PTAF10610490		BF		BF		BF
60	57.30	56.53	46		31	PTAF10650530		BF		**BF**		**BF**
64	61.12	60.35	48		32	PTAF10670560		BF		BF		BF
72	68.75	67.99	50			PTAF10740630		BF		BF		BF
80	76.39	75.63	54	15	36	PTAF10820670		BF		BF		BF
84	80.21	79.45	60		40	PTAF10860710		BF		BF		BF
90	85.94	85.18	65		42	–		B		B		B
96	91.67	90.91				–		B		B		B
112	106.95	106.19	70	20	46	–		B		B		B

No. of teeth	P3M6 *Bw*	P3M6 *BL*	P3M10 *Bw*	P3M10 *BL*	P3M15 *Bw*	P3M15 *BL*
10 to 20	9.5	19	13	23	19	29
21 to 112	11.5	19	16	23	21	29

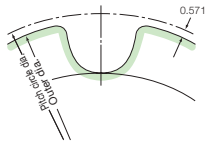
- Bold Font : Stock item Fine Font : Made to order item.
- Shaft bore of stock item are finished in accordance with the minimum diameter of the shaft to be used (Shaft bore tolerance H9)
- Stocked BF type flanges are not assembled.
- The belt sprokets for the P3M10 can also be used for the P3M6 belts.
- Belt sprockets of any type, dimension, number of teeth, or material other than the ones shown in the above table can also be fabricated (made to order item).
- *Flange material should be selected to match the material of belt sprocket : A: Aluminum, S: Cold rolled steel

P5M (Pitch : 5.00 mm)

■ Design Type



■ Tooth Profile



■ Materials

Aluminum

Carbon steel

■ Model Numbering Example

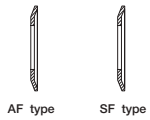
PT 20 P 5M 25 BF−A

- PT: Belt Sprocket
- 20: No.of groove
- P: Series
- 5M: Pitch
- 25: Belt width mm
- BF: Design type
- A: Material (A:Aluminum, blank:Carbon steel)

■ Flange Model Numbering Example

PT S F 10 430 300

- PT: Belt Sprocket
- S: Material (S:Cold rolled steel, A:Aluminum)
- F: Type
- 10: Thickness *t* ex:1.0 mm
- 430: Outer dia. *Df* ex:43.0 mm
- 300: Inner dia. *df* ex:30.0 mm



■ Types and Dimensions

mm

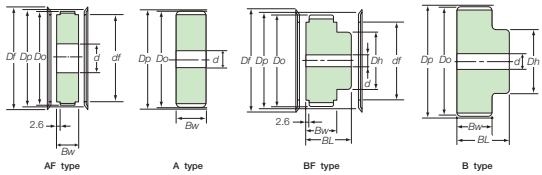
No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Bore size *d* Min.	Bore size *d* Max.	Flange model No.	Type and Materials P5M10 Carbon steel	P5M10 Aluminum	P5M15 Carbon steel	P5M15 Aluminum	P5M25 Carbon steel	P5M25 Aluminum
12	19.10	17.96	11	5	6	PT*F10230130	**AF·BF**	AF·BF	**AF·BF**	AF·BF	**AF·BF**	AF·BF
13	20.69	19.55	12			PT*F10260150	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
14	22.28	21.14	13			PT*F10280160	**AF·BF**	AF·BF	**AF·BF**	AF·BF	**AF·BF**	AF·BF
15	23.87	22.73	15		8	PT*F10290180	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
16	25.46	24.32	17		10	PT*F10310190	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
17	27.06	25.91	18	6		PT*F10320212	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
18	28.65	27.51	19		12	PT*F10360224	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
19	30.24	29.10					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
20	31.83	30.69					**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
21	33.42	32.28	23		14	PT*F10390265	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
22	35.01	33.87	25	8	17	PT*F10430300	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
23	36.61	35.46					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
24	38.20	37.06				PT*F10440310	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
25	39.79	38.65	30	10	20	PT*F10450335	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
26	41.38	40.24				PT*F10470355	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
27	42.97	41.83				PT*F10480375	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
28	44.56	43.42	32		22	PT*F10520375	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
29	46.15	45.01	33			PT*F10520400	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
30	47.75	46.60	35	12	24	PT*F10550425	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
31	49.34	48.20	36				AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
32	50.93	49.79	38		26		**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
33	52.52	51.38				PT*F10580450	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
34	54.11	52.97	42		28	PT*F10610490	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
35	55.70	54.56					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
36	57.30	56.15	44		30	PT*F10640500	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
37	58.89	57.75	45			PT*F10650530	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
38	60.48	59.34					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
39	62.07	60.93	46			PT*F10670560	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
40	63.66	62.52	48		32		**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
41	65.25	64.11				PTSF10710600	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
42	66.85	65.70	52	15	35		AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
43	68.44	67.29				PT*F10740630	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
44	70.03	68.89	56		38		**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
45	71.62	70.48					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
46	73.21	72.07	58			PT*F10820670	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
47	74.80	73.66					AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
48	76.39	75.25					**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
49	77.99	76.84	64		42	PT*F10860710	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
50	79.58	78.44					**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
56	89.13	87.98	70		46	–	A·B	A·B	A·B	A·B	A·B	A·B
60	95.49	94.35	80		54	PT*F101030850	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**	**AF·BF**
64	101.86	100.72	84	18	56	–	A·B	A·B	A·B	A·B	A·B	A·B
72	114.59	113.45	90		60	PT*F1012001060	**AF·BF**	AF·BF	**AF·BF**	AF·BF	**AF·BF**	AF·BF
80	127.32	126.18	98		65	–	A·B	A·B	A·B	A·B	A·B	A·B
84	133.69	132.55	100			–	A·B	A·B	A·B	A·B	A·B	A·B
90	143.24	142.10	106	20	70	–	A·B	A·B	A·B	A·B	A·B	A·B
96	152.79	151.65	110		75	–	A·B	A·B	A·B	A·B	A·B	A·B
112	178.25	177.11	120		80	–	A·B	A·B	A·B	A·B	A·B	A·B

No. of teeth	P5M10 *Bw*	P5M10 *BL*	P5M15 *Bw*	P5M15 *BL*	P5M25 *Bw*	P5M25 *BL*
12 to112	16	28	21	33	32	44

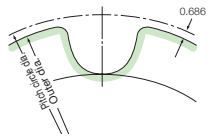
- Bold Font : Stock item Fine Font : Made to order item.
- Pilot bore diameter of the stock items are“ minimum bore -1mm.”
- Stocked flanges are not assembled.
- Belt sprockets of any type, dimension, number of teeth, or material other than the ones shown in the above table can also be fabricated (made to order item).
- * : Flange material should be selected to match the material of belt sprocket : A: Aluminum, S: Cold rolled steel

P8M (Pitch : 8.00 mm)

■ Design Type



■ Tooth Profile



■ Materials

Aluminum

Carbon steel

■ Model Numbering Example

PT 20 P 8M 25 BF–A

- PT: Belt Sprocket
- 20: No.of groove
- P: Series
- 8M: Pitch
- 25: Belt width mm
- BF: Design type
- A: Material A:Aluminum blank:Carbon steel

■ Flange Model Numbering Example

PT S F 16 550 425

- PT: Belt Sprocket
- S: Material S:Cold rolled steel A:Aluminum
- F: Type
- 16: Thickness *t* ex:1.6 mm
- 550: Outer dia. *Df* ex:55.0 mm
- 425: Inner dia. *df* ex:42.5 mm

■ Types and Dimensions

mm

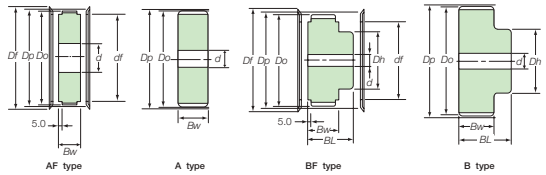
No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Bore size *d* Min.	Bore size *d* Max.	Flange model No.	Type and Materials P8M15 Carbon steel	P8M15 Aluminum	P8M25 Carbon steel	P8M25 Aluminum	P8M40 Carbon steel	P8M40 Aluminum	P8M60 Carbon steel	P8M60 Aluminum
20	50.93	49.56	36	12	22	PT*F16550425	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
21	53.48	52.10	39		23	PTSF16610450	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
22	56.02	54.65	41		25	PT*F16620450	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
23	58.57	57.20	43		26	PT*F16660500	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
24	61.12	59.74	46		28		**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
25	63.66	62.29	49		28	PTSF16700560	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
26	66.21	64.84	51	16	30	PT*F16730560	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
27	68.75	67.38	53		32		AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
28	71.30	69.93	55		34	PT*F16790630	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
29	73.85	72.48	58				AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
30	76.39	75.02	60		36	PT*F16820670	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
31	78.94	77.57	63			PT*F16860710	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
32	81.49	80.12	65		38		**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
33	84.03	82.66	67		40		AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
34	86.58	85.21	70		42	PT*F16910770	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
35	89.13	87.75	73			PT*F16940770	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
36	91.67	90.30	75		45	PT*F16970800	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
37	94.22	92.85	77		46	PTSF161030850	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
38	96.77	95.39	80		48		AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
39	99.31	97.94	83			PT*F161070900	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
40	101.86	100.49	85	20	50		**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
41	104.41	103.03	86			PTSF161110950	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
42	106.95	105.58	87				AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
43	109.50	108.13	88		52	PTSF1611501020	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
44	112.05	110.67	90		56	PT*F1611901020	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
45	114.59	113.22	92		58		AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
46	117.14	115.77	95		60	–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
47	119.68	118.31	98			PT*F1612701120	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
48	122.23	120.86	100		62		**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
49	124.78	123.41				PTSF1613501150	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B	AF·BF	A·B
50	127.32	125.95				PT*F1613501200	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
56	142.60	141.23				–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
60	152.79	151.42				PT*F1615801400	**AF·BF**	**AF·BF**	**AF·BF**	**AF**·BF	**AF·BF**	**AF**·BF	**AF·BF**	AF·BF
64	162.97	161.60	110			PTSF1616701520	**AF·BF**	A·B	**AF·BF**	A·B	**AF·BF**	A·B	**AF·BF**	A·B
72	183.35	181.97				PTSF1619001700	**AF·BF**	A·B	**AF·BF**	A·B	**AF·BF**	A·B	**AF·BF**	A·B
80	203.72	202.35	120	30	65	–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
84	213.90	212.53	126		70	–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
90	229.18	227.81	130		75	–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
96	244.46	243.09	144	35	80	–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
112	285.21	283.83				–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B
120	305.58	304.21				–	A·B	A·B	A·B	A·B	A·B	A·B	A·B	A·B

No. of teeth	P8M15 *Bw*	P8M15 *BL*	P8M25 *Bw*	P8M25 *BL*	P8M40 *Bw*	P8M40 *BL*	P8M60 *Bw*	P8M60 *BL*
20 to 41	22	39	33	50	49	66	70	87
42 to 120	22	44	33	55	49	71	70	92

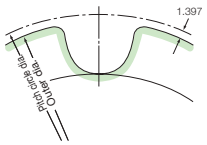
- Bold Font : Stock item Fine Font : Made to order item.
- Pilot bore diameter of the stock items are“ minimum bore -1mm.”
- Stocked flanges are not assembled.
- Belt sprockets of any type, dimension, number of teeth, or material other than the ones shown in the above table can also be fabricated (made to order item).
- * : Flange material should be selected to match the material of belt sprocket : A: Alminum, S: Cold rolled steel
- The flanges for aluminum belt sprockets with 37, 38, 41, or 42 teeth are aluminum lathe-turned type.

P14M (Pitch : 14.00 mm)

■ Design Type



■ Tooth Profile



■ Materials

Carbon steel

■ Model Numbering Example

PT 30 P 14M 40 BF

- PT: Belt Sprocket
- 30: No.of groove
- P: Series
- 14M: Pitch
- 40: Belt width mm
- BF: Design type

■ Flange Model Numbering Example

Lathe turning

■ Types and Dimensions

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Bore size *d* Min.	Bore size *d* Max.	Flange dia. Outer *Df*	Flange dia. Inner *df*	P14M40 Carbon steel	P14M60 Carbon steel	P14M80 Carbon steel	P14M100 Carbon steel	P14M120 Carbon steel
28	124.78	122.13	90	20	56	136	102	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
29	129.23	126.59	95		60	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
30	133.69	131.05	100		62	145	111	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
31	138.15	135.50	105			–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
32	142.60	139.96	110			154	120	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
33	147.06	144.42	120		70	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
34	151.52	148.87				163	129	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
35	155.97	153.33				–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
36	160.43	157.78				171	137	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
37	164.88	162.24	130		75	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
38	169.34	166.70	135			181	146	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
39	173.80	171.15			80	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
40	178.25	175.61				190	155	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
41	182.71	180.02				–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
42	187.17	184.47				198	164	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
43	191.62	188.93	145		85	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
44	196.08	193.38	155			207	173	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
45	200.54	197.84				–	–	A·B	A·B	A·B	A·B	A·B
46	204.99	202.30	160		90	–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
47	209.45	206.75				–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
48	213.90	211.21				225	191	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
49	218.36	215.67				–	–	AF·BF	AF·BF	AF·BF	AF·BF	AF·BF
50	222.82	220.12				234	200	**AF·BF**	**AF·BF**	AF·BF	AF·BF	AF·BF
56	249.55	246.81		30		–	–	A·**B**	A·**B**	A·B	A·B	A·B
60	267.38	264.64				–	–	A·**B**	A·**B**	A·B	A·B	A·B
64	285.21	282.46				–	–	A·**B**	A·**B**	A·B	A·B	A·B
72	320.86	318.06	170	35		–	–	A·**B**	A·**B**	A·B	A·B	A·B
80	356.51	353.71			100	–	–	A·B	A·B	A·B	A·B	A·B
84	374.33	371.54	180		110	–	–	A·B	A·B	A·B	A·B	A·B
90	401.07	398.28	200	40	120	–	–	A·B	A·B	A·B	A·B	A·B
96	427.81	425.01	240		150	–	–	A·B	A·B	A·B	A·B	A·B
112	499.11	496.32	250			–	–	A·B	A·B	A·B	A·B	A·B
120	534.76	531.97	300		180	–	–	A·B	A·B	A·B	A·B	A·B

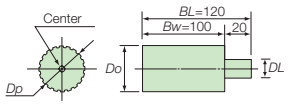
No. of teeth	P14M40		P14M60		P14M80		P14M100		P14M120	
	Bw	*BL*	*Bw*	*BL*	*Bw*	*BL*	*Bw*	*BL*	*Bw*	*BL*
28 to 43	53	73	74	94	95	115	116	136	137	157
44 to 120	53	78	74	99	95	120	116	141	137	162

- Bold Font : Stock item Fine Font : Made to order item.
- Pilot bore diameter of the stock items are“ minimum bore -1mm.”
- For P14M80, P14M100, and P14M120 with 28 to 50 teeth, the minimum diameter of the shaft to be used is 30 mm.
- Stocked flanges are not assembled.
- Belt sprockets of any type, dimension, number of teeth, or material other than the ones shown in the above table can also be fabricated (made to order item).

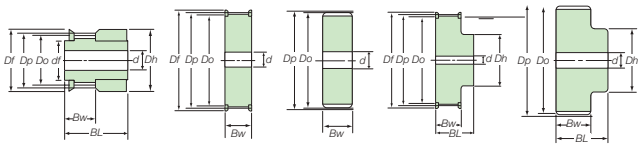
The Ultra PX Belts HY Type UP14M requires a dedicated belt sprocket (made to order item).

Cylindrical Belt Sprocket MTO Item

■ Size



■ Processing Shape (Reference)



■ Materials

Aluminum

■ Model Numbering Example

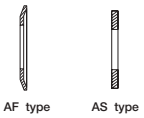
PT 20 P 2M 100L – A

- PT: Belt Sprocket
- 20: No.of groove
- P: Series
- 2M: Pitch
- 100L: Cylindrical Belt Sprocket
- A: Material A:Aluminum

■ Flange Model Numbering Example

PT A F 10 360 224

- PT: Belt Sprocket
- A: Material S:Cold rolled steel A:Aluminum
- F: Type
- 10: Thickness *t* ex:1.0 mm
- 360: Outer dia. *Df* ex:36.0 mm
- 224: Inner dia. *df* ex:22.4 mm



■ Types and Dimensions (P2M)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Flange model No.
10	6.37	5.86	4	PTAS1011040
11	7.00	6.49		
12	7.64	7.13		
13	8.28	7.77		PTAS1012055
14	8.91	8.40	6	
15	9.55	9.04		PTAS1013070
16	10.19	9.68		
17	10.82	10.31		PTAS1015080
18	11.46	10.95	8	
19	12.10	11.59		
20	12.73	12.22		PTAS10170100
21	13.37	12.86	10	
22	14.01	13.50		
23	14.64	14.13		
24	15.28	14.77	12	
25	15.92	15.41		PTAS10210133
26	16.55	16.04		
27	17.19	16.68		
28	17.83	17.32		PTAS10250150
30	19.10	18.59	16	PTAF10260150
32	20.37	19.86		PTAF10280160
36	22.92	22.41		PTAF10290180
40	25.46	24.96		PTAF10320212
44	28.01	27.50		PTAF10340230
48	30.56	30.05		PTAF10360224
50	31.83	31.32		PTAF10390265
60	38.20	37.69		PTAF10450335

■ Types and Dimensions (P3M)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Flange model No.
10	9.55	8.79	4	PTAS1012055
11	10.50	9.74	6	PTAS1013070
12	11.46	10.70		PTAS1015080
13	12.41	11.65	8	
14	13.37	12.61		PTAS10170100
15	14.32	13.56	10	
16	15.28	14.52		
18	17.19	16.43	12	PTAS10210133
19	18.14	17.38		
20	19.10	18.34		PTAS10250150
21	20.05	19.29	16	
22	21.01	20.25		PTAF10280160
24	22.92	22.16		PTAF10290180
25	23.87	23.11		PTAF10310190
26	24.83	24.07		
28	26.74	25.98		PTAF10320212
30	28.65	27.89		PTAF10340230
32	30.56	29.80		PTAF10360224
36	34.38	33.62		PTAF10430300
40	38.20	37.44		PTAF10450335
48	45.84	45.07		PTAF10520400
50	47.75	46.98		PTAF10550425
60	57.30	56.53		PTAF10650530

■ Types and Dimensions (P5M)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Hub dia. *Dh*	Flange Model No.
12	19.10	17.96	12	PTAF10230130
14	22.28	21.14	16	PTAF10280160
15	23.87	22.73		PTAF10290180
16	25.46	24.32		PTAF10310190
17	27.06	25.91		PTAF10320212
18	28.65	27.51		PTAF10360224
19	30.24	29.10		
20	31.83	30.69		
21	33.42	32.28		PTAF10390265
22	35.01	33.87		PTAF10430300
24	38.20	37.06		PTAF10440310
25	39.79	38.65		PTAF10450335
26	41.38	40.24		PTAF10470355
28	44.56	43.42		PTAF10520375
30	47.75	46.60		PTAF10550425
32	50.93	49.79		
36	57.30	56.15		PTAF10640500
40	63.66	62.52		PTAF10670560
44	70.03	68.89		PTAF10740630
48	76.39	75.25		PTAF10820670
50	79.58	78.44		PTAF10860710
60	95.49	94.35		PTAF101030850

Belt Sprockets Fit Bore

Short delivery and easy ordering by model no. with codes for types of finished bore.

General machining process of the shaft bore, keyway, tapping, and surface treatment of the belt sprockets are standardized.Orders can be placed simply by specifying the Belt Sprocket model number and additional machining codes, allowing quick delivery.
This eliminates the need for drawing preparation and extra machining, contributing to reduced engineering effort and lower costs.

Available items

Belt Sprockets Standard Stock Items	**Material: Carbon steel**	**sizes P5M, P8M, P14M**
	Material: Aluminum alloy	**sizes P3M, P5M, P8M**

Specifications

●shaft bore machin

The dimensions are on a millimeter basis (Dimensions in inches are not applicable)

Shaft bore tolerance	Shaft bore dia.	Chamfer dimension
H : H7 G : G7 M : M7	Three-digit display in integral numbers (mm)	N: Not designated (Tsubaki's standard chamfering) Chamfering dimensions are all 0.5 mm. A: 1 mm B: 2 mm C: 3 mm

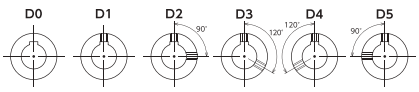
●Keyway machining

Keyway width tolerance	Keyway width
New JIS J : JS9 P : P9 Old JIS F : F7 E : E9 W : without keyway	Two-digit display in integral numbers (mm) The number for the products without keyway is [00].

*For no keyway, specify [W 00].

●Hole Tapping

For tap sizes, refer to the Specifications (Keyway and Tap Sizes) on page 64.

Number of taps and location	Tap size
	Two-digit display in integral numbers (mm) The number for the products without tap is [M00].

*For no taps, specify [D0 M00].

●Surface treatment

Blank : Non-surface treatment K : Electroless nickel-phosphorus plating

*Carbon steel only
*The products without surface treatment have no subsequent code.
Note:No coating is applied for the additional processed parts.

Model Numbering Example

Model number	Model number of the belt sprocket
	PT30P8M15AF

Additional finishing code	Shaft bore processing				Keyway processing			Tapping				Surface	
	–	**H**	**040**	**N**	**–**	**J**	**12**	**D**	**2**	**M**	**08**	**–**	**K**
	–	Shaft bore tolerance	Shaft bore dia.	Chamfering dimension	–	Keyway width tolerance	Keyway width	–	No.of taps and arrangement	–	Tapped hole size	–	Surface treatment

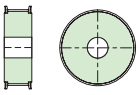
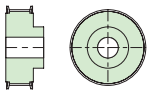
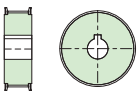
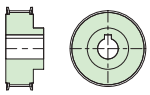
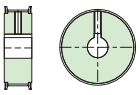
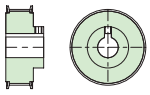
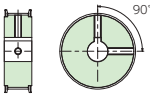
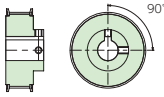
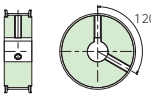
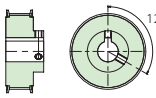
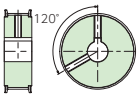
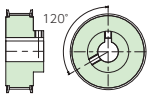
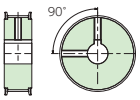
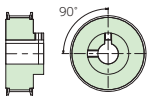
In the above example, the ordering model number is PT30P8M15AF-H040N-J12D2M08-K.

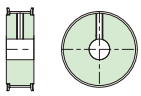
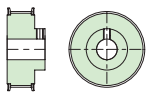
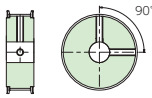
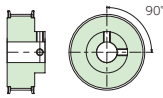
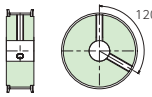
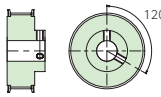
Notes

·For keyway and tapping sizes, refer to the machining specifications on the next page.
·Determine the shoft bore diameter and key surface pressure in accordance with general machine design.

Additional finishing codes / Specifications

Tapping

Shaft bore	Key	Tap	AF Type	BF Type
	—	0		
		0		
		1		
		2		
		3		
		4		
		5		

Shaft bore	Key	Tap	AF Type	BF Type
	—	1		
		2		
		3		

Specifications (Keyway and tap sizes)

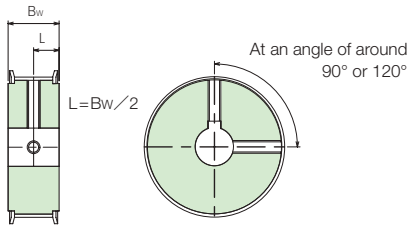
mm

Keyway width tolerance	Shaft bore dia.	over 10 12 or below	over 12 17 or below	over 17 22 or below	over 22 30 or below	over 30 38 or below	over 38 44 or below	over 44 50 or below	over 50 58 or below	over 58 65 or below	over 65 75 or below	over 75 80 or below
Js9·P9	Keyway width	4	5	6	8	10	12	14	16	18	20	22
	Keyway depth	1.8	2.3	2.8	3.3	3.3	3.3	3.8	4.3	4.4	4.9	5.4
	Tap size	M4	M4/M5	M5/M6	M5/M6/M8	M6/M8/M10			M8/M10/M12		M10/M12/M16	

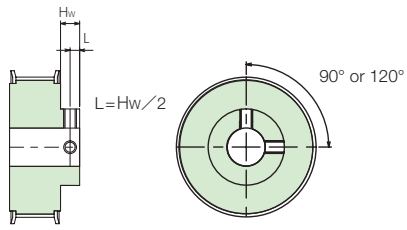
Keyway width tolerance	Shaft bore dia.	10 to 13	14 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80
F7·E9	Keyway width	4	5	7	10	12	15	18	20
	Keyway depth	1.5	2	3	3.5	3.5	5	6	6
	Tap size	M4	M4/M5	M5/M6	M6/M8/M10			M8/M10/M12	M10/M12/M16

Working Specifications (Tapping position)

AF Type



BF Type



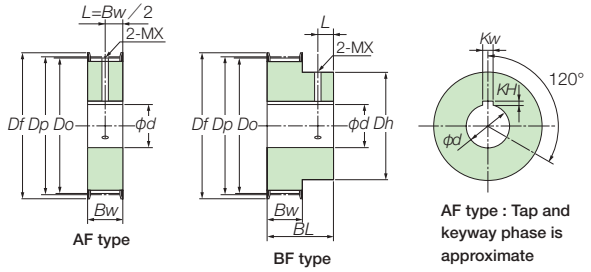
·In the case of the AF Type, the tapping angle of the second tap is an approximate value.
(as it is tapped on the bottom of the belt sprocket teeth)
·If the tapping length is long, a counterbore may be machined.
·The products with taps come with setscrews in the tapped holes.

Set Screw Specifications

·Steel cup point set screws with hexagonal hole
·Use stainless steel set screws if the belt sprocket is plated or made of aluminum.

P5M (Pitch : 5.00 mm)

■ Design Type



■ Model Numbering Example

PT 30 P5M 15 AF – H 020 N – J 06 D 3 M 06

- PT: Belt Sprocket
- 30: No.of groove
- P5M: Pitch
- 15: Belt width mm
- AF: Design type
- H: Shaft bore tolerance (H7)
- 020: Shaft bore dia. mm
- N: Tsubaki standard chamfering (0.5mm)
- J: Keyway width tolerance
- 06: Keyway width mm
- D: No. of taps and arrangement
- 3: No. of taps and arrangement
- M: Tapped hole size
- 06: Tapped hole size

■ Specifications

mm

Applicable shaft bore dia. mm	Keyway width *Kw*	Tolerance *Js9*	Keyway depth *KH*	Tolerance	Tap
over10, 12 or below.	4	±0.0150	1.8	+0.1 0	M4
over12, 17 or below.	5		2.3		M5
over17, 22 or below.	6		2.8		M6

Finished shaft bore tolerance: H7
Set screws are included

■ Materials

Belt Sprocket : Carbon steel

Flange : Steel

■ Types and Dimensions

●P5M10AF · BF

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Hub dia. *Dh*	Dimensions *Bw*	*BL*	*L*	Approx.mass *kg* AF	BF	Shaft bore dia. *d*						
20	31.83	30.69	36	19	16	28	6	0.09	0.11	12						
22	35.01	33.87	43	25				0.11	0.15	12	14	15	16			
24	38.20	37.06	44	25				0.13	0.17	12	14	15	16			
25	39.79	38.65	45	30				0.14	0.20	12	14	15	16	18	19	20
26	41.38	40.24	47	30				0.15	0.21	12	14	15	16	18	19	20
28	44.56	43.42	52	32				0.18	0.24	12	14	15	16	18	19	20
30	47.75	46.60	55	35				0.20	0.28	12	14	15	16	18	19	20
32	50.93	49.79	55	38				0.23	0.32	12	14	15	16	18	19	20
36	57.30	56.15	64	44				0.30	0.43	12	14	15	16	18	19	20
40	63.66	62.52	67	48				0.37	0.53	12	14	15	16	18	19	20

- As for BF Type, please note that the provided set screws may protrude from the hub surface in some combinations.
- The approximate mass refers to the mass before shaft bore processing.

●P5M15AF · BF

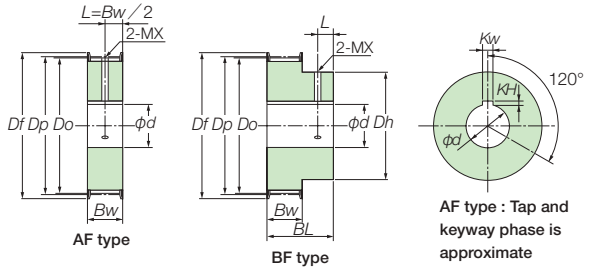
mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Hub dia. *Dh*	Dimensions *Bw*	*BL*	*L*	Approx.mass *kg* AF	BF	Shaft bore dia. *d*						
20	31.83	30.69	36	19	21	33	6	0.12	0.14	12						
22	35.01	33.87	43	25				0.14	0.18	12	14	15	16			
24	38.20	37.06	44	25				0.17	0.21	12	14	15	16			
25	39.79	38.65	45	30				0.18	0.24	12	14	15	16	18	19	20
26	41.38	40.24	47	30				0.20	0.25	12	14	15	16	18	19	20
28	44.56	43.42	52	32				0.23	0.30	12	14	15	16	18	19	20
30	47.75	46.60	55	35				0.26	0.34	12	14	15	16	18	19	20
32	50.93	49.79	55	38				0.30	0.40	12	14	15	16	18	19	20
36	57.30	56.15	64	44				0.39	0.52	12	14	15	16	18	19	20
40	63.66	62.52	67	48				0.48	0.64	12	14	15	16	18	19	20

- As for BF Type, please note that the provided set screws may protrude from the hub surface in some combinations.
- The approximate mass refers to the mass before shaft bore processing.

P8M (Pitch : 8.00 mm)

■ Design Type



■ Model Numbering Example

PT 30 P8M 15 AF – H 020 N – J 06 D 3 M 06

- PT: Belt Sprocket
- 30: No.of groove
- P8M: Pitch
- 15: Belt width mm
- AF: Design type
- H: Shaft bore tolerance (H7)
- 020: Shaft bore dia. mm
- N: Tsubaki standard chamfering (0.5mm)
- J: Keyway width tolerance
- 06: Keyway width mm
- D: Keyway
- 3: No. of taps and arrangement
- M: M
- 06: Tapped hole size

■ Specifications

mm

Applicable shaft bore dia. mm	Keyway width Kw	Tolerance Js9	Keyway depth KH	Tolerance	Tap
over10, 12 or below.	4	±0.0150	1.8	+0.1 0	M4
over12, 17 or below.	5		2.3		M5
over17, 22 or below.	6		2.8		M6
over22, 30 or below.	8	±0.0180	3.3	+0.2 0	
over30, 38 or below.	10				M8

Finished shaft bore tolerance: H7
Set screws are included

■ Materials

Belt Sprocket : Carbon steel

Flange : Steel

■ Types and Dimensions

●P8M15AF · BF

mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Hub dia. Dh	Dimensions Bw	BL	L	Approx.mass kg AF	BF	Shaft bore dia. d									
24	61.12	59.75	66	46	22	39	9	0.46	0.68	18	19	20	22	24	25	28			
26	66.21	64.84	73	51				0.53	0.80	18	19	20	22	24	25	28	30		
28	71.30	69.93	79	55				0.62	0.94	18	19	20	22	24	25	28	30		
30	76.39	75.02	82	60				0.72	1.10	18	19	20	22	24	25	28	30	32	35
32	81.49	80.12	86	65				0.83	1.27	18	19	20	22	24	25	28	30	32	35

- As for BF Type, please note that the provided set screws may protrude from the hub surface in some combinations.
- The approximate mass refers to the mass before shaft bore processing.

●P8M25AF · BF

mm

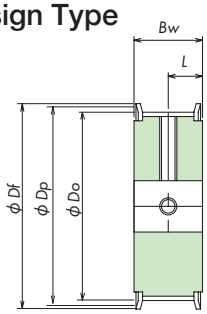
No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Hub dia. Dh	Dimensions Bw	BL	L	Approx.mass kg AF	BF	Shaft bore dia. d									
24	61.12	59.75	66	46	33	50	9	0.69	0.91	18	19	20	22	24	25	28			
26	66.21	64.84	73	51				0.80	1.07	18	19	20	22	24	25	28	30		
28	71.30	69.93	79	55				0.94	1.25	18	19	20	22	24	25	28	30		
30	76.39	75.02	82	60				1.09	1.46	18	19	20	22	24	25	28	30	32	35
32	81.49	80.12	86	65				1.25	1.69	18	19	20	22	24	25	28	30	32	35

- As for BF Type, please note that the provided set screws may protrude from the hub surface in some combinations.
- The approximate mass refers to the mass before shaft bore processing.

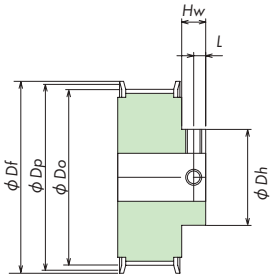
P5M (Pitch : 5.00 mm), P8M (Pitch : 8.00 mm), P14M (Pitch : 14.00 mm)

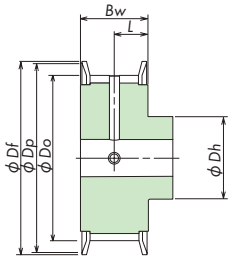
■ Design Type

AF type



BF type





PT20P5M10BF
PT20P5M15BF
PT20P5M25BF
Shaft bore diameter φ12 is tapped on the belt Sprockets tooth surface.

■ Materials

Belt Sprocket : Carbon steel
Flange : Steel

■ Types and Dimensions

●P5M

mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Hub dia. Dh	Applicable type	Shaft bore dia. range	P5M10				P5M15				P5M25			
							AF		BF		AF		BF		AF		BF	
							Bw	L	Hw	L	Bw	L	Hw	L	Bw	L	Hw	L
16	25.46	24.32	31	17	AF·BF	10	16	8	12	6	21	10.5	12	6	32	16	12	6
18	28.65	27.51	36	19	AF·BF	10 to 11	16	8	12	6	21	10.5	12	6	32	16	12	6
20	31.83	30.69	36	19	AF·BF	10 to 12	16	8	12	6	21	10.5	12	6	32	16	12	6
22	35.01	33.87	43	25	AF·BF	10 to 16	16	8	12	6	21	10.5	12	6	32	16	12	6
24	38.20	37.06	44	25	AF·BF	10 to 16	16	8	12	6	21	10.5	12	6	32	16	12	6
25	39.79	38.65	45	30	AF·BF	10 to 20	16	8	12	6	21	10.5	12	6	32	16	12	6
26	41.38	40.24	47	30	AF·BF	10 to 20	16	8	12	6	21	10.5	12	6	32	16	12	6
28	44.56	43.42	52	32	AF·BF	10 to 21	16	8	12	6	21	10.5	12	6	32	16	12	6
30	47.75	46.60	55	35	AF·BF	12 to 23	16	8	12	6	21	10.5	12	6	32	16	12	6
32	50.93	49.79	55	38	AF·BF	12 to 25	16	8	12	6	21	10.5	12	6	32	16	12	6
36	57.30	56.15	64	44	AF·BF	12 to 29	16	8	12	6	21	10.5	12	6	32	16	12	6
40	63.66	62.52	67	48	AF·BF	12 to 32	16	8	12	6	21	10.5	12	6	32	16	12	6
44	70.03	68.89	74	56	AF·BF	15 to 37	16	8	12	6	21	10.5	12	6	32	16	12	6
48	76.39	75.25	82	58	AF·BF	15 to 39	16	8	12	6	21	10.5	12	6	32	16	12	6
50	79.58	78.44	86	64	AF·BF	15 to 43	16	8	12	6	21	10.5	12	6	32	16	12	6
60	95.49	94.35	103	80	AF·BF	15 to 49	16	8	12	6	21	10.5	12	6	32	16	12	6
72	114.59	113.45	120	90	AF·BF	18 to 49	16	8	12	6	21	10.5	12	6	32	16	12	6

●P8M

mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Hub dia. Dh	Applicable type	Shaft bore dia. range	P8M15				P8M25				P8M40				P8M60			
							AF		BF		AF		BF		AF		BF		AF		BF	
							Bw	L	Hw	L	Bw	L	Hw	L	Bw	L	Hw	L	Bw	L	Hw	L
20	50.93	49.56	55	36	AF·BF	12 to 24	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
22	56.02	54.65	62	41	AF·BF	12 to 27	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
24	61.12	59.75	66	46	AF·BF	12 to 31	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
26	66.21	64.84	73	51	AF·BF	16 to 34	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
28	71.30	69.93	79	55	AF·BF	16 to 37	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
30	76.39	75.02	82	60	AF·BF	16 to 40	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
32	81.49	80.12	86	65	AF·BF	16 to 43	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
34	86.58	85.21	91	70	AF·BF	16 to 47	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
36	91.67	90.30	97	75	AF·BF	16 to 50	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
40	101.86	100.49	107	85	AF·BF	20 to 57	22	11	17	8.5	33	16.5	17	8.5	49	24.5	17	8.5	70	35	17	8.5
44	112.05	110.67	119	90	AF·BF	20 to 60	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11
48	122.23	120.86	127	100	AF·BF	20 to 67	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11
50	127.32	125.95	135	100	AF·BF	20 to 67	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11
60	152.79	151.42	158	100	AF·BF	20 to 67	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11
64	162.97	161.60	167	110	AF·BF	20 to 73	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11
72	183.35	181.97	190	110	AF·BF	30 to 73	22	11	22	11	33	16.5	22	11	49	24.5	22	11	70	35	22	11

●P14M

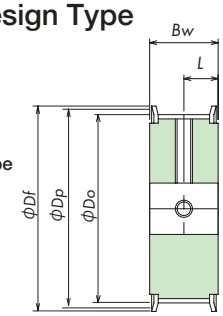
mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Hub dia. Dh	Applicable type	Shaft bore dia. range	P14M40				P14M60			
							AF		BF		AF		BF	
							Bw	L	Hw	L	Bw	L	Hw	L
28	124.78	122.13	136	90	AF·BF	20 to 60	53	26.5	20	10	74	37	20	10
30	133.69	131.05	145	100	AF·BF	20 to 67	53	26.5	20	10	74	37	20	10
32	142.60	139.96	154	110	AF·BF	20 to 73	53	26.5	20	10	74	37	20	10
34	151.52	148.87	163	120	AF·BF	20 to 80	53	26.5	20	10	74	37	20	10
36	160.43	157.78	171	120	AF·BF	20 to 80	53	26.5	20	10	74	37	20	10
38	169.34	166.70	181	135	AF·BF	20 to 80	53	26.5	20	10	74	37	20	10
40	178.25	175.61	190	135	AF·BF	20 to 80	53	26.5	20	10	74	37	20	10
42	187.17	184.47	198	135	AF·BF	20 to 80	53	26.5	20	10	74	37	20	10
44	196.08	193.38	207	155	AF·BF	20 to 80	53	26.5	25	12.5	74	37	25	12.5
48	213.90	211.21	225	160	AF·BF	20 to 80	53	26.5	25	12.5	74	37	25	12.5
50	222.82	220.12	234	160	AF·BF	20 to 80	53	26.5	25	12.5	74	37	25	12.5

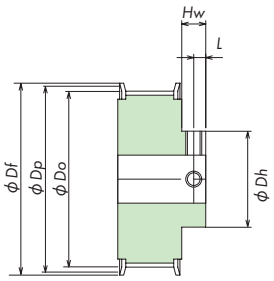
P3M (Pitch : 3.00 mm) , P5M (Pitch : 5.00 mm) , P8M (Pitch : 8.00 mm)

■ Design Type

AF type



BF type



■ Materials

Belt Sprocket : Aluminum

Flange : Aluminum

■ Types and Dimensions

•P3M

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Hub dia. *Dh*	Applicable type	Shaft bore dia. range	P3M10 BF *Hw*	P3M10 BF *L*	P3M15 BF *Hw*	P3M15 BF *L*
28	26.74	25.98	32	18	BF	10 to12	8	4	8	4
30	28.65	27.89	34	18	BF	10 to12	8	4	8	4
32	30.56	29.80	36	18	BF	10 to12	8	4	8	4
36	34.38	33.62	43	24	BF	10 to16	8	4	8	4
40	38.20	37.44	45	26	BF	10 to18	8	4	8	4
48	45.84	45.07	52	36	BF	13 to24	8	4	8	4
50	47.75	46.98	55	36	BF	13 to24	8	4	8	4
60	57.30	56.53	65	46	BF	13 to31	8	4	8	4

Note: Certain models have restrictions on available machining options.

•P5M

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Hub dia. *Dh*	Applicable type	Shaft bore dia. range	P5M10 AF *Bw*	P5M10 AF *L*	P5M10 BF *Hw*	P5M10 BF *L*	P5M15 AF *Bw*	P5M15 AF *L*	P5M15 BF *Hw*	P5M15 BF *L*	P5M25 AF *Bw*	P5M25 AF *L*	P5M25 BF *Hw*	P5M25 BF *L*
16	25.46	24.32	31	17	AF	10	16	8	–	–	21	10.5	12	6	32	16	12	6
18	28.65	27.51	36	19	AF•BF	10 to11	16	8	12	6	21	10.5	12	6	32	16	12	6
20	31.83	30.69	36	19	AF•BF	10 to12	16	8	12	6	21	10.5	12	6	32	16	12	6
22	35.01	33.87	43	25	AF•BF	10 to15	16	8	12	6	21	10.5	12	6	32	16	12	6
24	38.20	37.06	44	25	AF•BF	10 to16	16	8	12	6	21	10.5	12	6	32	16	12	6
25	39.79	38.65	45	30	AF•BF	10 to19	16	8	12	6	21	10.5	12	6	32	16	12	6
26	41.38	40.24	47	30	AF•BF	10 to20	16	8	12	6	21	10.5	12	6	32	16	12	6
28	44.56	43.42	52	32	AF•BF	10 to21	16	8	12	6	21	10.5	12	6	32	16	12	6
30	47.75	46.60	55	35	AF•BF	12 to21	16	8	12	6	21	10.5	12	6	32	16	12	6
32	50.93	49.79	55	38	AF•BF	12 to23	16	8	12	6	21	10.5	12	6	32	16	12	6
36	57.30	56.15	64	44	AF•BF	12 to29	16	8	12	6	21	10.5	12	6	32	16	12	6
40	63.66	62.52	67	48	AF•BF	12 to32	16	8	12	6	21	10.5	12	6	32	16	12	6
44	70.03	68.89	74	56	AF•BF	15 to37	16	8	12	6	21	10.5	12	6	32	16	12	6
48	76.39	75.25	82	58	AF•BF	15 to39	16	8	12	6	21	10.5	12	6	32	16	12	6
50	79.58	78.44	86	64	AF•BF	15 to43	16	8	12	6	21	10.5	12	6	32	16	12	6
60	95.49	94.35	103	80	AF•BF	15 to49	16	8	12	6	21	10.5	12	6	32	16	12	6

Note: Certain models have restrictions on available machining options.

•P8M

mm

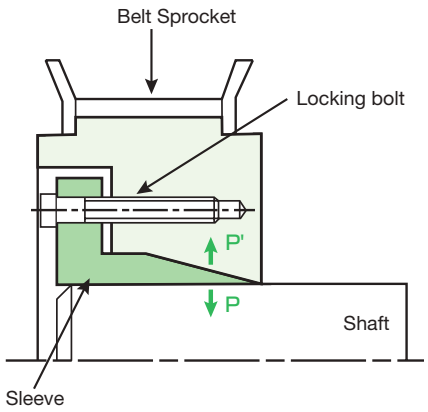
No. of teeth *n*	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Hub dia. *Dh*	Applicable type	Shaft bore dia. range	P8M15 AF *Bw*	P8M15 AF *L*	P8M15 BF *Hw*	P8M15 BF *L*	P8M25 AF *Bw*	P8M25 AF *L*	P8M40 AF *Bw*	P8M40 AF *L*
20	50.93	49.56	55	36	AF•BF	12 to21	22	11	17	8.5	33	16.5	49	24.5
22	56.02	54.65	62	41	AF•BF	12 to26	22	11	17	8.5	33	16.5	49	24.5
24	61.12	59.75	66	46	AF•BF	12 to30	22	11	17	8.5	33	16.5	49	24.5
26	66.21	64.84	73	51	AF•BF	16 to34	22	11	17	8.5	33	16.5	49	24.5
28	71.30	69.93	79	55	AF•BF	16 to37	22	11	17	8.5	33	16.5	49	24.5
30	76.39	75.02	82	60	AF•BF	16 to40	22	11	17	8.5	33	16.5	49	24.5
32	81.49	80.12	86	65	AF•BF	16 to43	22	11	17	8.5	33	16.5	49	24.5
34	86.58	85.21	91	70	AF•BF	16 to47	22	11	17	8.5	33	16.5	49	24.5
36	91.67	90.30	97	75	AF•BF	16 to50	22	11	17	8.5	33	16.5	49	24.5
40	101.86	100.49	107	85	AF•BF	20 to57	22	11	17	8.5	33	16.5	49	24.5
44	112.05	110.67	119	90	AF•BF	20 to60	22	11	22	11	33	16.5	49	24.5
48	122.23	120.86	127	100	AF•BF	20 to64	22	11	22	11	33	16.5	49	24.5
50	127.32	125.95	135	100	AF•BF	20 to64	22	11	22	11	33	16.5	49	24.5
60	152.79	151.42	158	100	AF•BF	20 to64	22	11	22	11	33	16.5	49	24.5

Note: Certain models have restrictions on available machining options.

■ Lock Belt Sprockets S Type

Most standard type lock belt sprockets. Strong locking allows them to be used with Ultra PX Belts. Flat installation enables lighter weight and space savings. S Type Aluminum, with a body made of High strength aluminum alloy types are also available. Effective for reducing weight and inertia even further.

The fastening principle of the Lock Belt Sprockets S Type

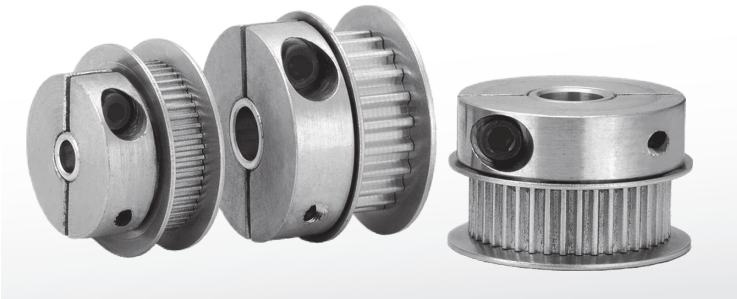


The inner diameter of the belt sprocket and the outer diameter of the sleeve are tapered.
By tightening the locking bolt, the belt sprocket slides on the tapered surface.
At this time, the forces P and P' that hold down the shaft and inner tapered surface are produced by the wedge action.
Because of the forces P and P', the frictional force that firmly tightens the belt sprocket and shaft is produced.

■ Lock Belt Sprockets S Type Plated

Nickel-phosphorus plating to the main belt sprocket unit and sleeve, and a special coating to the bolts are applied. Not only strong and no-wobbling fastening, this achieves dry fastening which requires no lubrication and enhances corrosion resistance.

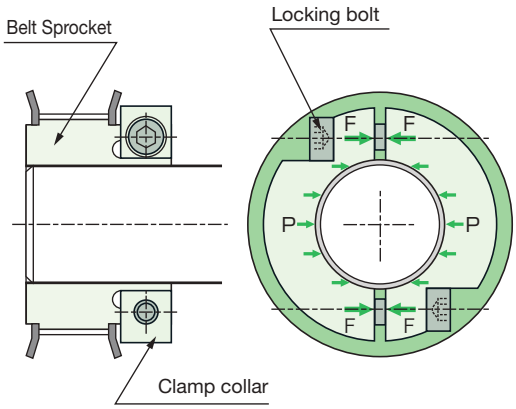
■ Lock Belt Sprockets C Type



C Type Lock Belt Sprockets use a clamp collar. It can be locked easily with two bolts, and have excellent rotational balance. Also, it is an externally tightened type, there is no deformation of the belt sprocket and is suitable for small-diameter shafts.

The fastening principle of the Lock Belt Sprockets C Type

When two clamp collars are placed in the belt sprocket hub and the locking bolts are tighten with the force F, the external surface of the hub is held down by the surface pressure P that is equivalent to the force 4F on the entire perimeter and contracts.
The contracted inner surface of the hub is attached firmly to the shaft, the frictional force is generated, and then the shaft and the belt sprocket are strongly friction-fastened. As the characteristic of this clamp mechanism is that the hub is tighten by two locking bolts with the force equivalent to four bolts, a large tightening power can be obtained with fewer bolts.

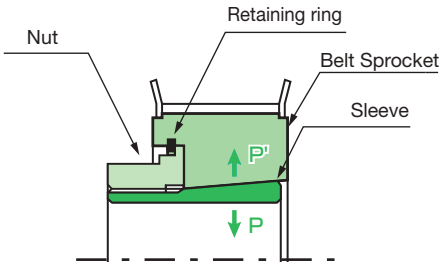


■ Lock Belt Sprockets N Type

Enables easy locking with a single nut. Bore diameters starting from 7mm available. Ideal for small diameter shaft locking.

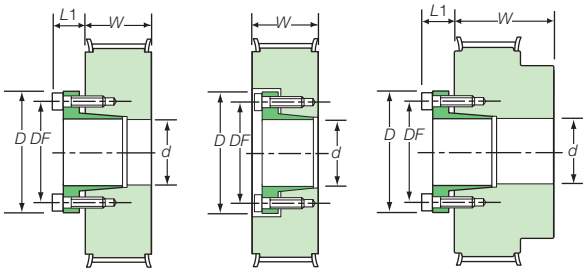
The tightening principle of the Lock Belt Sprockets N Type

As the inner diameter of the belt sprocket and the outer diameter of the sleeve are tapered, tightening the locking bolt slides the belt sprocket to move on the tapered surface.
At this time, the forces P and P' that hold down the shaft and inner tapered surface are produced by the wedge action.
Because of the forces P and P', the frictional force that firmly fastens the belt sprocket and shaft is produced.



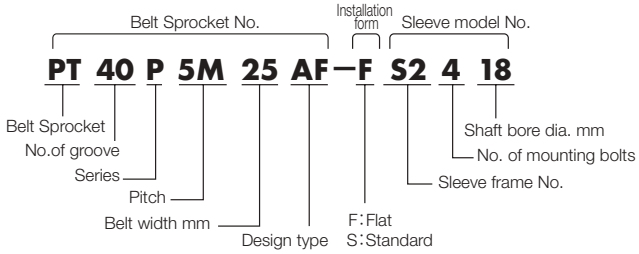
P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation　AF-F Flat installation　BF-S Standard installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking Bolts	Tightening Torque N·m {kgf·m}	D mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•UP5M10 Width:16mm(AF), 28mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S14	S14	S14	S14	S14	S14											
25	39.79	45.0	AF	S14	S14	S14	S14	S14	S14											
26	41.38	47.0	AF	S14	S14	S14	S14	S14	S14											
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14											
30	47.75	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24						
32	50.93	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24						
36	57.30	64.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33			
40	63.66	67.0	AF·BF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
44	70.03	74.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
48	76.39	82.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
50	79.58	86.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
60	95.49	103.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
72	114.59	120.0	AF·BF								S24	S24	S24	S24	S44	S44	S44	S44	S44	S44

- The P5M10 for the flat installation type cannot be fabricated.
- Combinations in [ ] are the belt sprocket BF type.
- Made to order.

When using PX Belts, refer to the combination table on page 83.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

•UP5M15 Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
24	38.20	44.0	AF	S14	S14	S14	S14	S14	S14															
25	39.79	45.0	AF	S14	S14	S14	S14	S14	S14															
26	41.38	47.0	AF	S14	S14	S14	S14	S14	S14															
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14															
30	47.75	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
32	50.93	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
36	57.30	64.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33							
40	63.66	67.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
44	70.03	74.0	AF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
48	76.39	82.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
50	79.58	86.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
60	95.49	103.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
72	114.59	120.0	AF								S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•UP5M25 Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
24	38.20	44.0	AF			S14	S14	S14	S14															
25	39.79	45.0	AF			S14	S14	S14	S14															
26	41.38	47.0	AF				S14	S14	S14															
28	44.56	52.0	AF				S14	S14	S14															
30	47.75	55.0	AF				S16	S16	S16	S24	S24	S24	S24	S24										
32	50.93	55.0	AF				S16	S16	S16	S24	S24	S24	S24	S24										
36	57.30	64.0	AF				S16	S16	S16	S24	S24	S24	S24	S24	S33	S33	S33							
40	63.66	67.0	AF				S16	S16	S16	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
44	70.03	74.0	AF					S24	S24	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46				
48	76.39	82.0	AF						S26	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
50	79.58	86.0	AF						S26	S26	S26	S26	S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
60	95.49	103.0	AF						S26	S26	S26	S26	S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
72	114.59	120.0	AF									S26	S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55

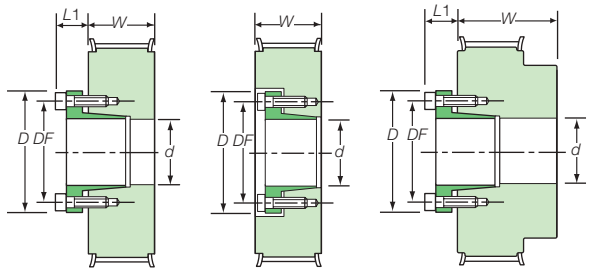
- The combinations in ☐ are available for flat installation.
- Made to order.

When using PX Belts, refer to the combination table on page 84.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

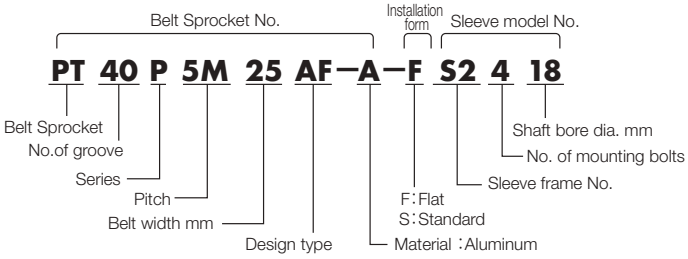
P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation　AF-F Flat installation　BF-S Standard installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : High strength aluminum alloy

Sleeve : Carbon steel
Heat treated (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P5M10-A Width:16mm(AF),28mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S13	S13	S13	S13	S13	S13											
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13											
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13											
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13											
30	47.75	55.0	AF			S13	S13	S13	S13											
32	50.93	55.0	AF			S13	S13	S13	S13											
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23						
40	63.66	67.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33			
44	70.03	74.0	AF·BF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF·BF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF·BF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF·BF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43

- The P5M10 for the flat installation type cannot be fabricated.
- Combinations in [ ] are the belt sprocket BF type.
- Made to order.

When using PX Belts, refer to the combination table on page 85.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

•P5M15-A Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S13	S13	S13	S13	S13	S13											
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13											
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13											
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14											
30	47.75	55.0	AF			S14	S14	S14	S14											
32	50.93	55.0	AF			S14	S14	S14	S14											
36	57.30	64.0	AF			S14	S14	S14	S14	S23	S23	S23	S23	S23						
40	63.66	67.0	AF			S14	S14	S14	S14	S23	S23	S23	S23	S23	S33	S33	S33			
44	70.03	74.0	AF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF					S23	S23	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF					S23	S23	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF					S24	S24	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•P5M25-A Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
28	44.56	52.0	AF				S14	S14	S14											
30	47.75	55.0	AF					S14	S14											
32	50.93	55.0	AF				S16	S16	S16											
36	57.30	64.0	AF				S16	S16	S16	S23	S23	S23	S23	S23						
40	63.66	67.0	AF				S16	S16	S16	S24	S24	S24	S24	S24	S33	S33	S33			
44	70.03	74.0	AF					S24	S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF					S26	S26	S26	S26	S26	S26	S26	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF					S26	S26	S26	S26	S26	S26	S26	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF						S26	S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44

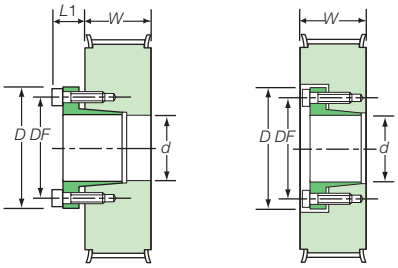
- The combinations in ☐ are available for flat installation.
- Made to order.

When using PX Belts, refer to the combination table on page 86.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

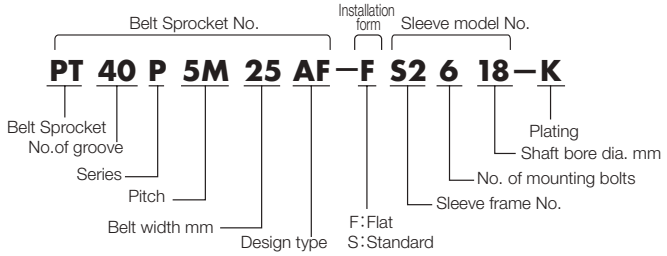
P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation　　AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions,Sleeve Frame No.and No. of Mounting Bolts

•UP5M10 Width:16mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*													
				10	11	12	14	15	16	17	18	19	20	22	24	25	28
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13								
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13								
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13								
30	47.75	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23			
32	50.93	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23			
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
40	63.66	67.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
44	70.03	74.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
48	76.39	82.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
50	79.58	86.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
60	95.49	103.0	AF					S16	S16	S23	S23	S23	S23	S23	S33	S33	S33
72	114.59	120.0	AF								S23	S23	S23	S23	S33	S33	S33

- The P5M10 for the flat installation type cannot be fabricated.
- Made to order.

When using PX Belts, refer to the combination table on page 87.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the Ultra PX belts HC Type is used

•UP5M15 Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																								
				12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
25	39.79	45.0	AF	S13	S13	S13	S13																					
26	41.38	47.0	AF	S13	S13	S13	S13																					
28	44.56	52.0	AF		S13	S13	S13																					
30	47.75	55.0	AF		S13	S13	S13	S23	S23	S23	S23	S23																
32	50.93	55.0	AF		S16	S16	S16	S23	S23	S23	S23	S23																
36	57.30	64.0	AF		S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33													
40	63.66	67.0	AF		S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
44	70.03	74.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
48	76.39	82.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
50	79.58	86.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
60	95.49	103.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
72	114.59	120.0	AF						S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•UP5M25 Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																								
				12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
36	57.30	64.0	AF					S26	S26	S26	S26	S26	S33	S33	S33													
40	63.66	67.0	AF					S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44										
44	70.03	74.0	AF					S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44										
48	76.39	82.0	AF					S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
50	79.58	86.0	AF					S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
60	95.49	103.0	AF					S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
72	114.59	120.0	AF										S36	S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75

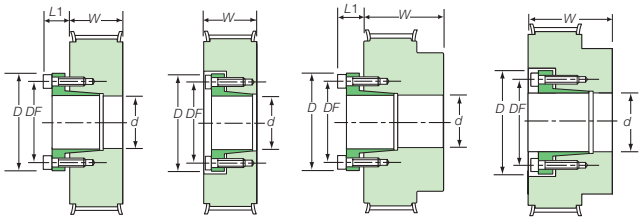
- The combinations in [ ] are available for flat installation.
- Made to order.

When using PX Belts, refer to the combination table on page 88.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

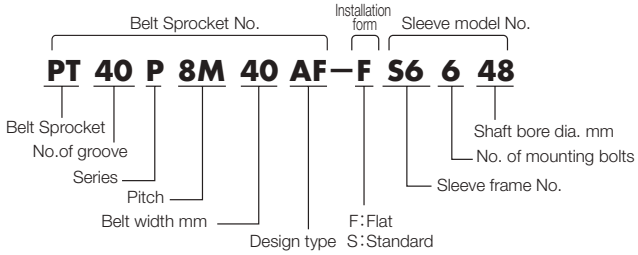
P8M (Pitch : 8.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation | AF-F Flat installation | BF-S Standard installation | BF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•UP8M15 Width:22mm(AF) , 39mm(BF 40 teeth), 44mm(BF 44 to 72 teeth)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
20	50.93	55.0	AF	S16	S16	S16	S24	S24	S24	S24	S24													
22	56.02	62.0	AF	S16	S16	S16	S24	S24	S24	S24	S24													
24	61.12	66.0	AF		S16	S16	S24	S24	S24	S24	S24	S33	S33	S33										
26	66.21	73.0	AF			S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44							
28	71.30	79.0	AF			S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44							
30	76.39	82.0	AF				S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
32	81.49	86.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
40	101.86	107.0	AF·BF							S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
44	112.05	119.0	AF·BF							S26	S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66
48	122.23	127.0	AF·BF							S26	S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66
50	127.32	135.0	AF·BF							S26	S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66
60	152.79	158.0	AF·BF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66
64	162.97	167.0	BF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66
72	183.35	190.0	BF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66

- Combinations in [ ] are the belt sprocket BF type.
- Made to order.

When using PX Belts, refer to the combination table on page 89.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the Ultra PX belts HC Type is used

•UP8M25 Width:33mm(AF),55mm(BF)

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
24	61.12	66.0	AF	S26	S26	S26	S26	S26	S34	S34	S34													
26	66.21	73.0	AF		S26	S26	S26	S26	S46	S46	S46	S44	S44	S44										
28	71.30	79.0	AF			S26	S26	S26	S46	S46	S46	S44	S44	S44										
30	76.39	82.0	AF					S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55						
32	81.49	86.0	AF					S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55						
34	86.58	91.0	AF						S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
36	91.67	97.0	AF						S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF						S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF						S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF								S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF								S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF											S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
64	162.97	167.0	BF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	BF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

• The combinations in ☐ are available for flat installation. · Made to order.

•UP8M40 Width:49mm(AF),71mm(BF)

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
26	66.21	73.0	AF									S46	S46	S46										
28	71.30	79.0	AF								S48	S48	S48	S48										
30	76.39	82.0	AF								S48	S48	S48	S48	S56	S56	S56	S56						
32	81.49	86.0	AF								S48	S48	S48	S48	S56	S56	S56	S56						
34	86.58	91.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66			
36	91.67	97.0	AF										S48	S48	S510	S510	S510	S510	S66	S66	S66			
40	101.86	107.0	AF												S510	S510	S510	S510	S66	S66	S66			
44	112.05	119.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF															S510	S66	S66	S66	S75	S75	S75
64	162.97	167.0	BF																S68	S68	S68	S75	S75	S75
72	183.35	190.0	BF																S68	S68	S68	S75	S75	S75

• The combinations in ☐ are available for flat installation. · Made to order.

•UP8M60 Width:70mm(AF),92mm(BF)

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
34	86.58	91.0	AF												S510	S510	S510	S510						
36	91.67	97.0	AF														S510	S510						
40	101.86	107.0	AF																S68	S68	S68			
44	112.05	119.0	AF																S68	S68	S68	S75	S75	S75
48	122.23	127.0	AF																S68	S68	S68	S75	S75	S75
50	127.32	135.0	AF																S68	S68	S68	S75	S75	S75
60	152.79	158.0	AF																S612	S612	S612	S75	S75	S75
64	162.97	167.0	BF																S612	S612	S612	S75	S75	S75
72	183.35	190.0	BF																S612	S612	S612	S75	S75	S75

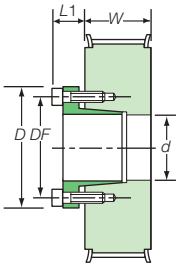
• The combinations in ☐ are available for flat installation. · Made to order.

When using PX Belts, refer to the combination table on page 90.

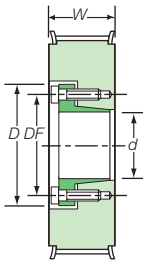
Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type

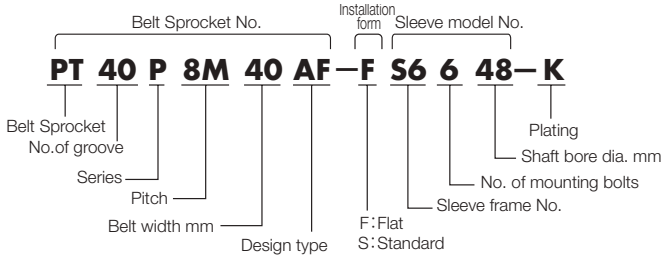


AF-S Standard installation



AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	D mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•UP8M15 Width:22mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																	
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
20	50.93	55.0	AF	S16	S16	S16	S23	S23	S23	S23	S23										
22	56.02	62.0	AF	S16	S16	S16	S23	S23	S23	S23	S23										
24	61.12	66.0	AF	S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33							
26	66.21	73.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
28	71.30	79.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
30	76.39	82.0	AF			S16	S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
32	81.49	86.0	AF			S16	S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
40	101.86	107.0	AF							S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
44	112.05	119.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55
48	122.23	127.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55
50	127.32	135.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55
60	152.79	158.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55
64	162.97	167.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55
72	183.35	190.0	AF												S48	S48	S48	S55	S55	S55	S55

- The P8M15 for the flat installation type cannot be fabricated.
- Made to order.

When using PX Belts, refer to the combination table on page 93.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the Ultra PX belts HC Type is used

•UP8M25 Width:33mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
24	61.12	66.0	AF	S26	S26	S26	S26	S26																
26	66.21	73.0	AF	S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44										
28	71.30	79.0	AF	S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44										
30	76.39	82.0	AF	S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
32	81.49	86.0	AF	S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
34	86.58	91.0	AF		S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
36	91.67	97.0	AF			S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF					S26	S36	S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF						S36	S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF								S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF								S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF									S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
64	162.97	167.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

- The combinations in ☐ are available for flat installation.
- Made to order.

•UP8M40 Width:49mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
26	66.21	73.0	AF						S36	S36	S36													
28	71.30	79.0	AF							S36	S36	S48	S48	S48										
30	76.39	82.0	AF								S36	S48	S48	S48	S55	S55	S55	S55						
32	81.49	86.0	AF									S48	S48	S48	S55	S55	S55	S55						
34	86.58	91.0	AF									S48	S48	S48	S55	S55	S55	S55						
36	91.67	97.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66			
40	101.86	107.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66			
44	112.05	119.0	AF									S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF											S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF											S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
64	162.97	167.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	AF													S510	S510	S510	S66	S66	S66	S75	S75	S75

- The combinations in ☐ are available for flat installation.
- Made to order.

•UP8M60 Width:70mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
28	71.30	79.0	AF									S48	S48	S48										
30	76.39	82.0	AF										S48	S48										
32	81.49	86.0	AF											S48										
34	86.58	91.0	AF												S510	S510	S510	S510						
36	91.67	97.0	AF												S510	S510	S510	S510	S66	S66	S66			
40	101.86	107.0	AF												S510	S510	S510	S510	S66	S66	S66			
44	112.05	119.0	AF												S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF														S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF															S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF																S612	S612	S612	S75	S75	S75
64	162.97	167.0	AF																S612	S612	S612	S75	S75	S75
72	183.35	190.0	AF																S612	S612	S612	S75	S75	S75

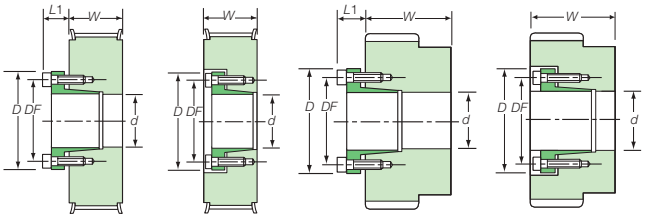
- The combinations in ☐ are available for flat installation.
- Made to order.

When using PX Belts, refer to the combination table on page 94.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

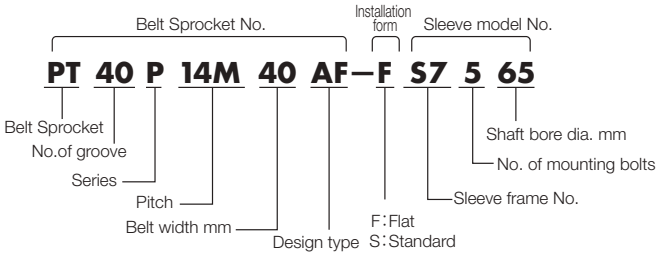
P14M (Pitch : 14.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation | AF-F Flat installation | B-S Standard installation | BF Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve framel No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•UP14M40 Width:53mm(AF), 78mm(B)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d* 42	45	48	50	55	60	65	70
28	124.78	136.0	AF	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF		S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF			S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF			S68	S66	S66	S75	S75	S75
36	160.43	171.0	AF			S612	S612	S612	S75	S75	S75
38	169.34	181.0	AF			S612	S612	S612	S75	S75	S75
40	178.25	190.0	AF			S612	S612	S612	S75	S75	S75
42	187.17	198.0	AF			S612	S612	S612	S75	S75	S75
44	196.08	207.0	AF			S612	S612	S612	S75	S75	S75
48	213.90	225.0	AF			S612	S612	S612	S75	S75	S75
50	222.82	234.0	AF			S612	S612	S612	S75	S75	S75
56	249.55	–	B			S612	S612	S612	S75	S75	S75
60	267.38	–	B			S612	S612	S612	S75	S75	S75
64	285.21	–	B				S612	S612	S710	S710	S710
72	320.86	–	B						S710	S710	S710

• The combinations in ☐ are available for flat installation. • Made to order.

•UP14M60 Width:74mm(AF), 99mm(B)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d* 42	45	48	50	55	60	65	70
28	124.78	136.0	AF			S612	S612	S612	S75	S75	S75
30	133.69	145.0	AF			S612	S612	S612	S75	S75	S75
32	142.60	154.0	AF			S612	S612	S612	S75	S75	S75
34	151.52	163.0	AF			S612	S612	S612	S75	S75	S75
36	160.43	171.0	AF			S612	S612	S612	S75	S75	S75
38	169.34	181.0	AF			S612	S612	S612	S75	S75	S75
40	178.25	190.0	AF			S612	S612	S612	S710	S710	S710
42	187.17	198.0	AF				S612	S612	S710	S710	S710
44	196.08	207.0	AF					S612	S710	S710	S710
48	213.90	225.0	AF						S710	S710	S710
50	222.82	234.0	AF						S710	S710	S710
56	249.55	–	B						S710	S710	S710
60	267.38	–	B						S710	S710	S710
64	285.21	–	B						S710	S710	S710
72	320.86	–	B						S710	S710	S710

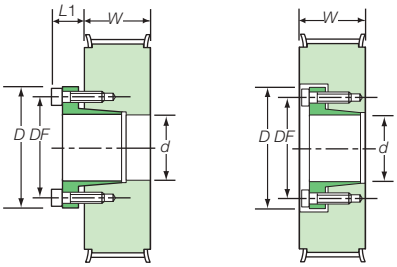
• The combinations in ☐ are available for flat installation. • Made to order.

When using PX Belts, refer to the combination table on page 95.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

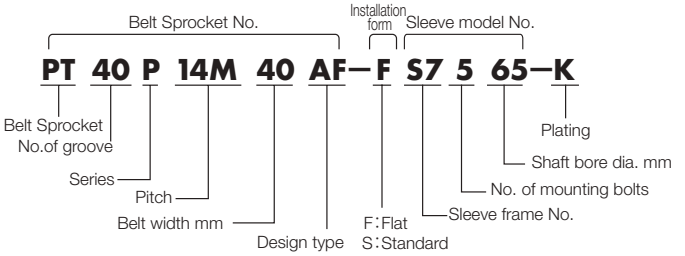
P14M (Pitch : 14.00 mm) Combined when the Ultra PX belts HC Type is used

■ Design Type



AF-S Standard installation　　AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specification

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions,Sleeve Frame No. and No. of Mounting Bolts

•UP14M40 Width:53mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d* 42	45	48	50	55	60	65	70
28	124.78	136.0	AF	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF		S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF			S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF			S612	S612	S612	S75	S75	S75
36	160.43	171.0	AF			S612	S612	S612	S75	S75	S75
38	169.34	181.0	AF			S612	S612	S612	S75	S75	S75
40	178.25	190.0	AF			S612	S612	S612	S75	S75	S75
42	187.17	198.0	AF			S612	S612	S612	S75	S75	S75
44	196.08	207.0	AF			S612	S612	S612	S75	S75	S75
48	213.90	225.0	AF			S612	S612	S612	S75	S75	S75
50	222.82	234.0	AF			S612	S612	S612	S75	S75	S75

- The combinations in ▭ are available for flat installation.
- Made to order.

•UP14M60 Width:74mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d* 42	45	48	50	55	60	65	70
28	124.78	136.0	AF			S612	S612	S612	S75	S75	S75
30	133.69	145.0	AF			S612	S612	S612	S75	S75	S75
32	142.60	154.0	AF			S612	S612	S612	S75	S75	S75
34	151.52	163.0	AF			S612	S612	S612	S75	S75	S75
36	160.43	171.0	AF			S612	S612	S612	S75	S75	S75
38	169.34	181.0	AF			S612	S612	S612	S75	S75	S75
40	178.25	190.0	AF			S612	S612	S612	S710	S710	S710
42	187.17	198.0	AF				S612	S612	S710	S710	S710
44	196.08	207.0	AF					S612	S710	S710	S710
48	213.90	225.0	AF						S710	S710	S710
50	222.82	234.0	AF						S710	S710	S710

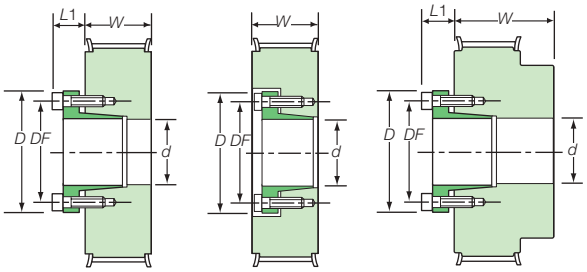
- The combinations in ▭ are available for flat installation.
- Made to order.

When using PX Belts, refer to the combination table on page 96.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

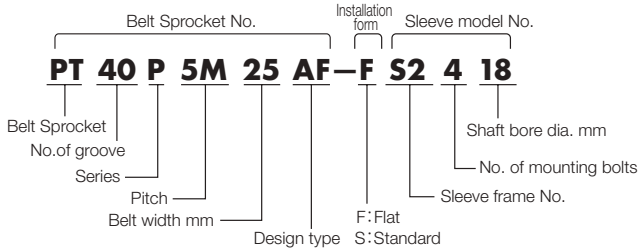
P5M (Pitch : 5.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation　AF-F Flat installation　B-S Standard installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P5M10 Width:16mm(AF), 28mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S14	S14	S14	S14	S14	S14											
25	39.79	45.0	AF	S14	S14	S14	S14	S14	S14											
26	41.38	47.0	AF	S14	S14	S14	S14	S14	S14											
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14											
30	47.75	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24						
32	50.93	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24						
36	57.30	64.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33			
40	63.66	67.0	AF·BF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
44	70.03	74.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
48	76.39	82.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
50	79.58	86.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
60	95.49	103.0	AF·BF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44
72	114.59	120.0	AF·BF								S24	S24	S24	S24	S44	S44	S44	S44	S44	S44

- The P5M10 for the flat installation type (AF-F)cannot be fabricated.
- Combinations in ☐ are the belt sprocket BF type.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 71.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the PX belts is used

•P5M15 Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
24	38.20	44.0	AF	S14	S14	S14	S14	S14	S14															
25	39.79	45.0	AF	S14	S14	S14	S14	S14	S14															
26	41.38	47.0	AF	S14	S14	S14	S14	S14	S14															
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14															
30	47.75	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
32	50.93	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
36	57.30	64.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33							
40	63.66	67.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
44	70.03	74.0	AF					S14	S14	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
48	76.39	82.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
50	79.58	86.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
60	95.49	103.0	AF					S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55
72	114.59	120.0	AF								S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•P5M25 Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
24	38.20	44.0	AF	S14	S14	S14	S14	S14	S14															
25	39.79	45.0	AF	S14	S14	S14	S14	S14	S14															
26	41.38	47.0	AF	S14	S14	S14	S14	S14	S14															
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14															
30	47.75	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
32	50.93	55.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24										
36	57.30	64.0	AF			S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33							
40	63.66	67.0	AF				S14	S24	S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44				
44	70.03	74.0	AF					S24	S24	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46				
48	76.39	82.0	AF					S24	S24	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
50	79.58	86.0	AF					S24	S24	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
60	95.49	103.0	AF						S24	S24	S24	S24	S24	S24	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
72	114.59	120.0	AF								S26	S26	S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55

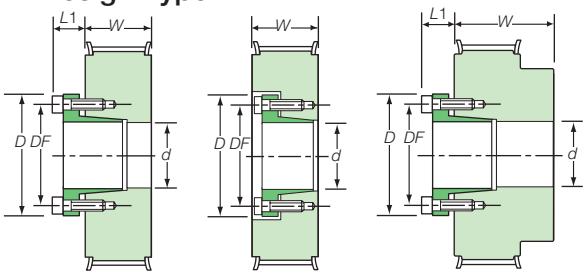
- The combinations in ☐ are available for flat installation.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 72.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation　AF-F Flat installation　BF-S Standard installation

■ Model Numbering Example

Belt Sprocket No. (PT 40 P 5M 25 AF—A—F S2 4 18); Installation form; Sleeve model No.

PT 40 P 5M 25 AF—A—F S2 4 18

- PT: Belt Sprocket
- 40: No.of groove
- P: Series
- 5M: Pitch
- 25: Belt width mm
- AF: Design type
- A: Material : Aluminum
- F: Installation form — F : Flat, S : Standard
- S2: Sleeve frame No.
- 4: No. of mounting bolts
- 18: Shaft bore dia. mm

*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : High strength alminum alloy

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P5M10-A:Width :16mm(AF), 28mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S13	S13	S13	S13	S13	S13											
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13											
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13											
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13											
30	47.75	55.0	AF			S13	S13	S13	S13											
32	50.93	55.0	AF			S13	S13	S13	S13											
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23						
40	63.66	67.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33			
44	70.03	74.0	AF·BF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF·BF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF·BF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF·BF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43

- The P5M10 for the flat installation type cannot be fabricated.
- Combinations in [ ] are the belt sprocket BF type.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 73.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the PX belts is used

•P5M15-A Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S13	S13	S13	S13	S13	S13											
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13											
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13											
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13											
30	47.75	55.0	AF			S13	S13	S13	S13											
32	50.93	55.0	AF			S13	S13	S13	S13											
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23						
40	63.66	67.0	AF			S14	S14	S14	S14	S23	S23	S23	S23	S23	S33	S33	S33			
44	70.03	74.0	AF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF					S14	S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF					S24	S24	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•P5M25-A Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
24	38.20	44.0	AF	S13	S13	S13	S13	S13	S13											
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13											
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13											
28	44.56	52.0	AF	S14	S14	S14	S14	S14	S14											
30	47.75	55.0	AF			S14	S14	S14	S14											
32	50.93	55.0	AF			S14	S14	S14	S14											
36	57.30	64.0	AF			S14	S14	S14	S14	S23	S23	S23	S23	S23						
40	63.66	67.0	AF				S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33			
44	70.03	74.0	AF					S24	S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43
48	76.39	82.0	AF					S24	S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43
50	79.58	86.0	AF					S24	S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43
60	95.49	103.0	AF						S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43

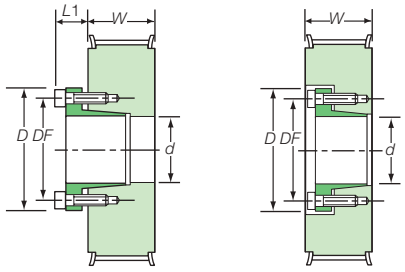
- The combinations in ▭ are available for flat installation.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 74.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

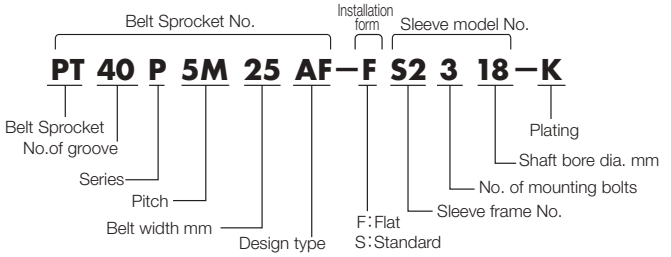
P5M (Pitch : 5.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation　　AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions, Sleeve Frame No.and No.of Mounting Bolts

•P5M10 Width:16mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*													
				10	11	12	14	15	16	17	18	19	20	22	24	25	28
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13								
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13								
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13								
30	47.75	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23			
32	50.93	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23			
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
40	63.66	67.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
44	70.03	74.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
48	76.39	82.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
50	79.58	86.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
60	95.49	103.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33
72	114.59	120.0	AF								S23	S23	S23	S23	S33	S33	S33

- The P5M10 for the flat installation type cannot be fabricated.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 75.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P5M (Pitch : 5.00 mm) Combined when the PX belts is used

•P5M15 Width:21mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																				
				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
25	39.79	45.0	AF	S13	S13	S13	S13	S13	S13															
26	41.38	47.0	AF	S13	S13	S13	S13	S13	S13															
28	44.56	52.0	AF	S13	S13	S13	S13	S13	S13															
30	47.75	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23										
32	50.93	55.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23										
36	57.30	64.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33							
40	63.66	67.0	AF			S13	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
44	70.03	74.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
48	76.39	82.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
50	79.58	86.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
60	95.49	103.0	AF					S13	S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
72	114.59	120.0	AF								S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55

- The P5M15 for the flat installation type cannot be fabricated.
- Made to order.

•P5M25 Width:32mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																						
				12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
25	39.79	45.0	AF	S13	S13	S13	S13																					
26	41.38	47.0	AF	S13	S13	S13	S13																					
28	44.56	52.0	AF		S13	S13	S13																					
30	47.75	55.0	AF		S13	S13	S13	S23	S23	S23	S23	S23																
32	50.93	55.0	AF		S16	S16	S16	S23	S23	S23	S23	S23																
36	57.30	64.0	AF		S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33													
40	63.66	67.0	AF		S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
44	70.03	74.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
48	76.39	82.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
50	79.58	86.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
60	95.49	103.0	AF			S16	S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
72	114.59	120.0	AF						S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75

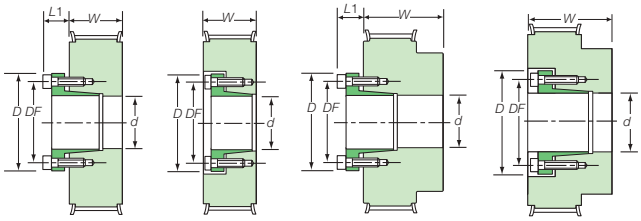
- The combinations in [ ] are available for flat installation.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 76.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation | AF-F Flat installation | BF-S Standard installation | BF-F Flat installation

■ Model Numbering Example

Belt Sprocket No. | Installation form | Sleeve model No.

PT 40 P 8M 40 AF—F S4 4 32

- PT: Belt Sprocket
- 40: No.of groove
- P: Series
- 8M: Pitch
- 40: Belt width mm
- AF: Design type
- F: Installation form — F:Flat, S:Standard
- S4: Sleeve frame No.
- 4: No. of mounting bolts
- 32: Shaft bore dia. mm

*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions, Sleeve Frame No.and No.of Mounting Bolts

•P8M15 Width:22mm(AF), 39mm(BF 40 teeth), 44mm(BF 44 to 72 teeth)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																					
				12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
20	50.93	55.0	AF	S14	S14	S14	S14	S24	S24	S24	S24	S24													
22	56.02	62.0	AF	S14	S14	S14	S14	S24	S24	S24	S24	S24													
24	61.12	66.0	AF	S14	S14	S14	S14	S24	S24	S24	S24	S24	S33	S33	S33										
26	66.21	73.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44							
28	71.30	79.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44							
30	76.39	82.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
32	81.49	86.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
34	86.58	91.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
36	91.67	97.0	AF				S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55			
40	101.86	107.0	AF·BF								S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
44	112.05	119.0	AF·BF								S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
48	122.23	127.0	AF·BF								S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
50	127.32	135.0	AF·BF								S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
60	152.79	158.0	AF·BF								S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
64	162.97	167.0	BF								S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66
72	183.35	190.0	BF													S44	S44	S44	S55	S55	S55	S55	S66	S66	S66

- The combinations in ☐ are available for flat installation.
- Combinations in ☐ are the belt sprocket BF type.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 77.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the PX belts is used

•P8M25 Width:33mm(AF), 55mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
20	50.93	55.0	AF	S16	S16	S16	S24	S24	S24	S24	S24																
22	56.02	62.0	AF	S16	S16	S16	S24	S24	S24	S24	S24																
24	61.12	66.0	AF	S16	S16	S16	S24	S24	S24	S24	S24	S33	S33	S33													
26	66.21	73.0	AF			S16	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44										
28	71.30	79.0	AF			S16	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44										
30	76.39	82.0	AF			S16	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55						
32	81.49	86.0	AF			S16	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55						
34	86.58	91.0	AF				S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
36	91.67	97.0	AF				S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF							S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF							S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF							S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF							S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
64	162.97	167.0	BF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
72	183.35	190.0	BF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75

• The combinations in ☐ are available for flat installation. • Made to order.

•P8M40 Width:49mm(AF), 71mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
20	50.93	55.0	AF			S24	S24	S24	S24	S24	S24																
22	56.02	62.0	AF			S24	S24	S24	S24	S24	S24																
24	61.12	66.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33													
26	66.21	73.0	AF			S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44										
28	71.30	79.0	AF			S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44										
30	76.39	82.0	AF			S24	S24	S24	S24	S24	S24	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55						
32	81.49	86.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55						
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF							S26	S26	S44	S44	S44	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
64	162.97	167.0	BF											S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	BF														S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

• The combinations in ☐ are available for flat installation. • Made to order.

•P8M60 Width:70mm(AF), 92mm(BF)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
28	71.30	79.0	AF				S26	S26	S26	S26	S26	S46	S46	S46	S46	S46	S46										
30	76.39	82.0	AF				S26	S26	S26	S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55						
32	81.49	86.0	AF								S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55						
34	86.58	91.0	AF								S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55						
36	91.67	97.0	AF								S26	S48	S48	S48	S48	S48	S48	S55	S55	S55	S55						
40	101.86	107.0	AF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF										S48	S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF											S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF															S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
64	162.97	167.0	BF															S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	BF																		S510	S66	S66	S66	S75	S75	S75

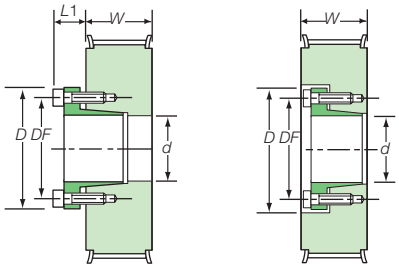
• The combinations in ☐ are available for flat installation. • Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 78.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

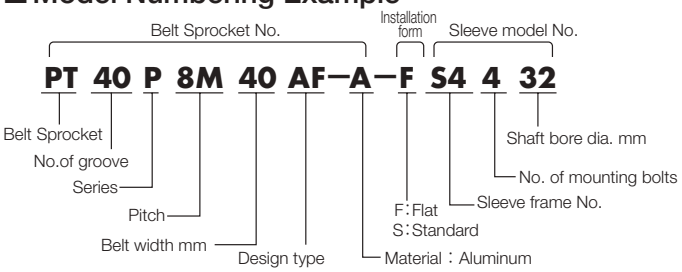
P8M (Pitch : 8.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation　　AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : High strength alminum alloy

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P8M15-A Width:22mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																			
				12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
20	50.93	55.0	AF	S14	S14	S14	S14															
22	56.02	62.0	AF	S14	S14	S14	S14	S23	S23	S23	S23	S23										
24	61.12	66.0	AF	S14	S14	S14	S14	S23	S23	S23	S23	S23	S33	S33	S33							
26	66.21	73.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33							
28	71.30	79.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
30	76.39	82.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
32	81.49	86.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
34	86.58	91.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
36	91.67	97.0	AF				S14	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
40	101.86	107.0	AF								S23	S23	S33	S33	S33	S43	S43	S43				
44	112.05	119.0	AF								S23	S23	S33	S33	S33	S43	S43	S43	S55	S55	S55	S55
48	122.23	127.0	AF								S23	S23	S33	S33	S33	S43	S43	S43	S55	S55	S55	S55
50	127.32	135.0	AF								S23	S23	S33	S33	S33	S43	S43	S43	S55	S55	S55	S55
60	152.79	158.0	AF								S24	S24	S33	S33	S33	S43	S43	S43	S55	S55	S55	S55

- The P8M15 for the flat installation type cannot be fabricated.
- Made to order.

P8M (Pitch : 8.00 mm) Combined when the PX belts is used

•P8M25-A Width:33mm

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																	
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
20	50.93	55.0	AF		S14	S14															
22	56.02	62.0	AF	S16	S16	S16	S23	S23	S23	S23	S23										
24	61.12	66.0	AF	S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33							
26	66.21	73.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33							
28	71.30	79.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
30	76.39	82.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
32	81.49	86.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
34	86.58	91.0	AF				S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
36	91.67	97.0	AF				S23	S23	S23	S23	S23	S33	S33	S33	S43	S43	S43				
40	101.86	107.0	AF							S24	S24	S33	S33	S33	S43	S43	S43				
44	112.05	119.0	AF							S24	S24	S33	S33	S33	S43	S43	S43	S55	S55	S55	S55
48	122.23	127.0	AF							S26	S26	S44	S44	S44	S43	S43	S43	S55	S55	S55	S55
50	127.32	135.0	AF							S26	S26	S44	S44	S44	S43	S43	S43	S55	S55	S55	S55
60	152.79	158.0	AF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55

- The combinations in ▭ are available for flat installation.
- Made to order.

•P8M40-A Width:49mm

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																	
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
24	61.12	66.0	AF								S23	S33	S33	S33							
26	66.21	73.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33							
28	71.30	79.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43				
30	76.39	82.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43				
32	81.49	86.0	AF				S26	S26	S26	S26	S26	S34	S34	S34	S43	S43	S43				
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S34	S34	S34	S43	S43	S43				
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S34	S34	S34	S43	S43	S43				
40	101.86	107.0	AF							S26	S26	S34	S34	S34	S44	S44	S44				
44	112.05	119.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
48	122.23	127.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
50	127.32	135.0	AF									S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
60	152.79	158.0	AF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55

- The combinations in ▭ are available for flat installation.
- Made to order.

•UP8M15-A Width:22mm *Combined when the Ultra PX belts HC Type is used

mm

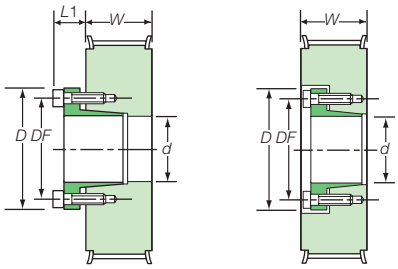
No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																	
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
22	56.02	62.0	AF	S16	S16	S16	S23	S23	S23	S23	S23										
24	61.12	66.0	AF	S16	S16	S16	S24	S24	S24	S24	S24	S33	S33	S33							
26	66.21	73.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33							
28	71.30	79.0	AF			S24	S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43				
30	76.39	82.0	AF				S24	S24	S24	S24	S24	S33	S33	S33	S43	S43	S43				
32	81.49	86.0	AF				S26	S26	S26	S26	S26	S34	S34	S34	S43	S43	S43				
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S34	S34	S34	S43	S43	S43				
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S44	S44	S44	S43	S43	S43				
40	101.86	107.0	AF							S26	S26	S44	S44	S44	S44	S44	S44				
44	112.05	119.0	AF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
48	122.23	127.0	AF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
50	127.32	135.0	AF							S26	S26	S46	S46	S46	S46	S46	S46	S55	S55	S55	S55
60	152.79	158.0	AF									S48	S48	S48	S48	S48	S48	S55	S55	S55	S55

- The P8M15 for the flat installation type cannot be fabricated.
- Made to order.

If considering the use of P8M25-A or P8M40-A belt sprocket together with the Ultra PX Belt, consult us.

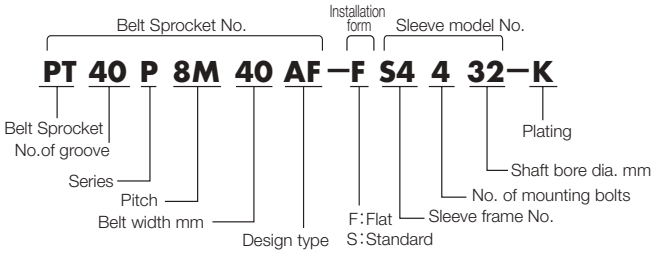
P8M (Pitch : 8.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P8M15 Width:22mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*																		
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
20	50.93	55.0	AF	S13	S13	S13	S23	S23	S23	S23	S23										
22	56.02	62.0	AF	S13	S13	S13	S23	S23	S23	S23	S23										
24	61.12	66.0	AF	S13	S13	S13	S23	S23	S23	S23	S23	S33	S33	S33							
26	66.21	73.0	AF			S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
28	71.30	79.0	AF			S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44				
30	76.39	82.0	AF			S13	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
32	81.49	86.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
34	86.58	91.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
36	91.67	97.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
40	101.86	107.0	AF							S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
44	112.05	119.0	AF							S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
48	122.23	127.0	AF							S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
50	127.32	135.0	AF							S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
60	152.79	158.0	AF							S23	S23	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
64	162.97	167.0	AF							S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55
72	183.35	190.0	AF												S44	S44	S44	S55	S55	S55	S55

- The P8M15 for the flat installation type cannot be fabricated.
- Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 79.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P8M (Pitch : 8.00 mm) Combined when the PX belts is used

•P8M25 Width:33mm

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
20	50.93	55.0	AF	S16	S16	S16	S23	S23	S23	S23	S23																
22	56.02	62.0	AF	S16	S16	S16	S23	S23	S23	S23	S23																
24	61.12	66.0	AF	S16	S16	S16	S23	S23	S23	S23	S23	S33	S33	S33													
26	66.21	73.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
28	71.30	79.0	AF			S16	S23	S23	S23	S23	S23	S33	S33	S33	S44	S44	S44										
30	76.39	82.0	AF			S16	S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
32	81.49	86.0	AF			S16	S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
34	86.58	91.0	AF			S16	S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55						
36	91.67	97.0	AF				S26	S26	S26	S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF							S26	S26	S33	S33	S33	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
64	162.97	167.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
72	183.35	190.0	AF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75

• The combinations in ☐ are available for flat installation. • Made to order.

•P8M40 Width:49mm

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
24	61.12	66.0	AF				S26	S26	S26	S26	S26	S33	S33	S33													
26	66.21	73.0	AF				S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44										
28	71.30	79.0	AF				S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44										
30	76.39	82.0	AF				S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
32	81.49	86.0	AF				S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
34	86.58	91.0	AF				S26	S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55						
36	91.67	97.0	AF					S26	S26	S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF							S26	S26	S36	S36	S36	S44	S44	S44	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF								S26	S36	S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF									S36	S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF										S36	S36	S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
64	162.97	167.0	AF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66	S75	S75	S75
72	183.35	190.0	AF												S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

• The combinations in ☐ are available for flat installation. • Made to order.

•P8M60 Width:70mm

mm

No. of teeth n	Pitch circle dia. Dp	Flange outer dia. Df	Type	Shaft bore dia. d																							
				14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
26	66.21	73.0	AF									S36	S36	S36													
28	71.30	79.0	AF									S36	S36	S36	S48	S48	S48										
30	76.39	82.0	AF									S36	S36	S36	S48	S48	S48	S55	S55	S55	S55						
32	81.49	86.0	AF											S36	S48	S48	S48	S55	S55	S55	S55						
34	86.58	91.0	AF											S36	S48	S48	S48	S55	S55	S55	S55						
36	91.67	97.0	AF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
40	101.86	107.0	AF												S48	S48	S48	S55	S55	S55	S55	S66	S66	S66			
44	112.05	119.0	AF												S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
48	122.23	127.0	AF												S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	127.32	135.0	AF												S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
60	152.79	158.0	AF															S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
64	162.97	167.0	AF															S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
72	183.35	190.0	AF															S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

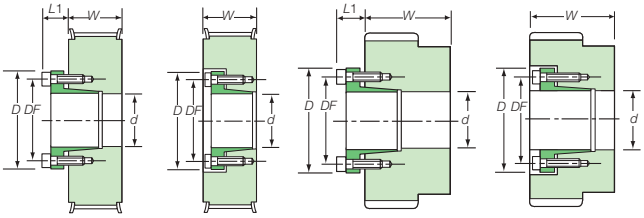
• The combinations in ☐ are available for flat installation. • Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 80.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

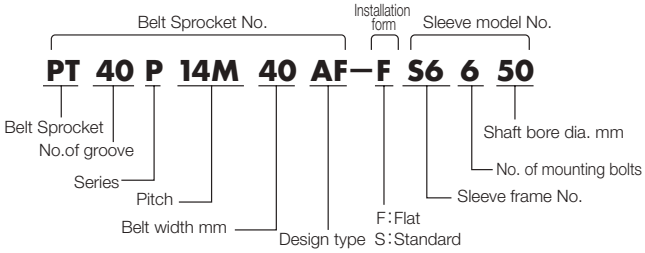
P14M (Pitch : 14.00 mm) Combined when the PX belts is used

■ Design Type



AF-S Standard installation | AF-F Flat installation | B-S Standard installation | BF Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table has the corresponding sleeve frame number and number of mounting bolts.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	4.2 {0.43}	32	24	12
S2	M5×18	8.3 {0.85}	42	32	14
S3	M5×20	8.3 {0.85}	48.5	38.5	15.5
S4	M5×20	8.3 {0.85}	56	46	15.5
S5	M5×22	8.3 {0.85}	66	56	17.5
S6	M6×25	16.8 {1.71}	80	68	21
S7	M8×30	40.5 {4.13}	101	86	24.5

See page 136 for sleeve performance details

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P14M40 Width:53mm(AF), 78mm(B)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*															
				24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
28	124.78	136.0	AF	S48	S48	S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF			S48	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF						S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF							S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
36	160.43	171.0	AF							S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
38	169.34	181.0	AF							S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
40	178.25	190.0	AF								S510	S510	S510	S66	S66	S66	S75	S75	S75
42	187.17	198.0	AF									S510	S510	S66	S66	S66	S75	S75	S75
44	196.08	207.0	AF										S510	S66	S66	S66	S75	S75	S75
48	213.90	225.0	AF											S68	S66	S66	S75	S75	S75
50	222.82	234.0	AF											S612	S612	S612	S75	S75	S75
56	249.55	–	B											S612	S612	S612	S75	S75	S75
60	267.38	–	B											S612	S612	S612	S75	S75	S75
64	285.21	–	B											S612	S612	S612	S75	S75	S75
72	320.86	–	B											S612	S612	S612	S75	S75	S75

• The combinations in ▭ are available for flat installation. • Made to order.

•P14M60 Width:74mm(AF), 99mm(B)

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*															
				24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
28	124.78	136.0	AF							S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF							S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF									S510	S510	S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF											S66	S66	S66	S75	S75	S75
36	160.43	171.0	AF											S612	S612	S612	S75	S75	S75
38	169.34	181.0	AF											S612	S612	S612	S75	S75	S75
40	178.25	190.0	AF											S612	S612	S612	S75	S75	S75
42	187.17	198.0	AF											S612	S612	S612	S75	S75	S75
44	196.08	207.0	AF											S612	S612	S612	S75	S75	S75
48	213.90	225.0	AF											S612	S612	S612	S75	S75	S75
50	222.82	234.0	AF											S612	S612	S612	S75	S75	S75
56	249.55	–	B											S612	S612	S612	S710	S710	S710
60	267.38	–	B												S612	S612	S710	S710	S710
64	285.21	–	B													S612	S710	S710	S710
72	320.86	–	B														S710	S710	S710

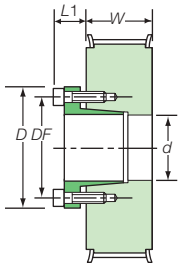
• The combinations in ▭ are available for flat installation. • Made to order.

When using Ultra PX Belts HC Type, refer to the combination table on page 81.

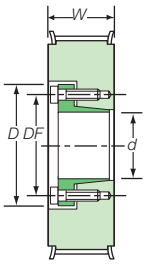
Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P14M (Pitch : 14.00 mm) Combined when the PX belts is used

■ Design Type

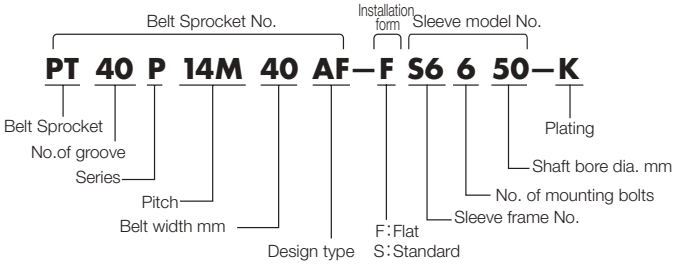


AF-S Standard installation



AF-F Flat installation

■ Model Numbering Example



*The items that can be manufactured are those where the number of mounting bolts is indicated at the intersection of the number of teeth and the shaft bore diameter in the table.

■ Sleeve Types and Dimensions

Sleeve frame No.	Locking bolts	Tightening torque N·m {kgf·m}	*D* mm	*DF* mm	*L*1 mm
S1	M4×16	3.4 {0.35}	32	24	12
S2	M5×20	6.8 {0.69}	42	32	14
S3	M5×20	6.8 {0.69}	48.5	38.5	15.5
S4	M5×20	6.8 {0.69}	56	46	15.5
S5	M5×25	6.8 {0.69}	66	56	17.5
S6	M6×25	13.6 {1.39}	80	68	21
S7	M8×30	32.8 {3.35}	101	86	24.5

See page 138 for sleeve performance details

■ Materials and Specification

Belt Sprocket : Carbon steel
Electroless nickel-phosphorus plating

Sleeve : Carbon steel
Heat treated (Quenching and tempering)
Electroless nickel-phosphorus plating

Locking Bolt : Alloy steel
Heat treated (Quenching and tempering)
Special surface treatment

■ Types,Dimensions,Sleeve Frame No.and No.of Mounting Bolts

•P14M40 Width:53mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*												
				30	32	35	38	40	42	45	48	50	55	60	65	70
28	124.78	136.0	AF	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF	S48	S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF		S48	S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
36	160.43	171.0	AF			S48	S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
38	169.34	181.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
40	178.25	190.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
42	187.17	198.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
44	196.08	207.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
48	213.90	225.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
50	222.82	234.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75

- The combinations in ▭ are available for flat installation.
- Made to order.

•P14M60 Width:74mm

mm

No. of teeth *n*	Pitch circle dia. *Dp*	Flange outer dia. *Df*	Type	Shaft bore dia. *d*												
				30	32	35	38	40	42	45	48	50	55	60	65	70
28	124.78	136.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
30	133.69	145.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
32	142.60	154.0	AF				S510	S510	S510	S510	S66	S66	S66	S75	S75	S75
34	151.52	163.0	AF					S510	S510	S510	S66	S66	S66	S75	S75	S75
36	160.43	171.0	AF						S510	S510	S66	S66	S66	S75	S75	S75
38	169.34	181.0	AF							S510	S66	S66	S66	S75	S75	S75
40	178.25	190.0	AF								S66	S66	S66	S75	S75	S75
42	187.17	198.0	AF								S612	S612	S612	S75	S75	S75
44	196.08	207.0	AF								S612	S612	S612	S75	S75	S75
48	213.90	225.0	AF								S612	S612	S612	S75	S75	S75
50	222.82	234.0	AF								S612	S612	S612	S75	S75	S75

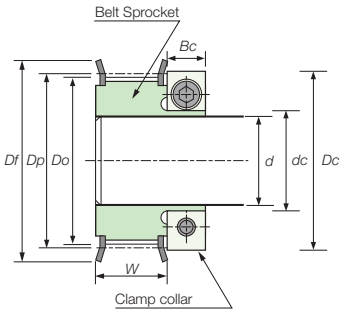
- The combinations in ▭ are available for flat installation.
- Made to order.

When using Ultra PX Belts HC type, refer to the combination table on page 82.

Applicable sleeve specifications (possibility of combined use, applicable sleeve frame number, and number of mounting bolts) may differ depending on the difference in transmission capacity between the PX Belt and the Ultra PX Belt, even if the number of teeth and the shaft bore are the same.

P2M (Pitch : 2.00 mm) , P3M (Pitch : 3.00 mm)

■ Design Type



■ Model Numbering Example

Belt Sprocket Model No.

PT 30 P2M 6 BF−A C3 10

- PT: Belt Sprocket
- 30: No.of groove
- P2M: Pitch
- 6: Belt width mm
- BF: Design type
  *Applicable Belt Sprocket types are BF type.
- A: Material, A : Aluminum
- C3: Clamp collar model No.
- 10: Shaft bore dia. mm

*Applicable belt sprockets types are all BF type.
*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table corresponds to the Clamp Collar Model No.

■ Clamp Collar Types and Dimensions

Clamp collar model No.	Size			Unit mass	Locking bolts			
					Number	Size	Tightening torque M_A	
	dc	*Dc*	*Bc*	g			N·m	kgf·m
	mm	mm	mm					
C1	9.2	30	10	19	2	M4×12	3.8	0.39
C2	11.0	33	10	22		M4×12	3.8	0.39
C3	13.4	40	12	39		M5×15	7.5	0.77
C4	16.4	42	12	42		M5×20	7.5	0.77
C5	19.4	45	12	46		M5×20	7.5	0.77
C6	22.8	53	15	78		M6×20	12.6	1.3

■ Materials and Specifications

Belt Sprocket : Aluminum alloy

Clamp collar : Aluminum alloy

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions and Clamp Collar Model No.

•P2M6BF-A Width:11.5mm Material:Aluminum alloy

mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
28	17.83	17.32	25.0	C1	C1	C2	C2	C3	C3								
30	19.10	18.59	26.0	C1	C1	C2	C2	C3	C3								
32	20.37	19.86	28.0	C1	C1	C2	C2	C3	C3								
34	21.65	21.14	28.0	C1	C1	C2	C2	C3	C3								
36	22.92	22.41	29.0	C1	C1	C2	C2	C3	C3	C4	C4						
40	25.46	24.96	32.0	C1	C1	C2	C2	C3	C3	C4	C4	C5	C5	C5			
42	26.74	26.23	32.0	C1	C1	C2	C2	C3	C3	C4	C4	C5	C5	C5			
44	28.01	27.50	34.0	C1	C1	C2	C2	C3	C3	C4	C4	C5	C5	C5			
48	30.56	30.05	36.0	C1	C1	C2	C2	C3	C3	C4	C4	C5	C5	C5			
50	31.83	31.32	39.0	C1	C1	C2	C2	C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
60	38.20	37.69	45.0			C2	C2	C3	C3	C4	C4	C5	C5	C5	C6	C6	C6

・ Made to order.

•P3M10BF-A Width:16mm Material:Aluminum alloy

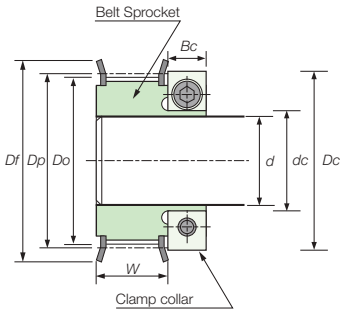
mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
22	21.01	20.25	28.0		C1	C2	C2										
24	22.92	22.16	29.0			C2	C2										
25	23.87	23.11	31.0			C2	C2										
26	24.83	24.07	31.0			C2	C2	C3	C3								
28	26.74	25.98	32.0			C2	C2	C3	C3	C4	C4						
30	28.65	27.89	34.0				C2	C3	C3	C4	C4						
32	30.56	29.80	36.0					C3	C3	C4	C4						
36	34.38	33.62	43.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
40	38.20	37.44	45.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
48	45.84	45.07	52.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
50	47.75	46.98	55.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
60	57.30	56.53	65.0							C4	C4	C5	C5	C5	C6	C6	C6

・ Made to order.

P3M (Pitch : 3.00 mm)

■ Design Type



■ Model Numbering Example

Belt Sprocket Model No.

PT 30 P3M 15 BF−A C3 10

- PT: Belt Sprocket
- 30: No.of groove
- P3M: Pitch
- 15: Belt width mm
- BF: Design type
- A: Material (A : Aluminum, blank : Carbon steel)
- C3: Clamp collar model No.
- 10: Shaft bore dia. mm

*Applicable Belt Sprocket types are BF type.

*Applicable belt sprockets types are all BF type.
*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table corresponds to the Clamp Collar Model No.

■ Clamp Collar Types and Dimensions

Clamp collar model No.	Size			Unit mass	Locking bolts			
					Number	Size	Tightening torque M_A	
	dc	*Dc*	*Bc*	g			N·m	kgf·m
	mm	mm	mm					
C1	9.2	30	10	19	2	M4×12	3.8	0.39
C2	11.0	33	10	22		M4×12	3.8	0.39
C3	13.4	40	12	39		M5×15	7.5	0.77
C4	16.4	42	12	42		M5×20	7.5	0.77
C5	19.4	45	12	46		M5×20	7.5	0.77
C6	22.8	53	15	78		M6×20	12.6	1.3

■ Materials and Specification

Belt Sprocket : Aluminum alloy
Carbon steel

Clamp collar : Aluminum alloy

Locking Bolt : Alloy steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions and Clamp Collar Model No.

•P3M10BF Width:16mm Material:Carbon steel

mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
22	21.01	20.25	28.0	C1	C1	C2	C2										
24	22.92	22.16	29.0	C1	C1	C2	C2										
25	23.87	23.11	31.0	C1	C1	C2	C2										
26	24.83	24.07	31.0	C1	C1	C2	C2	C3	C3								
28	26.74	25.98	32.0	C1	C1	C2	C2	C3	C3	C4	C4						
30	28.65	27.89	34.0	C1	C1	C2	C2	C3	C3	C4	C4						
32	30.56	29.80	36.0	C1	C1	C2	C2	C3	C3	C4	C4						

• Made to order.

•P3M15BF-A Width:21mm Material:Aluminum alloy

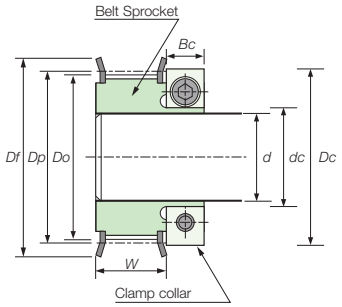
mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
22	21.01	20.25	28.0					C3	C3								
24	22.92	22.16	29.0					C3	C3	C4	C4						
25	23.87	23.11	31.0					C3	C3	C4	C4						
26	24.83	24.07	31.0					C3	C3	C4	C4						
28	26.74	25.98	32.0					C3	C3	C4	C4	C5	C5	C5			
30	28.65	27.89	34.0					C3	C3	C4	C4	C5	C5	C5			
32	30.56	29.80	36.0					C3	C3	C4	C4	C5	C5	C5			
36	34.38	33.62	43.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
40	38.20	37.44	45.0							C4	C4	C5	C5	C5	C6	C6	C6
48	45.84	45.07	52.0									C5	C5	C5	C6	C6	C6
50	47.75	46.98	55.0									C5	C5	C5	C6	C6	C6
60	57.30	56.53	65.0										C5		C6	C6	C6

• Made to order.

P5M (Pitch : 5.00 mm)

■ Design Type



■ Model Numbering Example

Belt Sprocket Model No.

PT 25 P5M 10 BF – A C3 10

- PT: Belt Sprocket
- 25: No.of groove
- P5M: Pitch
- 10: Belt width mm
- BF: Design type
  *Applicable Belt Sprocket types are BF type.
- A: Material
  A : Aluminum
  blank : Carbon steel
- C3: Clamp collar model No.
- 10: Shaft bore dia. mm

*Applicable belt sprockets types are all BF type.
*The items that can be manufactured are those where the intersection of the number of teeth and the shaft bore diameter in the table corresponds to the Clamp Collar Model No.

■ Clamp Collar Types and Dimensions

Clamp collar model No.	Size			Unit mass	Locking bolts			
					Number	Size	Tightening torque M_A	
	dc	*Dc*	*Bc*	g			N·m	kgf·m
	mm	mm	mm					
C1	9.2	30	10	19	2	M4×12	3.8	0.39
C2	11.0	33	10	22		M4×12	3.8	0.39
C3	13.4	40	12	39		M5×15	7.5	0.77
C4	16.4	42	12	42		M5×20	7.5	0.77
C5	19.4	45	12	46		M5×20	7.5	0.77
C6	22.8	53	15	78		M6×20	12.6	1.3

■ Materials and Specifications

Belt Sprocket : Aluminum alloy
Carbon steel

Clamp collar : Aluminum alloy

Locking Bolt : Alloy Steel
Heat treatment (Quenching and tempering)
Black (colored) oxide coating

■ Types,Dimensions and Clamp Collar Model No.

•P5M10BF-A Width:16mm Material:Aluminum alloy

mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
16	25.46	24.32	31.0					C3	C3	C4	C4						
18	28.65	27.51	36.0					C3	C3	C4	C4	C5	C5	C5			
20	31.83	30.69	36.0					C3	C3	C4	C4	C5	C5	C5			
22	35.01	33.87	43.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
24	38.20	37.06	44.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
25	39.79	38.65	45.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
26	41.38	40.24	47.0							C4	C4	C5	C5	C5	C6	C6	C6
28	44.56	43.42	52.0							C4	C4	C5	C5	C5	C6	C6	C6
30	47.75	46.60	55.0								C4	C5	C5	C5	C6	C6	C6
32	50.93	49.79	55.0									C5	C5	C5	C6	C6	C6
36	57.30	56.15	64.0									C5	C5	C5	C6	C6	C6
40	63.66	62.52	67.0										C5		C6	C6	C6
44	70.03	68.89	74.0												C6	C6	C6

・ Made to order.

•P5M10BF Width:16mm Material:Carbon steel

mm

No. of teeth n	Pitch circle dia. *Dp*	Outer dia. *Do*	Flange outer dia. *Df*	Shaft bore dia. *d*													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
12	19.10	17.96	23.0	C1	C1												
14	22.28	21.14	28.0	C1	C1	C2	C2										
16	25.46	24.32	31.0	C1	C1	C2	C2	C3	C3								
18	28.65	27.51	36.0	C1	C1	C2	C2	C3	C3	C4	C4						
20	31.83	30.69	36.0			C2	C2	C3	C3	C4	C4						
22	35.01	33.87	43.0			C2	C2	C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
24	38.20	37.06	44.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
25	39.79	38.65	45.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
26	41.38	40.24	47.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
28	44.56	43.42	52.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
30	47.75	46.60	55.0							C4	C4	C5	C5	C5	C6	C6	C6
32	50.93	49.79	55.0							C4	C4	C5	C5	C5	C6	C6	C6
36	57.30	56.15	64.0							C4	C4	C5	C5	C5	C6	C6	C6
40	63.66	62.52	67.0							C4	C4	C5	C5	C5	C6	C6	C6
44	70.03	68.89	74.0									C5	C5	C5	C6	C6	C6

・ Made to order.

P5M (Pitch : 5.00 mm)

■ Types,Dimensions and Clamp Collar Model

•P5M15BF-A Width:21mm Material:Aluminum alloy

mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Shaft bore dia. d													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
16	25.46	24.32	31.0					C3		C4	C4						
18	28.65	27.51	36.0					C3		C4	C4	C5	C5	C5			
20	31.83	30.69	36.0							C4	C4	C5	C5	C5			
22	35.01	33.87	43.0									C5	C5	C5	C6	C6	C6
24	38.20	37.06	44.0									C5	C5	C5	C6	C6	C6
25	39.79	38.65	45.0									C5	C5	C5	C6	C6	C6
26	41.38	40.24	47.0									C5	C5	C5	C6	C6	C6
28	44.56	43.42	52.0										C5		C6	C6	C6
30	47.75	46.60	55.0										C5		C6	C6	C6
32	50.93	49.79	55.0												C6	C6	C6
36	57.30	56.15	64.0												C6	C6	C6
40	63.66	62.52	67.0												C6	C6	
44	70.03	68.89	74.0													C6	

・ Made to order.

•P5M15BF Width:21mm Material:Carbon steel

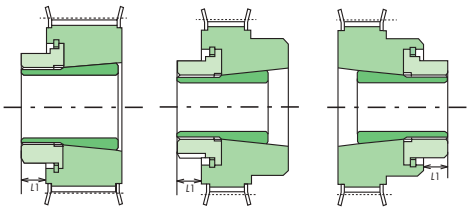
mm

No. of teeth n	Pitch circle dia. Dp	Outer dia. Do	Flange outer dia. Df	Shaft bore dia. d													
				6	7	8	9	10	11	12	14	15	16	17	18	19	20
12	19.10	17.96	23.0	C1	C1												
14	22.28	21.14	28.0			C2	C2										
16	25.46	24.32	31.0				C2	C3	C3								
18	28.65	27.51	36.0					C3	C3	C4	C4						
20	31.83	30.69	36.0					C3	C3	C4	C4						
22	35.01	33.87	43.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
24	38.20	37.06	44.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
25	39.79	38.65	45.0					C3	C3	C4	C4	C5	C5	C5	C6	C6	C6
26	41.38	40.24	47.0					C3		C4	C4	C5	C5	C5	C6	C6	C6
28	44.56	43.42	52.0							C4	C4	C5	C5	C5	C6	C6	C6
30	47.75	46.60	55.0							C4	C4	C5	C5	C5	C6	C6	C6
32	50.93	49.79	55.0								C4	C5	C5	C5	C6	C6	C6
36	57.30	56.15	64.0										C5	C5	C6	C6	C6
40	63.66	62.52	67.0												C6	C6	C6
44	70.03	68.89	74.0												C6	C6	C6

・ Made to order.

P3M (Pitch : 3.00 mm) , P5M (Pitch : 5.00 mm)

■ Design Type



AF type

BF type
Installing direction : A

BF type
Installing direction : B

■ Sleeve Types and Dimensions

Sleeve frame No.	Shaft bore dia. mm	Sleeve dia. L1mm	Widths across flats mm	Tightning torque M_A N·m	Tightning torque M_A kgf·m
N1	7	5	18	18	1.84
	8				
	9				
N2	10	6	22	28	2.86
	11				
	12				
N3	14	8	30	65	6.63
	15				
	16				
N4	17	10	36	100	10.20
	18				
	19				
N5	20	11	41	130	13.27
	22				
	24				
N6	25	11	46	200	20.41
	26				
	28				

■ Model Numbering Example (P3M)

Belt Sprocket No. / Sleeve model No.

PT 36 P 3M 10 BF–A–N1 9 A

- PT: Belt Sprocket
- 36: No.of groove
- P: Series
- 3M: Pitch
- 10: Belt width mm
- BF: Design type
- A: Material A:Aluminum
- N1: Sleeve frame No. (N type)
- 9: Shaft bore dia. mm
- A: (Only BF type) A : Installing non-hub side, B : Installing hub side

■ Materials and Specifications

Belt Sprocket : Aluminum

Sleeve : Carbon steel
Heat treatment (Quenching and tempering)

Nut : Carbon steel
Heat treatment (Quenching and tempering)
Fluorine coating (black)

■ Model Numbering Example (P5M)

Belt Sprocket No. / Sleeve model No.

PT 30 P 5M 15 BF–N2 11 A

- PT: Belt Sprocket
- 30: No.of groove
- P: Series
- 5M: Pitch
- 15: Belt width mm
- BF: Design type
- N2: Sleeve frame No. (N type)
- 11: Shaft bore dia. mm
- A: (Only BF type) A : Installing non-hub side, B : Installing hub side

■ Materials and Specifications

Belt Sprocket : Carbon steel

Sleeve : Carbon steel
Heat treatment (Quenchingand tempering)

Nut : Carbon steel
Heat treatment (Quenching and tempering)
Fluorine coating (black)

■ Types,Dimensions and Sleeve Frame No.

•P3M10 Width:16mm

mm

No. of teeth n	Pitch circle dia.	Flange outer dia.	Shaft bore dia. d 7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	26	28
36	34.38	43.0	N1	N1	N1															
40	38.20	45.0	N1	N1	N1															
48	45.84	52.0	N1	N1	N1	N2	N2	N2												
50	47.75	55.0	N1	N1	N1	N2	N2	N2												
60	57.30	65.0	N1	N1	N1	N2	N2	N2												

- The products within the range in ☐ are also applicable to the Ultra PX Belt.
- The products in ▒ are the BF Type and applicable only to the installing direction A.
- The products in ▒ are the BF Type and applicable to both the installing directions A and B.
- Made to order.

•P3M15 Width:21mm

mm

No. of teeth n	Pitch circle dia.	Flange outer dia.	Shaft bore dia. d 7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	26	28
36	34.38	43.0	N1	N1	N1															
40	38.20	45.0	N1	N1	N1															
48	45.84	52.0	N1	N1	N1	N2	N2	N2												
50	47.75	55.0	N1	N1	N1	N2	N2	N2												
60	57.30	65.0	N1	N1	N1	N2	N2	N2												

- The products within the range in ☐ are also applicable to the Ultra PX Belt.
- The products in ▒ are the BF Type and applicable only to the installing direction A.
- The products in ▒ are the BF Type and applicable to both the installing directions A and B.
- Made to order.

P5M (Pitch : 5.00 mm)

•P5M10 Width:16mm

mm

No. of teeth *n*	Pitch circle dia.	Flange outer dia.	Shaft bore dia. *d*																	
			7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	26	28
22	35.01	43.0	N1	N1	N1															
24	38.20	44.0	N1	N1	N1															
25	39.79	45.0	N1	N1	N1															
26	41.38	47.0	N1	N1	N1	N2	N2	N2												
28	44.56	52.0	N1	N1	N1	N2	N2	N2												
30	47.75	55.0	N1	N1	N1	N2	N2	N2												
32	50.93	55.0	N1	N1	N1	N2	N2	N2												
36	57.30	64.0		N1	N1	N2	N2	N2	N3	N3	N3									
40	63.66	67.0			N1	N2	N2	N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
44	70.03	74.0				N2	N2	N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
48	76.39	82.0				N2	N2	N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
50	79.58	86.0				N2	N2	N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
60	95.49	103.0						N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
72	114.59	120.0							N3	N3	N3	N4	N4	N4	N5	N5	N5			

- The products within the range in ☐ are also applicable to the Ultra PX Belt.
- The products in ▒ are the BF Type and applicable only to the installing direction A.
- The products in ▒ are the BF Type and applicable to both the installing directions A and B.
- Made to order.

•P5M15 Width:21mm

mm

No. of teeth *n*	Pitch circle dia.	Flange outer dia.	Shaft bore dia. *d*																	
			7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	26	28
22	35.01	43.0	N1	N1	N1															
24	38.20	44.0	N1	N1	N1															
25	39.79	45.0	N1	N1	N1															
26	41.38	47.0		N1	N1	N2	N2	N2												
28	44.56	52.0			N1	N2	N2	N2												
30	47.75	55.0			N1	N2	N2	N2												
32	50.93	55.0				N2	N2	N2												
36	57.30	64.0				N2	N2	N2	N3	N3	N3									
40	63.66	67.0					N2	N2	N3	N3	N3	N4	N4	N4	N5	N5	N5			
44	70.03	74.0						N2	N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
48	76.39	82.0							N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
50	79.58	86.0							N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
60	95.49	103.0							N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
72	114.59	120.0								N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6

- The products within the range in ☐ are also applicable to the Ultra PX Belt.
- The products in ▒ are the AF Type.
- The products in ▒ are the BF Type and applicable only to the installing direction A.
- The products in ▒ are the BF Type and applicable to both the installing directions A and B.
- Made to order.

•P5M25 Width:32mm

mm

No. of teeth *n*	Pitch circle dia.	Flange outer dia.	Shaft bore dia. *d*																	
			7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	26	28
26	41.38	47.0					N2	N2												
28	44.56	52.0						N2												
30	47.75	55.0																		
32	50.93	55.0																		
36	57.30	64.0							N3	N3	N3									
40	63.66	67.0							N3	N3	N3	N4	N4	N4	N5	N5	N5			
44	70.03	74.0							N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
48	76.39	82.0							N3	N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
50	79.58	86.0								N3	N3	N4	N4	N4	N5	N5	N5	N6	N6	N6
60	95.49	103.0										N4	N4	N4	N5	N5	N5	N6	N6	N6
72	114.59	120.0											N4	N4	N5	N5	N5	N6	N6	N6

- The products in ▒ are the AF Type.
- The products in ▒ are the BF Type and applicable only to the installing direction A.
- The products in ▒ are the BF Type and applicable to both the installing directions A and B.
- Made to order.

Friction type locking devices

Power Lock KE Series

Model
PL(Shaft dia.)×(outer dia.) KE : ① Standard
KE-SS : ② Stainless steel
KE-KP : ③ Electroless nickel-phosphorus plating
KE-LP : ④ low surface pressure

Applicable to a wide range of tolerance shafts

- Smaller outer and inner diameter compared to those of AE series allows compact design
- Available in stainless-steel, electroless nickel-plating, and low surface pressure

Applicable shaft dia
①③④ ϕ5 to ϕ100 ② ϕ5 to ϕ50

Transmissible Torque N·m{kgf·m}
①③ 7.5{0.77} to 9900{1010} ② 5.0{0.51} to 836{85.3} ④ 6.3{0.64} to 8290{846}

Power Lock AS Series

Model
PL(Shaft dia.)×(outer dia) AS : ① Standard
AS-SS : ② Stainless steel
AS-KP : ③ Electroless nickel-phosphorus plating

Easy handling and multipurpose

- Adopting high-strength locking bolts. Fewer bolts are used compared to competitors' equivalent products, and reduces the labor required for assembly
- Available in stainless steel and electroless nickel-plated finish, and inch size models

Applicable shaft dia
① ϕ19 to ϕ500 ② ϕ19 to ϕ150 ③ ϕ19 to ϕ300

Transmissible Torque N·m{kgf·m}
①294{30} to 555000{56600} ②196{20} to 20900{2130} ③245{25} to 151000{15400}

Power Lock AE Series

Model
PL(Shaft dia.)×(outer dia.) AE

Self-centering function added to the AS series

- No need to machine the guide section

Applicable shaft dia
ϕ19 to ϕ150

Transmissible Torque N·m{kgf·m}
265{27} to 27000{2760}

Power Lock TF Series

Model
PL(Shaft dia.)×(outer dia.) TF : ① Standard
TF-KP : ② Electroless nickel-phosphorus plating

The smallest inner and outer diameter ratio in the series enables best performance for locking small hubs.

- The smallest number of locking bolts of the series
- The electroless nickel plating (KP) is also available
- Equipped with self-centering function, and no need to machine the guide section

Applicable shaft dia
① ϕ6 to ϕ90 ② ϕ10 to ϕ90

Transmissible Torque N·m{kgf·m}
①11{1.2} to 8820{900} ②44{4.43} to 8820{900}

Power Lock RE-SS Series

Model
PL(Shaft dia.)×(outer dia.) RE-SS

Austenite stainless steel

- Install or remove the snap ring to use as a flange or straight type
- Best for use in clean rooms and corrosive atmosphere
- Wide product lineup including small-diameter shafts

Applicable shaft dia
ϕ5 to ϕ50

Transmissible Torque N·m{kgf·m}
5.01{0.51} to 1170{119}

Power Lock

Friction type locking devices

Power Lock AD-N Series

Model
PL(Shaft dia.)×(outer dia.) AD-N : ① Standard
AD-N-KP : ② Electroless nickel-phosphorus plating

Approximately 1.5 to 3 times greater rated torque capacity than the AS series

- Same inner and outer diameters with AS series allows to replace multiple use of the AS.
- The nickel-phosphorus plating models also available on ②

Applicable shaft dia
① ϕ19 to ϕ300 ② ϕ50 to ϕ100
Transmissible Torque N·m{kgf·m}
①382{39} to 429000{43800} ②4210{430} to 26500{2700}

Power Lock SL Series

Model
PL(Shaft dia.)×(outer dia.) SL

Best for locking hollow shafts for speed reducers, etc.

- External locking devices installed over outer hub diameters.
- Applicable even when thickness of the boss cannot be secured due to its design

Applicable shaft dia
ϕ24 to ϕ300
Transmissible Torque N·m{kgf·m}
167{17} to 290000{29600}

Power Lock ML Series

Model
PL(Shaft dia.)×(outer dia.) ML

Quick to install with a single nut.

- Suitable for hubs whose length are shorter than the widths of the Power-Lock ML series.
- Equipped with self-centering function, and no need to machine the guide section

Applicable shaft dia
ϕ5 to ϕ75
Transmissible Torque N·m{kgf·m}
6.76{0.69} to 2000{204}

Power Lock EF Series

Model
PL(Shaft dia.)×(outer dia.) EF

EL series with a integrated pressure flange

- Achieves twice or three times larger rated torque capacity torque with the same inner and outer diameters of the EL
- Equipped with self-centering function, and no need to machine the guide section

Applicable shaft dia
ϕ10 to ϕ120mm
Transmissible Torque N·m{kgf·m}
39{4.0} to 12600{1290}

Power Lock EL Series

Model
PL(Shaft dia.)×(outer dia.) EL

Simple construction

- The size and number of bolts to be tightened or even the number of EL to be installed can be selected freely to achieve an optimum design
- Complete ring design achieves superior dynamic balance
- Best for large volume use due to the low price

Applicable shaft dia
ϕ10 to ϕ150
Transmissible Torque N·m{kgf·m}
6.9{0.7} to 10500{1070}

Tsubaki Belt Tension Meter T-ACE

Features of a sonic belt tension meter Belt Tension Meter T-ACE BDTM201

1 An organic EL screen is used

The brighter screen made it easier to read letters, which improved the visibility in dark measuring environment.

2 Wide measurement range

The measurement frequency range was extended to 10 to 5,000 Hz, which made it easier to conduct measurements in both short and long span layouts.

3 Up to 40 measurement conditions can be registered

Unit mass, belt width, and span length can be registered up to 40 sets.
(No. 00 – No. 39)

4 Preinstalled unit masses

The unit mass of Tsubaki-manufactured synchronous belts is pre-installed, allowing easy data entry.

Specification

Model	BDTM201
Measuring range	10.0 to 5000Hz, 0.01 to 99900N (Indication possible area)
Span length	1 to 9999mm (Indication possible area)
Unit mass	0.1 to 999.9g/mm W ×m L (Indication possible area)
Working temperature	–10 to 50°C, 80% or less (No condensation)
Power supply	Dry Cell AAA×2
Mass/Dimensions	120g (Main body) · L160×W59×D26mm
Accessories	Sensor microphone, dry cell (AAA×2), portable soft case, instruction manual, warranty certificate, inspection certificate, operation procedure sheet (portable)
Option (sold separately)	Sensor microphone / cord type
Sensor microphone	Sensor microphone: Flexible type (Standard type) / Cord type (Cord length: 1 m)

For details, please refer to the catalog.

Tsubaki Easy-Laser

Features of Belt Sprocket · Accessories for sprocket centering adjustment Easy-Laser EL-D92-BTA

1 Rapid accuracy check

Thanks to the high degree of linearity of the laser line.

2 Simple operation

Easy to use, Just project the laser on the targets.

3 Mounting on non-magnetic materials possible

Can be attached to non-magnetic materials using double-sided tape.

The mounting accuracy of the belt sprockets has a major impact on smooth belt drive and conveyance. Easy-Laser makes it easy to check and adjust any misalignment simply by projecting the laser beam on the belt sprockets.

■ Accurate centering adjustment possible

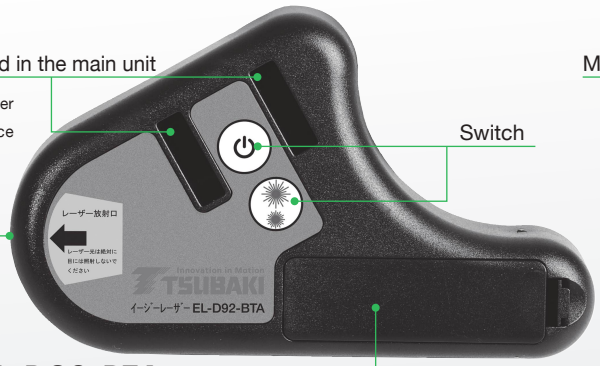
Parallel misalignment·Angular misalignment | Parallel misalignment | Angular misalignment

Target

Targets (two) are stored in the main unit

The position where the stopper stops is the target reference position.

Laser light aperture



Switch

Magnet

Padded case

AA battery (one, attached)

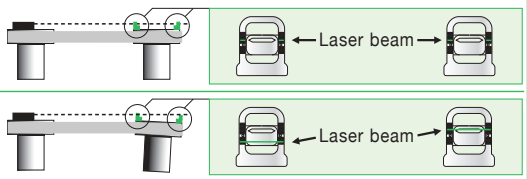
Model Numbering Example **EL-D92-BTA**

EASY-LASER is a trademark of Easy-Laser AB.

Adjust centering while checking the position of the laser beam projected on the targets. Easy operation at a glance.

◆ **Correct alignment:**
Laser beam projects through the centers

◆ **Misaligned:**
Laser beam deviates from the centers



■ Specifications

Model number	EL-D92-BTA
Laser wavelength	630 to 680 nm
Laser output	Weak mode 0.6mW or less High mode 4.8mW or less
Laser class	class 2
Beam angle	55°
Sprocket (pulley) diameter	60 mm or more
Sprocket (pulley) width	Regardless of width
Accuracy	Angular error between targets within 0.05°
Practical measuring distance	Up to 10 m (when used indoors)

Material	ABS resin / Aluminum (hard alumite)
Dimensions (W x H x D)	147 × 87 × 31 mm
Mass of main unit	265g
Power supply	Dry Cell AAA×1
Battery operation	8 hours continuously
Operating temperature	–10 to 50°C

Belt Clamp

Features of Belt Clamp

1 Stock item

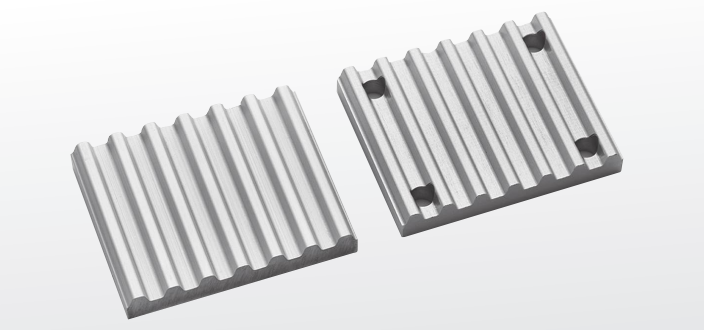
As this product is stock item, it is available immediately.

2 Assortment to match your belt

Pitch 5mm is available in widths of 10/15/20/25mm, and pitch 8mm is available in widths of 15/20/25/40/60mm.

3 Choice of varieties

You can choose either without holes or with holes according to your needs.
●Without holes for more flexible processing ●With holes for no processing



The Tsubaki belt clamp is a metal plate for fixing a work to the belt, fixing a long belt, etc.

■Model Numbering Example

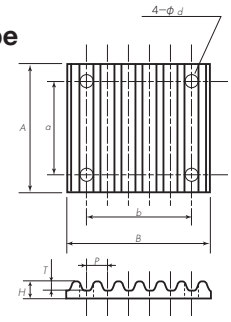
BDCP — P5M 10 N

- BDCP: Belt Clamp
- P5M: Pitch
- 10: Belt width mm
- N: N : without mounting holes; No symbol : With mounting holes

■Material

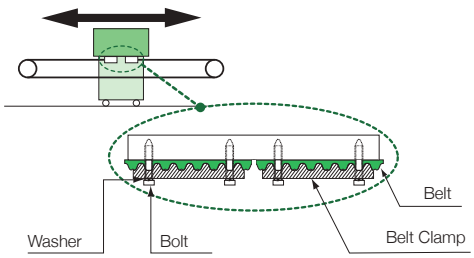
Aluminum alloy (White alumite treatment)

■Shape

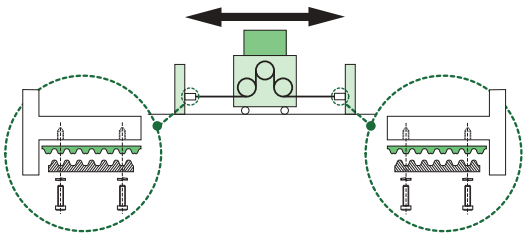


Use examples

Example 1 Fixing works that move reciprocally



Example 2 Long belt fixing end



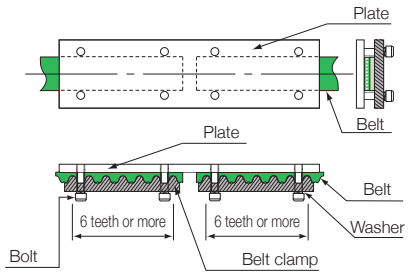
■Type,Dimension and Weight list

mm / g

Model No.	Mounting hole Available	Mounting hole Not available	Type	Applicable belt width	Width A	Length B	Overall thickness H	Tooth height T	Fitting hole pitch a	Fitting hole pitch b	Fitting hole dia. d	Tooth shape pitch p	Mass
BDCP-P5M10	—	N	P5M UP5M	10	27	35	6	1.9	16	25	4.5	5	12
BDCP-P5M15	—	N		15	32				21				15
BDCP-P5M20	—	N		20	37				26				17
BDCP-P5M25	—	N		25	42				31				19
BDCP-P8M15	—	N	P8M UP8M	15	34	54	8	3	22	40	5.5	8	32
BDCP-P8M20	—	N		20	39				27				36
BDCP-P8M25	—	N		25	44				32				41
BDCP-P8M40		N		40	60				—	—	—		55
BDCP-P8M60		N		60	80								74

Applicable products: Each type without mounting holes

■Connecting methods

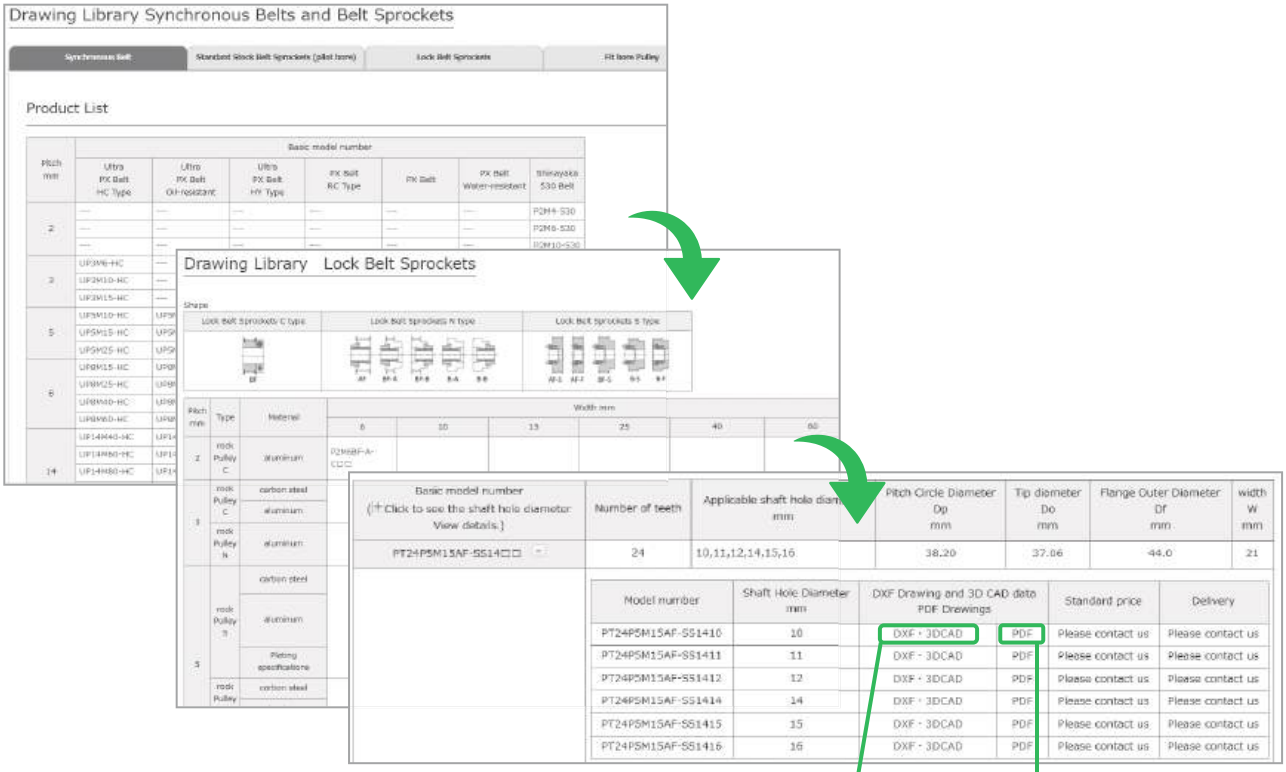


■Instructions for use

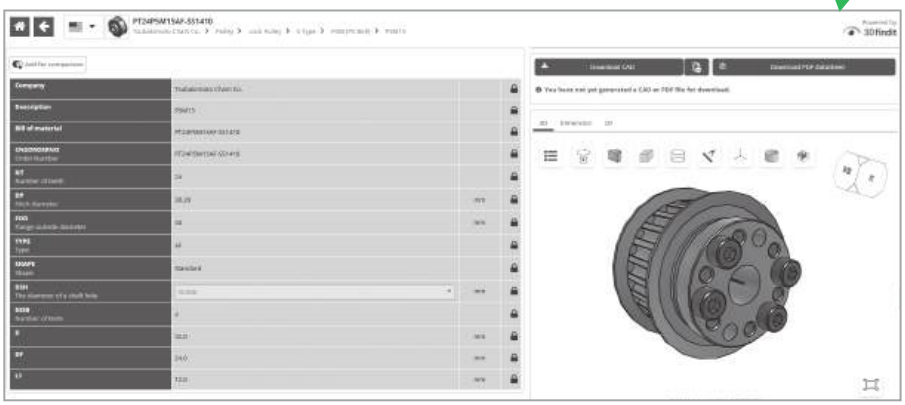
- Do not create holes in the belt for installation.
- Fasten four bolts uniformly.
- The bolts shall be fastened tight enough for the spring washers on the nut side to become flat. If the bolts are fastened too much, the belt may be deformed.
- Bolts for tightening, spring washers, etc. shall be prepared by customer.
- Chamfer the angles of the plate that contact the belt.
- Check for any loose bolts periodically for maintenance. Refasten them if they are loose.
- Please contact your local Tsubaki representative for the vertical installation.

Drawing download (2D and 3D-capable)

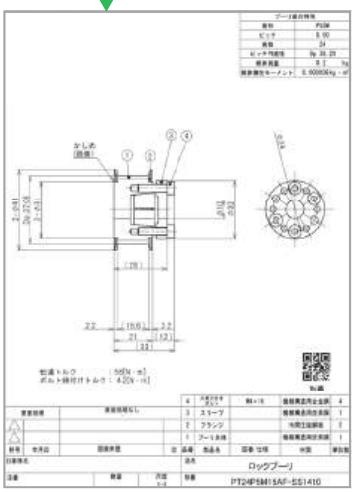
2D and 3D CAD data required for design can be downloaded in various file formats.
From model selection to drawing download, the entire process can be completed smoothly on the web, helping reduce design effort.



CAD data



PDF



TSUBAKI Power Transmission Products Information Site https://tt-net.tsubakimoto.co.jp

Please make use of our engineering support, which includes detailed product information, selection software, usage examples, 2D/3D CAD data, instruction manuals, and various data downloads. We are here to assist you in your product design and engineering needs.

HOME＞Drawing Library＞Synchronous Belts and Belt Sprockets Synchronous Belt

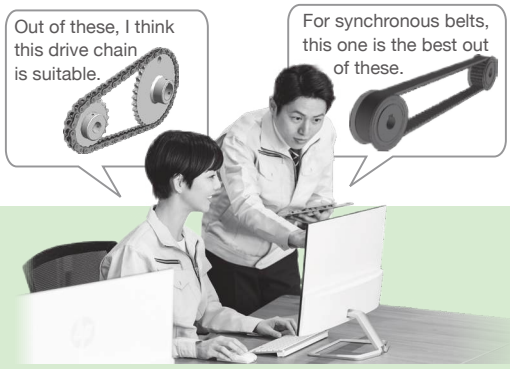
Go to the CADENAS WEB2CAD website

Selection Method

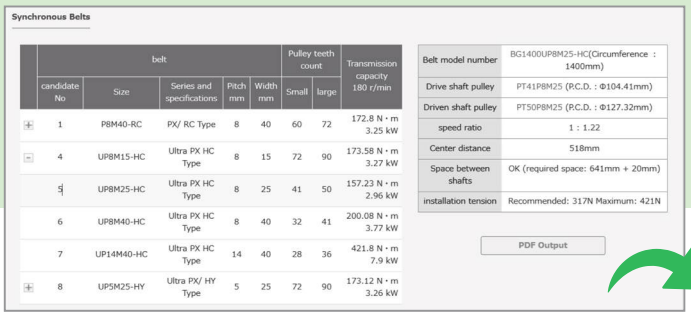
Auto Selector (Simplified Version)

A fast and easy-to-use Auto Selector (Simplified version) is available on our website (TSUBAKI Power Transmission Infomation Site). By entering basic conditions, multiple suitable options can be selected -no complex calculations required. This tool is ideal for use in the early stages of design and planning.

Drive chain & Synchronous belt
Auto Selector (Simplified version)



Only "TSUBAKI" allows the selection of both Drive chains and Synchronous Belts. at the same time.

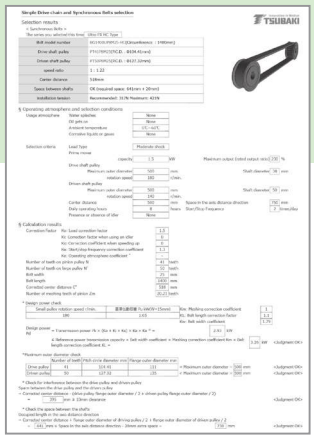


Synchronous Belts

	belt					Pulley teeth count		Transmission capacity 180 r/min
	candidate No	Size	Series and specifications	Pitch mm	Width mm	Small	large	
+	1	P8M40-RC	PX/ RC Type	8	40	60	72	172.8 N・m 3.25 kW
−	4	UP8M15-HC	Ultra PX HC Type	8	15	72	90	173.58 N・m 3.27 kW
	5	UP8M25-HC	Ultra PX HC Type	8	25	41	50	157.23 N・m 2.96 kW
	6	UP8M40-HC	Ultra PX HC Type	8	40	32	41	200.08 N・m 3.77 kW
	7	UP14M40-HC	Ultra PX HC Type	14	40	28	36	421.8 N・m 7.9 kW
+	8	UP5M25-HY	Ultra PX/ HY Type	5	25	72	90	173.12 N・m 3.26 kW

Belt model number	BG1400UP8M25-HC(Circumference : 1400mm)
Drive shaft pulley	PT41P8M25 (P.C.D. : Φ104.41mm)
Driven shaft pulley	PT50P8M25 (P.C.D. : Φ127.32mm)
speed ratio	1 : 1.22
Center distance	518mm
Space between shafts	OK (required space: 641mm + 20mm)
installation tension	Recommended: 317N Maximum: 421N

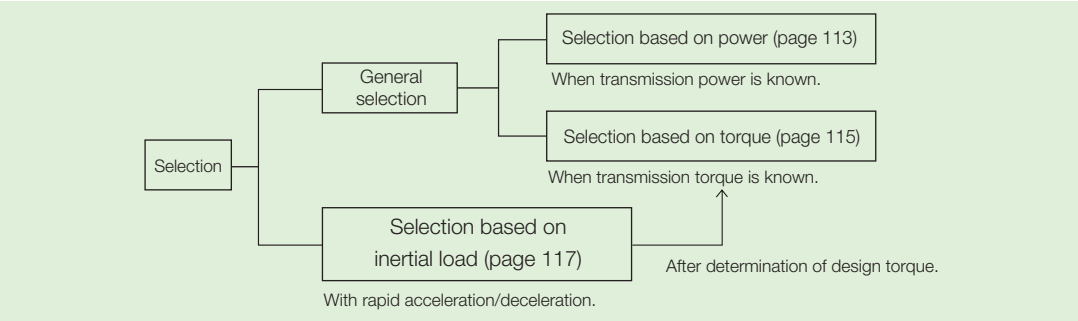
PDF Output



It is available to output the selection result as a PDF file.

Type of selection

Synchronous Belts can be selected by the following methods. Use a suitable method according to your requirements.



Correction Factors

Correction Factors

Table 1: Service correction factor (*Ko*)

Ratio of max. load output to motor rated output		≤200%			201 to 249%			250%≤		
Operation hours per day h		<3	3 to 10	10<	<3	3 to 10	10<	<3	3 to 10	10<
Type of load and examples of application	Relatively smooth drive Example: Measuring instruments, medical equipment, agitators	1.2	1.3	1.4	1.3	1.4	1.4	1.4	1.5	1.6
	Drive with slight shock Example: Injection molding machines, machine tools, conveyors, pumps	1.3	1.4	1.5	1.4	1.5	1.6	1.5	1.6	1.7
	Drive with large shock Example: Robots, high-speed press machines, intermittently driven conveyors	1.4	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.8

In applications involving extremely severe shock loads, factor greater than 1.8 may be required.
Please contact a Tsubaki representative for the use of such application.

Table 2: Correction factor when idler is used (*Ki*)

Idler mounted on	Inside	Outside
Slack side of belt	0	+0.1
Tension side of belt	+0.1	+0.2

Table 3: Correction factor for speed increase (*Ks*)

Increase ratio	Correction factor
1 and over, up to 1.25	0
1.25 and over, up to 1.75	+0.2
1.75 and over, up to 2.5	+0.3
2.5 and over, up to 3.5	+0.4
3.5 and over	+0.5

Table 4: Start-stop frequency correction factor (*Ka*)

Frequency of start-stop per day		≤10	11 to 100	101 to 999	1000≤
Ratio of max. output to motor rated output	≤200%	1.2	1.3	1.4	1.5
	201 to 249%	1.3	1.4	1.5	1.6
	250%≤	1.4	1.6	1.7	1.8

Table 5: Belt length correction factor (*KL*)

Pitch \ Belt length mm	≤200	201 to 300	301 to 450	451 to 600	601 to 900	901 to 1300	1301 to 1800	1801≤
P2M	0.8	0.9	1.0	1.1	1.2	1.2	1.2	1.2
P3M・UP3M	0.8	0.9	1.0	1.1	1.2	1.2	1.2	1.2
P5M・UP5M	–	0.8	0.8	0.9	1.0	1.1	1.2	1.2
P8M・UP8M	–	–	0.8	0.8	0.9	1.0	1.1	1.2
P14M・UP14M	–	–	–	–	–	0.9	1.0	1.1

Table 6: Meshing correction factor (*Km*)

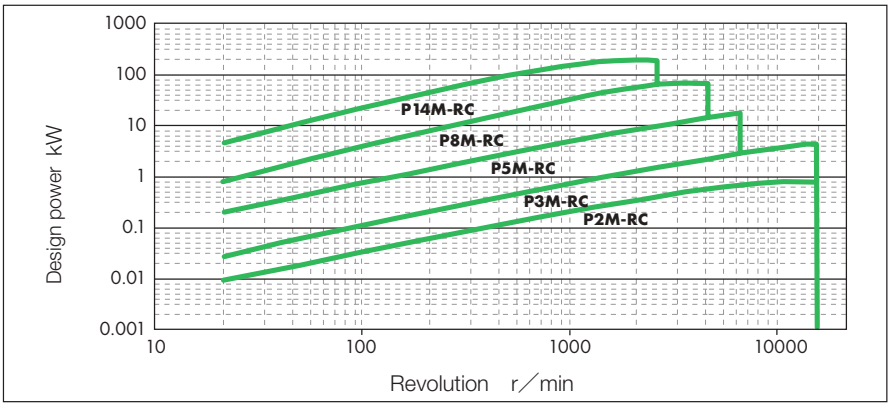
Number of meshing teeth of small belt sprocket Zm	6 or over	5	4
Meshing correction factor	1.0	0.7	0.5

Note: If the number of meshing teeth of the belt and belt sprocket do not satisfy the following conditions, reconsider the layout.

- In the case of a drive belt sprocket, the engagement angle shall be 120° or larger, and the number of meshing teeth shall be six or more.
- In the case of a driven belt sprocket, the engagement angle shall be 90° or larger, and the number of meshing teeth shall be six or more.

PX Belts RC Type

■ Standard transmission capacity

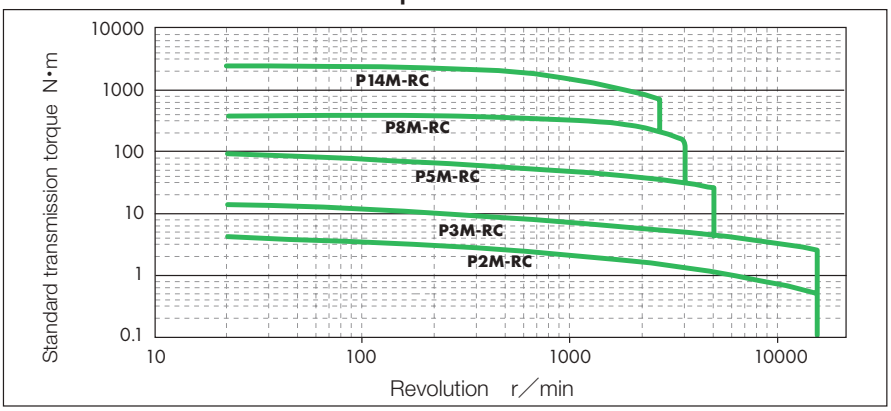


■ Widths applicable to the tentative selection table

Belt type	Subject belt	Maximum applicable width [mm]
PX Belt RC Type	P2M-RC	10
	P3M-RC	15
	P5M-RC	25
	P8M-RC	60
	P14M-RC	120

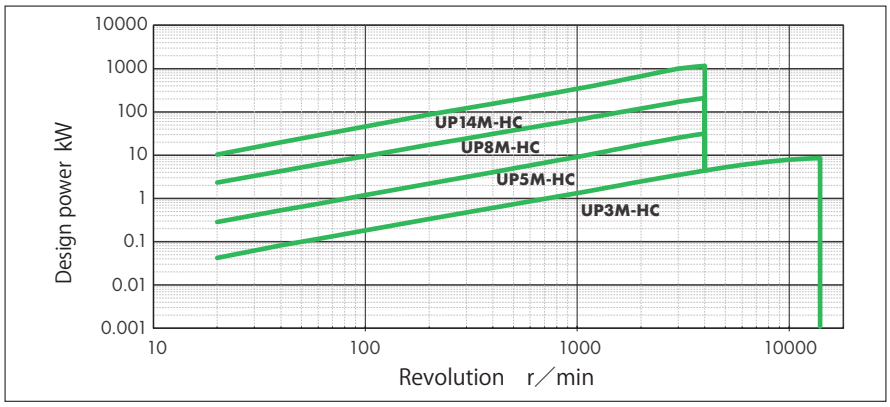
This table is based on the maximum widths of standard products.

■ Standard transmission torque



Ultra PX Belts HC Type

■ Standard transmission capacity

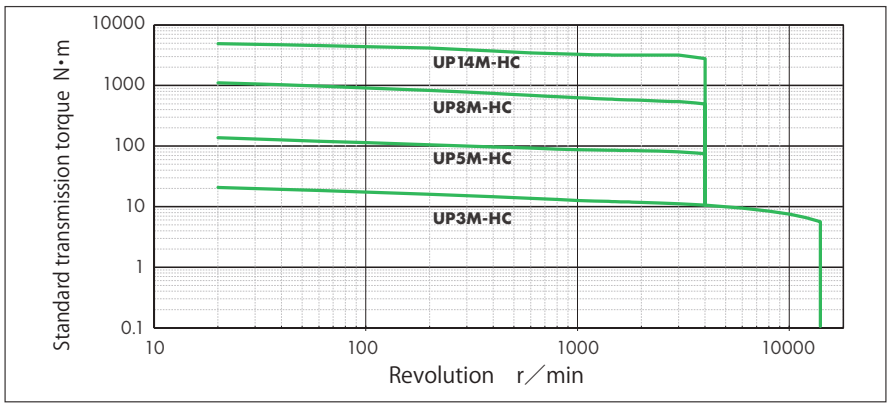


■ Widths applicable to the tentative selection table

Belt type	Subject belt	Maximum applicable width [mm]
Ultra PX Belt HC Type	UP3M-HC	15
	UP5M-HC	25
	UP8M-HC	60
	UP14M-HC	120

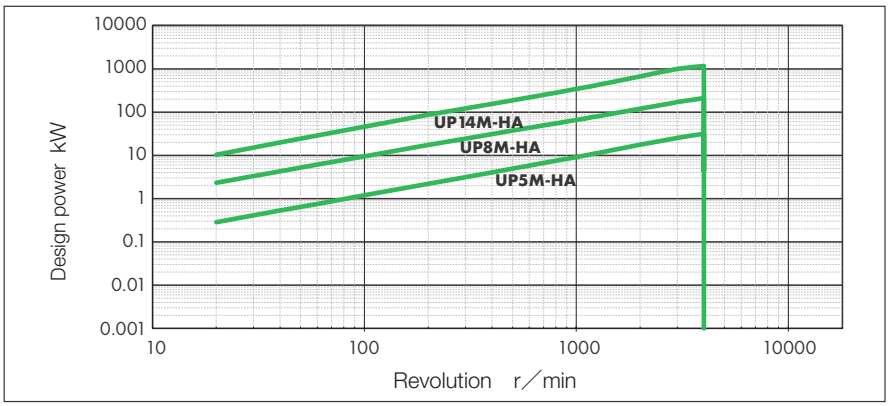
This table is based on the maximum widths of standard products.

■ Standard transmission torque

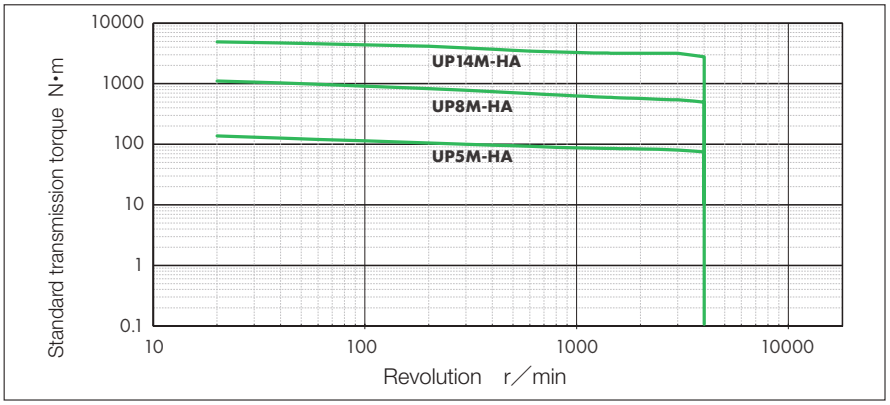


Ultra PX Belts HA Type (Oil resistant / Water resistant Type)

■ Standard transmission capacity



■ Standard transmission torque



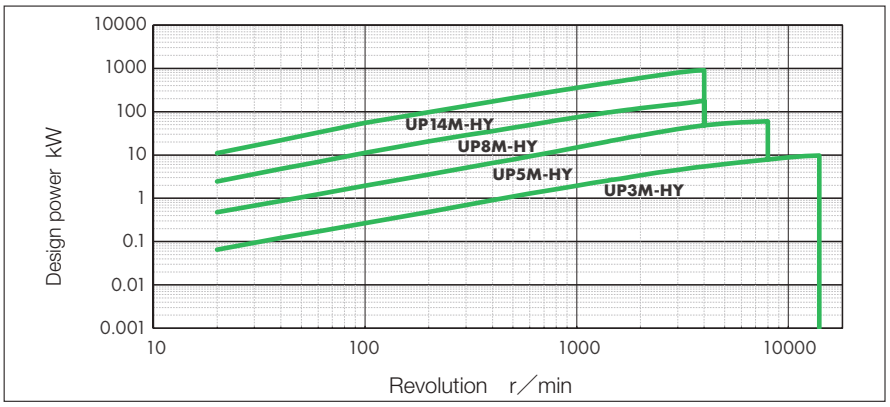
■ Widths applicable to the tentative selection table

Belt type	Subject belt	Maximum applicable width [mm]
Ultra PX Belt HA Type Oil resistant / Water resistant	UP5M-HA	25
	UP8M-HA	60
	UP14M-HA	120

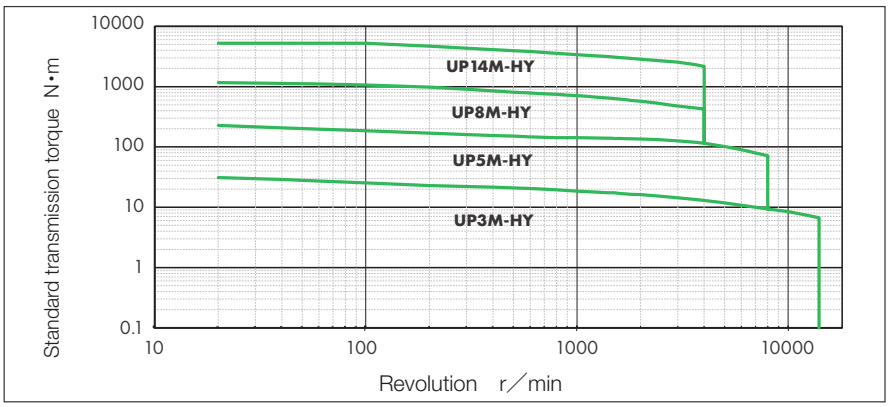
This table is based on the maximum widths of standard products.

Ultra PX Belts HY Type

■ Standard transmission capacity



■ Standard transmission torque



■ Widths applicable to the tentative selection table

Belt type	Subject belt	Maximum applicable width [mm]
Ultra PX Belt HY Type	UP3M-HY	15
	UP5M-HY	25
	UP8M-HY	60
	UP14M-HY	120

This table is based on the maximum widths of standard products.

Selection based on Power

Parameters required for selection

Determine each condition.

- Output of motor kW, revolution of output shaft r/min, shaft diameter
- Type, revolution r/min, shaft diameter of driven machine
- Center distance
- Hours of use and frequency of start-stop per day
- Speed ratio
- Use or nonuse of idler
- Other conditions (layout restriction, etc.)

Determination of design power

Calculate the design power as follows:

$$Pd = Pk \times (Ko + Ki + Ks) \times Ka \times Ke \text{ *2}$$

Pd : Design power kW
Pk : Transmission power*1 kW
Ko : Service correction factor — Table 1 on page 110
Ki : Correction factor when idler is used — Table 2 on page 110
Ks : Correction factor for speed increase — Table 3 on page 110
Ka : Start-stop frequency correction factor — Table 4 on page 110
Ke : Operation environment coefficient — 1.2

*1 The transmission power means motive power of transmission and the motor output is used usually. Please use if the actual transmission power (with the actual load) is known.
*2 When the Ultra PX Belts HA Type (oil- and water-resistant type) is used in operation that is exposed to oil and water, and when the PX Belt Water Resistant Type is used in operation that is exposed to water, multiply 1.2 as the Operation environment coefficient (*Ke*).

Determination of belt size and No. of teeth of belt sprockets

(1) Widths applicable to the tentative selection table(Pages 111 to 112), tentatively select a belt size based on the design power and small belt sprocket revolution.
(2) Referring to the standard transmission capacity tables (pages 19 to 54), tentatively select a belt width and the number of teeth of the small belt sprocket. For selection, following should be noted :
- Select the number of teeth of the small belt sprocket from areas other than the colored areas in the standard transmission capacity tables.
- Select a small belt sprocket that meets the "pitch circle diameter > belt width."
- Verify that the bore usable range of the small belt sprocket satisfies the shaft diameter.

(3) Determine the number of teeth of the large belt sprocket based on the number of teeth of the small belt sprocket and the speed ratio. Verify the bore diameter to use also.

Selection of belt length and center distance

(1) Calculate an approximate belt length (*L'*) and select a belt of the length that is closest to the approximate length from the list of belt types.

$$L' = 2C + 1.57\,(Dp + dp) + \frac{(Dp - dp)^2}{4C}$$

L' : Approximate belt length mm
C : Center distance mm
Dp : Pitch circle diameter of large belt sprocket mm
dp : Pitch circle diameter of small belt sprocket mm

(2) Calculate the center distance (*C*) using the selected belt length (*L*).

$$C = \frac{B + \sqrt{B^2 - 2\,(Dp - dp)^2}}{4} \qquad B = L - 1.57\,(Dp + dp)$$

L : Belt length mm

Correction for the number of meshing teeth

The number of meshing teeth of belt sprocket less than 6 is not recommended, but if such a belt sprocket needs to be used, correction for the number of meshing teeth is necessary. After obtaining the number of meshing teeth, determine a meshing correction factor referring to Table 6 on page 110.The engagement angles of the drive belt sprocket and idler belt sprocket should be 120°or more and 90°or more, respectively.

$$Zm = N \times \frac{\phi}{360°}$$

$$\phi = 180° - \frac{57°\,(Dp - dp)}{C}$$

Zm : Number of meshing teeth of small belt sprocket
N : Number of teeth of small belt sprocket
ϕ : Belt contact angle to small belt sprocket degrees
Dp : Pitch circle diameter of large belt sprocket mm
dp : Pitch circle diameter of small belt sprocket mm
C : Center distance mm

Verification of belt width

Verify the belt width that satisfies the design power.

$$Pd \le Pu \times Kw \times Km \times KL$$

$$Kw \ge \frac{Pd}{Pu \times Km \times KL}$$

Pd : Design power kW
Pu : Standard transmission capacity kW
Kw : Belt width factor
Km : Meshing correction factor — Table 6 on page 110
KL : Belt length correction factor — Table 5 on page 110

An example of selection calculation (Based on Power)

Parameters required for selection

The parameters required for selection are as follows:

Item	Description
Motor output, revolution, shaft diameter	5.5kW (peak torque 200%), 1450 r/min, 32 mm
Type, revolution, shaft diameter of driven machine	Pump, 920 r/min, 30 mm
Center distance	415 mm
Run hours per day, start-stop frequency	12 hours/day, 100 times/day
Speed ratio	1 : 1.58 reduction
Use or nonuse of idler	On the back of the slack side
Other conditions	Small belt sprocket to be 100 mm or less in OD for layout reason.

Determination of design power

Obtain the correction factors appropriate for the conditions of use from the tables on page 110 and determine the design power.

Service correction factor (Ko) ····· 1.5
Correction factor when idler is used (Ki) ····· 0.1
Correction factor for speed increase (Ks) ····· 0
Start-stop frequency correction factor (Ka) ····· 1.3

Design power: $Pd = Pk \times (Ko+Ki+Ks) \times Ka = 5.5 \times (1.5+0.1+0) \times 1.3 = 11.44$
Thus, the design power is 11.44 kW.

Determination of belt size and No. of teeth of belt sprockets

(1) Tentatively determine a belt size from Widths applicable to the tentative selection table (pages 111 to 112).
Here, tentatively select "P8M-RC" from the design power (11.44 kW) and motor revolution (1450 r/min).

(2) In consideration of the speed ratio, shaft diameters of the motor and driven machine and other conditions, select a belt width and the number of teeth of a belt sprocket from the standard transmission capacity table (page 48).
Here, select 28 teeth (dp=71.30 mm) and 44 teeth (Dp=112.05 mm) of P8M60-RC (belt width 60 mm). For the dimensions of the belt sprockets, see page 47.

Determination of belt length and center distance

(1) Calculate an approximate belt length (L').

$$L' = 2C+1.57\ (Dp+dp) + \frac{(Dp-dp)^2}{4C} = 2\times415+1.57\ (112.05+71.30) + \frac{(112.05-71.30)^2}{4\times415} = 1118.86 \text{ mm}$$

The belt which is closest to this approximate length is "1120P8M" (140 teeth) from the list of Belt Length (page 47).

(2) Calculate the center distance (C).

$$B = L-1.57\ (Dp+dp) = 1120-1.57\ (112.05+71.30) = 832.14$$

$$C = \frac{B+\sqrt{B^2-2\,(Dp-dp)^2}}{4} = \frac{832.14+\sqrt{832.14^2-2\ (112.05-71.30)^2}}{4} = 415.57 \text{ mm}$$

Correction for the number of meshing teeth

Obtain the number of teeth of the belt that mesh with the small belt sprocket and determine the meshing correction factor.

$$\phi = 180° - \frac{57°\ (Dp-dp)}{C} = 180° - \frac{57°\ (112.05-71.30)}{415.57} = 174.41°$$

$$Zm = N\times\frac{\phi}{360°} = \frac{28\times174.41}{360°} = 13.6 \text{ teeth}$$

Thus, the meshing correction factor is Km=1.0 from the table on page 110.

Determination of belt width

Finally determine the belt width that satisfies the design power.

$$Kw \geq \frac{Pd}{Pu\times Km\times KL} = \frac{11.44}{3.15\times1.0\times1.0} = 3.64$$

Thus, the belt that satisfies the width factor is BG1120P8M60-RC (belt width 60 mm).

Results of selection

Belt : BG1120P8M60-RC
Small belt sprocket : PT28P8M60AF or BF
Large belt sprocket : PT44P8M60AF or BF
Center distance : 415.57 mm

Selection based on Torque

Parameters required for selection

Determine each condition.

- Output shaft torque of motor N·m, revolution of output shaft r/min, shaft diameter
- Type, revolution r/min, shaft diameter of driven machine
- Center distance
- Hours of use and frequency of start-stop per day
- Speed ratio
- Use or nonuse of idler
- Other conditions

Determination of design torque

Calculate the design torque as follows:

$$Pt = Pm \times (Ko + Ki + Ks) \times Ka \times Ke^{*}$$

Pt : Design torque N·m
Pm : Transmission torque N·m
Ko : Service correction factor — Table 1 on page 110
Ki : Correction factor when idler is used — Table 2 on page 110
Ks : Correction factor for speed increase — Table 3 on page 110
Ka : Start-stop frequency correction factor — Table 4 on page 110
Ke : Operation environment coefficient — 1.2

* When the Ultra PX Belts HA Type (oil- and water-resistant type) is used in operation that is exposed to oil and water, and when the PX Belt Water Resistant Type is used in operation that is exposed to water, multiply 1.2 as the Operation environment coeffcient (*Ke*).

Determination of belt size and number of teeth of belt sprockets

(1) Widths applicable to the tentative selection table(pages 111 to 112), tentatively select a belt size based on the design torque and small belt sprocket revolution.

(2) Referring to the standard transmission torque tables (pages 19 to 54), tentatively select a belt width and the number of teeth of the small belt sprocket. For selection, following should be noted:

- Select the number of teeth of the small belt sprocket from areas other than the colored areas in the standard transmission torque tables.
- Select a small belt sprocket that meets the "pitch circle diameter > belt width."
- Verify that the bore usable range of the small belt sprocket satisfies the shaft diameter.

(3) Determine the number of teeth of the large belt sprocket based on the number of teeth of the small belt sprocket and the speed ratio. Verify the bore diameter to use also.

Selection of belt length and center distance

(1) Calculate an approximate belt length (*L'*) and select a belt of the length that is closest to the approximate length from the list of belt types.

$$L' = 2C + 1.57\,(Dp + dp) + \frac{(Dp - dp)^2}{4C}$$

L' : Approximate belt length mm
C : Center distance mm
Dp : Pitch circle diameter of large belt sprocket mm
dp : Pitch circle diameter of small belt sprocket mm

(2) Calculate the center distance (*C*) using the selected belt length (*L*).

$$C = \frac{B + \sqrt{B^2 - 2\,(Dp - dp)^2}}{4} \qquad B = L - 1.57\,(Dp + dp)$$

L : Belt length mm

Correction for the number of meshing teeth

The number of meshing teeth of belt sprocket less than 6 is not recommended, but if such a belt sprocket needs to be used, correction for the number of meshing teeth is necessary. After obtaining the number of meshing teeth, determine a meshing correction factor referring to Table 6 on page 110.The engagement angles of the drive belt sprocket and idler belt sprocket should be 120°or more and 90°or more, respectively.

$$Zm = N \times \frac{\phi}{360^\circ}$$

$$\phi = 180^\circ - \frac{57^\circ\,(Dp - dp)}{C}$$

Zm : Number of meshing teeth of small belt sprocket
N : Number of teeth of small belt sprocket
ϕ : Belt contact angle to small belt sprocket degrees
Dp : Pitch circle diameter of large belt sprocket mm
dp : Pitch circle diameter of small belt sprocket mm
C : Center distance mm

Verification of belt width

Verify the belt width that satisfies the design torque.

$$Pt \le Pr \times Kw \times Km \times KL$$

$$Kw \ge \frac{Pt}{Pr \times Km \times KL}$$

Pt : Design torque N·m
Pr : Standard transmission torque N·m
Kw : Belt width factor
Km : Meshing correction factor — Table 6 on page 110
KL : Belt length correction factor — Table 5 on page 110

An example of selection calculation (Based on Torque)

Parameters required for selection

The parameters required for selection are as follows:

Item	Description
Motor output shaft torque, revolution, shaft diameter	Rated torque 18.6 N·m (100%), 1,500 r/min., 32 mm
Type, revolution, shaft diameter of driven machine	Intermittent drive conveyor, 300 r/min., 30 mm
Center distance	250 to 350mm
Run hours per day, start-stop frequency	8 hours/day, 5 times/day
Speed ratio	1 : 1
Use or nonuse of idler	None
Other conditions	Speed reducer of the servomotor section 1/5, outer diameter of belt sprocket ϕ100 or smaller

Determination of design torque

Obtain the correction factors appropriate for the conditions of use from the tables on page 110 and determine the design power.

Service correction factor (Ko) ····· 1.5

Correction factor when idler is used (Ki) ····· 0

Correction factor for speed increase (Ks) ····· 0

Start-stop frequency correction factor (Ka) ····· 1.2

Design torque: $Pt = Pm \times (Ko+Ki+Ks) \times Ka \times Ke^* = 18.6 \times (1.5+0+0) \times 1.2 = 33.48$

Based on the condition of the speed reducer of the servomotor section as 1/5, the design torque is calculated as 5 × 33.48 = 167.4 N·m.

Determination of belt size and number of teeth of belt sprockets

(1) Tentatively determine a belt size from Widths applicable to the tentative selection table (pages 111 to 112).
Here,tentaiuely select "UP8M-HC"from the design torque (167.4N·m) and drive belt sprocket revolution (300r/min=1500/5)

(2) In consideration of the speed ratio, shaft diameters of the motor and driven machine and other conditions, select a belt width and the number of teeth of a belt sprocket from the standard transmission torque table (page 24).
Here, select UP8M-HC (Belt width: 40 mm) and 36 as the number of teeth of the belt sprocket (dp = 91.67 mm, flange outer diameter of ϕ97 mm). For the dimensions of the belt sprockets, see page 60.

Determination of belt length and center distance

(1) Calculate an approximate belt length (L').

$$L' = 2C+1.57\ (Dp+dp) + \frac{(Dp-dp)^2}{4C} = 2\times300+1.57\ (91.67+91.67) + \frac{(91.67-91.67)^2}{4\times300} = 887.84 \text{ mm}$$

The belt which is closest to this approximate length is "880UP8M" (110 teeth) from the list of Belt Length (page 23).

(2) Calculate the center distance (C).

$$B = L - 1.57\ (Dp+dp) = 880 - 1.57\ (91.67+91.67) = 592.15$$

$$C = \frac{B + \sqrt{B^2 - 2\,(Dp-dp)^2}}{4} = \frac{592.15 + \sqrt{592.15^2 - 2\ (91.67-91.67)^2}}{4} = 296.07 \text{ mm}$$

Correction for the number of meshing teeth

Obtain the number of teeth of the belt that mesh with the small belt sprocket and determine the meshing correction factor.

$$\phi = 180° - \frac{57°\ (Dp-dp)}{C} = 180° - \frac{57°\ (91.67-91.67)}{296.07} = 180°$$

$$Zm = N \times \frac{\phi}{360°} = 36 \times \frac{180}{360°} = 18 \text{ teeth}$$

Thus, the meshing correction factor is Km=1.0 from the table on page 110.

Determination of belt width

Finally determine the belt width that satisfies the design torque.

$$Kw \geq \frac{Pt}{Pr \times Km \times KL} = \frac{167.4}{68.5 \times 1.0 \times 0.9} = 2.72$$

Thus, the belt that satisfies the width factor is UP8M40-HC (belt width 40 mm).

Results of selection

Belt : BG880UP8M40-HC
Drive belt sprocket : PT36P8M40AF or BF
Driven belt sprocket : PT36P8M40AF or BF
Center distance : 296.07 mm

Selection based on Inertial load

Parameters required for selection

Determine each condition.

(1) Rotating equipment
Shape, dimensions, mass, revolution, acceleration (deceleration) time, shaft diameter, center distance, run hours per day, start-stop frequency, speed ratio, use or nonuse of an idler and other conditions.

(2) Linear motion equipment
Belt Sprocket pitch circle diameter, mass of a linear motion equipment, supporting method, coefficient of friction of supporting mechanism, moving speed, acceleration (deceleration) time, shaft diameter, center distance, run hours per day, start-stop frequency, speed ratio, use or nonuse of an idler and other conditions.

Calculation of moment of inertia

Calculate the moment of inertia as follows:

(1) Rotating equipment

・Solid cylinder

$$I = \frac{1}{8} mD^2$$

・Hollow cylinder

$$I = \frac{1}{8} m(D^2+d^2)$$

・Rectangular cross section

$$I = \frac{1}{12} m(a^2+b^2)$$

・Eccentric rotating equipment

$$I = \frac{1}{8} mD^2+me^2$$

(2) Linear motion equipment

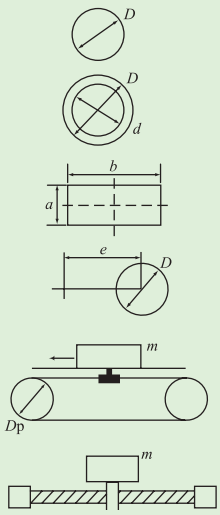
$$I = \frac{1}{4} mDp^2$$

(3) Ball screw drive

$$I = \frac{1}{4} m\left(\frac{L}{\pi}\right)^2$$

(4) Total moment of inertia

$$\Sigma I = (I_1+I_2+\ldots\ldots)R^2$$



I : Moment of inertia of a body kg・m^2
ΣI : Total moment of inertia
m : Mass of a rotating or Linear motion equipment kg
D : Outside diameter of a rotating equipment m
d : Inside diameter of the hollow of a rotating equipment m
a : Length of a side of the rectangular cross section m
b : Length of a side of the rectangular cross section m
e : Distance of eccentricity m
Dp : Belt Sprocket pitch circle diameter m
L : Lead of screw m
R : Reduction ratio (Number of teeth of drive belt sprocket / number of teeth of driven belt sprocket)

*Total the moment of inertia of all moving bodies (including the driven belt sprocket) that are driven by the belt by the equation shown on the left side.

Calculation of acceleration (deceleration) torque

Calculate the acceleration (deceleration) torque as follows:

$$Pa = \frac{\Sigma I \times (n_2 - n_1)}{9.55 \times ta}$$

Pa : Acceleration (deceleration) torque N・m
n_1 : Revolution before acceleration (deceleration) r/min
n_2 : Revolution after acceleration (deceleration) r/min
ta : Acceleration (deceleration) time s

Calculation of continuous load torque

Calculate the continuous load torque as follows:

(1) Horizontal movement

$$Pc = 4.9 \times m\mu Dp$$

(2) Vertical movement

$$Pc = 4.9 \times mDp$$

Pc : Continuous load torque N・m
μ : Coefficient of friction of moving body supporting mechanism

Determination of design torque

Calculate the design torque as follows. For Ko and Ka, use values in the following tables:

$$Pt = (Pa + Pc) \times (Ko + Ki + Ks) \times Ka \times Ke^*$$

Pt : Design torque N・m
Pa : Acceleration (deceleration) torque N・m
Pc : Continuous load torque N・m
Ko : Service correction factor Left-side figure
Ki : Correction factor when idler is used Table 2 on page 110
Ks : Correction factor for speed increase Table 3 on page 110
Ka : Start-stop frequency correction facto Left-side figure
Ke : Operation environment coefficient 1.2

●Service correction factor

Run hours per day h	<3	3 to 10	10<
Ko	1.2	1.3	1.5

●Start-stop frequency correction factor

Frequency of start/stop per day	≤10	11 to 100	101 to 999	1000≤
Ka	1.1	1.2	1.3	1.5

* When the Ultra PX Belts HA Type (oil- and water-resistant type) is used in operation that is exposed to oil and water, and when the PX Belt Water Resistant Type is used in operation that is exposed to water, multiply 1.2 as the Operation environment coefficient (Ke).

Note:For the following steps, return to "Determination of belt size and number of teeth of belt sprockets" on page 113.

An example of selection calculation (Based on Inertial load)

Parameters required for selection

The parameters required for selection are as follows:

Item	Description
	(Machine tool table drive)
Belt Sprocket pitch circle diameter	50 mm or less
Mass of linear motion equipment	50 kg
Supporting method and coefficient of friction of supporting mechanism	LM guide, coefficient of friction $\mu=0.1$
Moving speed	1000 r/min
Acceleration (deceleration) time	0.3 s
Shaft diameter	20 mm
Center distance	1400 mm
Run hours per day, start-stop frequency	12 hours/day, 1000 times/day
Speed ratio	1 : 1
Use or nonuse of idler	None
Other conditions	None

Calculation of moment of inertia

First, obtain the moment of inertia. For the linear motion equipment, the following equation applies. Based on the above conditions, tentatively select the belt sprocket "30P5M" (number of teeth 30 , Dp = 47.75 mm).

$$I = \frac{1}{4} mDp^2 = \frac{1}{4} \times 50 \times 0.04775^2 = 0.0285 \text{ kg·m}^2$$

Calculation of acceleration (deceleration) torque and continuous load torque

Obtain the acceleration (deceleration) torque and continuous load torque as follows:

Acceleration (deceleration) torque $Pa = \dfrac{I \times (n2-n1)}{9.55 \times ta} = \dfrac{0.0285 \times (1000-0)}{9.55 \times 0.3} = 9.95$ N·m

Continuous load torque $Pc = 4.9 \times m\mu Dp = 4.9 \times 50 \times 0.1 \times 0.04775 = 1.17$ N·m

Determination of design torque

Obtain the design torque by multiplying a total of the acceleration (deceleration) torque and continuous load torque by each correction factor.

$$Pt = (Pa+Pc) \times (Ko+Ki+Ks) \times Ka = (9.95+1.17) \times (1.5+0+0) \times 1.5 = 25.02 \text{ N·m}$$

After the determination of the design torque, follow "Selection and Design - Selection based on torque."

Determination of belt size and number of teeth of belt sprockets

(1) Tentatively determine a belt size from Widths applicable to the tentative selection table (pages 111 to 112). Here, tentatively select "UP5M" from the design torque (25.02 N·m) and motor revolution (1000 r/min).

(2) In consideration of the belt sprocket pitch circle diameter, speed ratio, shaft diameter and other conditions, select a belt width and the number of teeth of the belt sprocket from the standard transmission torque table (page 22). Here, select 30 teeth (Dp=47.75 mm) of UP5M25 (belt width 25 mm). For the dimensions of the belt sprockets, see page 59.

Determination of belt length and center distance

(1) Calculate an approximate belt length (L').

$$L' = 2C+1.57\,(Dp+dp) + \frac{(Dp-dp)^2}{4C} = 2\times1400+1.57\,(47.75+47.75) + \frac{(47.75-47.75)^2}{4\times1400} = 2950 \text{ mm}$$

The belt which is closest to this approximate length is "3050UP5M" (610 teeth) from the list of Belt Length (page 21).

(2) Calculate the center distance (C).

$$B = L-1.57\,(Dp+dp) = 3050-1.57\,(47.75+47.75) = 2900$$

$$C = \frac{B+\sqrt{B^2-2\,(Dp+dp)^2}}{4} = \frac{2900+\sqrt{2900^2-2\,(47.75-47.75)^2}}{4} = 1450 \text{ mm}$$

Correction for the number of meshing teeth

Obtain the number of teeth of the belt that mesh with the small belt sprocket and determine the meshing correction factor. Since the speed ratio is 1:1, the number of meshing teeth is a half of 30 teeth, which is 15 teeth. Thus, the meshing correction factor is 1.0.

Determination of belt width

Finally confirm the belt width that satisfies the design torque.

$$Kw \geq \frac{Pt}{Pr \times Km \times KL} = \frac{25.02}{9.37 \times 1.0 \times 1.2} = 2.23$$

Thus, the belt that satisfies the width factor is UP5M25 (belt width 25 mm).

Results of selection

Belt : BG3050UP5M25-HC Belt Sprocket : PT30P5M25AF or BF

Center distance : 1450 mm

Design Guide

Item			Formula	Explanation of sign
Pitch circle diameter	Dp	mm	$Dp = \frac{N \times p}{\pi}$	N : Number of teeth of belt sprocket p : Belt pitch mm
Belt speed	V	m/s	$V = \frac{\pi Dp \times n}{1000 \times 60}$	Dp : Pitch circle diameter of belt sprocket mm n : Revolution of belt sprockets r/min
Tension required for drive	Fa	N {kgf}	$Fa = \frac{9.8 \times 102 \times P}{V} = \frac{2T}{\left(\frac{Dp}{1000}\right)}$ Gravity unit : $Fa = \frac{102 \times P}{V} = \frac{2T}{\left(\frac{Dp}{1000}\right)}$	P : Power kW V : Belt speed m/s T : Torque N・m {kgf・m} Dp : Pitch circle diameter of belt sprocket mm
Power	P	kW	$P = \frac{Fa \times V}{1000} = \frac{T \times n}{974 \times 9.8}$ Gravity unit : $P = \frac{Fa \times V}{102} = \frac{T \times n}{974}$	Fa : Tension required for drive N {kgf} V : Belt speed m/s T : Torque N・m {kgf・m} n : Revolution r/min
Torque	T	N・m {kgf・m}	$T = \frac{9.8 \times 974 \times P}{n}$ Gravity unit : $T = \frac{974 \times P}{n}$	P : Power kW n : Revolution r/min
Torque due to flywheel effect	Tf	N・m {kgf・m}	$Tf = \frac{I \pi (n_2 - n_1)}{30t}$ Gravity unit : $Tf = \frac{GD^2 \times (n_2 - n_1)}{375 \times t}$	I : Moment of inertia kg・m² n_1 : Revolution before acceleration (deceleration) r/min n_2 : Revolution after acceleration (deceleration) r/min t : Time from n_1 to n_2 s GD^2 : Flywheel effect {kgf・m}
Center distance	C	mm	$C = \frac{B + \sqrt{B^2 - 2(Dp - dp)^2}}{4}$ $B = L - 1.57(Dp + dp)$	L : Belt length mm Dp : Pitch circle diameter of large belt sprocket mm dp : Pitch circle diameter of small belt sprocket mm
Approximate belt length	L'	mm	$L' = 2C + 1.57(Dp + dp) + \frac{(Dp - dp)^2}{4C}$	Dp : Pitch circle diameter of large belt sprocket mm dp : Pitch circle diameter of small belt sprocket mm C : Center distance mm
Number of meshing teeth of small belt sprocket	Zm		$Zm = N \times \frac{ø}{360^\circ}$ $ø = 180^\circ - \frac{57^\circ (Dp - dp)}{C}$	N : Number of teeth of small belt sprocket $ø$: Belt contact angle to small belt sprocket degrees degrees Dp : Pitch circle diameter of large belt sprocket mm dp : Pitch circle diameter of small belt sprocket mm C : Center distance mm

Design Guide

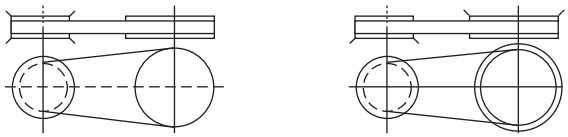
Installation of guide flanges

The synchronous belt when running tends to deviate in the axial direction of the belt sprockets. In order to prevent the synchronous belt from running off the belt sprockets, guide flanges are installed on the belt sprockets. The guide flange installation standard is as follows:

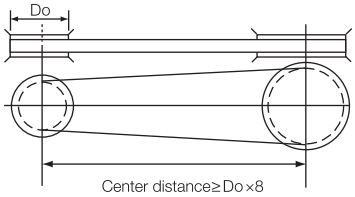
■Horizontal-shaft transmission

Install guide flanges on both sides of either belt sprocket or on one side of one belt sprocket and another flange on the opposite side of the other belt sprocket. (Example 1) Where the belt sprocket center distance is greater than 8 times the outer diameter of the small belt sprocket, install guide flanges on both sides of both belt sprockets. (Example 2)

(Example 1)

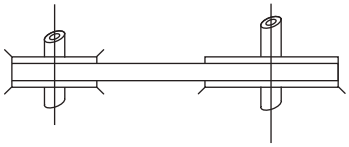


(Example 2)



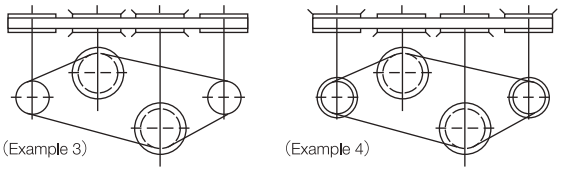
■Vertical-shaft transmission

Since the belt is likely to disengage downward, install guide flanges on both sides of one belt sprocket and another guide flange on the lower side of the other belt sprocket.



■Multiple-shaft transmission

Install guide flanges on both sides of every other belt sprocket (Example 3) or install guide flanges on one side of all belt sprockets alternately (Example 4).



Use of an idler

An idler is used in the following cases:

- The distance between the shafts is fixed and an idler is used for adjustment of the installation tension.
- The speed ratio is large and the number of meshing teeth of the small belt sprocket needs to be increased.
- No belt guide can be used on the drive and driven belt sprockets.

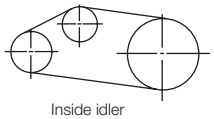
■Precautions for using the idler

- The idler must be fixed and used on the slack side.
- Note that if the parallelism between the axis of the idler and the axes of both belt sprockets is poor, the idler may cause the belt to disengage from the belt sprockets.
- Determine the idler diameter according to the following criteria.

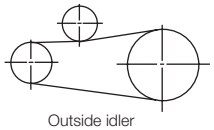
Inside idler…Belt sprocket having the number of teeth greater than the minimum number of teeth of belt sprocket in the following table.
Outside idler…Uncrowned belt sprocket without teeth which of the pitch circle diameter should be greater than 1.2 times of the belt sprocket in the following table.

■Minimum number of teeth of belt sprocket for selection of an idler

Type \ Revolution r/min	900 or below	Over 900, 1200 or below	Over 1200, 1800 or below	Over 1800, 3600 or below
P2M	16	16	18	20
P3M・UP3M	14	14	16	18
P5M・UP5M	18	20	24	28
P8M・UP8M	24	26	26	28
P14M・UP14M	28	28	28	34



Inside idler



Outside idler

Note: 1.For revolutions above 3600 r/min, refer to the Standard Transmission Capacity Table.
2.Refer to pages 131–132 for the pitch diameter.

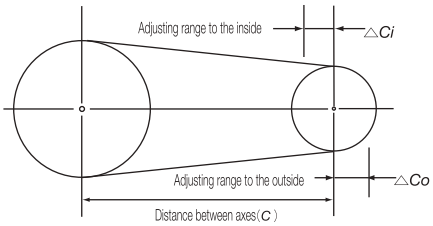
Adjustment of distance between two axes

In the transmission of only driving and driven belt sprockets, without using an idler, provide the adjusting margin (table below) of the distance between axes at the bearing including the manufacturing length (tolerance) of belt.

■Adjusting margin of inter-axial distance

mm

	Type / Belt length	P2M・P3M・P5M UP3M・UP5M	P8M・P14M UP8M・UP14M
△Co	500 or below	3	3
	Over 500,1000 or below	5	5
	Over 1000,2000 or below	10	10
	Over 2000	15	15
△Ci	Common	10	15



Design Guide

Installation tension and axial load

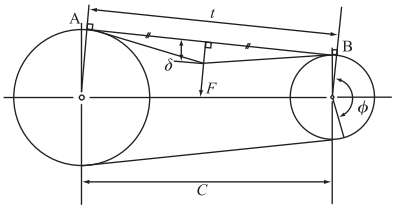
■Belt installation tension

Synchronous Belt drive requires an adequate installation tension to prevent jumping teeth and to ensure smooth drive. A small installation tension tends to cause mismatching of tooth meshing and a large tension tends to cause noises, both of which shorten the service life. A sound sonic Belt Tension Meter T-ACE that can measure the tension accurately is available. See page 105.

■How to apply an installation tension

1.Accurately establish the parallelism of all shafts including the idler shaft and belt sprocket alignment.
2.Apply a force (*F*) to the center of the span of the belt.
3.Apply a tension that makes the deflection (δ) of the belt 1.6 mm per 100 mm of span.

■How to obtain the push force (F)



$$F = \frac{Ti + \frac{t \times Y}{L}}{16}$$

F : Push force required for deflection (δ) at the center of the span N {kgf}
Ti : Installation tension N {kgf}
Y : Correction factor
δ : Deflection mm=0.016 t
t : Span length mm

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

C : Center distance mm
Dp : Pitch circle diameter of large belt sprocket mm
dp : Pitch circle diameter of small belt sprocket mm
L : Belt length mm

■Axial load

The axial load is obtained by the following equation:

$$\text{Axial load} = 2Ti \times \sin\frac{\phi}{2}$$

Ti : Installation tension N {kgf}
φ : Winding angle of small belt sprocket degrees

■List of installation tension

●Ultra PX belts HC Type

Type	Belt Width mm	Installation Tension *Ti* N {kgf} Recommended	Installation Tension *Ti* N {kgf} Max. Value	Correction Factor *Y* N {kgf}
UP3M-HC	6	29 {3.0}	40 {4.1}	38.5 {3.9}
	10	52 {5.3}	72 {7.3}	61.8 {6.3}
	15	82 {8.4}	114 {11.6}	90.0 {9.2}
UP5M-HC	10	108 {11.0}	147 {15.0}	102.7 {10.5}
	15	171 {17.4}	232 {23.7}	152.0 {15.5}
	20	238 {24.3}	323 {32.9}	200.7 {20.5}
	25	307 {31.3}	418 {42.6}	249.1 {25.4}
	30	377 {38.4}	513 {52.3}	297.2 {30.3}
	35	450 {45.9}	613 {62.5}	344.9 {35.2}
	40	524 {53.4}	713 {72.7}	392.5 {40.0}
UP8M-HC	15	177 {18.0}	235 {24.0}	190.6 {19.4}
	20	244 {24.9}	324 {33.0}	246.0 {25.1}
	25	317 {32.3}	421 {42.9}	299.9 {30.6}
	30	389 {39.7}	517 {52.7}	352.6 {36.0}
	35	464 {47.3}	616 {62.8}	404.3 {41.2}
	40	540 {55.1}	717 {73.1}	455.1 {46.4}
	45	618 {63.0}	820 {83.6}	505.2 {51.5}
	50	697 {71.1}	926 {94.4}	554.7 {56.6}
	55	777 {79.2}	1032 {105.2}	603.7 {61.6}
	60	859 {87.6}	1140 {116.2}	652.2 {66.5}
UP14M-HC	40	794 {81.0}	1050 {107.1}	834.0 {85.0}
	60	1255 {128.0}	1659 {169.2}	1242.7 {126.7}
	80	1747 {178.1}	2310 {235.6}	1649.0 {168.2}
	100	2255 {229.9}	2982 {304.1}	2053.6 {209.4}
	120	2771 {282.6}	3665 {373.7}	2456.9 {250.5}

●Ultra PX belts HA Type

Type	Belt Width mm	Installation Tension *Ti* N {kgf} Recommended	Installation Tension *Ti* N {kgf} Max. Value	Correction Factor *Y* N {kgf}
UP5M-HA	10	108 {11.0}	147 {15.0}	102.7 {10.5}
	15	171 {17.4}	232 {23.7}	152.0 {15.5}
	20	238 {24.3}	323 {32.9}	200.7 {20.5}
	25	307 {31.3}	418 {42.6}	249.1 {25.4}
	30	377 {38.4}	513 {52.3}	297.2 {30.3}
	35	450 {45.9}	613 {62.5}	344.9 {35.2}
	40	524 {53.4}	713 {72.7}	392.5 {40.0}
UP8M-HA	15	177 {18.0}	235 {24.0}	190.6 {19.4}
	20	244 {24.9}	324 {33.0}	246.0 {25.1}
	25	317 {32.3}	421 {42.9}	299.9 {30.6}
	30	389 {39.7}	517 {52.7}	352.6 {36.0}
	35	464 {47.3}	616 {62.8}	404.3 {41.2}
	40	540 {55.1}	717 {73.1}	455.1 {46.4}
	45	618 {63.0}	820 {83.6}	505.2 {51.5}
	50	697 {71.1}	926 {94.4}	554.7 {56.6}
	55	777 {79.2}	1032 {105.2}	603.7 {61.6}
	60	859 {87.6}	1140 {116.2}	652.2 {66.5}
UP14M-HA	40	794 {81.0}	1050 {107.1}	834.0 {85.0}
	60	1255 {128.0}	1659 {169.2}	1242.7 {126.7}
	80	1747 {178.1}	2310 {235.6}	1649.0 {168.2}
	100	2255 {229.9}	2982 {304.1}	2053.6 {209.4}
	120	2771 {282.6}	3665 {373.7}	2456.9 {250.5}

Design Guide

●Ultra PX belts HY Type

Type	Belt Width mm	Installation Tension Ti N {kgf} Recommended	Installation Tension Ti N {kgf} Max. Value	Correction Factor Y N {kgf}
UP3M-HY	6	39 {4.0}	47 {4.8}	76.0 {7.7}
	10	68 {6.9}	82 {8.4}	118.2 {12.1}
	15	105 {10.7}	127 {13.0}	167.7 {17.1}
UP5M-HY	10	125 {12.7}	165 {16.8}	152.5 {15.6}
	15	194 {19.8}	256 {26.1}	223.7 {22.8}
	20	265 {27.0}	350 {35.7}	293.6 {29.9}
	25	338 {34.5}	446 {45.5}	362.6 {37.0}
	30	413 {42.1}	545 {55.6}	430.8 {43.9}
	35	488 {49.8}	644 {65.7}	498.4 {50.8}
	40	564 {57.5}	744 {75.9}	565.4 {57.7}
UP8M-HY	15	255 {26.0}	290 {29.6}	272.0 {27.7}
	20	347 {35.4}	394 {40.2}	341.3 {34.8}
	25	444 {45.3}	505 {51.5}	406.9 {41.5}
	30	541 {55.2}	615 {62.7}	469.9 {47.9}
	35	640 {65.3}	728 {74.2}	530.6 {54.1}
	40	740 {75.5}	841 {85.8}	589.6 {60.1}
	45	842 {85.9}	957 {97.6}	647.0 {66.0}
	50	944 {96.3}	1073 {109.4}	703.0 {71.7}
	55	1048 {106.9}	1192 {121.6}	757.9 {77.3}
	60	1150 {117.3}	1308 {133.4}	811.8 {82.8}
UP14M-HY	40	1020 {104.0}	1225 {124.9}	1044.3 {106.5}
	60	1581 {161.2}	1899 {193.6}	1537.5 {156.8}
	80	2162 {220.5}	2597 {264.8}	2023.1 {206.3}
	100	2754 {280.8}	3308 {337.3}	2053.1 {209.4}
	120	3366 {343.2}	4043 {412.3}	2978.6 {303.7}

●PX belts RC Type

Type	Belt Width mm	Installation Tension Ti N {kgf} Recommended	Installation Tension Ti N {kgf} Max. Value	Correction Factor Y N {kgf}
P2M-RC	4	5.9 {0.6}	7.8 {0.8}	10.0 {1.0}
	6	9.4 {1.0}	12 {1.2}	16.1 {1.6}
	10	17 {1.7}	22 {2.2}	28.2 {2.9}
P3M-RC	6	20 {2.0}	26 {2.7}	17.6 {1.8}
	10	36 {3.7}	47 {4.8}	29.0 {3.0}
	15	57 {5.8}	74 {7.5}	43.1 {4.4}
P5M-RC	10	97 {9.9}	132 {13.5}	56.9 {5.8}
	15	154 {15.7}	209 {21.3}	82.4 {8.4}
	20	214 {21.8}	291 {29.6}	139.0 {14.2}
	25	276 {28.2}	376 {38.4}	201.0 {20.5}
P8M-RC	15	203 {20.6}	265 {27.0}	151.3 {15.4}
	20	280 {28.5}	365 {37.3}	193.0 {19.7}
	25	363 {37.0}	473 {48.3}	233.0 {23.8}
	40	617 {63.0}	807 {82.3}	346.6 {35.3}
	60	982 {100.1}	1283 {130.9}	488.3 {49.8}
P14M-RC	40	990 {101.0}	1310 {133.6}	635.5 {64.8}
	60	1564 {159.5}	2070 {211.1}	973.2 {99.2}
	80	2178 {222.1}	2882 {293.9}	1316.8 {134.3}
	100	2812 {286.7}	3720 {379.3}	1664.9 {169.8}
	120	3455 {352.3}	4572 {466.2}	2016.6 {205.6}

●PX belts Water resistant type

Type	Belt Width mm	Installation Tension Ti N {kgf} Recommended	Installation Tension Ti N {kgf} Max. Value	Correction Factor Y N {kgf}
P5M-W	10	108 {11.0}	147 {15.0}	50.1 {5.1}
	15	171 {17.4}	232 {23.7}	74.2 {7.6}
	25	307 {31.3}	418 {42.6}	184.9 {18.9}
P8M-W	15	225 {22.9}	294 {30.0}	147.2 {15.0}
	25	403 {41.1}	526 {53.6}	226.7 {23.1}
	40	686 {70.0}	897 {91.5}	337.3 {34.4}
	60	1091 {111.3}	1426 {145.4}	475.2 {48.5}

●PX Belts SHINAYAKA 530 (for Endless Belts)

Type	Belt Width mm	Installation Tension Ti N {kgf} Recommended	Installation Tension Ti N {kgf} Max. Value	Correction Factor Y N {kgf}
P2M-530	4	5.9 {0.6}	7.8 {0.8}	10.0 {1.0}
	6	9.4 {1.0}	12 {1.2}	16.1 {1.6}
	10	17 {1.7}	22 {2.2}	28.2 {2.9}
P3M-530	6	20 {2.0}	26 {2.7}	17.6 {1.8}
	10	36 {3.7}	47 {4.8}	29.0 {3.0}
	15	57 {5.8}	74 {7.5}	43.1 {4.4}

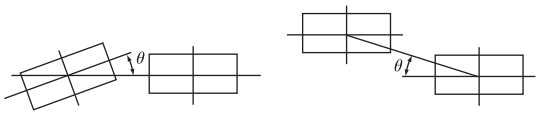
Design Guide

Alignment of belt sprocket

Tsubaki synchronous belt does not turn at belt sprocket center even when belt sprocket-alignment is correctly made, and it is liable to deviate on either side. Although the force is very small, the belt will be pressed hard against the flange when the belt sprocket-alignment is poor, resulting in premature failure of belt or falling off of flange. Therefore adjust the alignment of belt sprocket within the allowable range listed below.

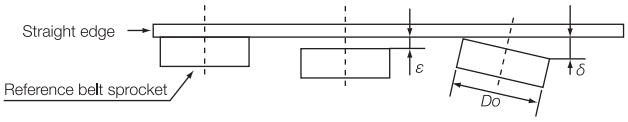
■Allowable range of belt sprocket alignment

Belt Size	All			
Belt width mm	30 or below	Over 30,50 or below	Over 50,100 or below	Over 100
Allowable degree of parallelism ($\tan\theta$)	$\frac{5}{1000}$ or below	$\frac{4}{1000}$ or below	$\frac{3}{1000}$ or below	$\frac{2}{1000}$ or below
θmin	17 or below	13 or below	10 or below	6 or below



■How to adjust the belt sprocket:

As shown in the figure, the belt sprocket can be aligned in the correct position by placing the straight edge on the reference belt sprocket and then bringing the other belt sprockets into contact with the straight edge over the entire surface. ($\varepsilon=0$). It is possible to obtain axial degree of parallelism simultaneously by making δ in the figure to be lower than Do x allowable degree of parallelism.



$\delta \leq Do$ (Outer diameter)×Allowable degree of parallelism

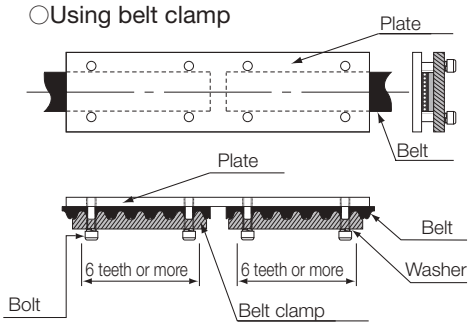
Multiple-shaft drive

If more than one belt is used in parallel, install idler belt sprockets independently from each other in order to adjust the belt installation tension individually.
For details, refer to the Tsubaki Synchronous Belts & Belt Sprockets Instruction Manual.

Open-ended belt

■Connecting methods

○Using belt clamp



Belt dimensional tolerances

■Belt length tolerance
●PX/Ultra PX belts

mm

Belt length	tolerance
256 or below.	±0.41
Over 256, 384 or below.	±0.46
Over 384, 512 or below.	±0.51
Over 512, 760 or below.	±0.61
Over 760, 1016 or below.	±0.66
Over 1016, 1272 or below.	±0.76
Over 1272, 1528 or below.	±0.81
Over 1528, 1776 or below.	±0.86
Over 1776, 2032 or below.	±0.91
Over 2032, 2288 or below.	±0.97
Over 2288, 2544 or below.	±1.02
Over 2544, 2792 or below.	±1.07
Over 2792, 3048 or below.	±1.12
Over 3048, 3304 or below.	±1.17
Over 3304, 3560 or below.	±1.22
Over 3560, 3808 or below.	±1.26
Over 3808, 4064 or below.	±1.32
Over 4064, 4320 or below.	±1.37
Over 4320, 4576 or below.	±1.42

■Belt width tolerance
●PX/Ultra PX belts

mm

Belt width	Belt length		
	840 or below.	Over 840, 1680 or below.	Over 1680
10 or below.	+0.3 −0.6	+0.6 −0.6	–
Over 10, 45 or below.	+0.8 −0.8	+0.8 −1.2	+0.8 −1.2
Over 45, 75 or below.	+1.2 −1.6	+1.6 −1.6	+1.6 −1.6
Over 75, 100 or below.	+1.6 −1.6	+1.6 −2.0	+2.0 −2.0
Over 100	+2.4 −2.4	+2.4 −2.8	+2.4 −3.2

Design Guide

Materials of belt sprockets Unit Mass

The following materials are suitable for Belt Sprockets: g/cm³

Materials	Code	Unit Mass
Carbon steel	S45C	7.85
Aluminum alloy	A2017—T4	2.8
Stainless steel	SUS304	7.8

General equations for Belt Sprocket calculation

・Pitch circle diameter

$$Dp = \frac{N \times p}{\pi}$$

・Outer diameter

$$Do = Dp - 2a = \frac{N \times p}{\pi} - 2a$$

p : Belt pitch mm
N : Number of teeth of Belt Sprocket
a : Pitch line depth (PLD) mm

mm

	P3M	P5M	P8M	P14M
p Pitch	3.000	5.000	8.000	14.000
a (PLD)	0.381	0.571	0.686	1.397

Note:The outer diameter of P14M standard belt sprockets in the catalog includes a correction value, so there are some that do not follow this formula.

Tolerances of Belt Sprocket dimensions

■Errors in tooth trace direction (relative to finished bore centerline)

Parallelism between tooth and bore centerline

mm

Belt Width	Tolerance of Error in Tooth Trace Direction
50 or below.	0.03
Over 50, 100 or below.	0.04
Over 100	0.05

■Runout of outer circumference circle (relative to finished bore centerline)

mm

Outer dia.	Allowable Runout
203.20 or below.	0.13
Over 203.20	0.13＋[(Outside diameter−203.20)×0.0005]

■Runout of side face (relative to finished bore centerline)

mm

Outer dia.	Allowable Runout
101.60 or below.	0.10
Over 101.60, 254.00 or below.	Outer diameter×0.001
Over 254.00	0.25＋[(Outer diameter−254.00)×0.0005]

■Cylindricity of outer cylinder (Gradient = taper × 1/2)

mm

Nominal width	Allowance
20 or below.	0.01
Over 20, 50 or below.	0.02
Over 50, 100 or below.	0.04
Over 100	0.06

・The above permissible values are for machine processed belt sprockets.
・As the permissible values for molded belt sprockets vary depending on the conditions of use and the layout, Please contact a Tsubaki representative.

Design Guide

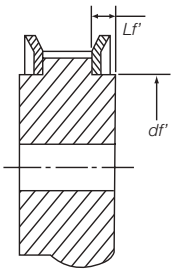
Guide flange

■Belt Sprocket dimensions when using a standard flange

●Dimensional tolerances of flange fitting part

mm

Fitting Part Dimension *df'*	25 or below.	Over 25 50 or below.	Over 50 100 or below.	Over 100 180 or below.
Tolerance mm	–0.02 –0.05	–0.02 –0.06	–0.02 –0.07	–0.02 –0.12

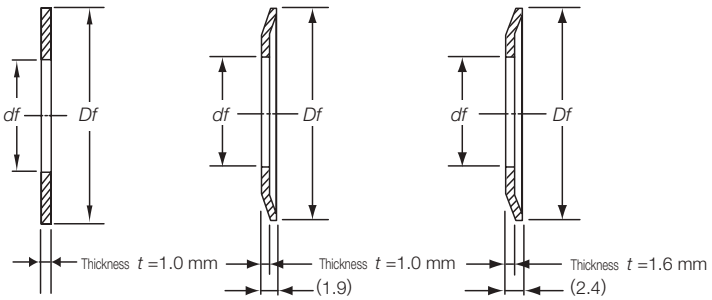


●Stepped part length

mm

Type (Pitch)	P2M・P3M	P5M	P8M	P14M
Stepped part length *Lf'* mm	2.0	2.2	2.6	5.0

■Flange designation



AS type…Material: Aluminum
SS type…Material:Steel

AF type…Material: Aluminum
SF type…Material:Steel

AF type…Material: Aluminum
SF type…Material:Steel

Flange Model Numbering Example

PT A F 10 650 530

- PT: Belt Sprocket
- A: Material:Aluminum
- F: Flange type
- 10: Thickness *t* ex:1.0 mm
- 650: Outer dia. *Df* ex:65.0 mm
- 530: Inner dia. *df* ex:53.0 mm

PT S F 10 650 530

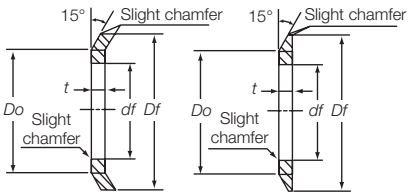
- PT: Belt Sprocket
- S: Material:Steel
- F: Flange type
- 10: Thickness *t* ex:1.0 mm
- 650: Outer dia. *Df* ex:65.0 mm
- 530: Inner dia. *df* ex:53.0 mm

■General shape and standard dimensions

mm

Type (Pitch)	Thickness *t* Recommended Press	Thickness *t* Recommended Turning	Thickness *t* Normally used thickness	OD *Df* Minimum	ID *df*
P2M	1.0	1.6	1.0 to 1.6	Do+ 4	Do–5
P3M				Do+ 4.5	
P5M		2.0	1.0 to 2.0	Do+ 6.3	Do–8
P8M	1.6	2.5	1.6 to 2.5	Do+ 8	Do–10
P14M	–	4.0	4.0 to 5.0	Do+14	Do–20

Depending on standard flanges to use, the OD or ID may be different from those in the above table.



Press type **Turning type**

Design Guide

Guide Flange Installation Method

■Staking the flange

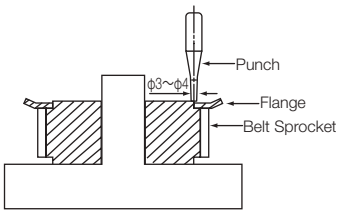
●Staking

Normally, pressed flanges and pressed flanges are secured by staking using a punch as shown below.The number of staking points is as follows:

Outer dia. mm	30 or below.	Over 30, 50 or below.	Over 50, 120 or below.	Over 120, 250 or below.
No. of places to caulk	4	8	12	16

Precautions:

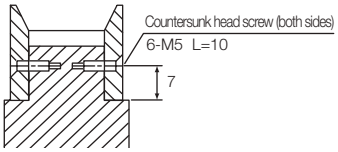
・Place a belt sprocket on a flat table and stake the flange using a punch.
・When staking the side opposite the hub, insert the hub to a cylindrical jig placed on the table to ensure stability.



■Other fixing methods

●Fixing with screws

For the belt sprockets with a large number of teeth, such as P8M and P14M, the pressed flanges may be secured to the belt sprocket body with flathead screws depending on the application.
Minimum number of flathead screws are as follows:



Outer dia. mm	120 or below.	Over 120, 250 or below.	Over 250, 450 or below.	Over 450, 650 or below.
No. of screws	4	6	8	12

●Fixing by knurling

A method in which the pressed flange is staked by knurling using a lathe is also used.

Coupling the belt sprocket and shaft

(1) By use of key

A general method to secure the belt sprocket based on the bore-shaft fitting dimensional tolerances and keyway tolerances.

・For the use of aluminum belt sprocket, use under the keyway surface pressure of 80 N/mm^2 or lower and for one-way rotation.
・To use for forward and reverse rotation, use lock belt sprockets.

(2) By use of frictional force

We offer lock belt sprockets with an integrated friction type locking device. Refer to page 71 and the pages that follow.

・In the case of friction type locking devices, such as lock belt sprockets, a strong surface pressure is applied to the main belt sprocket unit. Therefore, high-strength aluminum alloy is used for aluminum belt sprockets.
The use of friction type locking devices with additional processing on standard aluminum belt sprockets (products with pilot bore, such as Power- Lock) may damage the belt sprockets and cannot be used.
To use friction type locking devices with aluminum belt sprockets, it is recommended to use our lock belt sprockets.

Design Guide

Shaft hole dimensions and tolerances

■Bore and shaft fitting dimensional tolerances (JIS B 0401-1:2016)

μm

Dimension Range mm	Bore Dimensional Tolerance		Shaft Dimensional Tolerance	
	H7	H8	h7	h8
Over 3, or 6 below.	+12 to 0	+18 to 0	0 to –12	0 to –18
Over 6, or 10 below.	+15 to 0	+22 to 0	0 to –15	0 to –22
Over 10, or 18 below.	+18 to 0	+27 to 0	0 to –18	0 to –27
Over 18, or 30 below.	+21 to 0	+33 to 0	0 to –21	0 to –33
Over 30, or 50 below.	+25 to 0	+39 to 0	0 to –25	0 to –39
Over 50, or 80 below.	+30 to 0	+46 to 0	0 to –30	0 to –46
Over 80, or 120 below.	+35 to 0	+54 to 0	0 to –35	0 to –54

Keyway dimensions and tolerances

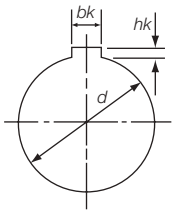
For reference, typical dimensions and tolerances for finished Belt Sprocket Fit Bore shaft holes as follows:

●New JIS keys Js9 (Part name designation: J)

Shaft bore dia.	Key	Keyway depth *d+hk*	Keyway Dimensional Tolerance *bk*
Over10, or 12 below.	4 × 4	d+1.8	4±0.0150
Over12, or 17 below.	5 × 5	d+2.3	5±0.0150
Over17, or 22 below.	6 × 6	d+2.8	6±0.0150
Over22, or 30 below.	8 × 7	d+3.3	8±0.0180
Over30, or 38 below.	10 × 8	d+3.3	10±0.0180
Over38, or 44 below.	12 × 8	d+3.3	12±0.0215
Over44, or 50 below.	14 × 9	d+3.8	14±0.0215
Over50, or 58 below.	16 × 10	d+4.3	16±0.0215
Over58, or 65 below.	18 × 11	d+4.4	18±0.0215
Over65, or 75 below.	20 × 12	d+4.9	20±0.0260
Over75, or 85 below.	22 × 14	d+5.4	22±0.0260
Over85, or 95 below.	25 × 14	d+5.4	25±0.0260

●Old JIS keys E9 (Part name designation: E)

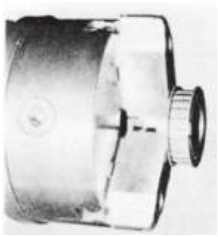
Shaft bore dia.	Key	Keyway depth *d+hk*	Keyway Dimensional Tolerance *bk*
Over10, or 13 below.	4 × 4	d+1.5	$4^{+0.050}_{+0.020}$
Over13, or 20 below.	5 × 5	d+2.0	$5^{+0.050}_{+0.020}$
Over20, or 30 below.	7 × 7	d+3.0	$7^{+0.061}_{+0.025}$
Over30, or 40 below.	10 × 8	d+3.5	$10^{+0.061}_{+0.025}$
Over40, or 50 below.	12 × 8	d+3.5	$12^{+0.075}_{+0.032}$
Over50, or 60 below.	15 × 10	d+5.0	$15^{+0.075}_{+0.032}$
Over60, or 70 below.	18 × 12	d+6.0	$18^{+0.075}_{+0.032}$
Over70, or 80 below.	20 × 13	d+6.0	$20^{+0.092}_{+0.040}$
Over80, or 95 below.	24 × 16	d+8.0	$24^{+0.092}_{+0.040}$



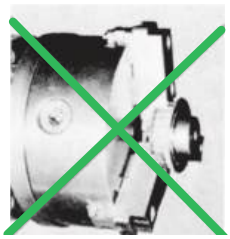
When keyway processing is needed, please provided us the dimensions and tolerance. If no specification is provided, it will be processed according to the tolerances shown in the table above.

Additional processing of stock items

The best way to process a shaft bore of a belt sprocket is to secure the outer diameter of the teeth section with a chuck. However, in the case of the BF and B Type Standard Belt Sprockets, the concentricity of the outer diameters of the teeth section and the hub is machined correctly. Therefore, it is recommended to secure the outer diameter of the hub with a chuck when processing the shaft bore. In addition, as the flange rotates when machining a DF Type Belt Sprocket, put a setscrew in the tapped hole before machining to prevent rotation.



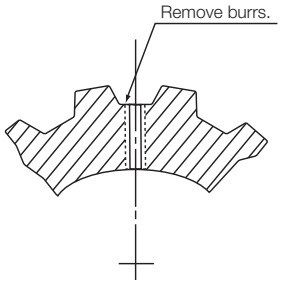
An example of chucking BF type



Never chuck flange part

■Tapping

When tapping the bottom, remove burrs completely as they will damage the belt. (For belt sprockets with hub, tap the hub.)



Design Guide

Belt Sprocket width

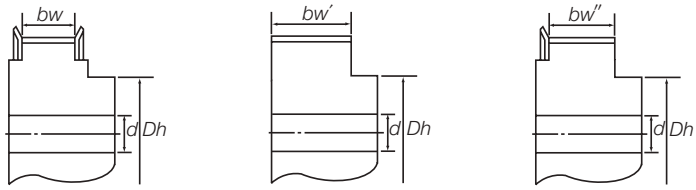


Fig 1 Fig 2 Fig 3

■Belt width and Belt Sprocket width mm

Type (Pitch)	Belt width mm	Belt Sprocket width (Standard)		
		Fig1 *bw*	Fig2 *bw'*	Fig3 *bw"*
P2M	4	5.0	9.0	7.0
	6	7.5	11.5	9.5
	10	12.0	16.0	14.0
P3M	6	7.5	11.5	9.5
	10	12.0	16.0	14.0
	15	17.0	21.0	19.0
P5M	10	11.6	16.0	13.8
	15	16.6	21.0	18.8
	25	27.6	32.0	29.8
P8M	15	16.8	22.0	19.4
	25	27.8	33.0	30.4
	40	43.8	49.0	46.4
	60	64.8	70.0	67.4
P14M	40	43.0	53.0	48.0
	60	64.0	74.0	69.0
	80	85.0	95.0	90.0
	100	106.0	116.0	111.0
	120	127.0	137.0	132.0

Surface treatment

Various surface treatments are available according to applications.

Type of Surface Treatment	Effect	Applicable Material
Blackening	Rust prevention, decoration	Carbon steel
Electrogalvanizing	Rust prevention, decoration	Carbon steel
Electroless nickel-phosphorus plating	Rust prevention, decoration	Carbon steel
Alumite	Rust prevention	Aluminum alloy
Hard alumite	Rust prevention, wear resistance	Aluminum alloy

Backlash-less tooth profile

For synchronous belt engagement, a backlash is usually provided. However, for synchronous belt drive used for robots, electronic component assembling machines, NC machines, printers, plotters, etc. that require highly accurate rotation, belt sprockets having a special backlashless tooth profile with minimal backlash to minimize rotating angle errors are also available. Please contact a Tsubaki representative.

Design Guide

■ Flange Dimension (Steel)

•Thickness t =1.0mm

Type	Dimension mm		No. of teeth		
	Outer dia. (*Df*)	Inner dia. (*df*)	**P2M**	**P3M**	**P5M**
PTSF10230130	23	13	–	–	12
PTSF10260150	26	15	29, 30	–	13
PTSF10280160	28	16	31 to 34	22, 23	14
PTSF10290180	29	18	35, 36	24	15
PTSF10310190	31	19	37 to 39	25, 26	16
PTSF10320212	32	21.2	40 to 42	27, 28	17
PTSF10340230	34	23	43 to 45	29, 30	–
PTSF10360224	36	22.4	48	31, 32	18 to 20
PTSF10390265	39	26.5	49 to 51	33, 34	21
PTSF10430300	43	30	52 to 57	35 to 38	22, 23
PTSF10440310	44	31	58, 59	39	24
PTSF10450335	45	33.5	60 to 62	40, 41	25
PTSF10470355	47	35.5	63	42	26
PTSF10480375	48	37.5	64 to 66	43, 44	27
PTSF10520375	52	37.5	67 to 69	45, 46	28
PTSF10520400	52	40	70 to 72	47, 48	29
PTSF10550425	55	42.5	73 to 77	49 to 52	30 to 32
PTSF10580450	58	45	78 to 82	53 to 55	33
PTSF10610490	61	49	83 to 87	56 to 58	34, 35
PTSF10640500	64	50	88, 89	59	36
PTSF10650530	65	53	90 to 92	60 to 62	37, 38
PTSF10670560	67	56	93 to 98	63 to 67	39, 40
PTSF10710600	71	60	99 to 103	68 to 70	41, 42
PTSF10740630	74	63	104 to 107	71 to 74	43 to 45
PTSF10820670	82	67	110 to 120	75 to 81	46 to 48
PTSF10860710	86	71	121 to 126	82 to 86	49 to 52
PTSF101030850	103	85	–	93 to 103	57 to 62
PTSF1012001060	120	106	–	–	70 to 73

■ Flange Dimension (Steel)

•Thickness t =1.6mm

Type	Dimension mm		No. of teeth
	Outer dia. (*Df*)	Inner dia. (*df*)	**P8M**
PTSF16360224	36	22.4	–
PTSF16430300	43	30	–
PTSF16490335	49	33.5	–
PTSF16520375	52	37.5	–
PTSF16550425	55	42.5	20
PTSF16568420	56.8	42	–
PTSF16610450	61	45	21
PTSF16620450	62	45	22
PTSF16660500	66	50	23, 24
PTSF16670530	67	53	–
PTSF16700560	70	56	25
PTSF16730560	73	56	26, 27
PTSF16790630	79	63	28, 29
PTSF16820670	82	67	30
PTSF16860710	86	71	31 to 33
PTSF16910770	91	77	34
PTSF16940770	94	77	35
PTSF16970800	97	80	36
PTSF161030850	103	85	37, 38
PTSF161070900	107	90	39, 40
PTSF161110950	111	95	41, 42
PTSF1611501020	115	102	43
PTSF1611901020	119	102	44, 45
PTSF1612701120	127	112	47, 48
PTSF1613501150	135	115	49
PTSF1613501200	135	120	50, 51
PTSF1613901250	139	125	52, 53
PTSF1614301280	143	128	54, 55
PTSF1615101370	151	137	57
PTSF1615801400	158	140	58 to 61
PTSF1616701520	167	152	63, 64
PTSF1619001700	190	170	70 to 72

Design Guide

■ Flange Dimension (Aluminum)

•Thickness t =1.0mm

Type	Dimension mm		No. of teeth		
	Outer dia. (Df)	Inner dia. (df)	P2M	P3M	P5M
PTAS1011040	11	4	12	–	–
PTAS1012055	12	5.5	14	10	–
PTAS1013070	13	7	15, 16	11	–
PTAS1015080	15	8	17 to 19	12, 13	–
PTAS10170100	17	10	20 to 24	14 to 16	–
PTAS10210133	21	13.3	25 to 27	17, 18	–
PTAS10250150	25	15	28	19 to 21	–
PTAF10230130	23	13	–	–	12
PTAF10260150	26	15	29 to 31	–	13
PTAF10280160	28	16	32 to 34	22、23	14
PTAF10290180	29	18	35, 36	24	15
PTAF10310190	31	19	37 to 39	25, 26	16
PTAF10320212	32	21.2	40 to 42	27, 28	17
PTAF10340230	34	23	43 to 45	29, 30	–
PTAF10360224	36	22.4	46 to 48	31, 32	18 to 20
PTAF10390265	39	26.5	49, 50	33, 34	21
PTAF10430300	43	30	–	35 to 38	22, 23
PTAF10440310	44	31	–	39	24
PTAF10450335	45	33.5	60	40, 41	25
PTAF10470355	47	35.5	–	42	26
PTAF10480375	48	37.5	64	43, 44	27
PTAF10520375	52	37.5	–	45, 46	28
PTAF10520400	52	40	–	47, 48	29
PTAF10550425	55	42.5	72	49, 50	30 to 32
PTAF10580450	58	45	80	–	33
PTAF10610490	61	49	–	56	34, 35
PTAF10640500	64	50	88, 89	59	36
PTAF10650530	65	53	90	60	37, 38
PTAF10670560	67	56	93 to 98	63 to 67	39, 40
PTAF10740630	74	63	104 to 107	71 to 74	43 to 45
PTAF10820670	82	67	110 to 120	75 to 81	46 to 48
PTAF10860710	86	71	121 to 126	82 to 86	49 to 52
PTAF101030850	103	85	–	93 to 103	57 to 62
PTAF1012001060	120	106	–	–	70 to 73

■ Flange Dimension (Aluminum)

•Thickness t =1.6mm

Type	Dimension mm		No. of teeth
	Outer dia.(Df)	Inner dia. (df)	P8M
PTAF16550425	55	42.5	20
PTAF16620450	62	45	22
PTAF16660500	66	50	23, 24
PTAF16730560	73	56	26, 27
PTAF16790630	79	63	28, 29
PTAF16820670	82	67	30
PTAF16860710	86	71	31 to 33
PTAF16910770	91	77	34
PTAF16970800	97	80	36
PTAF161070900	107	90	39, 40
PTAF1611901020	119	102	44, 45
PTAF1612701120	127	112	47, 48
PTAF1613501200	135	120	50, 51
PTAF1615801400	158	140	58 to 61

Pitch and Outer Diameter

mm

P2M						P3M						P5M					
No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.
10	6.37	5.86	**81**	51.57	51.06	**10**	9.55	8.79	**81**	77.35	76.59				**81**	128.92	127.77
11	7.00	6.49	**82**	52.20	51.69	**11**	10.50	9.74	**82**	78.30	77.54				**82**	130.51	129.37
12	7.64	7.13	**83**	52.84	52.33	**12**	11.46	10.70	**83**	79.26	78.50	**12**	19.10	17.96	**83**	132.10	130.96
13	8.28	7.77	**84**	53.48	52.97	**13**	12.41	11.65	**84**	80.21	79.45	**13**	20.69	19.55	**84**	133.69	132.55
14	8.91	8.40	**85**	54.11	53.60	**14**	13.37	12.61	**85**	81.17	80.41	**14**	22.28	21.14	**85**	135.28	134.14
15	9.55	9.04	**86**	54.75	54.24	**15**	14.32	13.56	**86**	82.12	81.36	**15**	23.87	22.73	**86**	136.87	135.73
16	10.19	9.68	**87**	55.39	54.88	**16**	15.28	14.52	**87**	83.08	82.32	**16**	25.46	24.32	**87**	138.46	137.32
17	10.82	10.31	**88**	56.02	55.51	**17**	16.23	15.47	**88**	84.03	83.27	**17**	27.06	25.91	**88**	140.06	138.91
18	11.46	10.95	**89**	56.66	56.15	**18**	17.19	16.43	**89**	84.99	84.23	**18**	28.65	27.51	**89**	141.65	140.51
19	12.10	11.59	**90**	57.30	56.79	**19**	18.14	17.38	**90**	85.94	85.18	**19**	30.24	29.10	**90**	143.24	142.10
20	12.73	12.22	**91**	57.93	57.42	**20**	19.10	18.34	**91**	86.90	86.14	**20**	31.83	30.69	**91**	144.83	143.69
21	13.37	12.86	**92**	58.57	58.06	**21**	20.05	19.29	**92**	87.85	87.09	**21**	33.42	32.28	**92**	146.42	145.28
22	14.01	13.50	**93**	59.21	58.70	**22**	21.01	20.25	**93**	88.81	88.05	**22**	35.01	33.87	**93**	148.01	146.87
23	14.64	14.13	**94**	59.84	59.33	**23**	21.96	21.20	**94**	89.76	89.00	**23**	36.61	35.46	**94**	149.61	148.46
24	15.28	14.77	**95**	60.48	59.97	**24**	22.92	22.16	**95**	90.72	89.96	**24**	38.20	37.06	**95**	151.20	150.06
25	15.92	15.41	**96**	61.12	60.61	**25**	23.87	23.11	**96**	91.67	90.91	**25**	39.79	38.65	**96**	152.79	151.65
26	16.55	16.04	**97**	61.75	61.24	**26**	24.83	24.07	**97**	92.63	91.87	**26**	41.38	40.24	**97**	154.38	153.24
27	17.19	16.68	**98**	62.39	61.88	**27**	25.78	25.02	**98**	93.58	92.82	**27**	42.97	41.83	**98**	155.97	154.83
28	17.83	17.32	**99**	63.03	62.52	**28**	26.74	25.98	**99**	94.54	93.78	**28**	44.56	43.42	**99**	157.56	156.42
29	18.46	17.95	**100**	63.66	63.15	**29**	27.69	26.93	**100**	95.49	94.73	**29**	46.15	45.01	**100**	159.15	158.01
30	19.10	18.59	**101**	64.30	63.79	**30**	28.65	27.89	**101**	96.45	95.69	**30**	47.75	46.60	**101**	160.75	159.60
31	19.74	19.23	**102**	64.94	64.43	**31**	29.60	28.84	**102**	97.40	96.64	**31**	49.34	48.20	**102**	162.34	161.20
32	20.37	19.86	**103**	65.57	65.06	**32**	30.56	29.80	**103**	98.36	97.60	**32**	50.93	49.79	**103**	163.93	162.79
33	21.01	20.50	**104**	66.21	65.70	**33**	31.51	30.75	**104**	99.31	98.55	**33**	52.52	51.38	**104**	165.52	164.38
34	21.65	21.14	**105**	66.85	66.34	**34**	32.47	31.71	**105**	100.27	99.51	**34**	54.11	52.97	**105**	167.11	165.97
35	22.28	21.77	**106**	67.48	66.97	**35**	33.42	32.66	**106**	101.22	100.46	**35**	55.70	54.56	**106**	168.70	167.56
36	22.92	22.41	**107**	68.12	67.61	**36**	34.38	33.62	**107**	102.18	101.42	**36**	57.30	56.15	**107**	170.30	169.15
37	23.55	23.05	**108**	68.75	68.25	**37**	35.33	34.57	**108**	103.13	102.37	**37**	58.89	57.75	**108**	171.89	170.75
38	24.19	23.68	**109**	69.39	68.88	**38**	36.29	35.53	**109**	104.09	103.33	**38**	60.48	59.34	**109**	173.48	172.34
39	24.83	24.32	**110**	70.03	69.52	**39**	37.24	36.48	**110**	105.04	104.28	**39**	62.07	60.93	**110**	175.07	173.93
40	25.46	24.96	**111**	70.66	70.16	**40**	38.20	37.44	**111**	106.00	105.24	**40**	63.66	62.52	**111**	176.66	175.52
41	26.10	25.59	**112**	71.30	70.79	**41**	39.15	38.39	**112**	106.95	106.19	**41**	65.25	64.11	**112**	178.25	177.11
42	26.74	26.23	**113**	71.94	71.43	**42**	40.11	39.35	**113**	107.91	107.15	**42**	66.85	65.70	**113**	179.85	178.70
43	27.37	26.87	**114**	72.57	72.07	**43**	41.06	40.30	**114**	108.86	108.10	**43**	68.44	67.29	**114**	181.44	180.29
44	28.01	27.50	**115**	73.21	72.70	**44**	42.02	41.25	**115**	109.82	109.05	**44**	70.03	68.89	**115**	183.03	181.89
45	28.65	28.14	**116**	73.85	73.34	**45**	42.97	42.21	**116**	110.77	110.01	**45**	71.62	70.48	**116**	184.62	183.48
46	29.28	28.78	**117**	74.48	73.98	**46**	43.93	43.16	**117**	111.73	110.96	**46**	73.21	72.07	**117**	186.21	185.07
47	29.92	29.41	**118**	75.12	74.61	**47**	44.88	44.12	**118**	112.68	111.92	**47**	74.80	73.66	**118**	187.80	186.66
48	30.56	30.05	**119**	75.76	75.25	**48**	45.84	45.07	**119**	113.64	112.87	**48**	76.39	75.25	**119**	189.39	188.25
49	31.19	30.69	**120**	76.39	75.89	**49**	46.79	46.03	**120**	114.59	113.83	**49**	77.99	76.84	**120**	190.99	189.84
50	31.83	31.32	**121**	77.03	76.52	**50**	47.75	46.98	**121**	115.55	114.78	**50**	79.58	78.44	**121**	192.58	191.44
51	32.47	31.96	**122**	77.67	77.16	**51**	48.70	47.94	**122**	116.50	115.74	**51**	81.17	80.03	**122**	194.17	193.03
52	33.10	32.60	**123**	78.30	77.80	**52**	49.66	48.89	**123**	117.46	116.69	**52**	82.76	81.62	**123**	195.76	194.62
53	33.74	33.23	**124**	78.94	78.43	**53**	50.61	49.85	**124**	118.41	117.65	**53**	84.35	83.21	**124**	197.35	196.21
54	34.38	33.87	**125**	79.58	79.07	**54**	51.57	50.80	**125**	119.37	118.60	**54**	85.94	84.80	**125**	198.94	197.80
55	35.01	34.51	**126**	80.21	79.71	**55**	52.52	51.76	**126**	120.32	119.56	**55**	87.54	86.39	**126**	200.54	199.39
56	35.65	35.14	**127**	80.85	80.34	**56**	53.48	52.71	**127**	121.28	120.51	**56**	89.13	87.98	**127**	202.13	200.98
57	36.29	35.78	**128**	81.49	80.98	**57**	54.43	53.67	**128**	122.23	121.47	**57**	90.72	89.58	**128**	203.72	202.58
58	36.92	36.42	**129**	82.12	81.62	**58**	55.39	54.62	**129**	123.19	122.42	**58**	92.31	91.17	**129**	205.31	204.17
59	37.56	37.05	**130**	82.76	82.25	**59**	56.34	55.58	**130**	124.14	123.38	**59**	93.90	92.76	**130**	206.90	205.76
60	38.20	37.69	**131**	83.40	82.89	**60**	57.30	56.53	**131**	125.10	124.33	**60**	95.49	94.35	**131**	208.49	207.35
61	38.83	38.33	**132**	84.03	83.53	**61**	58.25	57.49	**132**	126.05	125.29	**61**	97.08	95.94	**132**	210.08	208.94
62	39.47	38.96	**133**	84.67	84.16	**62**	59.21	58.44	**133**	127.01	126.24	**62**	98.68	97.53	**133**	211.68	210.53
63	40.11	39.60	**134**	85.31	84.80	**63**	60.16	59.40	**134**	127.96	127.20	**63**	100.27	99.13	**134**	213.27	212.13
64	40.74	40.24	**135**	85.94	85.44	**64**	61.12	60.35	**135**	128.92	128.15	**64**	101.86	100.72	**135**	214.86	213.72
65	41.38	40.87	**136**	86.58	86.07	**65**	62.07	61.31	**136**	129.87	129.11	**65**	103.45	102.31	**136**	216.45	215.31
66	42.02	41.51	**137**	87.22	86.71	**66**	63.03	62.26	**137**	130.83	130.06	**66**	105.04	103.90	**137**	218.04	216.90
67	42.65	42.15	**138**	87.85	87.35	**67**	63.98	63.22	**138**	131.78	131.02	**67**	106.63	105.49	**138**	219.63	218.49
68	43.29	42.78	**139**	88.49	87.98	**68**	64.94	64.17	**139**	132.74	131.97	**68**	108.23	107.08	**139**	221.23	220.08
69	43.93	43.42	**140**	89.13	88.62	**69**	65.89	65.13	**140**	133.69	132.93	**69**	109.82	108.67	**140**	222.82	221.67
70	44.56	44.06	**141**	89.76	89.26	**70**	66.85	66.08	**141**	134.65	133.88	**70**	111.41	110.27	**141**	224.41	223.27
71	45.20	44.69	**142**	90.40	89.89	**71**	67.80	67.04	**142**	135.60	134.84	**71**	113.00	111.86	**142**	226.00	224.86
72	45.84	45.33	**143**	91.04	90.53	**72**	68.75	67.99	**143**	136.55	135.79	**72**	114.59	113.45	**143**	227.59	226.45
73	46.47	45.97	**144**	91.67	91.17	**73**	69.71	68.95	**144**	137.51	136.75	**73**	116.18	115.04	**144**	229.18	228.04
74	47.11	46.60	**145**	92.31	91.80	**74**	70.66	69.90	**145**	138.46	137.70	**74**	117.77	116.63	**145**	230.77	229.63
75	47.75	47.24	**146**	92.95	92.44	**75**	71.62	70.86	**146**	139.42	138.66	**75**	119.37	118.22	**146**	232.37	231.22
76	48.38	47.88	**147**	93.58	93.08	**76**	72.57	71.81	**147**	140.37	139.61	**76**	120.96	119.82	**147**	233.96	232.82
77	49.02	48.51	**148**	94.22	93.71	**77**	73.53	72.77	**148**	141.33	140.57	**77**	122.55	121.41	**148**	235.55	234.41
78	49.66	49.15	**149**	94.86	94.35	**78**	74.48	73.72	**149**	142.28	141.52	**78**	124.14	123.00	**149**	237.14	236.00
79	50.29	49.78	**150**	95.49	94.98	**79**	75.44	74.68	**150**	143.24	142.48	**79**	125.73	124.59	**150**	238.73	237.59
80	50.93	50.42				**80**	76.39	75.63				**80**	127.32	126.18			

Pitch and Outer Diameter

mm

P8M						P14M					
No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.	No. of teeth	Pitch circle dia.	Outer dia.
			81	206.26	204.89				**81**	360.96	358.17
			82	208.81	207.44				**82**	365.42	362.63
			83	211.36	209.99				**83**	369.88	367.08
			84	213.90	212.53				**84**	374.33	371.54
			85	216.45	215.08				**85**	378.79	375.99
			86	219.00	217.63				**86**	383.25	380.45
			87	221.54	220.17				**87**	387.70	384.91
			88	224.09	222.72				**88**	392.16	389.36
			89	226.64	225.27				**89**	396.61	393.82
			90	229.18	227.81				**90**	401.07	398.28
20	50.93	49.56	**91**	231.73	230.36				**91**	405.53	402.73
21	53.48	52.10	**92**	234.28	232.90				**92**	409.98	407.19
22	56.02	54.65	**93**	236.82	235.45				**93**	414.44	411.65
23	58.57	57.20	**94**	239.37	238.00				**94**	418.90	416.10
24	61.12	59.75	**95**	241.92	240.54				**95**	423.35	420.56
25	63.66	62.29	**96**	244.46	243.09				**96**	427.81	425.01
26	66.21	64.84	**97**	247.01	245.64				**97**	432.26	429.47
27	68.75	67.38	**98**	249.55	248.18				**98**	436.72	433.93
28	71.30	69.93	**99**	252.10	240.73	**28**	124.78	122.13	**99**	441.18	438.38
29	73.85	72.48	**100**	254.65	253.28	**29**	129.23	126.59	**100**	445.63	442.84
30	76.39	75.02	**101**	257.19	255.82	**30**	133.69	131.05	**101**	450.09	447.30
31	78.94	77.57	**102**	259.74	258.37	**31**	138.15	135.50	**102**	454.55	451.75
32	81.49	80.12	**103**	262.29	260.92	**32**	142.60	139.96	**103**	459.00	456.21
33	84.03	82.66	**104**	264.83	263.46	**33**	147.06	144.42	**104**	463.46	460.67
34	86.58	85.21	**105**	267.38	266.01	**34**	151.52	148.87	**105**	467.92	465.12
35	89.13	87.75	**106**	269.93	268.55	**35**	155.97	153.33	**106**	472.37	469.58
36	91.67	90.30	**107**	272.47	271.10	**36**	160.43	157.78	**107**	476.83	474.03
37	94.22	92.85	**108**	275.02	273.65	**37**	164.88	162.24	**108**	481.28	478.49
38	96.77	95.39	**109**	277.57	276.19	**38**	169.34	166.70	**109**	485.74	482.95
39	99.31	97.94	**110**	280.11	278.74	**39**	173.80	171.15	**110**	490.20	487.40
40	101.86	100.49	**111**	282.66	281.29	**40**	178.25	175.61	**111**	494.65	491.86
41	104.41	103.03	**112**	285.21	283.83	**41**	182.71	180.02	**112**	499.11	496.32
42	106.95	105.58	**113**	287.75	286.38	**42**	187.17	184.47	**113**	503.57	500.77
43	109.50	108.13	**114**	290.30	288.93	**43**	191.62	188.93	**114**	508.02	505.23
44	112.05	110.67	**115**	292.85	291.47	**44**	196.08	193.38	**115**	512.48	509.68
45	114.59	113.22	**116**	295.39	294.02	**45**	200.54	197.84	**116**	516.94	514.14
46	117.14	115.77	**117**	297.94	296.57	**46**	204.99	202.30	**117**	521.39	518.60
47	119.68	118.31	**118**	300.48	299.11	**47**	209.45	206.75	**118**	525.85	523.05
48	122.23	120.86	**119**	303.03	301.66	**48**	213.90	211.21	**119**	530.30	527.51
49	124.78	123.41	**120**	305.58	304.21	**49**	218.36	215.67	**120**	534.76	531.97
50	127.32	125.95	**121**	308.12	306.75	**50**	222.82	220.12	**121**	539.22	536.42
51	129.87	128.50	**122**	310.67	309.30	**51**	227.27	224.53	**122**	543.67	540.88
52	132.42	131.04	**123**	313.22	311.84	**52**	231.73	228.99	**123**	548.13	545.34
53	134.96	133.59	**124**	315.76	314.39	**53**	236.19	233.44	**124**	552.59	549.79
54	137.51	136.14	**125**	318.31	316.94	**54**	240.64	237.90	**125**	557.04	554.25
55	140.06	138.68	**126**	320.86	319.48	**55**	245.10	242.35	**126**	561.50	558.70
56	142.60	141.23	**127**	323.40	322.03	**56**	249.55	246.81	**127**	565.95	563.16
57	145.15	143.78	**128**	325.95	324.58	**57**	254.01	251.27	**128**	570.41	567.62
58	147.70	146.32	**129**	328.50	327.12	**58**	258.47	255.72	**129**	574.87	572.07
59	150.24	148.87	**130**	331.04	329.67	**59**	262.92	260.18	**130**	579.32	576.53
60	152.79	151.42	**131**	333.59	332.22	**60**	267.38	264.64	**131**	583.78	580.99
61	155.34	153.96	**132**	336.14	334.76	**61**	271.84	269.09	**132**	588.24	585.44
62	157.88	156.51	**133**	338.68	337.31	**62**	276.29	273.55	**133**	592.69	589.90
63	160.43	159.06	**134**	341.23	339.86	**63**	280.75	278.01	**134**	597.15	594.36
64	162.97	161.60	**135**	343.77	342.40	**64**	285.21	282.46	**135**	601.61	598.81
65	165.52	164.15	**136**	346.32	344.95	**65**	289.66	286.92	**136**	606.06	603.27
66	168.07	166.70	**137**	348.87	347.50	**66**	294.12	291.37	**137**	610.52	607.72
67	170.61	169.24	**138**	351.41	350.04	**67**	298.57	295.83	**138**	614.97	612.18
68	173.16	171.79	**139**	353.96	352.59	**68**	303.03	300.29	**139**	619.43	616.64
69	175.71	174.34	**140**	356.51	355.14	**69**	307.49	304.74	**140**	623.89	621.09
70	178.25	176.88	**141**	359.05	357.68	**70**	311.94	309.15	**141**	628.34	625.55
71	180.80	179.43	**142**	361.60	360.23	**71**	316.40	313.61	**142**	632.80	630.01
72	183.35	181.97	**143**	364.15	362.77	**72**	320.86	318.06	**143**	637.26	634.46
73	185.89	184.52	**144**	366.69	365.32	**73**	325.31	322.52	**144**	641.71	638.92
74	188.44	187.07	**145**	369.24	367.87	**74**	329.77	326.98	**145**	646.17	643.38
75	190.99	189.61	**146**	371.89	370.41	**75**	334.23	331.43	**146**	650.63	647.83
76	193.53	192.16	**147**	374.33	372.96	**76**	338.68	335.89	**147**	655.08	652.29
77	196.08	194.71	**148**	374.88	375.51	**77**	343.14	340.34	**148**	659.54	656.74
78	198.63	197.25	**149**	379.43	378.05	**78**	347.59	344.80	**149**	663.99	661.20
79	201.17	199.80	**150**	381.97	380.60	**79**	352.05	349.26	**150**	668.45	665.66
80	203.72	202.35				**80**	356.51	353.71			

Selection and Design

Verification of the maximum transmission torque

Select Lock Belt Sprockets S Type according to the following procedure:
Calculate the maximum generated torque and the maximum generated thrust load by multiplying a service factor by the generated transmission capacity.

●Maximum generated torque T_{max}

[SI units]

$$T_{max}\ (\mathrm{N{\cdot}m}) = \frac{9550 \times KW \times SF}{n}$$

[Gravitational units]

$$T_{max}\ (\mathrm{kgf{\cdot}m}) = \frac{974 \times KW \times SF}{n}$$

● Maximum generated thrust load P_{max}

$$P_{max}\ (\mathrm{N\{kgf\}}) = P_{ax} \times SF$$

KW : Transmission capacity kW
SF : Service factor (Choose from the table below)
n : Rotation speed r/min
P_{ax} : Maximum thrust load N{kgf}

If the torque and thrust load are applied simultaneously, calculate the synthetic load MR_{max} using the following formula:

$$MR_{max} = \sqrt{(T_{max})^2 + (P_{max} \times d/2000)^2}\ \ \mathrm{N{\cdot}m\{kgf{\cdot}m\}}$$

d : Shaft diameter (mm)

Compare T_{max} or MR_{max} value calculated above with the transmission torque Mt of the sleeve.

OK $Mt \geq T_{max}$ or MR_{max}
NG $Mt < T_{max}$ or MR_{max}

Service factor SF

Load condition		Service factor SF
Smooth transmission with no impact	Small load inertia Inertia ratio of 1.0 or lower	1.2 to 1.5
Transmission with mild impact	Medium load inertia Inertia ratio of 1.0 to 3.0	1.5 to 2.0
Load with major impact or forward and reverse rotation	Large load inertia Inertia ratio of 3.0 or higher	2.0 to 5.0

Selection of the shaft

Use a shaft made of a material that satisfies the following formula:

$$\delta_{0.2S} \geq 1.2 \times P$$

$\delta_{0.2S}$: The yield point of the material used for the shaft (MPa)
P : Surface pressure on the shaft side (MPa)
(Refer to page 136 for the S Type and page 138 for the S Type Surface coated Model)

When a hollow shaft is used, use a shaft with an inner diameter dimension d_B that satisfies the following formula:

$$d_B \leq d \times \sqrt{\frac{\delta_{0.2S} - 2 \times P}{\delta_{0.2S}}}$$

d : Shaft diameter (mm)
$\delta_{0.2S}$: The yield point of the material used for the shaft (MPa)

aluminum type

When using at a low temperature (0°C or lower) or a high temperature (50°C or higher), disengagement between the belt and belt sprocket occurs, which may cause premature wear of the belt, etc.

[Reference] Thermal expansion coefficient		Specific gravity (g/cm³)
Aluminum:	23.9×10^{-6}	2.8
Carbon steel:	11.7×10^{-6}	7.8

Approximate mass

In the case of a standard installation, the approximate mass can be figured out by adding the added mass in the table to the mass of the standard belt sprocket.
In the case of a flat installation, the approximate mass can be figured out by deducting the deducted mass in the table to the mass of the standard belt sprocket.

Sleeve frame No.	Installation method	
	Standard installation	Flat installation
	Added mass	Deducted mass
	kg	kg
S1	0.1	0.1
S2	0.1	0.1
S3	0.1	0.2
S4	0.2	0.3
S5	0.3	0.4
S6	0.5	0.6
S7	0.9	1.0

Handling instructions

Installation

1) **S Type Model:**
Wipe off the dirt on the shaft surface and apply a small amount of oil or grease. (Avoid using the oil or grease that contains molybdenum-based antifriction agent.)
Remove the locking bolt of the sleeve, wipe the contact surfaces of the belt sprocket and sleeve clean, and apply oil or grease. Also, apply it to the thread and seat parts of the locking bolt. (Avoid using oil or grease that contains molybdenum-based antifriction agent.)
2) **S Type Plated Model:** Remove the locking bolt of the sleeve and wipe the contact surfaces of the belt sprocket and sleeve clean. Do not use oil or grease because it does not need to be applied.
3) Tighten the locking bolt lightly to assemble the sleeve temporarily.
4) Push the Lock Belt Sprocket that was assembled temporarily in the step 3 to the predetermined position gently with the hand.
5) Tighten the bolts uniformly in the diagonal order at the torque that is one-fourth of the rated tightening torque M_A.
6) Increase the tightening torque to the half of M_A and tighten in the same manner as the step 5.
7) Increase the tightening torque to the rated value and tighten in the same manner as the steps 5 and 6.
8) Tighten all the locking bolts at the rated tightening torque sequentially in a circumferential direction. Repeat this procedure several times. When all the locking bolts are tightened at the rated tightening torque, the installation is completed.

Precautions for installation

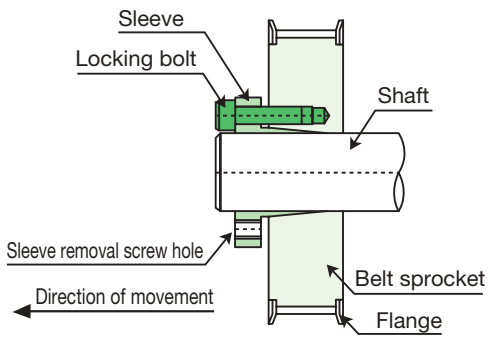
1) Be sure to use a torque wrench when tightening the locking bolts. Observe the tightening procedure and the tightening torque M_A when tightening them. Using any wrench other than a torque wrench and tightening manually are not recommended, which could result in slippage and deformation.
2) Tightening the bolts at a torque higher than the tightening torque could result in breakage of the bolts. In addition, tightening the bolts at a torque lower could cause loosening of the bolts. Therefore, be sure to tighten at the appropriate tightening torque M_A.
3) Do not use any locking bolt other than the ones provided with this product, or it could cause an accident, such as breakage of the bolt. If you need new bolts due to loss, replacement, etc. Please contact a Tsubaki representative.

Removal

1) After confirming that no load, such as torque, is applied to the belt sprocket and shaft, loosen the locking bolts sequentially to remove them.
2) By inserting the removed bolts into the removal screw holes and tightening them uniformly, the locked state is released.

Movement of the belt sprocket when tighten bolts

In the installation of the Lock Series S Type, the sprockets are moved by 0.5 to 1.0 mm in the shaft direction between the initial fixation and the final tightening. Therefore, when centering the product, consider the amount of movement of the belt sprocket in advance. For the direction of movement of the belt sprocket, refer to the figure on the right.

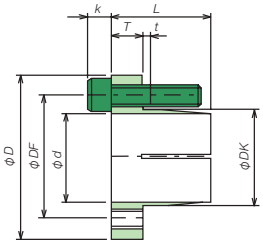


General precautions

1) Allowable transmission torque: Load torque should be selected so that the maximum generated torque multiplied by the service factor shown on page 133 is always less than or equal to the transmission torque.
2) Shaft diameter tolerance and surface roughness: The shaft diameter tolerance and shaft surface roughness shall be h8 and *Ra* 3.2, respectively.
3) Installation to a shaft with a keyway and D-shaped shaft
If the product is installed onto a shaft on which a keyway has already been machined, such as a motor shaft, or a D-shaped shaft, the allowable transmission torque decreases by 10%.
4) Installation to a cold-finished steel bar
If the product is installed onto a cold-finished steel bar whose mechanical properties are guaranteed (allowable radius of drawing materials: Grades 8 to 10), the allowable transmission torque decreases by 10%.
5) As the shaft material, use a solid shaft material of S35C or higher.
6) Operating temperature range: -15 to 80°C (Aluminum: 0 to 50°C)
7) When tightening the bolts, be sure to use a torque wrench.
(Use the torque wrench properly in accordance with the instruction manual of the torque wrench used.)

Specifications for Sleeves

■ Sleeve Specifications



Sleeve	Materials	Carbon steel
	Heat treatment	Quenching and tempering
Locking Bolt	Hex. socket head cap screw (JIS B 1176:2014) Strength class: 12.9	
	Materials	Alloy steel
	Heat treatment	Quenching and tempering
	Surface treatment	Black colored oxide coating

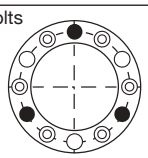
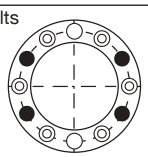
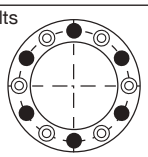
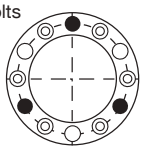
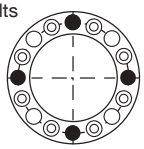
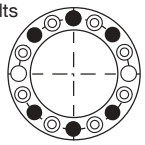
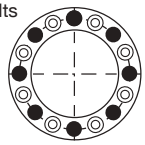
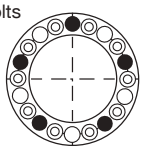
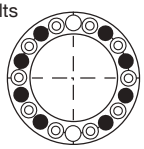
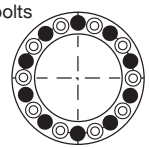
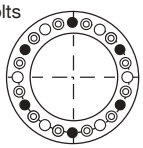
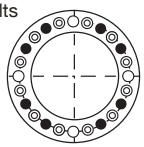
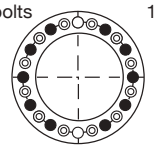
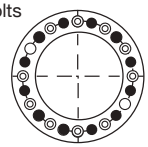
■ Sleeve Dimensions

mm

Sleeve frame No.	Shaft bore dia. *d*	Sleeve outer dia. *D*	Pitch circle dia. *φDF*	Taper outer dia. *φDK*	Sleeve length *L*	Flange thickness *T*	Straight part *t*	Bolt head height *k*	Locking bolt size	Tap hole	Tightening torque N·m {kgf·m}
S1	10	32	24	18.6	18	6	2	4	M4×16	M4	4.2 {0.43}
	11										
	12										
	14										
	15										
	16										
S2	15	42	32	25.2	22	7	2	5	M5×18	M5	8.3 {0.85}
	16										
	17										
	18										
	19										
	20										
	22										
S3	24	48.5	38.5	31.2	23.5	8	2.5	5	M5×20	M5	8.3 {0.85}
	25										
	28										
S4	24	56	46	38.6	26	8	2.5	5	M5×20	M5	8.3 {0.85}
	25										
	28										
	30										
	32										
	35										
S5	35	66	56	48.8	29	10	2.5	5	M5×22	M5	8.3 {0.85}
	38										
	40										
	42										
	45										
S6	48	80	68	60	36	12	3	6	M6×25	M6	16.8 {1.71}
	50										
	55										
S7	60	101	86	75.5	40	13	3.5	8	M8×30	M8	40.5 {4.13}
	65										
	70										

■ Locking bolts position

●Locking bolts position ○Vacant hole ◎Tap hole (Tap hole for removal)

Sleeve frame No.	Locking bolts position
S1 S2 S3	3 bolts  4 bolts  6 bolts 
S4	3 bolts  4 bolts  6 bolts  8 bolts 
S5 S7	5 bolts  8 bolts  10 bolts 
S6	6 bolts  8 bolts  10 bolts  12 bolts 

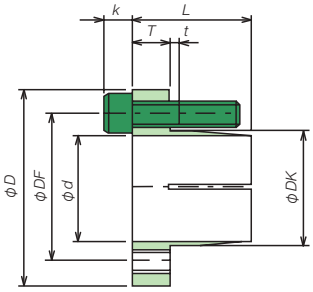
Specifications for Sleeves

■ Sleeve Performance

Sleeve frame No.	No.of bolts	Shaft bore dia. d mm	Locking bolt size	Tightening torque M_A N·m {kgf·m}	Transmissible torque Mt N·m {kgf·m}	Transmissible thrust Pax kN {kgf}	Shaft contact pressure P MPa {kgf/mm²}	Hub contact pressure P' MPa {kgf/mm²}	Min. hub dia., mm Materials SS400	S35C	S45C	A7075-T6
S1	3	10	M4×16	4.2 {0.43}	43 {4.4}	8.6 {882}	196 {20.0}	111 {11.3}	35	30	29	29
		11			48 {4.8}	8.6 {882}	179 {18.2}	111 {11.3}	35	30	29	29
		12			52 {5.3}	8.6 {882}	164 {16.7}	111 {11.3}	35	30	29	29
		14			60 {6.2}	8.6 {882}	140 {14.3}	111 {11.3}	35	30	29	29
		15			65 {6.6}	8.6 {882}	131 {13.4}	111 {11.3}	35	30	29	29
		16			69 {7.1}	8.6 {882}	123 {12.5}	111 {11.3}	35	30	29	29
	4	10			58 {5.9}	11.5 {1176}	262 {26.7}	148 {15.1}	44	34	32	33
		11			63 {6.5}	11.5 {1176}	238 {24.3}	148 {15.1}	44	34	32	33
		12			69 {7.1}	11.5 {1176}	218 {22.3}	148 {15.1}	44	34	32	33
		14			81 {8.2}	11.5 {1176}	187 {19.1}	148 {15.1}	44	34	32	33
		15			86 {8.8}	11.5 {1176}	175 {17.8}	148 {15.1}	44	34	32	33
		16			92 {9.4}	11.5 {1176}	164 {16.7}	148 {15.1}	44	34	32	33
	6	14			121 {12.3}	17.3 {1764}	281 {28.6}	222 {22.6}	Usage prohibited	49	42	44
		15			130 {13.2}	17.3 {1764}	262 {26.7}	222 {22.6}	Usage prohibited	49	42	44
		16			138 {14.1}	17.3 {1764}	245 {25.0}	222 {22.6}	Usage prohibited	49	42	44
S2	3	15	M5×18	8.3 {0.85}	105 {10.7}	13.9 {1423}	163 {16.6}	101 {10.3}	45	39	38	38
		16			112 {11.4}	13.9 {1423}	152 {15.5}	101 {10.3}	45	39	38	38
		17			119 {12.1}	13.9 {1423}	143 {14.6}	101 {10.3}	45	39	38	38
		18			126 {12.8}	13.9 {1423}	135 {13.8}	101 {10.3}	45	39	38	38
		19			133 {13.5}	13.9 {1423}	128 {13.1}	101 {10.3}	45	39	38	38
		20			139 {14.2}	13.9 {1423}	122 {12.4}	101 {10.3}	45	39	38	38
		22			153 {15.7}	13.9 {1423}	111 {11.3}	101 {10.3}	45	39	38	38
	4	15			139 {14.2}	18.6 {1898}	217 {22.1}	135 {13.8}	54	44	41	42
		16			149 {15.2}	18.6 {1898}	203 {20.7}	135 {13.8}	54	44	41	42
		17			158 {16.1}	18.6 {1898}	191 {19.5}	135 {13.8}	54	44	41	42
		18			167 {17.1}	18.6 {1898}	181 {18.4}	135 {13.8}	54	44	41	42
		19			177 {18.0}	18.6 {1898}	171 {17.5}	135 {13.8}	54	44	41	42
		20			186 {19.0}	18.6 {1898}	163 {16.6}	135 {13.8}	54	44	41	42
		22			205 {20.9}	18.6 {1898}	148 {15.1}	135 {13.8}	54	44	41	42
	6	17			237 {24.2}	27.9 {2846}	287 {29.3}	203 {20.7}	124	59	52	54
		18			251 {25.6}	27.9 {2846}	271 {27.6}	203 {20.7}	124	59	52	54
		19			265 {27.0}	27.9 {2846}	257 {26.2}	203 {20.7}	124	59	52	54
		20			279 {28.5}	27.9 {2846}	244 {24.9}	203 {20.7}	124	59	52	54
		22			307 {31.3}	27.9 {2846}	222 {22.6}	203 {20.7}	124	59	52	54
S3	3	24	M5×20	8.3 {0.85}	167 {17.1}	13.9 {1423}	102 {10.4}	81 {8.3}	49	44	43	44
		25			174 {17.8}	13.9 {1423}	98 {10.0}	81 {8.3}	49	44	43	44
		28			195 {19.9}	13.9 {1423}	87 {8.9}	81 {8.3}	49	44	43	44
	4	24			223 {22.8}	18.6 {1898}	135 {13.8}	108 {11.0}	56	49	47	47
		25			232 {23.7}	18.6 {1898}	130 {13.3}	108 {11.0}	56	49	47	47
		28			260 {26.6}	18.6 {1898}	116 {11.8}	108 {11.0}	56	49	47	47
	6	24			335 {34.2}	27.9 {2846}	203 {20.7}	162 {16.6}	82	59	55	57
		25			349 {35.6}	27.9 {2846}	195 {19.9}	162 {16.6}	82	59	55	57
		28			391 {39.9}	27.9 {2846}	174 {17.8}	162 {16.6}	82	59	55	57
S4	3	24	M5×20	8.3 {0.85}	167 {17.1}	13.9 {1423}	85 {8.7}	55 {5.6}	53	50	49	49
		25			174 {17.8}	13.9 {1423}	82 {8.3}	55 {5.6}	53	50	49	49
		28			195 {19.9}	13.9 {1423}	73 {7.5}	55 {5.6}	53	50	49	49
		30			209 {21.3}	13.9 {1423}	68 {7.0}	55 {5.6}	53	50	49	49
		32			223 {22.8}	13.9 {1423}	64 {6.5}	55 {5.6}	53	50	49	49
		35			244 {24.9}	13.9 {1423}	58 {6.0}	55 {5.6}	53	50	49	49
	4	24			223 {22.8}	18.6 {1898}	114 {11.6}	73 {7.5}	58	53	51	52
		25			232 {23.7}	18.6 {1898}	109 {11.1}	73 {7.5}	58	53	51	52
		28			260 {26.6}	18.6 {1898}	97 {9.9}	73 {7.5}	58	53	51	52
		30			279 {28.5}	18.6 {1898}	91 {9.3}	73 {7.5}	58	53	51	52
		32			298 {30.4}	18.6 {1898}	85 {8.7}	73 {7.5}	58	53	51	52
		35			325 {33.2}	18.6 {1898}	78 {7.9}	73 {7.5}	58	53	51	52
	6	24			335 {34.2}	27.9 {2846}	170 {17.4}	110 {11.2}	69	59	57	58
		25			349 {35.6}	27.9 {2846}	164 {16.7}	110 {11.2}	69	59	57	58
		28			391 {39.9}	27.9 {2846}	146 {14.9}	110 {11.2}	69	59	57	58
		30			418 {42.7}	27.9 {2846}	136 {13.9}	110 {11.2}	69	59	57	58
		32			446 {45.5}	27.9 {2846}	128 {13.0}	110 {11.2}	69	59	57	58
		35			488 {49.8}	27.9 {2846}	117 {11.9}	110 {11.2}	69	59	57	58
	8	24			446 {45.5}	37.2 {3795}	227 {23.2}	146 {14.9}	88	68	64	65
		25			465 {47.4}	37.2 {3795}	218 {22.3}	146 {14.9}	88	68	64	65
		28			521 {53.1}	37.2 {3795}	195 {19.9}	146 {14.9}	88	68	64	65
		30			558 {56.9}	37.2 {3795}	182 {18.5}	146 {14.9}	88	68	64	65
		32			595 {60.7}	37.2 {3795}	170 {17.4}	146 {14.9}	88	68	64	65
		35			651 {66.4}	37.2 {3795}	156 {15.9}	146 {14.9}	88	68	64	65
S5	5	35	M5×22	8.3 {0.85}	407 {41.5}	23.2 {2372}	91 {9.3}	68 {6.9}	70	64	63	63
		38			442 {45.1}	23.2 {2372}	84 {8.6}	68 {6.9}	70	64	63	63
		40			465 {47.4}	23.2 {2372}	80 {8.2}	68 {6.9}	70	64	63	63
		42			488 {49.8}	23.2 {2372}	76 {7.8}	68 {6.9}	70	64	63	63
		45			523 {53.4}	23.2 {2372}	71 {7.3}	68 {6.9}	70	64	63	63
	8	35			651 {66.4}	37.2 {3795}	146 {14.9}	108 {11.0}	86	74	71	72
		38			707 {72.1}	37.2 {3795}	135 {13.8}	108 {11.0}	86	74	71	72
		40			744 {75.9}	37.2 {3795}	128 {13.1}	108 {11.0}	86	74	71	72
		42			781 {79.7}	37.2 {3795}	122 {12.4}	108 {11.0}	86	74	71	72
		45			837 {85.4}	37.2 {3795}	114 {11.6}	108 {11.0}	86	74	71	72
	10	35			814 {83.0}	46.5 {4744}	183 {18.7}	135 {13.8}	102	81	77	78
		38			883 {90.1}	46.5 {4744}	169 {17.2}	135 {13.8}	102	81	77	78
		40			930 {94.9}	46.5 {4744}	160 {16.3}	135 {13.8}	102	81	77	78
		42			976 {99.6}	46.5 {4744}	152 {15.6}	135 {13.8}	102	81	77	78
		45			1046 {106.7}	46.5 {4744}	142 {14.5}	135 {13.8}	102	81	77	78
S6	6	48	M6×25	16.8 {1.71}	1116 {113.9}	46.5 {4744}	105 {10.7}	87 {8.8}	94	84	81	82
		50			1162 {118.6}	46.5 {4744}	101 {10.3}	87 {8.8}	94	84	81	82
		55			1279 {130.5}	46.5 {4744}	91 {9.3}	87 {8.8}	94	84	81	82
	8	48			1488 {151.8}	62.0 {6326}	140 {14.3}	115 {11.8}	110	93	88	90
		50			1550 {158.1}	62.0 {6326}	134 {13.7}	115 {11.8}	110	93	88	90
		55			1705 {174.0}	62.0 {6326}	122 {12.4}	115 {11.8}	110	93	88	90
	10	48			1860 {189.8}	77.5 {7907}	175 {17.8}	144 {14.7}	134	103	97	99
		50			1937 {197.7}	77.5 {7907}	168 {17.1}	144 {14.7}	134	103	97	99
		55			2131 {217.4}	77.5 {7907}	152 {15.6}	144 {14.7}	134	103	97	99
	12	48			2232 {227.7}	93.0 {9488}	210 {21.4}	173 {17.7}	174	117	107	110
		50			2325 {237.2}	93.0 {9488}	201 {20.5}	173 {17.7}	174	117	107	110
		55			2557 {260.9}	93.0 {9488}	183 {18.7}	173 {17.7}	174	117	107	110
S7	5	60	M8×30	40.5 {4.13}	2140 {218.4}	71.3 {7280}	115 {11.7}	94 {9.6}	124	109	105	107
		65			2319 {236.6}	71.3 {7280}	106 {10.8}	94 {9.6}	124	109	105	107
		70			2497 {254.8}	71.3 {7280}	99 {10.1}	94 {9.6}	124	109	105	107
	8	60			3424 {349.4}	114.1 {11648}	184 {18.8}	150 {15.3}	177	134	125	128
		65			3710 {378.6}	114.1 {11648}	170 {17.3}	150 {15.3}	177	134	125	128
		70			3995 {407.7}	114.1 {11648}	158 {16.1}	150 {15.3}	177	134	125	128
	10	60			4281 {436.8}	142.7 {14560}	230 {23.5}	188 {19.2}	270	159	143	149
		65			4637 {473.2}	142.7 {14560}	212 {21.7}	188 {19.2}	270	159	143	149
		70			4994 {509.6}	142.7 {14560}	197 {20.1}	188 {19.2}	270	159	143	149

Specifications for Sleeves

■ Sleeve Specifications



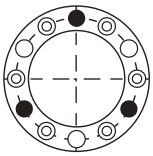
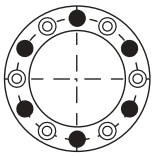
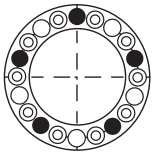
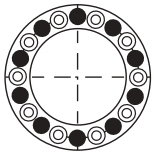
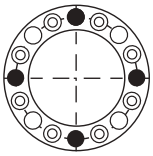
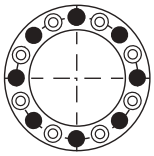
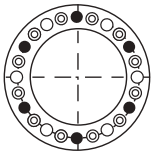
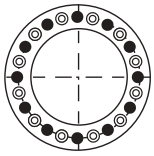
Sleeve	Materials	Carbon steel
	Heat treatment	Quenching and tempering
	surface treatment	Electroless nickel-phosphorus plating
Locking Bolt	Hex. socket head cap screw (JIS B 1176:2014) Strength class:12.9	
	Materials	Alloy steel
	Heat treatment	Quenching and tempering
	Surface treatment	Special surface treatment

■ Sleeve Dimensions

mm

Sleeve frame No.	Shaft bore dia.	Sleeve outer dia.	Pitch circle dia.	Taper outer dia.	Sleeve length	Flange thickness	Straight part	Bolt head height	Locking bolt size
	d	*φD*	*φDF*	*φDK*	*L*	*T*	*t*	*k*	
S1	10	32	24	18.6	18	6	2	4	M4×16
	11								
	12								
	14								
	15								
	16								
S2	17	42	32	25.2	22	7	2	5	M5×20
	18								
	19								
	20								
	22								
S3	24	48.5	38.5	31.2	23.5	8	2.5	5	M5×20
	25								
	28								
S4	30	56	46	38.6	26	8	2.5	5	M5×20
	32								
	35								
S5	38	66	56	48.8	29	10	2.5	5	M5×25
	40								
	42								
	45								
S6	48	80	68	60	36	12	3	6	M6×25
	50								
	55								
S7	60	101	86	75.5	40	13	3.5	8	M8×30
	65								
	70								

■ Locking bolts position

Sleeve frame No.	Locking bolts position	Sleeve frame No.	Locking bolts position
S1 S2 S3	3 bolts  6 bolts 	S5 S7	5 bolts  10 bolts 
S4	4 bolts  8 bolts 	S6	6 bolts  12 bolts 

●Locking bolt use position

○Vacant hole

◎Screw hole (Screw hole for removing the sleeve)

Specifications for Sleeves

■ Sleeve Performance

Sleeve frame No.	No.of bolts	Shaft bore dia.	Locking bolt size	Tightening torque	Transmissible torque	Transmissible thrust	Shaft contact pressure	Hub contact pressure	Min. hub dia., mm			
				M_A	Mt	Pax	P	P'	Materials			
		d mm		N·m {kgf·m}	N·m {kgf·m}	kN {kgf}	MPa {kgf/mm²}	MPa {kgf/mm²}	SS400	S35C	S45C	A7075-T6
S1	3	10	M4×16	3.4{0.35}	43 {4.4}	8.6 {882}	196 {20.0}	111 {11.3}	35	30	29	29
		11			48 {4.8}	8.6 {882}	179 {18.2}	111 {11.3}	35	30	29	29
		12			52 {5.3}	8.6 {882}	164 {16.7}	111 {11.3}	35	30	29	29
		14			60 {6.2}	8.6 {882}	140 {14.3}	111 {11.3}	35	30	29	29
		15			65 {6.6}	8.6 {882}	131 {13.4}	111 {11.3}	35	30	29	29
		16			69 {7.1}	8.6 {882}	123 {12.5}	111 {11.3}	35	30	29	29
	6	14			121 {12.3}	17.3 {1764}	281 {28.6}	222 {22.6}	Usage prohibited	49	42	44
		15			130 {13.2}	17.3 {1764}	262 {26.7}	222 {22.6}	Usage prohibited	49	42	44
		16			138 {14.1}	17.3 {1764}	245 {25.0}	222 {22.6}	Usage prohibited	49	42	44
S2	3	17	M5×20	6.8{0.69}	119 {12.1}	13.9 {1423}	143 {14.6}	101 {10.3}	45	39	38	38
		18			126 {12.8}	13.9 {1423}	135 {13.8}	101 {10.3}	45	39	38	38
		19			133 {13.5}	13.9 {1423}	128 {13.1}	101 {10.3}	45	39	38	38
		20			139 {14.2}	13.9 {1423}	122 {12.4}	101 {10.3}	45	39	38	38
		22			153 {15.7}	13.9 {1423}	111 {11.3}	101 {10.3}	45	39	38	38
	6	17			237 {24.2}	27.9 {2846}	287 {29.3}	203 {20.7}	124	59	52	54
		18			251 {25.6}	27.9 {2846}	271 {27.6}	203 {20.7}	124	59	52	54
		19			265 {27.0}	27.9 {2846}	257 {26.2}	203 {20.7}	124	59	52	54
		20			279 {28.5}	27.9 {2846}	244 {24.9}	203 {20.7}	124	59	52	54
		22			307 {31.3}	27.9 {2846}	222 {22.6}	203 {20.7}	124	59	52	54
S3	3	24	M5×20	6.8{0.69}	167 {17.1}	13.9 {1423}	102 {10.4}	81 {8.3}	49	44	43	44
		25			174 {17.8}	13.9 {1423}	98 {10.0}	81 {8.3}	49	44	43	44
		28			195 {19.9}	13.9 {1423}	87 {8.9}	81 {8.3}	49	44	43	44
	6	24			335 {34.2}	27.9 {2846}	203 {20.7}	162 {16.6}	82	59	55	57
		25			349 {35.6}	27.9 {2846}	195 {19.9}	162 {16.6}	82	59	55	57
		28			391 {39.9}	27.9 {2846}	174 {17.8}	162 {16.6}	82	59	55	57
S4	4	30	M5×20	6.8{0.69}	279 {28.5}	18.6 {1898}	91 {9.3}	73 {7.5}	58	53	51	52
		32			298 {30.4}	18.6 {1898}	85 {8.7}	73 {7.5}	58	53	51	52
		35			325 {33.2}	18.6 {1898}	78 {7.9}	73 {7.5}	58	53	51	52
	8	30			558 {56.9}	37.2 {3795}	182 {18.5}	146 {14.9}	88	68	64	65
		32			595 {60.7}	37.2 {3795}	170 {17.4}	146 {14.9}	88	68	64	65
		35			651 {66.4}	37.2 {3795}	156 {15.9}	146 {14.9}	88	68	64	65
S5	5	38	M5×25	6.8{0.69}	442 {45.1}	23.2 {2372}	84 {8.6}	68 {6.9}	70	64	63	63
		40			465 {47.4}	23.2 {2372}	80 {8.2}	68 {6.9}	70	64	63	63
		42			488 {49.8}	23.2 {2372}	76 {7.8}	68 {6.9}	70	64	63	63
		45			523 {53.4}	23.2 {2372}	71 {7.3}	68 {6.9}	70	64	63	63
	10	38			883 {90.1}	46.5 {4744}	169 {17.2}	135 {13.8}	102	81	77	78
		40			930 {94.9}	46.5 {4744}	160 {16.3}	135 {13.8}	102	81	77	78
		42			976 {99.6}	46.5 {4744}	152 {15.6}	135 {13.8}	102	81	77	78
		45			1046 {106.7}	46.5 {4744}	142 {14.5}	135 {13.8}	102	81	77	78
S6	6	48	M6×25	13.6{1.39}	1116 {113.9}	46.5 {4744}	105 {10.7}	87 {8.8}	94	84	81	82
		50			1162 {118.6}	46.5 {4744}	101 {10.3}	87 {8.8}	94	84	81	82
		55			1279 {130.5}	46.5 {4744}	91 {9.3}	87 {8.8}	94	84	81	82
	12	48			2232 {227.7}	93.0 {9488}	210 {21.4}	173 {17.7}	174	117	107	110
		50			2325 {237.2}	93.0 {9488}	201 {20.5}	173 {17.7}	174	117	107	110
		55			2557 {260.9}	93.0 {9488}	183 {18.7}	173 {17.7}	174	117	107	110
S7	5	60	M8×30	32.8{3.35}	2140 {218.4}	71.3 {7280}	115 {11.7}	94 {9.6}	124	109	105	107
		65			2319 {236.6}	71.3 {7280}	106 {10.8}	94 {9.6}	124	109	105	107
		70			2497 {254.8}	71.3 {7280}	99 {10.1}	94 {9.6}	124	109	105	107
	10	60			4281 {436.8}	142.7 {14560}	230 {23.5}	188 {19.2}	270	159	143	149
		65			4637 {473.2}	142.7 {14560}	212 {21.7}	188 {19.2}	270	159	143	149
		70			4994 {509.6}	142.7 {14560}	197 {20.1}	188 {19.2}	270	159	143	149

Selection and Design

Verification of the maximum transmission torque

Select Lock Belt Sprockets C Type according to the following procedure:
Calculate the maximum generated torque and the maximum generated thrust load by multiplying a service factor by the generated transmission capacity.

●Maximum generated torque T_{max}

[SI units]

$$T_{max}\ (\mathrm{N{\cdot}m}) = \frac{9550 \times KW \times SF}{n}$$

[Gravitational units]

$$T_{max}\ (\mathrm{kgf{\cdot}m}) = \frac{974 \times KW \times SF}{n}$$

● Maximum generated thrust load P_{max}

$$P_{max}\ (\mathrm{N\{kgf\}}) = P_{ax} \times SF$$

KW : Transmission capacity kW
SF : Service factor (Choose from the table below
n : Rotation speed r／min
P_{ax} : Maximum thrust load N{kgf}

If the torque and thrust load are applied simultaneously, calculate the synthetic load MR_{max} using the following formula:

$$MR_{max} = \sqrt{(T_{max})^2 + (P_{max} \times d/2000)^2}\ \mathrm{N{\cdot}m\{kgf{\cdot}m\}}$$

d : Shaft diameter (mm)

Compare T_{max} or MR_{max} value calculated above with the transmission torque Mt of the sleeve.

OK $Mt \geq T_{max}$ or MR_{max}
NG $Mt < T_{max}$ or MR_{max}

Service factor SF

Load condition		Service factor SF
Smooth transmission with no impact	Small load inertia Inertia ratio of 1.0 or lower	1.2 to 1.5
Transmission with mild impact	Medium load inertia Inertia ratio of 1.0 to 3.0	1.5 to 2.0
Load with major impact or forward and reverse rotation	Large load inertia Inertia ratio of 3.0 or higher	2.0 to 5.0

Selection of the shaft

Use a shaft made of a material that satisfies the following formula:

$$\delta_{0.2S} \geq 1.2 \times P$$

$\delta_{0.2S}$: The yield point of the material used for the shaft (MPa)
P : Surface pressure on the shaft side(MPa) (See page 140)

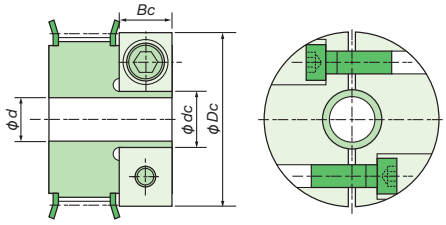
When a hollow shaft is used, use a shaft with an inner diameter dimension d_B that satisfies the following formula:

$$d_B \leq d \times \sqrt{\frac{\delta_{0.2S} - 2 \times P}{\delta_{0.2S}}}$$

d : Shaft diameter (mm)
$\delta_{0.2S}$: The yield point of the material used for the shaft (MPa)

Clamp collar Specification · Handling instructions

Clamp collar specification



Clamp collar model No.	Size dc mm	Size Dc mm	Size Bc mm	Unit Mass g	Locking Bolts No.	Locking Bolts Size	Tightening torque M_A N·m	Tightening torque M_A kgf·m	Shaft bore dia. d mm	Belt Sprockets Materials:Alminum alloy Transmissible torque Mt N·m	Mt kgf·m	Transmissible thrust Pax kN	Pax kgf	Shaft contact pressure P MPa	P kgf/mm²	Belt Sprockets Materials:Carbon steel Transmissible torque Mt N·m	Mt kgf·m	Transmissible thrust Pax kN	Pax kgf	Shaft contact pressure P MPa	P kgf/mm²
C1	9.2	30	10	19	2	M4×12	3.8	0.39	6	2.8	0.29	0.93	95	193	19.7	6.9	0.70	0.70	72	266	27.1
									7	3.5	0.36	1.00	102	185	18.9	7.1	0.72	0.75	77	255	26.0
C2	11.0	33	10	22		M4×12	3.8	0.39	8	4.7	0.48	1.18	120	162	16.5	9.2	0.94	1.11	114	223	22.8
									9	4.9	0.50	1.09	111	144	14.7	9.9	1.01	1.35	138	198	20.2
C3	13.4	40	12	39		M5×15	7.5	0.77	10	11.1	1.13	2.22	227	151	15.4	18.9	1.93	2.45	250	208	21.2
									11	8.9	0.91	1.62	165	150	15.3	17.9	1.83	2.34	239	207	21.1
C4	16.4	42	12	42		M5×20	7.5	0.77	12	13.4	1.37	2.23	228	138	14.1	22.7	2.32	3.22	329	190	19.4
									14	14.2	1.45	2.03	207	118	12.0	26.4	2.69	4.39	447	163	16.6
C5	19.4	45	12	46		M5×20	7.5	0.77	15	19.1	1.95	2.55	260	110	11.2	28.3	2.89	5.04	515	152	15.5
									16	22.9	2.34	2.86	292	103	10.5	30.2	3.08	5.75	586	142	14.5
									17	19.7	2.01	2.32	236	97	9.9	32.1	3.28	6.49	662	134	13.7
C6	22.8	53	15	78		M6×20	12.6	1.3	18	35.7	3.64	3.97	405	98	10.0	47.8	4.88	9.56	976	134	13.7
									19	38.4	3.92	4.04	412	100	10.2	50.5	5.15	9.90	1010	137	14.0
									20	31.9	3.26	3.19	326	95	9.7	53.2	5.43	10.98	1120	131	13.4

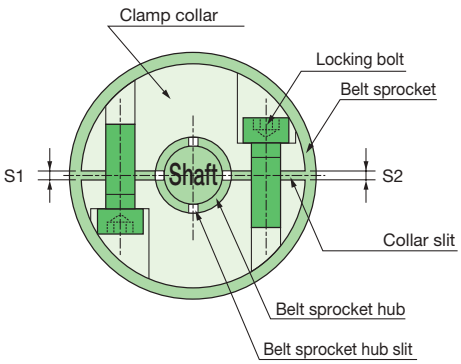
Approximate mass

The approximate mass can be figured out by adding the clamp collar unit mass in the table to the mass of the standard belt sprocket.

Handling instructions

■ Installation

1) If there is any dust or dirt on the shaft surface, wipe clean with a cloth. If there is also any dust or dirt on the belt sprocket hub or clamp collar, wipe clean.
2) Because a solid lubricant is applied to the seat and thread surfaces of the locking bolts in advance, do not wipe it off or apply oil or grease.
3) For belt sprocket with four slits in the hub section, place the clamp collar in such a way that its slits come to almost the same position as the slits of the collar.
4) After confirming the position, alternately tighten the right and left bolts at an approximately half of the specified tightening torque (the bolt tightening torque M_A. shown in the table below) . In doing so, tighten them while making an adjustment visually so that the widths S1 and S2 of the right and left collar slits become almost uniform.
5) Alternately tighten the right and left bolts at the rated tightening torque M_A. When the bolts rotate no more, the installation is completed.



■Precautions for installation

1) Be sure to use a torque wrench when tightening the locking bolts. Observe the tightening procedure and the tightening torque M_A when tightening them. Using any wrench other than a torque wrench and tightening manually are not recommended, which could result in an accident, such as slippage and deformation.
2) Tightening the bolts at a torque higher than the tightening torque could result in breakage of the bolts. In addition, locking the bolts at a torque lower could cause loosening of the bolts. Therefore, be sure to tighten at the appropriate tightening torque M_A.
3) Do not use any locking bolt other than the ones provided with this product, or it could cause an accident, such as breakage of the bolt. Contact a Tsubaki representative. if you need new bolts due to loss, replacement, etc.
4) Shaft diameter tolerance and surface roughness: The shaft diameter tolerance and shaft surface roughness shall be h8 and *Ra* 3.2, respectively.

■Removal

After confirming that no load, such as torque and thrust, is applied to the belt sprocket and shaft, loosen the right and left bolts uniformly to remove them.

Sleeve Specification · Handling instructions

■N type Sleeve dimensions

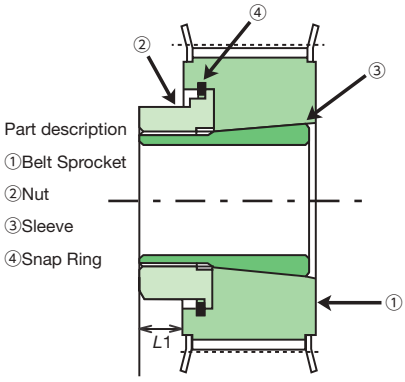
Sleeve frame No.	Shaft bore dia. mm	Sleeve dia. *L*1 mm	Widths across flats1 mm	Transmissible torque *Mt* N·m	{kgf·m}	Nut tightening torque M_A N·m	{kgf·m}	Nut Mass kg
N1	7	5	18	22.7	{2.32}	18	{1.84}	0.015
	8			26.0	{2.65}			
	9			29.2	{2.98}			
N2	10	6	22	42.0	{4.29}	28	{2.86}	0.024
	11			46.2	{4.71}			
	12			50.4	{5.14}			
N3	14	8	30	104.0	{10.61}	65	{6.63}	0.057
	15			111.0	{11.33}			
	16			119.0	{12.14}			
N4	17	10	36	161.0	{16.43}	100	{10.20}	0.096
	18			171.0	{17.45}			
	19			180.0	{18.37}			
N5	20	11	41	214.0	{21.84}	130	{13.27}	0.117
	22			236.0	{24.08}			
	24			257.0	{26.22}			
N6	25	11	46	370.0	{37.76}	200	{20.41}	0.315
	26			385.0	{39.29}			
	28			415.0	{42.35}			

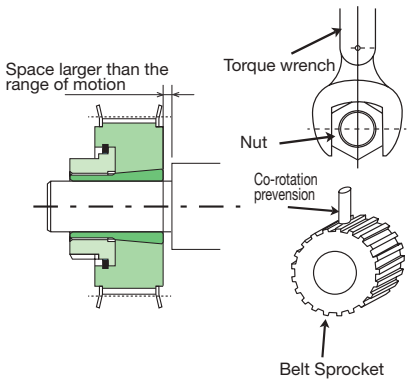
Approximate mass

The approximate mass can be calculated by adding the nut mass in the table to the mass of the standard belt sprocket.

Installation

1) Wipe off the dirt on the shaft surface and apply a small amount of oil or grease.(Avoid using the oil or grease that contains molybdenum-based antifriction agent.)
2) Because the sleeve, nut, and retaining ring are assembled in the main belt sprocket unit, install it directly onto the shaft. If it is difficult to install, rotate the nut in the loosening direction. It makes installation easier.
   If the product is used after it is stored for over a month, remove the sleeve, wipe off the dust on the circumference of the sleeve, and apply oil or grease. (Avoid using oil or grease that contains molybdenum-based antifriction agents.)
3) By preventing the rotation of the main belt sprocket unit and tighten the nut manually, the lock belt sprocket can be attached temporarily at the predetermined position on the shaft or at the predetermined phase position.
4) Using a torque wrench, tighten the nut at the specified tightening torque M_A (above table).
5) When tightening the nut, be sure to prevent the rotation of the shaft or the main belt sprocket unit. One of the methods for preventing the rotation of the main belt sprocket unit is to create a hole on the outer circumference of the belt sprocket and put a rotation prevention rod into the hole (remove burrs sufficiently after creating the hole).
6) Because the main belt sprocket unit moves 0.2 to 2.0 mm in the direction opposite to the nut during tightening, pay attention to the alignment of the belt sprocket, as well as the step on the shaft.





Removal

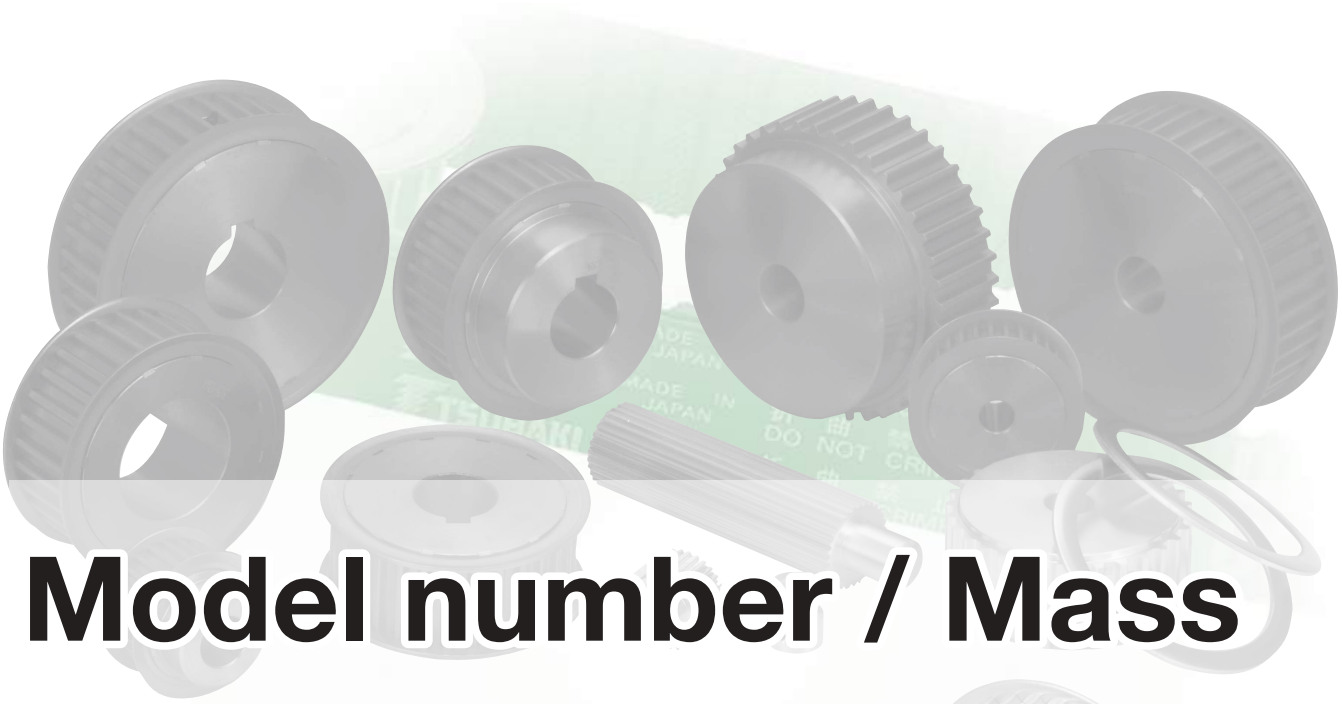
1) Loosen the nut after confirming that no torque and thrust load are applied to the belt sprocket and shaft.
2) When loosening the nut, be sure to prevent rotation of the shaft and main belt sprocket unit.
3) By loosening the nut, the tightening between the shaft and belt sprocket is released.

General precautions

1) Always use a torque wrench when tightening nuts. Please avoid improper tightening methods such as hand tightening or using pipe extensions, as these inaccurate tightening methods can cause problems.
2) Operating temperature range: -15 to 80°C (Aluminum: 0 to 50°C)
3) Use the torque wrench properly in accordance with the instruction manual of the torque wrench used.
4) Shaft diameter tolerance and surface roughness: The shaft diameter tolerance and shaft surface roughness shall be h8 and *Ra* 3.2, respectively.

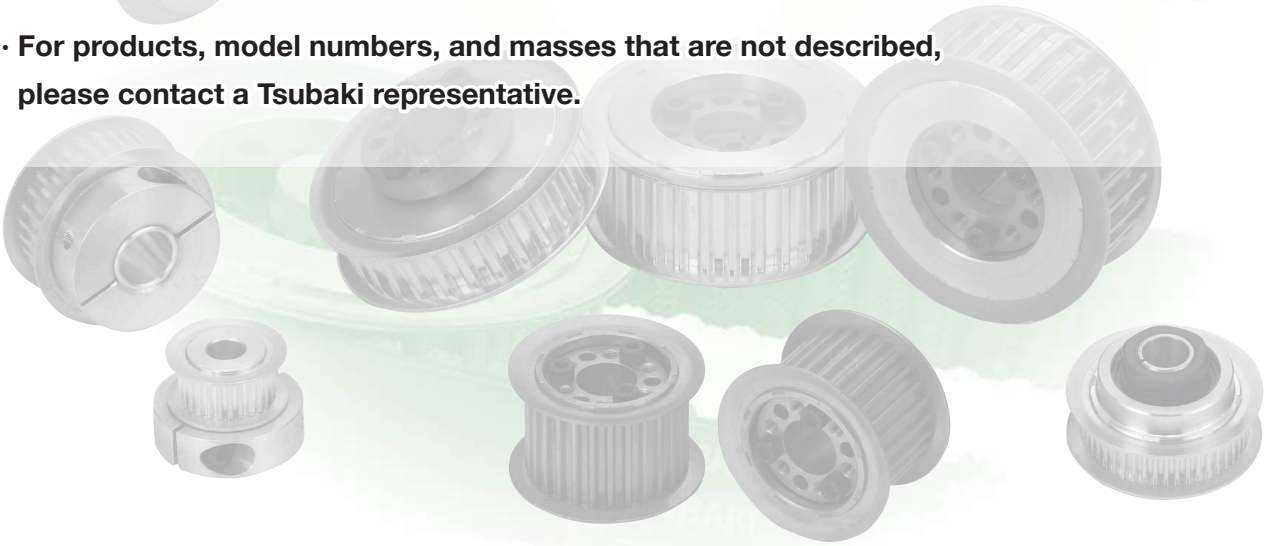
Selection·Design

For the materials for selecting the Lock Belt Sprockets N Type, contact aTsubaki representative.



Model number / Mass

· For products, model numbers, and masses that are not described, please contact a Tsubaki representative.



P2M

P3M

Number of teeth	■ P2M4-A Model number	Mass g	■ P2M6-A Model number	Mass g	■ P2M10-A Model number	Mass g	■ P3M6 Model number	Mass g	■ P3M10 Model number	Mass g	Number of teeth
10							PT10P3M6DF	10.0	PT10P3M10DF	11.3	10
11							PT11P3M6DF	12.4	PT11P3M10DF	14.1	11
12							PT12P3M6DF	16.7	PT12P3M10DF	18.9	12
13							PT13P3M6DF	17.8	PT13P3M10DF	20.5	13
14	PT14P2M4DF-A	3.8	PT14P2M6DF-A	4.2	PT14P2M10DF-A	4.5	PT14P3M6DF	22.8	PT14P3M10DF	26.1	14
15	PT15P2M4DF-A	4.5	PT15P2M6DF-A	5.0	PT15P2M10DF-A	5.4	PT15P3M6DF	24.1	PT15P3M10DF	27.9	15
16	PT16P2M4DF-A	4.6	PT16P2M6DF-A	5.2	PT16P2M10DF-A	5.7	PT16P3M6DF	25.5	PT16P3M10DF	29.9	16
17	PT17P2M4DF-A	6.1	PT17P2M6DF-A	6.8	PT17P2M10DF-A	7.3	PT17P3M6DF	36.0	PT17P3M10DF	41.4	17
18	PT18P2M4DF-A	6.3	PT18P2M6DF-A	7.0	PT18P2M10DF-A	7.7	PT18P3M6DF	37.6	PT18P3M10DF	43.7	18
19	PT19P2M4DF-A	6.5	PT19P2M6DF-A	7.3	PT19P2M10DF-A	8.2	PT19P3M6DF	50.2	PT19P3M10DF	57.4	19
20	PT20P2M4DF-A	7.8	PT20P2M6DF-A	8.8	PT20P2M10DF-A	9.6	PT20P3M6DF	52.1	PT20P3M10DF	60.0	20
21	PT21P2M4DF-A	8.1	PT21P2M6DF-A	9.1	PT21P2M10DF-A	10.1	PT21P3M6BF	28.1	PT21P3M10BF	36.4	21
22	PT22P2M4DF-A	8.3	PT22P2M6DF-A	9.4	PT22P2M10DF-A	10.6	PT22P3M6BF	29.6	PT22P3M10BF	38.7	22
23	PT23P2M4DF-A	8.6	PT23P2M6DF-A	9.8	PT23P2M10DF-A	11.1	PT23P3M6BF	34.7	PT23P3M10BF	44.6	23
24	PT24P2M4DF-A	8.8	PT24P2M6DF-A	10.1	PT24P2M10DF-A	11.6	PT24P3M6BF	37.5	PT24P3M10BF	48.5	24
25	PT25P2M4DF-A	12.5	PT25P2M6DF-A	14.0	PT25P2M10DF-A	15.6	PT25P3M6BF	40.4	PT25P3M10BF	52.5	25
26	PT26P2M4DF-A	12.8	PT26P2M6DF-A	14.4	PT26P2M10DF-A	16.2	PT26P3M6BF	44.9	PT26P3M10BF	57.8	26
27	PT27P2M4DF-A	13.1	PT27P2M6DF-A	14.9	PT27P2M10DF-A	16.8	PT27P3M6BF	48.1	PT27P3M10BF	62.2	27
28	PT28P2M4BF-A	7.1	PT28P2M6BF-A	8.6	PT28P2M10BF-A	11.0	PT28P3M6BF	54.5	PT28P3M10BF	69.7	28
29	PT29P2M4BF-A	7.5	PT29P2M6BF-A	9.2	PT29P2M10BF-A	11.7	PT29P3M6BF	57.9	PT29P3M10BF	74.5	29
30	PT30P2M4BF-A	8.0	PT30P2M6BF-A	9.7	PT30P2M10BF-A	12.5	PT30P3M6BF	61.5	PT30P3M10BF	79.4	30
31	PT31P2M4BF-A	8.4	PT31P2M6BF-A	10.3	PT31P2M10BF-A	13.3	PT31P3M6BF	65.2	PT31P3M10BF	84.6	31
32	PT32P2M4BF-A	8.9	PT32P2M6BF-A	10.9	PT32P2M10BF-A	14.2	PT32P3M6BF	69.0	PT32P3M10BF	89.9	32
33	PT33P2M4BF-A	10.3	PT33P2M6BF-A	12.5	PT33P2M10BF-A	16.0					33
34	PT34P2M4BF-A	10.8	PT34P2M6BF-A	13.2	PT34P2M10BF-A	16.9					34
35	PT35P2M4BF-A	11.3	PT35P2M6BF-A	13.8	PT35P2M10BF-A	17.8					35
36	PT36P2M4BF-A	11.9	PT36P2M6BF-A	14.5	PT36P2M10BF-A	18.8					36
37	PT37P2M4BF-A	13.5	PT37P2M6BF-A	16.4	PT37P2M10BF-A	20.8					37
38	PT38P2M4BF-A	14.1	PT38P2M6BF-A	17.1	PT38P2M10BF-A	21.8					38
39	PT39P2M4BF-A	14.7	PT39P2M6BF-A	17.9	PT39P2M10BF-A	22.9					39
40	PT40P2M4BF-A	15.3	PT40P2M6BF-A	18.6	PT40P2M10BF-A	24.0					40
41	PT41P2M4BF-A	17.1	PT41P2M6BF-A	20.7	PT41P2M10BF-A	26.3					41
42	PT42P2M4BF-A	17.7	PT42P2M6BF-A	21.5	PT42P2M10BF-A	27.4					42
43	PT43P2M4BF-A	18.4	PT43P2M6BF-A	22.4	PT43P2M10BF-A	28.6					43
44	PT44P2M4BF-A	19.1	PT44P2M6BF-A	23.2	PT44P2M10BF-A	29.8					44
45	PT45P2M4BF-A	19.7	PT45P2M6BF-A	24.1	PT45P2M10BF-A	31.0					45
46	PT46P2M4BF-A	20.4	PT46P2M6BF-A	25.0	PT46P2M10BF-A	32.2					46
47	PT47P2M4BF-A	21.2	PT47P2M6BF-A	25.9	PT47P2M10BF-A	33.5					47
48	PT48P2M4BF-A	21.9	PT48P2M6BF-A	26.8	PT48P2M10BF-A	34.8					48
49	PT49P2M4BF-A	22.6	PT49P2M6BF-A	27.8	PT49P2M10BF-A	36.1					49
50	PT50P2M4BF-A	26.2	PT50P2M6BF-A	31.8	PT50P2M10BF-A	40.3					50
56	PT56P2M4BF-A	32.8	PT56P2M6BF-A	39.8	PT56P2M10BF-A	50.7					56
60	PT60P2M4BF-A	40.1	PT60P2M6BF-A	48.3	PT60P2M10BF-A	60.8					60
64	PT64P2M4B-A	41.1	PT64P2M6B-A	50.0	PT64P2M10B-A	63.7					64
72	PT72P2M4B-A	54.6	PT72P2M6B-A	65.9	PT72P2M10B-A	83.1					72
80	PT80P2M4B-A	64.1	PT80P2M6B-A	78.1	PT80P2M10B-A	100.1					80
84	PT84P2M4B-A	71.7	PT84P2M6B-A	87.3	PT84P2M10B-A	111.7					84
90	PT90P2M4B-A	80.0	PT90P2M6B-A	97.8	PT90P2M10B-A	126.3					90
96	PT96P2M4B-A	88.3	PT96P2M6B-A	108.2	PT96P2M10B-A	140.3					96
112	PT112P2M4B-A	114.6	PT112P2M6B-A	141.9	PT112P2M10B-A	187.1					112

P3M

■ P3M15 ■ P3M6-A ■ P3M10-A ■ P3M15-A

Number of teeth	Model number	Mass g	Model number	Mass g	Model number	Mass g	Model number	Mass g	Number of teeth
10	PT10P3M15DF	12.9							10
11	PT11P3M15DF	16.2							11
12	PT12P3M15DF	21.7							12
13	PT13P3M15DF	24.0							13
14	PT14P3M15DF	30.4							14
15	PT15P3M15DF	33.0							15
16	PT16P3M15DF	35.9							16
17	PT17P3M15DF	48.4							17
18	PT18P3M15DF	51.7							18
19	PT19P3M15DF	66.6							19
20	PT20P3M15DF	70.3							20
21	PT21P3M15BF	46.9	PT21P3M6BF-A	10.1	PT21P3M10BF-A	13.0	PT21P3M15BF-A	16.8	21
22	PT22P3M15BF	49.9	PT22P3M6BF-A	10.6	PT22P3M10BF-A	13.8	PT22P3M15BF-A	17.9	22
23	PT23P3M15BF	57.3	PT23P3M6BF-A	12.4	PT23P3M10BF-A	16.0	PT23P3M15BF-A	20.5	23
24	PT24P3M15BF	62.4	PT24P3M6BF-A	13.4	PT24P3M10BF-A	17.4	PT24P3M15BF-A	22.3	24
25	PT25P3M15BF	67.7	PT25P3M6BF-A	14.4	PT25P3M10BF-A	18.8	PT25P3M15BF-A	24.2	25
26	PT26P3M15BF	74.2	PT26P3M6BF-A	16.1	PT26P3M10BF-A	20.7	PT26P3M15BF-A	26.6	26
27	PT27P3M15BF	80.0	PT27P3M6BF-A	17.2	PT27P3M10BF-A	22.3	PT27P3M15BF-A	28.6	27
28	PT28P3M15BF	89.4	PT28P3M6BF-A	19.5	PT28P3M10BF-A	25.0	PT28P3M15BF-A	32.0	28
29	PT29P3M15BF	95.7	PT29P3M6BF-A	20.7	PT29P3M10BF-A	26.7	PT29P3M15BF-A	34.2	29
30	PT30P3M15BF	102.2	PT30P3M6BF-A	22.0	PT30P3M10BF-A	28.4	PT30P3M15BF-A	36.6	30
31	PT31P3M15BF	108.9	PT31P3M6BF-A	23.3	PT31P3M10BF-A	30.3	PT31P3M15BF-A	39.0	31
32	PT32P3M15BF	115.9	PT32P3M6BF-A	24.7	PT32P3M10BF-A	32.2	PT32P3M15BF-A	41.5	32
33			PT33P3M6BF-A	28.8	PT33P3M10BF-A	36.6	PT33P3M15BF-A	46.9	33
34			PT34P3M6BF-A	30.2	PT34P3M10BF-A	38.6	PT34P3M15BF-A	49.5	34
35			PT35P3M6BF-A	33.2	PT35P3M10BF-A	42.2	PT35P3M15BF-A	53.9	35
36			PT36P3M6BF-A	34.8	PT36P3M10BF-A	44.3	PT36P3M15BF-A	56.7	36
37			PT37P3M6BF-A	36.4	PT37P3M10BF-A	46.5	PT37P3M15BF-A	59.7	37
38			PT38P3M6BF-A	39.7	PT38P3M10BF-A	50.4	PT38P3M15BF-A	64.4	38
39			PT39P3M6BF-A	41.4	PT39P3M10BF-A	52.7	PT39P3M15BF-A	67.5	39
40			PT40P3M6BF-A	43.1	PT40P3M10BF-A	55.1	PT40P3M15BF-A	70.7	40
41			PT41P3M6BF-A	44.8	PT41P3M10BF-A	57.0	PT41P3M15BF-A	73.0	41
42			PT42P3M6BF-A	46.6	PT42P3M10BF-A	59.5	PT42P3M15BF-A	76.3	42
43			PT43P3M6BF-A	52.5	PT43P3M10BF-A	65.9	PT43P3M15BF-A	84.0	43
44			PT44P3M6BF-A	54.4	PT44P3M10BF-A	68.5	PT44P3M15BF-A	87.5	44
45			PT45P3M6BF-A	59.7	PT45P3M10BF-A	74.4	PT45P3M15BF-A	94.6	45
46			PT46P3M6BF-A	59.1	PT46P3M10BF-A	74.0	PT46P3M15BF-A	94.3	46
47			PT47P3M6BF-A	62.3	PT47P3M10BF-A	77.9	PT47P3M15BF-A	99.3	47
48			PT48P3M6BF-A	64.4	PT48P3M10BF-A	80.9	PT48P3M15BF-A	103.1	48
49			PT49P3M6BF-A	66.6	PT49P3M10BF-A	83.9	PT49P3M15BF-A	107.1	49
50			PT50P3M6BF-A	68.8	PT50P3M10BF-A	86.9	PT50P3M15BF-A	111.1	50
56			PT56P3M6BF-A	88.0	PT56P3M10BF-A	111.3	PT56P3M15BF-A	142.3	56
60			PT60P3M6BF-A	106.9	PT60P3M10BF-A	133.7	PT60P3M15BF-A	170.4	60
64			PT64P3M6BF-A	121.1	PT64P3M10BF-A	152.1	PT64P3M15BF-A	194.0	64
72			PT72P3M6BF-A	145.4	PT72P3M10BF-A	185.0	PT72P3M15BF-A	236.9	72
80			PT80P3M6BF-A	179.7	PT80P3M10BF-A	229.6	PT80P3M15BF-A	294.3	80
84			PT84P3M6BF-A	205.8	PT84P3M10BF-A	260.8	PT84P3M15BF-A	333.4	84
90			PT90P3M6B-A	239.8	PT90P3M10B-A	303.3	PT90P3M15B-A	387.5	90
96			PT96P3M6B-A	265.0	PT96P3M10B-A	338.4	PT96P3M15B-A	433.7	96
112			PT112P3M6B-A	344.4	PT112P3M10B-A	445.1	PT112P3M15B-A	572.4	112

P5M

Number of teeth	■ P5M10AF Model number	Mass kg	■ P5M10BF Model number	Mass kg	■ P5M15AF Model number	Mass kg	■ P5M15BF Model number	Mass kg	■ P5M25AF Model number	Mass kg	Number of teeth
10											10
11											11
12	PT12P5M10AF	0.02	PT12P5M10BF	0.03	PT12P5M15AF	0.03	PT12P5M15BF	0.04	PT12P5M25AF	0.05	12
13	PT13P5M10AF	0.03	PT13P5M10BF	0.04	PT13P5M15AF	0.04	PT13P5M15BF	0.05	PT13P5M25AF	0.06	13
14	PT14P5M10AF	0.04	PT14P5M10BF	0.05	PT14P5M15AF	0.05	PT14P5M15BF	0.06	PT14P5M25AF	0.07	14
15	PT15P5M10AF	0.04	PT15P5M10BF	0.06	PT15P5M15AF	0.05	PT15P5M15BF	0.07	PT15P5M25AF	0.08	15
16	PT16P5M10AF	0.05	PT16P5M10BF	0.07	PT16P5M15AF	0.06	PT16P5M15BF	0.08	PT16P5M25AF	0.1	16
17	PT17P5M10AF	0.05	PT17P5M10BF	0.08	PT17P5M15AF	0.07	PT17P5M15BF	0.09	PT17P5M25AF	0.11	17
18	PT18P5M10AF	0.06	PT18P5M10BF	0.09	PT18P5M15AF	0.08	PT18P5M15BF	0.11	PT18P5M25AF	0.12	18
19	PT19P5M10AF	0.07	PT19P5M10BF	0.1	PT19P5M15AF	0.09	PT19P5M15BF	0.12	PT19P5M25AF	0.14	19
20	PT20P5M10AF	0.09	PT20P5M10BF	0.11	PT20P5M15AF	0.12	PT20P5M15BF	0.14	PT20P5M25AF	0.16	20
21	PT21P5M10AF	0.1	PT21P5M10BF	0.14	PT21P5M15AF	0.13	PT21P5M15BF	0.17	PT21P5M25AF	0.18	21
22	PT22P5M10AF	0.11	PT22P5M10BF	0.15	PT22P5M15AF	0.14	PT22P5M15BF	0.18	PT22P5M25AF	0.19	22
23	PT23P5M10AF	0.12	PT23P5M10BF	0.16	PT23P5M15AF	0.16	PT23P5M15BF	0.2	PT23P5M25AF	0.21	23
24	PT24P5M10AF	0.13	PT24P5M10BF	0.17	PT24P5M15AF	0.17	PT24P5M15BF	0.21	PT24P5M25AF	0.23	24
25	PT25P5M10AF	0.14	PT25P5M10BF	0.2	PT25P5M15AF	0.18	PT25P5M15BF	0.24	PT25P5M25AF	0.25	25
26	PT26P5M10AF	0.15	PT26P5M10BF	0.21	PT26P5M15AF	0.2	PT26P5M15BF	0.25	PT26P5M25AF	0.27	26
27	PT27P5M10AF	0.17	PT27P5M10BF	0.23	PT27P5M15AF	0.22	PT27P5M15BF	0.28	PT27P5M25AF	0.3	27
28	PT28P5M10AF	0.18	PT28P5M10BF	0.24	PT28P5M15AF	0.23	PT28P5M15BF	0.3	PT28P5M25AF	0.32	28
29	PT29P5M10AF	0.19	PT29P5M10BF	0.27	PT29P5M15AF	0.25	PT29P5M15BF	0.33	PT29P5M25AF	0.35	29
30	PT30P5M10AF	0.2	PT30P5M10BF	0.28	PT30P5M15AF	0.26	PT30P5M15BF	0.34	PT30P5M25AF	0.37	30
31	PT31P5M10AF	0.22	PT31P5M10BF	0.3	PT31P5M15AF	0.28	PT31P5M15BF	0.37	PT31P5M25AF	0.4	31
32	PT32P5M10AF	0.23	PT32P5M10BF	0.32	PT32P5M15AF	0.3	PT32P5M15BF	0.4	PT32P5M25AF	0.43	32
33	PT33P5M10AF	0.25	PT33P5M10BF	0.34	PT33P5M15AF	0.32	PT33P5M15BF	0.42	PT33P5M25AF	0.46	33
34	PT34P5M10AF	0.27	PT34P5M10BF	0.39	PT34P5M15AF	0.35	PT34P5M15BF	0.47	PT34P5M25AF	0.49	34
35	PT35P5M10AF	0.28	PT35P5M10BF	0.4	PT35P5M15AF	0.37	PT35P5M15BF	0.49	PT35P5M25AF	0.52	35
36	PT36P5M10AF	0.3	PT36P5M10BF	0.43	PT36P5M15AF	0.39	PT36P5M15BF	0.52	PT36P5M25AF	0.56	36
37	PT37P5M10AF	0.32	PT37P5M10BF	0.46	PT37P5M15AF	0.42	PT37P5M15BF	0.56	PT37P5M25AF	0.59	37
38	PT38P5M10AF	0.33	PT38P5M10BF	0.47	PT38P5M15AF	0.44	PT38P5M15BF	0.58	PT38P5M25AF	0.63	38
39	PT39P5M10AF	0.35	PT39P5M10BF	0.5	PT39P5M15AF	0.46	PT39P5M15BF	0.61	PT39P5M25AF	0.66	39
40	PT40P5M10AF	0.37	PT40P5M10BF	0.53	PT40P5M15AF	0.48	PT40P5M15BF	0.64	PT40P5M25AF	0.7	40
41	PT41P5M10AF	0.37	PT41P5M10BF	0.53	PT41P5M15AF	0.49	PT41P5M15BF	0.65	PT41P5M25AF	0.74	41
42	PT42P5M10AF	0.38	PT42P5M10BF	0.57	PT42P5M15AF	0.5	PT42P5M15BF	0.69	PT42P5M25AF	0.77	42
43	PT43P5M10AF	0.4	PT43P5M10BF	0.59	PT43P5M15AF	0.53	PT43P5M15BF	0.71	PT43P5M25AF	0.81	43
44	PT44P5M10AF	0.42	PT44P5M10BF	0.64	PT44P5M15AF	0.56	PT44P5M15BF	0.77	PT44P5M25AF	0.85	44
45	PT45P5M10AF	0.45	PT45P5M10BF	0.66	PT45P5M15AF	0.58	PT45P5M15BF	0.8	PT45P5M25AF	0.89	45
46	PT46P5M10AF	0.47	PT46P5M10BF	0.7	PT46P5M15AF	0.61	PT46P5M15BF	0.85	PT46P5M25AF	0.93	46
47	PT47P5M10AF	0.49	PT47P5M10BF	0.72	PT47P5M15AF	0.64	PT47P5M15BF	0.88	PT47P5M25AF	0.98	47
48	PT48P5M10AF	0.51	PT48P5M10BF	0.75	PT48P5M15AF	0.67	PT48P5M15BF	0.91	PT48P5M25AF	1.02	48
49	PT49P5M10AF	0.54	PT49P5M10BF	0.82	PT49P5M15AF	0.7	PT49P5M15BF	0.99	PT49P5M25AF	1.07	49
50	PT50P5M10AF	0.56	PT50P5M10BF	0.85	PT50P5M15AF	0.73	PT50P5M15BF	1.02	PT50P5M25AF	1.12	50
56	PT56P5M10A	0.71	PT56P5M10B	1.06	PT56P5M15A	0.93	PT56P5M15B	1.28	PT56P5M25A	1.42	56
60	PT60P5M10AF	0.82	PT60P5M10BF	1.28	PT60P5M15AF	1.08	PT60P5M15BF	1.54	PT60P5M25AF	1.65	60
64	PT64P5M10A	0.94	PT64P5M10B	1.44	PT64P5M15A	1.23	PT64P5M15B	1.73	PT64P5M25A	1.87	64
72	PT72P5M10AF	1.2	PT72P5M10BF	1.78	PT72P5M15AF	1.57	PT72P5M15BF	2.15	PT72P5M25AF	2.4	72
80	PT80P5M10A	1.5	PT80P5M10B	2.19	PT80P5M15A	1.96	PT80P5M15B	2.65	PT80P5M25A	2.99	80
84	PT84P5M10A	1.65	PT84P5M10B	2.36	PT84P5M15A	2.16	PT84P5M15B	2.88	PT84P5M25A	3.3	84
90	PT90P5M10A	1.9	PT90P5M10B	2.71	PT90P5M15A	2.5	PT90P5M15B	3.3	PT90P5M25A	3.81	90
96	PT96P5M10A	2.18	PT96P5M10B	3.05	PT96P5M15A	2.86	PT96P5M15B	3.73	PT96P5M25A	4.36	96
112	PT112P5M10A	2.99	PT112P5M10B	4.03	PT112P5M15A	3.93	PT112P5M15B	4.97	PT112P5M25A	5.99	112

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Number of teeth	■ P5M25BF Model number	Mass kg	■ P5M10AF-A Model number	Mass kg	■ P5M10BF-A Model number	Mass kg	■ P5M15AF-A Model number	Mass kg	■ P5M15BF-A Model number	Mass kg	Number of teeth
10											10
11											11
12	PT12P5M25BF	0.06	PT12P5M10AF-A	0.01	PT12P5M10BF-A	0.01	PT12P5M15AF-A	0.01	PT12P5M15BF-A	0.01	12
13	PT13P5M25BF	0.07	PT13P5M10AF-A	0.01	PT13P5M10BF-A	0.01	PT13P5M15AF-A	0.01	PT13P5M15BF-A	0.02	13
14	PT14P5M25BF	0.08	PT14P5M10AF-A	0.01	PT14P5M10BF-A	0.02	PT14P5M15AF-A	0.02	PT14P5M15BF-A	0.02	14
15	PT15P5M25BF	0.1	PT15P5M10AF-A	0.01	PT15P5M10BF-A	0.02	PT15P5M15AF-A	0.02	PT15P5M15BF-A	0.02	15
16	PT16P5M25BF	0.12	PT16P5M10AF-A	0.02	PT16P5M10BF-A	0.02	PT16P5M15AF-A	0.02	PT16P5M15BF-A	0.03	16
17	PT17P5M25BF	0.13	PT17P5M10AF-A	0.02	PT17P5M10BF-A	0.03	PT17P5M15AF-A	0.03	PT17P5M15BF-A	0.03	17
18	PT18P5M25BF	0.15	PT18P5M10AF-A	0.02	PT18P5M10BF-A	0.03	PT18P5M15AF-A	0.03	PT18P5M15BF-A	0.04	18
19	PT19P5M25BF	0.17	PT19P5M10AF-A	0.03	PT19P5M10BF-A	0.03	PT19P5M15AF-A	0.03	PT19P5M15BF-A	0.04	19
20	PT20P5M25BF	0.18	PT20P5M10AF-A	0.03	PT20P5M10BF-A	0.04	PT20P5M15AF-A	0.04	PT20P5M15BF-A	0.05	20
21	PT21P5M25BF	0.21	PT21P5M10AF-A	0.03	PT21P5M10BF-A	0.05	PT21P5M15AF-A	0.04	PT21P5M15BF-A	0.06	21
22	PT22P5M25BF	0.24	PT22P5M10AF-A	0.03	PT22P5M10BF-A	0.05	PT22P5M15AF-A	0.05	PT22P5M15BF-A	0.06	22
23	PT23P5M25BF	0.26	PT23P5M10AF-A	0.04	PT23P5M10BF-A	0.05	PT23P5M15AF-A	0.05	PT23P5M15BF-A	0.07	23
24	PT24P5M25BF	0.28	PT24P5M10AF-A	0.04	PT24P5M10BF-A	0.06	PT24P5M15AF-A	0.06	PT24P5M15BF-A	0.07	24
25	PT25P5M25BF	0.31	PT25P5M10AF-A	0.04	PT25P5M10BF-A	0.07	PT25P5M15AF-A	0.06	PT25P5M15BF-A	0.08	25
26	PT26P5M25BF	0.34	PT26P5M10AF-A	0.05	PT26P5M10BF-A	0.07	PT26P5M15AF-A	0.06	PT26P5M15BF-A	0.09	26
27	PT27P5M25BF	0.36	PT27P5M10AF-A	0.05	PT27P5M10BF-A	0.08	PT27P5M15AF-A	0.07	PT27P5M15BF-A	0.09	27
28	PT28P5M25BF	0.39	PT28P5M10AF-A	0.06	PT28P5M10BF-A	0.08	PT28P5M15AF-A	0.08	PT28P5M15BF-A	0.1	28
29	PT29P5M25BF	0.43	PT29P5M10AF-A	0.06	PT29P5M10BF-A	0.09	PT29P5M15AF-A	0.08	PT29P5M15BF-A	0.11	29
30	PT30P5M25BF	0.45	PT30P5M10AF-A	0.07	PT30P5M10BF-A	0.1	PT30P5M15AF-A	0.09	PT30P5M15BF-A	0.12	30
31	PT31P5M25BF	0.49	PT31P5M10AF-A	0.07	PT31P5M10BF-A	0.1	PT31P5M15AF-A	0.09	PT31P5M15BF-A	0.13	31
32	PT32P5M25BF	0.53	PT32P5M10AF-A	0.08	PT32P5M10BF-A	0.11	PT32P5M15AF-A	0.1	PT32P5M15BF-A	0.14	32
33	PT33P5M25BF	0.56	PT33P5M10AF-A	0.08	PT33P5M10BF-A	0.12	PT33P5M15AF-A	0.11	PT33P5M15BF-A	0.14	33
34	PT34P5M25BF	0.61	PT34P5M10AF-A	0.09	PT34P5M10BF-A	0.13	PT34P5M15AF-A	0.12	PT34P5M15BF-A	0.16	34
35	PT35P5M25BF	0.65	PT35P5M10AF-A	0.09	PT35P5M10BF-A	0.14	PT35P5M15AF-A	0.12	PT35P5M15BF-A	0.17	35
36	PT36P5M25BF	0.69	PT36P5M10AF-A	0.1	PT36P5M10BF-A	0.15	PT36P5M15AF-A	0.13	PT36P5M15BF-A	0.18	36
37	PT37P5M25BF	0.73	PT37P5M10AF-A	0.11	PT37P5M10BF-A	0.16	PT37P5M15AF-A	0.14	PT37P5M15BF-A	0.19	37
38	PT38P5M25BF	0.77	PT38P5M10AF-A	0.11	PT38P5M10BF-A	0.16	PT38P5M15AF-A	0.15	PT38P5M15BF-A	0.2	38
39	PT39P5M25BF	0.81	PT39P5M10AF-A	0.12	PT39P5M10BF-A	0.17	PT39P5M15AF-A	0.16	PT39P5M15BF-A	0.21	39
40	PT40P5M25BF	0.86	PT40P5M10AF-A	0.13	PT40P5M10BF-A	0.18	PT40P5M15AF-A	0.16	PT40P5M15BF-A	0.22	40
41	PT41P5M25BF	0.9	PT41P5M10A-A	0.13	PT41P5M10B-A	0.19	PT41P5M15A-A	0.17	PT41P5M15B-A	0.23	41
42	PT42P5M25BF	0.95	PT42P5M10A-A	0.14	PT42P5M10B-A	0.2	PT42P5M15A-A	0.18	PT42P5M15B-A	0.25	42
43	PT43P5M25BF	0.99	PT43P5M10AF-A	0.14	PT43P5M10BF-A	0.21	PT43P5M15AF-A	0.19	PT43P5M15BF-A	0.26	43
44	PT44P5M25BF	1.07	PT44P5M10AF-A	0.15	PT44P5M10BF-A	0.23	PT44P5M15AF-A	0.2	PT44P5M15BF-A	0.28	44
45	PT45P5M25BF	1.11	PT45P5M10AF-A	0.16	PT45P5M10BF-A	0.24	PT45P5M15AF-A	0.21	PT45P5M15BF-A	0.29	45
46	PT46P5M25BF	1.17	PT46P5M10AF-A	0.17	PT46P5M10BF-A	0.25	PT46P5M15AF-A	0.22	PT46P5M15BF-A	0.3	46
47	PT47P5M25BF	1.21	PT47P5M10AF-A	0.18	PT47P5M10BF-A	0.26	PT47P5M15AF-A	0.23	PT47P5M15BF-A	0.31	47
48	PT48P5M25BF	1.26	PT48P5M10AF-A	0.18	PT48P5M10BF-A	0.27	PT48P5M15AF-A	0.24	PT48P5M15BF-A	0.32	48
49	PT49P5M25BF	1.36	PT49P5M10AF-A	0.19	PT49P5M10BF-A	0.29	PT49P5M15AF-A	0.25	PT49P5M15BF-A	0.35	49
50	PT50P5M25BF	1.41	PT50P5M10AF-A	0.2	PT50P5M10BF-A	0.3	PT50P5M15AF-A	0.26	PT50P5M15BF-A	0.37	50
56	PT56P5M25B	1.77	PT56P5M10A-A	0.26	PT56P5M10B-A	0.38	PT56P5M15A-A	0.33	PT56P5M15B-A	0.46	56
60	PT60P5M25BF	2.11	PT60P5M10AF-A	0.3	PT60P5M10BF-A	0.46	PT60P5M15AF-A	0.39	PT60P5M15BF-A	0.55	60
64	PT64P5M25B	2.37	PT64P5M10A-A	0.33	PT64P5M10B-A	0.51	PT64P5M15A-A	0.44	PT64P5M15B-A	0.62	64
72	PT72P5M25BF	2.98	PT72P5M10AF-A	0.43	PT72P5M10BF-A	0.64	PT72P5M15AF-A	0.56	PT72P5M15BF-A	0.77	72
80	PT80P5M25B	3.68	PT80P5M10A-A	0.54	PT80P5M10B-A	0.78	PT80P5M15A-A	0.7	PT80P5M15B-A	0.95	80
84	PT84P5M25B	4.01	PT84P5M10A-A	0.59	PT84P5M10B-A	0.85	PT84P5M15A-A	0.77	PT84P5M15B-A	1.03	84
90	PT90P5M25B	4.61	PT90P5M10A-A	0.68	PT90P5M10B-A	0.97	PT90P5M15A-A	0.89	PT90P5M15B-A	1.18	90
96	PT96P5M25B	5.22	PT96P5M10A-A	0.78	PT96P5M10B-A	1.09	PT96P5M15A-A	1.02	PT96P5M15B-A	1.33	96
112	PT112P5M25B	7.03	PT112P5M10A-A	1.07	PT112P5M10B-A	1.44	PT112P5M15A-A	1.41	PT112P5M15B-A	1.78	112

P5M

P8M

■ P5M25AF-A		■ P5M25BF-A		■ P8M15AF		■ P8M15BF		■ P8M25AF		
Number of teeth	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Number of teeth
10											10
11											11
12	PT12P5M25AF-A	0.02	PT12P5M25BF-A	0.02							12
13	PT13P5M25AF-A	0.02	PT13P5M25BF-A	0.02							13
14	PT14P5M25AF-A	0.03	PT14P5M25BF-A	0.03							14
15	PT15P5M25AF-A	0.03	PT15P5M25BF-A	0.04							15
16	PT16P5M25AF-A	0.03	PT16P5M25BF-A	0.04							16
17	PT17P5M25AF-A	0.04	PT17P5M25BF-A	0.05							17
18	PT18P5M25AF-A	0.04	PT18P5M25BF-A	0.05							18
19	PT19P5M25AF-A	0.05	PT19P5M25BF-A	0.06							19
20	PT20P5M25AF-A	0.06	PT20P5M25BF-A	0.07	PT20P8M15AF	0.28	PT20P8M15BF	0.4	PT20P8M25AF	0.42	20
21	PT21P5M25AF-A	0.06	PT21P5M25BF-A	0.08	PT21P8M15AF	0.31	PT21P8M15BF	0.46	PT21P8M25AF	0.47	21
22	PT22P5M25AF-A	0.07	PT22P5M25BF-A	0.08	PT22P8M15AF	0.35	PT22P8M15BF	0.51	PT22P8M25AF	0.52	22
23	PT23P5M25AF-A	0.08	PT23P5M25BF-A	0.09	PT23P8M15AF	0.38	PT23P8M15BF	0.56	PT23P8M25AF	0.57	23
24	PT24P5M25AF-A	0.08	PT24P5M25BF-A	0.1	PT24P8M15AF	0.46	PT24P8M15BF	0.68	PT24P8M25AF	0.69	24
25	PT25P5M25AF-A	0.09	PT25P5M25BF-A	0.11	PT25P8M15AF	0.52	PT25P8M15BF	0.75	PT25P8M25AF	0.77	25
26	PT26P5M25AF-A	0.1	PT26P5M25BF-A	0.12	PT26P8M15AF	0.53	PT26P8M15BF	0.8	PT26P8M25AF	0.8	26
27	PT27P5M25AF-A	0.11	PT27P5M25BF-A	0.13	PT27P8M15AF	0.58	PT27P8M15BF	0.85	PT27P8M25AF	0.87	27
28	PT28P5M25AF-A	0.12	PT28P5M25BF-A	0.14	PT28P8M15AF	0.62	PT28P8M15BF	0.94	PT28P8M25AF	0.94	28
29	PT29P5M25AF-A	0.13	PT29P5M25BF-A	0.15	PT29P8M15AF	0.68	PT29P8M15BF	1.01	PT29P8M25AF	1.02	29
30	PT30P5M25AF-A	0.13	PT30P5M25BF-A	0.16	PT30P8M15AF	0.72	PT30P8M15BF	1.1	PT30P8M25AF	1.09	30
31	PT31P5M25AF-A	0.14	PT31P5M25BF-A	0.17	PT31P8M15AF	0.8	PT31P8M15BF	1.19	PT31P8M25AF	1.19	31
32	PT32P5M25AF-A	0.15	PT32P5M25BF-A	0.19	PT32P8M15AF	0.83	PT32P8M15BF	1.27	PT32P8M25AF	1.25	32
33	PT33P5M25AF-A	0.16	PT33P5M25BF-A	0.2	PT33P8M15AF	0.83	PT33P8M15BF	1.32	PT33P8M25AF	1.25	33
34	PT34P5M25AF-A	0.18	PT34P5M25BF-A	0.22	PT34P8M15AF	0.89	PT34P8M15BF	1.38	PT34P8M25AF	1.33	34
35	PT35P5M25AF-A	0.19	PT35P5M25BF-A	0.23	PT35P8M15AF	0.95	PT35P8M15BF	1.48	PT35P8M25AF	1.42	35
36	PT36P5M25AF-A	0.2	PT36P5M25BF-A	0.25	PT36P8M15AF	1	PT36P8M15BF	1.57	PT36P8M25AF	1.51	36
37	PT37P5M25AF-A	0.21	PT37P5M25BF-A	0.26	PT37P8M15AF	1.07	PT37P8M15BF	1.66	PT37P8M25AF	1.6	37
38	PT38P5M25AF-A	0.22	PT38P5M25BF-A	0.28	PT38P8M15AF	1.13	PT38P8M15BF	1.78	PT38P8M25AF	1.69	38
39	PT39P5M25AF-A	0.24	PT39P5M25BF-A	0.29	PT39P8M15AF	1.19	PT39P8M15BF	1.89	PT39P8M25AF	1.79	39
40	PT40P5M25AF-A	0.25	PT40P5M25BF-A	0.31	PT40P8M15AF	1.24	PT40P8M15BF	1.96	PT40P8M25AF	1.86	40
41	PT41P5M25A-A	0.27	PT41P5M25B-A	0.32	PT41P8M15AF	1.31	PT41P8M15BF	2.05	PT41P8M25AF	1.96	41
42	PT42P5M25A-A	0.27	PT42P5M25B-A	0.34	PT42P8M15AF	1.38	PT42P8M15BF	2.14	PT42P8M25AF	2.07	42
43	PT43P5M25AF-A	0.29	PT43P5M25BF-A	0.35	PT43P8M15AF	1.45	PT43P8M15BF	2.23	PT43P8M25AF	2.18	43
44	PT44P5M25AF-A	0.3	PT44P5M25BF-A	0.38	PT44P8M15AF	1.53	PT44P8M15BF	2.34	PT44P8M25AF	2.29	44
45	PT45P5M25AF-A	0.32	PT45P5M25BF-A	0.4	PT45P8M15AF	1.6	PT45P8M15BF	2.45	PT45P8M25AF	2.4	45
46	PT46P5M25AF-A	0.33	PT46P5M25BF-A	0.42	PT46P8M15A	1.68	PT46P8M15B	2.59	PT46P8M25A	2.52	46
47	PT47P5M25AF-A	0.35	PT47P5M25BF-A	0.43	PT47P8M15AF	1.76	PT47P8M15BF	2.73	PT47P8M25AF	2.63	47
48	PT48P5M25AF-A	0.37	PT48P5M25BF-A	0.45	PT48P8M15AF	1.84	PT48P8M15BF	2.85	PT48P8M25AF	2.76	48
49	PT49P5M25AF-A	0.38	PT49P5M25BF-A	0.49	PT49P8M15AF	1.92	PT49P8M15BF	2.93	PT49P8M25AF	2.88	49
50	PT50P5M25AF-A	0.4	PT50P5M25BF-A	0.5	PT50P8M15AF	2	PT50P8M15BF	3.01	PT50P8M25AF	3.01	50
56	PT56P5M25A-A	0.51	PT56P5M25B-A	0.63	PT56P8M15A	2.55	PT56P8M15B	3.56	PT56P8M25A	3.82	56
60	PT60P5M25AF-A	0.59	PT60P5M25BF-A	0.75	PT60P8M15AF	2.94	PT60P8M15BF	3.95	PT60P8M25AF	4.41	60
64	PT64P5M25A-A	0.67	PT64P5M25B-A	0.85	PT64P8M15AF	3.37	PT64P8M15BF	4.6	PT64P8M25AF	5.05	64
72	PT72P5M25AF-A	0.86	PT72P5M25BF-A	1.07	PT72P8M15AF	4.23	PT72P8M15BF	5.41	PT72P8M25AF	6.35	72
80	PT80P5M25A-A	1.07	PT80P5M25B-A	1.32	PT80P8M15A	5.28	PT80P8M15B	6.7	PT80P8M25A	7.92	80
84	PT84P5M25A-A	1.18	PT84P5M25B-A	1.44	PT84P8M15A	5.84	PT84P8M15B	7.42	PT84P8M25A	8.77	84
90	PT90P5M25A-A	1.36	PT90P5M25B-A	1.65	PT90P8M15A	6.74	PT90P8M15B	8.43	PT90P8M25A	10.12	90
96	PT96P5M25A-A	1.56	PT96P5M25B-A	1.87	PT96P8M15A	7.67	PT96P8M15B	9.72	PT96P8M25A	11.5	96
112	PT112P5M25A-A	2.14	PT112P5M25B-A	2.52	PT112P8M15A	10.55	PT112P8M15B	12.6	PT112P8M25A	15.82	112
120					PT120P8M15A	12.15	PT120P8M15B	14.21	PT120P8M25A	18.23	120

P8M

Number of teeth	■ P8M25BF Model number	Mass kg	■ P8M40AF Model number	Mass kg	■ P8M40BF Model number	Mass kg	■ P8M60AF Model number	Mass kg	■ P8M60BF Model number	Mass kg	Number of teeth
10											10
11											11
12											12
13											13
14											14
15											15
16											16
17											17
18											18
19											19
20	PT20P8M25BF	0.54	PT20P8M40AF	0.62	PT20P8M40BF	0.74	PT20P8M60AF	0.89	PT20P8M60BF	1.01	20
21	PT21P8M25BF	0.61	PT21P8M40AF	0.69	PT21P8M40BF	0.84	PT21P8M60AF	0.99	PT21P8M60BF	1.14	21
22	PT22P8M25BF	0.68	PT22P8M40AF	0.77	PT22P8M40BF	0.93	PT22P8M60AF	1.1	PT22P8M60BF	1.27	22
23	PT23P8M25BF	0.76	PT23P8M40AF	0.85	PT23P8M40BF	1.03	PT23P8M60AF	1.22	PT23P8M60BF	1.4	23
24	PT24P8M25BF	0.91	PT24P8M40AF	0.94	PT24P8M40BF	1.15	PT24P8M60AF	1.34	PT24P8M60BF	1.55	24
25	PT25P8M25BF	1.01	PT25P8M40AF	1.03	PT25P8M40BF	1.27	PT25P8M60AF	1.47	PT25P8M60BF	1.71	25
26	PT26P8M25BF	1.07	PT26P8M40AF	1.09	PT26P8M40BF	1.34	PT26P8M60AF	1.56	PT26P8M60BF	1.81	26
27	PT27P8M25BF	1.14	PT27P8M40AF	1.19	PT27P8M40BF	1.46	PT27P8M60AF	1.7	PT27P8M60BF	1.97	27
28	PT28P8M25BF	1.25	PT28P8M40AF	1.29	PT28P8M40BF	1.58	PT28P8M60AF	1.84	PT28P8M60BF	2.13	28
29	PT29P8M25BF	1.35	PT29P8M40AF	1.39	PT29P8M40BF	1.72	PT29P8M60AF	1.99	PT29P8M60BF	2.32	29
30	PT30P8M25BF	1.46	PT30P8M40AF	1.5	PT30P8M40BF	1.86	PT30P8M60AF	2.15	PT30P8M60BF	2.5	30
31	PT31P8M25BF	1.58	PT31P8M40AF	1.61	PT31P8M40BF	2.01	PT31P8M60AF	2.31	PT31P8M60BF	2.7	31
32	PT32P8M25BF	1.69	PT32P8M40AF	1.73	PT32P8M40BF	2.15	PT32P8M60AF	2.47	PT32P8M60BF	2.89	32
33	PT33P8M25BF	1.77	PT33P8M40AF	1.85	PT33P8M40BF	2.17	PT33P8M60AF	2.65	PT33P8M60BF	2.96	33
34	PT34P8M25BF	1.82	PT34P8M40AF	1.98	PT34P8M40BF	2.47	PT34P8M60AF	2.82	PT34P8M60BF	3.31	34
35	PT35P8M25BF	1.95	PT35P8M40AF	2.11	PT35P8M40BF	2.64	PT35P8M60AF	3.01	PT35P8M60BF	3.54	35
36	PT36P8M25BF	2.07	PT36P8M40AF	2.24	PT36P8M40BF	2.8	PT36P8M60AF	3.2	PT36P8M60BF	3.76	36
37	PT37P8M25BF	2.2	PT37P8M40AF	2.37	PT37P8M40BF	2.97	PT37P8M60AF	3.39	PT37P8M60BF	3.99	37
38	PT38P8M25BF	2.34	PT38P8M40AF	2.51	PT38P8M40BF	3.16	PT38P8M60AF	3.59	PT38P8M60BF	4.24	38
39	PT39P8M25BF	2.49	PT39P8M40AF	2.66	PT39P8M40BF	3.36	PT39P8M60AF	3.8	PT39P8M60BF	4.5	39
40	PT40P8M25BF	2.58	PT40P8M40AF	2.77	PT40P8M40BF	3.49	PT40P8M60AF	3.95	PT40P8M60BF	4.67	40
41	PT41P8M25BF	2.7	PT41P8M40AF	2.92	PT41P8M40BF	3.65	PT41P8M60AF	4.17	PT41P8M60BF	4.91	41
42	PT42P8M25BF	2.83	PT42P8M40AF	3.07	PT42P8M40BF	3.83	PT42P8M60AF	4.39	PT42P8M60BF	5.15	42
43	PT43P8M25BF	2.95	PT43P8M40AF	3.23	PT43P8M40BF	4.01	PT43P8M60AF	4.62	PT43P8M60BF	5.39	43
44	PT44P8M25BF	3.1	PT44P8M40AF	3.4	PT44P8M40BF	4.21	PT44P8M60AF	4.85	PT44P8M60BF	5.66	44
45	PT45P8M25BF	3.25	PT45P8M40AF	3.56	PT45P8M40BF	4.41	PT45P8M60AF	5.09	PT45P8M60BF	5.94	45
46	PT46P8M25B	3.42	PT46P8M40A	3.74	PT46P8M40B	4.64	PT46P8M60A	5.34	PT46P8M60B	6.25	46
47	PT47P8M25BF	3.6	PT47P8M40AF	3.91	PT47P8M40BF	4.88	PT47P8M60AF	5.59	PT47P8M60BF	6.56	47
48	PT48P8M25BF	3.77	PT48P8M40AF	4.09	PT48P8M40BF	5.1	PT48P8M60AF	5.85	PT48P8M60BF	6.86	48
49	PT49P8M25BF	3.89	PT49P8M40AF	4.28	PT49P8M40BF	5.29	PT49P8M60AF	6.11	PT49P8M60BF	7.12	49
50	PT50P8M25BF	4.02	PT50P8M40AF	4.46	PT50P8M40BF	5.47	PT50P8M60AF	6.37	PT50P8M60BF	7.39	50
56	PT56P8M25B	4.83	PT56P8M40A	5.67	PT56P8M40B	6.68	PT56P8M60A	8.1	PT56P8M60B	9.11	56
60	PT60P8M25BF	5.42	PT60P8M40AF	6.55	PT60P8M40BF	7.56	PT60P8M60AF	9.36	PT60P8M60BF	10.37	60
64	PT64P8M25BF	6.28	PT64P8M40AF	7.5	PT64P8M40BF	8.73	PT64P8M60AF	10.71	PT64P8M60BF	11.94	64
72	PT72P8M25BF	7.53	PT72P8M40AF	9.43	PT72P8M40BF	10.61	PT72P8M60AF	13.47	PT72P8M60BF	14.65	72
80	PT80P8M25B	9.34	PT80P8M40A	11.76	PT80P8M40B	13.18	PT80P8M60A	16.8	PT80P8M60B	18.22	80
84	PT84P8M25B	10.34	PT84P8M40A	13.02	PT84P8M40B	14.59	PT84P8M60A	18.6	PT84P8M60B	20.17	84
90	PT90P8M25B	11.8	PT90P8M40A	15.02	PT90P8M40B	16.71	PT90P8M60A	21.46	PT90P8M60B	23.14	90
96	PT96P8M25B	13.55	PT96P8M40A	17.07	PT96P8M40B	19.13	PT96P8M60A	24.39	PT96P8M60B	26.44	96
112	PT112P8M25B	17.87	PT112P8M40A	23.49	PT112P8M40B	25.54	PT112P8M60A	33.55	PT112P8M60B	35.61	112
120	PT120P8M25B	20.28	PT120P8M40A	27.07	PT120P8M40B	29.12	PT120P8M60A	38.67	PT120P8M60B	40.72	120

P8M

■ P8M15AF-A		■ P8M15BF-A		■ P8M25AF-A		■ P8M25BF-A		■ P8M40AF-A		
Number of teeth	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Number of teeth
10											10
11											11
12											12
13											13
14											14
15											15
16											16
17											17
18											18
19											19
20	PT20P8M15AF-A	0.1	PT20P8M15BF-A	0.14	PT20P8M25AF-A	0.15	PT20P8M25BF-A	0.19	PT20P8M40AF-A	0.22	20
21	PT21P8M15A-A	0.11	PT21P8M15B-A	0.16	PT21P8M25A-A	0.17	PT21P8M25B-A	0.22	PT21P8M40A-A	0.25	21
22	PT22P8M15AF-A	0.12	PT22P8M15BF-A	0.18	PT22P8M25AF-A	0.19	PT22P8M25BF-A	0.24	PT22P8M40AF-A	0.28	22
23	PT23P8M15AF-A	0.14	PT23P8M15BF-A	0.2	PT23P8M25AF-A	0.21	PT23P8M25BF-A	0.27	PT23P8M40AF-A	0.31	23
24	PT24P8M15AF-A	0.15	PT24P8M15BF-A	0.23	PT24P8M25AF-A	0.23	PT24P8M25BF-A	0.3	PT24P8M40AF-A	0.34	24
25	PT25P8M15A-A	0.17	PT25P8M15B-A	0.25	PT25P8M25A-A	0.25	PT25P8M25B-A	0.33	PT25P8M40A-A	0.37	25
26	PT26P8M15AF-A	0.18	PT26P8M15BF-A	0.26	PT26P8M25AF-A	0.26	PT26P8M25BF-A	0.35	PT26P8M40AF-A	0.39	26
27	PT27P8M15AF-A	0.19	PT27P8M15BF-A	0.29	PT27P8M25AF-A	0.29	PT27P8M25BF-A	0.38	PT27P8M40AF-A	0.42	27
28	PT28P8M15AF-A	0.21	PT28P8M15BF-A	0.31	PT28P8M25AF-A	0.31	PT28P8M25BF-A	0.42	PT28P8M40AF-A	0.46	28
29	PT29P8M15AF-A	0.22	PT29P8M15BF-A	0.34	PT29P8M25AF-A	0.34	PT29P8M25BF-A	0.45	PT29P8M40AF-A	0.5	29
30	PT30P8M15AF-A	0.24	PT30P8M15BF-A	0.37	PT30P8M25AF-A	0.36	PT30P8M25BF-A	0.49	PT30P8M40AF-A	0.54	30
31	PT31P8M15AF-A	0.26	PT31P8M15BF-A	0.4	PT31P8M25AF-A	0.39	PT31P8M25BF-A	0.53	PT31P8M40AF-A	0.58	31
32	PT32P8M15AF-A	0.28	PT32P8M15BF-A	0.43	PT32P8M25AF-A	0.42	PT32P8M25BF-A	0.57	PT32P8M40AF-A	0.62	32
33	PT33P8M15AF-A	0.3	PT33P8M15BF-A	0.41	PT33P8M25AF-A	0.45	PT33P8M25BF-A	0.56	PT33P8M40AF-A	0.66	33
34	PT34P8M15AF-A	0.32	PT34P8M15BF-A	0.49	PT34P8M25AF-A	0.48	PT34P8M25BF-A	0.65	PT34P8M40AF-A	0.71	34
35	PT35P8M15AF-A	0.34	PT35P8M15BF-A	0.53	PT35P8M25AF-A	0.51	PT35P8M25BF-A	0.7	PT35P8M40AF-A	0.75	35
36	PT36P8M15AF-A	0.36	PT36P8M15BF-A	0.56	PT36P8M25AF-A	0.54	PT36P8M25BF-A	0.74	PT36P8M40AF-A	0.8	36
37	PT37P8M15AF-A	0.38	PT37P8M15BF-A	0.6	PT37P8M25AF-A	0.57	PT37P8M25BF-A	0.79	PT37P8M40AF-A	0.85	37
38	PT38P8M15AF-A	0.4	PT38P8M15BF-A	0.64	PT38P8M25AF-A	0.61	PT38P8M25BF-A	0.84	PT38P8M40AF-A	0.9	38
39	PT39P8M15AF-A	0.43	PT39P8M15BF-A	0.68	PT39P8M25AF-A	0.64	PT39P8M25BF-A	0.89	PT39P8M40AF-A	0.95	39
40	PT40P8M15AF-A	0.44	PT40P8M15BF-A	0.7	PT40P8M25AF-A	0.67	PT40P8M25BF-A	0.92	PT40P8M40AF-A	0.99	40
41	PT41P8M15AF-A	0.47	PT41P8M15BF-A	0.73	PT41P8M25AF-A	0.7	PT41P8M25BF-A	0.97	PT41P8M40AF-A	1.04	41
42	PT42P8M15AF-A	0.49	PT42P8M15BF-A	0.76	PT42P8M25AF-A	0.74	PT42P8M25BF-A	1.01	PT42P8M40AF-A	1.1	42
43	PT43P8M15A-A	0.52	PT43P8M15B-A	0.8	PT43P8M25A-A	0.78	PT43P8M25B-A	1.06	PT43P8M40A-A	1.16	43
44	PT44P8M15AF-A	0.55	PT44P8M15BF-A	0.84	PT44P8M25AF-A	0.82	PT44P8M25BF-A	1.11	PT44P8M40AF-A	1.22	44
45	PT45P8M15AF-A	0.57	PT45P8M15BF-A	0.88	PT45P8M25AF-A	0.86	PT45P8M25BF-A	1.16	PT45P8M40AF-A	1.28	45
46	PT46P8M15A-A	0.6	PT46P8M15B-A	0.93	PT46P8M25A-A	0.9	PT46P8M25B-A	1.23	PT46P8M40A-A	1.34	46
47	PT47P8M15AF-A	0.63	PT47P8M15BF-A	0.98	PT47P8M25AF-A	0.94	PT47P8M25BF-A	1.29	PT47P8M40AF-A	1.4	47
48	PT48P8M15AF-A	0.66	PT48P8M15BF-A	1.02	PT48P8M25AF-A	0.99	PT48P8M25BF-A	1.35	PT48P8M40AF-A	1.46	48
49	PT49P8M15A-A	0.69	PT49P8M15B-A	1.05	PT49P8M25A-A	1.03	PT49P8M25B-A	1.39	PT49P8M40A-A	1.53	49
50	PT50P8M15AF-A	0.72	PT50P8M15BF-A	1.08	PT50P8M25AF-A	1.08	PT50P8M25BF-A	1.44	PT50P8M40AF-A	1.6	50
56	PT56P8M15A-A	0.91	PT56P8M15B-A	1.27	PT56P8M25A-A	1.37	PT56P8M25B-A	1.73	PT56P8M40A-A	2.03	56
60	PT60P8M15AF-A	1.05	PT60P8M15BF-A	1.41	PT60P8M25AF-A	1.58	PT60P8M25BF-A	1.94	PT60P8M40AF-A	2.34	60
64	PT64P8M15A-A	1.2	PT64P8M15B-A	1.77	PT64P8M25A-A	1.81	PT64P8M25B-A	2.38	PT64P8M40A-A	2.68	64
72	PT72P8M15A-A	1.52	PT72P8M15B-A	2.06	PT72P8M25A-A	2.27	PT72P8M25B-A	2.82	PT72P8M40A-A	3.38	72
80	PT80P8M15A-A	1.89	PT80P8M15B-A	2.55	PT80P8M25A-A	2.83	PT80P8M25B-A	3.49	PT80P8M40A-A	4.21	80
84	PT84P8M15A-A	2.09	PT84P8M15B-A	2.82	PT84P8M25A-A	3.14	PT84P8M25B-A	3.87	PT84P8M40A-A	4.66	84
90	PT90P8M15A-A	2.41	PT90P8M15B-A	3.19	PT90P8M25A-A	3.62	PT90P8M25B-A	4.4	PT90P8M40A-A	5.38	90
96	PT96P8M15A-A	2.74	PT96P8M15B-A	3.69	PT96P8M25A-A	4.12	PT96P8M25B-A	5.07	PT96P8M40A-A	6.11	96
112	PT112P8M15A-A	3.77	PT112P8M15B-A	4.73	PT112P8M25A-A	5.66	PT112P8M25B-A	6.61	PT112P8M40A-A	8.41	112
120	PT120P8M15A-A	4.35	PT120P8M15B-A	5.3	PT120P8M25A-A	6.53	PT120P8M25B-A	7.48	PT120P8M40A-A	9.69	120

P8M

■ P8M40BF-A ■ P8M60AF-A ■ P8M60BF-A

Number of teeth	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Number of teeth
10							10
11							11
12							12
13							13
14							14
15							15
16							16
17							17
18							18
19							19
20	PT20P8M40BF-A	0.27	PT20P8M60AF-A	0.32	PT20P8M60BF-A	0.36	20
21	PT21P8M40B-A	0.3	PT21P8M60A-A	0.35	PT21P8M60B-A	0.41	21
22	PT22P8M40BF-A	0.33	PT22P8M60AF-A	0.39	PT22P8M60BF-A	0.45	22
23	PT23P8M40BF-A	0.37	PT23P8M60AF-A	0.44	PT23P8M60BF-A	0.5	23
24	PT24P8M40BF-A	0.41	PT24P8M60AF-A	0.48	PT24P8M60BF-A	0.55	24
25	PT25P8M40B-A	0.45	PT25P8M60A-A	0.53	PT25P8M60B-A	0.61	25
26	PT26P8M40BF-A	0.48	PT26P8M60AF-A	0.56	PT26P8M60BF-A	0.65	26
27	PT27P8M40BF-A	0.52	PT27P8M60AF-A	0.61	PT27P8M60BF-A	0.7	27
28	PT28P8M40BF-A	0.57	PT28P8M60AF-A	0.66	PT28P8M60BF-A	0.76	28
29	PT29P8M40BF-A	0.62	PT29P8M60AF-A	0.71	PT29P8M60BF-A	0.83	29
30	PT30P8M40BF-A	0.66	PT30P8M60AF-A	0.77	PT30P8M60BF-A	0.89	30
31	PT31P8M40BF-A	0.72	PT31P8M60AF-A	0.83	PT31P8M60BF-A	0.97	31
32	PT32P8M40BF-A	0.77	PT32P8M60AF-A	0.89	PT32P8M60BF-A	1.04	32
33	PT33P8M40BF-A	0.78	PT33P8M60AF-A	0.95	PT33P8M60BF-A	1.06	33
34	PT34P8M40BF-A	0.88	PT34P8M60AF-A	1.01	PT34P8M60BF-A	1.19	34
35	PT35P8M40BF-A	0.95	PT35P8M60AF-A	1.08	PT35P8M60BF-A	1.27	35
36	PT36P8M40BF-A	1	PT36P8M60AF-A	1.14	PT36P8M60BF-A	1.35	36
37	PT37P8M40BF-A	1.06	PT37P8M60AF-A	1.21	PT37P8M60BF-A	1.43	37
38	PT38P8M40BF-A	1.13	PT38P8M60AF-A	1.29	PT38P8M60BF-A	1.52	38
39	PT39P8M40BF-A	1.2	PT39P8M60AF-A	1.36	PT39P8M60BF-A	1.61	39
40	PT40P8M40BF-A	1.25	PT40P8M60AF-A	1.41	PT40P8M60BF-A	1.67	40
41	PT41P8M40BF-A	1.31	PT41P8M60AF-A	1.49	PT41P8M60BF-A	1.76	41
42	PT42P8M40BF-A	1.37	PT42P8M60AF-A	1.57	PT42P8M60BF-A	1.84	42
43	PT43P8M40B-A	1.43	PT43P8M60A-A	1.65	PT43P8M60B-A	1.93	43
44	PT44P8M40BF-A	1.51	PT44P8M60AF-A	1.74	PT44P8M60BF-A	2.03	44
45	PT45P8M40BF-A	1.58	PT45P8M60AF-A	1.82	PT45P8M60BF-A	2.13	45
46	PT46P8M40B-A	1.66	PT46P8M60A-A	1.91	PT46P8M60B-A	2.24	46
47	PT47P8M40BF-A	1.75	PT47P8M60AF-A	2	PT47P8M60BF-A	2.35	47
48	PT48P8M40BF-A	1.83	PT48P8M60AF-A	2.09	PT48P8M60BF-A	2.45	48
49	PT49P8M40B-A	1.89	PT49P8M60A-A	2.19	PT49P8M60B-A	2.55	49
50	PT50P8M40BF-A	1.96	PT50P8M60AF-A	2.28	PT50P8M60BF-A	2.64	50
56	PT56P8M40B-A	2.39	PT56P8M60A-A	2.9	PT56P8M60B-A	3.26	56
60	PT60P8M40BF-A	2.71	PT60P8M60AF-A	3.35	PT60P8M60BF-A	3.71	60
64	PT64P8M40B-A	3.25	PT64P8M60A-A	3.83	PT64P8M60B-A	4.27	64
72	PT72P8M40B-A	3.92	PT72P8M60A-A	4.82	PT72P8M60B-A	5.24	72
80	PT80P8M40B-A	4.87	PT80P8M60A-A	6.01	PT80P8M60B-A	6.52	80
84	PT84P8M40B-A	5.39	PT84P8M60A-A	6.66	PT84P8M60B-A	7.22	84
90	PT90P8M40B-A	6.16	PT90P8M60A-A	7.68	PT90P8M60B-A	8.28	90
96	PT96P8M40B-A	7.06	PT96P8M60A-A	8.73	PT96P8M60B-A	9.47	96
112	PT112P8M40B-A	9.36	PT112P8M60A-A	12.01	PT112P8M60B-A	12.75	112
120	PT120P8M40B-A	10.64	PT120P8M60A-A	13.84	PT120P8M60B-A	14.58	120

P14M

Number of teeth	■ P14M40AF Model number	Mass kg	■ P14M40BF Model number	Mass kg	■ P14M60AF Model number	Mass kg	■ P14M60BF Model number	Mass kg	■ P14M80AF Model number	Mass kg	Number of teeth
28	PT28P14M40AF	4.34	PT28P14M40BF	5.29	PT28P14M60AF	6.06	PT28P14M60BF	7.01	PT28P14M80AF	7.77	28
29	PT29P14M40AF	4.68	PT29P14M40BF	5.75	PT29P14M60AF	6.54	PT29P14M60BF	7.61	PT29P14M80AF	8.4	29
30	PT30P14M40AF	5.04	PT30P14M40BF	6.23	PT30P14M60AF	7.04	PT30P14M60BF	8.23	PT30P14M80AF	9.04	30
31	PT31P14M40AF	5.42	PT31P14M40BF	6.73	PT31P14M60AF	7.56	PT31P14M60BF	8.88	PT31P14M80AF	9.71	31
32	PT32P14M40AF	5.8	PT32P14M40BF	7.25	PT32P14M60AF	8.1	PT32P14M60BF	9.55	PT32P14M80AF	10.4	32
33	PT33P14M40AF	6.2	PT33P14M40BF	7.93	PT33P14M60AF	8.66	PT33P14M60BF	10.39	PT33P14M80AF	11.11	33
34	PT34P14M40AF	6.61	PT34P14M40BF	8.34	PT34P14M60AF	9.23	PT34P14M60BF	10.96	PT34P14M80AF	11.85	34
35	PT35P14M40AF	7.04	PT35P14M40BF	8.77	PT35P14M60AF	9.82	PT35P14M60BF	11.55	PT35P14M80AF	12.61	35
36	PT36P14M40AF	7.47	PT36P14M40BF	9.2	PT36P14M60AF	10.43	PT36P14M60BF	12.16	PT36P14M80AF	13.39	36
37	PT37P14M40AF	7.92	PT37P14M40BF	9.96	PT37P14M60AF	11.06	PT37P14M60BF	13.1	PT37P14M80AF	14.2	37
38	PT38P14M40AF	8.39	PT38P14M40BF	10.59	PT38P14M60AF	11.71	PT38P14M60BF	13.91	PT38P14M80AF	15.03	38
39	PT39P14M40AF	8.86	PT39P14M40BF	11.07	PT39P14M60AF	12.37	PT39P14M60BF	14.58	PT39P14M80AF	15.89	39
40	PT40P14M40AF	9.35	PT40P14M40BF	11.55	PT40P14M60AF	13.06	PT40P14M60BF	15.26	PT40P14M80AF	16.76	40
41	PT41P14M40AF	9.85	PT41P14M40BF	12.06	PT41P14M60AF	13.76	PT41P14M60BF	15.96	PT41P14M80AF	17.66	41
42	PT42P14M40AF	10.37	PT42P14M40BF	12.57	PT42P14M60AF	14.48	PT42P14M60BF	16.68	PT42P14M80AF	18.59	42
43	PT43P14M40AF	10.9	PT43P14M40BF	13.45	PT43P14M60AF	15.22	PT43P14M60BF	17.76	PT43P14M80AF	19.53	43
44	PT44P14M40AF	11.44	PT44P14M40BF	15.09	PT44P14M60AF	15.97	PT44P14M60BF	19.62	PT44P14M80AF	20.5	44
45	PT45P14M40A	11.99	PT45P14M40B	15.64	PT45P14M60A	16.75	PT45P14M60B	20.39	PT45P14M80A	21.5	45
46	PT45P14M40AF	11.99	PT45P14M40BF	15.88	PT45P14M60AF	16.75	PT45P14M60BF	20.64	PT45P14M80AF	21.5	46
47	PT45P14M40A	11.99	PT45P14M40B	15.88	PT45P14M60A	16.75	PT45P14M60B	20.64	PT45P14M80A	21.5	47
48	PT48P14M40AF	13.73	PT48P14M40BF	17.62	PT48P14M60AF	19.18	PT48P14M60BF	23.07	PT48P14M80AF	24.62	48
49	PT49P14M40AF	14.34	PT49P14M40BF	18.23	PT49P14M60AF	20.02	PT49P14M60BF	23.91	PT49P14M80AF	25.7	49
50	PT50P14M40AF	14.96	PT50P14M40BF	18.85	PT50P14M60AF	20.89	PT50P14M60BF	24.78	PT50P14M80AF	26.81	50
56	PT56P14M40A	18.79	PT56P14M40B	22.61	PT56P14M60A	26.23	PT56P14M60B	30.05	PT56P14M80A	33.68	56
60	PT60P14M40A	21.71	PT60P14M40B	25.52	PT60P14M60A	30.31	PT60P14M60B	34.12	PT60P14M80A	38.91	60
64	PT64P14M40A	24.83	PT64P14M40B	28.65	PT64P14M60A	34.67	PT64P14M60B	38.49	PT64P14M80A	44.51	64
72	PT72P14M40A	31.6	PT72P14M40B	35.88	PT72P14M60A	44.12	PT72P14M60B	48.4	PT72P14M80A	56.65	72
80	PT80P14M40A	39.31	PT80P14M40B	43.58	PT80P14M60A	54.88	PT80P14M60B	59.16	PT80P14M80A	70.46	80
84	PT84P14M40A	43.47	PT84P14M40B	48.29	PT84P14M60A	60.69	PT84P14M60B	65.51	PT84P14M80A	77.92	84
90	PT90P14M40A	49.99	PT90P14M40B	55.92	PT90P14M60A	69.79	PT90P14M60B	75.72	PT90P14M80A	89.6	90
96	PT96P14M40A	57.09	PT96P14M40B	65.73	PT96P14M60A	79.71	PT96P14M60B	88.35	PT96P14M80A	102.33	96
112	PT112P14M40A	78.31	PT112P14M40B	87.71	PT112P14M60A	109.34	PT112P14M60B	118.74	PT112P14M80A	140.37	112
120	PT120P14M40A	90.17	PT120P14M40B	103.81	PT120P14M60A	125.89	PT120P14M60B	139.53	PT120P14M80A	161.62	120

P14M

Number of teeth	■ P14M80BF Model number	Mass kg	■ P14M100AF Model number	Mass kg	■ P14M100BF Model number	Mass kg	■ P14M120AF Model number	Mass gkg	■ P14M120BF Model number	Mass kg	Number of teeth
28	PT28P14M80BF	8.73	PT28P14M100AF	9.49	PT28P14M100BF	10.45	PT28P14M120AF	11.21	PT28P14M120BF	12.17	28
29	PT29P14M80BF	9.46	PT29P14M100AF	10.25	PT29P14M100BF	11.32	PT29P14M120AF	12.11	PT29P14M120BF	13.18	29
30	PT30P14M80BF	10.23	PT30P14M100AF	11.04	PT30P14M100BF	12.23	PT30P14M120AF	13.04	PT30P14M120BF	14.22	30
31	PT31P14M80BF	11.02	PT31P14M100AF	11.85	PT31P14M100BF	13.17	PT31P14M120AF	14	PT31P14M120BF	15.31	31
32	PT32P14M80BF	11.85	PT32P14M100AF	12.7	PT32P14M100BF	14.14	PT32P14M120AF	15	PT32P14M120BF	16.44	32
33	PT33P14M80BF	12.84	PT33P14M100AF	13.57	PT33P14M100BF	15.3	PT33P14M120AF	16.03	PT33P14M120BF	17.76	33
34	PT34P14M80BF	13.58	PT34P14M100AF	14.47	PT34P14M100BF	16.2	PT34P14M120AF	17.09	PT34P14M120BF	18.82	34
35	PT35P14M80BF	14.34	PT35P14M100AF	15.4	PT35P14M100BF	17.13	PT35P14M120AF	18.19	PT35P14M120BF	19.92	35
36	PT36P14M80BF	15.13	PT36P14M100AF	16.36	PT36P14M100BF	18.09	PT36P14M120AF	19.32	PT36P14M120BF	21.05	36
37	PT37P14M80BF	16.24	PT37P14M100AF	17.34	PT37P14M100BF	19.38	PT37P14M120AF	20.48	PT37P14M120BF	22.52	37
38	PT38P14M80BF	17.24	PT38P14M100AF	18.36	PT38P14M100BF	20.56	PT38P14M120AF	21.68	PT38P14M120BF	23.88	38
39	PT39P14M80BF	18.09	PT39P14M100AF	19.4	PT39P14M100BF	21.6	PT39P14M120AF	22.91	PT39P14M120BF	25.11	39
40	PT40P14M80BF	18.97	PT40P14M100AF	20.47	PT40P14M100BF	22.67	PT40P14M120AF	24.17	PT40P14M120BF	26.38	40
41	PT41P14M80BF	19.87	PT41P14M100AF	21.57	PT41P14M100BF	23.77	PT41P14M120AF	25.47	PT41P14M120BF	27.68	41
42	PT42P14M80BF	20.79	PT42P14M100AF	22.7	PT42P14M100BF	24.9	PT42P14M120AF	26.8	PT42P14M120BF	29.01	42
43	PT43P14M80BF	22.08	PT43P14M100AF	23.85	PT43P14M100BF	26.4	PT43P14M120AF	28.17	PT43P14M120BF	30.72	43
44	PT44P14M80BF	24.15	PT44P14M100AF	25.04	PT44P14M100BF	28.68	PT44P14M120AF	29.57	PT44P14M120BF	33.22	44
45	PT45P14M80B	25.15	PT45P14M100A	26.25	PT45P14M100B	29.9	PT45P14M120A	31	PT45P14M120B	34.65	45
46	PT45P14M80BF	25.39	PT45P14M100AF	26.25	PT45P14M100BF	30.14	PT45P14M120AF	31	PT45P14M120BF	34.89	46
47	PT45P14M80B	25.39	PT45P14M100A	26.25	PT45P14M100B	30.14	PT45P14M120A	31	PT45P14M120B	34.89	47
48	PT48P14M80BF	28.51	PT48P14M100AF	30.06	PT48P14M100BF	33.95	PT48P14M120AF	35.5	PT48P14M120BF	39.39	48
49	PT49P14M80BF	29.59	PT49P14M100AF	31.39	PT49P14M100BF	35.28	PT49P14M120AF	37.07	PT49P14M120BF	40.96	49
50	PT50P14M80BF	30.7	PT50P14M100AF	32.74	PT50P14M100BF	36.63	PT50P14M120AF	38.67	PT50P14M120BF	42.56	50
56	PT56P14M80B	37.5	PT56P14M100A	41.12	PT56P14M100B	44.94	PT56P14M120A	48.57	PT56P14M120B	52.38	56
60	PT60P14M80B	42.72	PT60P14M100A	47.51	PT60P14M100B	51.33	PT60P14M120A	56.11	PT60P14M120B	59.93	60
64	PT64P14M80B	48.33	PT64P14M100A	54.35	PT64P14M100B	58.17	PT64P14M120A	64.19	PT64P14M120B	68.01	64
72	PT72P14M80B	60.92	PT72P14M100A	69.17	PT72P14M100B	73.44	PT72P14M120A	81.69	PT72P14M120B	85.97	72
80	PT80P14M80B	74.73	PT80P14M100A	86.03	PT80P14M100B	90.31	PT80P14M120A	101.6	PT80P14M120B	105.88	80
84	PT84P14M80B	82.73	PT84P14M100A	95.14	PT84P14M100B	99.96	PT84P14M120A	112.37	PT84P14M120B	117.18	84
90	PT90P14M80B	95.53	PT90P14M100A	109.4	PT90P14M100B	115.33	PT90P14M120A	129.21	PT90P14M120B	135.14	90
96	PT96P14M80B	110.97	PT96P14M100A	124.95	PT96P14M100B	133.59	PT96P14M120A	147.57	PT96P14M120B	156.21	96
112	PT112P14M80B	149.77	PT112P14M100A	171.4	PT112P14M100B	180.8	PT112P14M120A	202.43	PT112P14M120B	211.82	112
120	PT120P14M80B	175.26	PT120P14M100A	197.35	PT120P14M100B	210.99	PT120P14M120A	233.08	PT120P14M120B	246.71	120

P2M-100L P3M-100L P5M-100L

■ P2M-100L-A ■ P3M-100L-A ■ P5M-100L-A

Number of teeth	Model number	Mass kg	Model number	Mass kg	Model number	Mass kg	Number of teeth
10	PT10P2M-100L-A	0.01	PT10P3M-100L-A	0.01			10
11	PT11P2M-100L-A	0.01	PT11P3M-100L-A	0.02			11
12	PT12P2M-100L-A	0.01	PT12P3M-100L-A	0.02	PT12P5M-100L-A	0.06	12
13	PT13P2M-100L-A	0.01	PT13P3M-100L-A	0.03			13
14	PT14P2M-100L-A	0.01	PT14P3M-100L-A	0.03	PT14P5M-100L-A	0.09	14
15	PT15P2M-100L-A	0.02	PT15P3M-100L-A	0.04	PT15P5M-100L-A	0.11	15
16	PT16P2M-100L-A	0.02	PT16P3M-100L-A	0.04	PT16P5M-100L-A	0.12	16
17	PT17P2M-100L-A	0.02	PT17P3M-100L-A	0.05	PT17P5M-100L-A	0.14	17
18	PT18P2M-100L-A	0.03	PT18P3M-100L-A	0.06	PT18P5M-100L-A	0.16	18
19	PT19P2M-100L-A	0.03	PT19P3M-100L-A	0.06	PT19P5M-100L-A	0.18	19
20	PT20P2M-100L-A	0.03	PT20P3M-100L-A	0.07	PT20P5M-100L-A	0.19	20
21	PT21P2M-100L-A	0.04	PT21P3M-100L-A	0.08	PT21P5M-100L-A	0.22	21
22	PT22P2M-100L-A	0.04	PT22P3M-100L-A	0.09	PT22P5M-100L-A	0.24	22
23	PT23P2M-100L-A	0.04	PT23P3M-100L-A	0.1	PT23P5M-100L-A	0.26	23
24	PT24P2M-100L-A	0.05	PT24P3M-100L-A	0.11	PT24P5M-100L-A	0.28	24
25	PT25P2M-100L-A	0.05	PT25P3M-100L-A	0.12	PT25P5M-100L-A	0.31	25
26	PT26P2M-100L-A	0.06	PT26P3M-100L-A	0.13	PT26P5M-100L-A	0.34	26
27	PT27P2M-100L-A	0.06	PT27P3M-100L-A	0.14			27
28	PT28P2M-100L-A	0.07	PT28P3M-100L-A	0.15	PT28P5M-100L-A	0.39	28
30	PT30P2M-100L-A	0.08	PT30P3M-100L-A	0.17	PT30P5M-100L-A	0.45	30
32	PT32P2M-100L-A	0.09	PT32P3M-100L-A	0.19	PT32P5M-100L-A	0.52	32
34	PT34P2M-100L-A	0.1	PT34P3M-100L-A	0.22			34
36	PT36P2M-100L-A	0.12	PT36P3M-100L-A	0.24	PT36P5M-100L-A	0.66	36
40	PT40P2M-100L-A	0.14	PT40P3M-100L-A	0.3	PT40P5M-100L-A	0.82	40
44	PT44P2M-100L-A	0.17	PT44P3M-100L-A	0.37	PT44P5M-100L-A	1	44
48	PT48P2M-100L-A	0.2	PT48P3M-100L-A	0.44	PT48P5M-100L-A	1.2	48
50	PT50P2M-100L-A	0.22	PT50P3M-100L-A	0.48	PT50P5M-100L-A	1.31	50
60	PT60P2M-100L-A	0.31	PT60P3M-100L-A	0.69	PT60P5M-100L-A	1.9	60

Troubleshooting

Symptom	Possible causes	Remedy
1. Breakage of synchronous belt	Excessive load	Check the inertia of the driven object, motor, conditions of use, etc.
	Excessive shock load	Increase the belt size or install a shock absorber device.
	Bent belt	Transport, store, and install belts with care.
2. Premature wear of belt teeth	Excessive load	Modify the design.
	Too high installation tension	Apply an adequate installation tension.
	Improper belt sprocket tooth profile or incorrect dimensions of the tooth part	Use a belt sprocket having the correct tooth profile and dimensions.
3. Wear of belt bottom tooth	Too high installation tension	Apply an adequate installation tension.
	Insufficient synchronous belt capacity	Check the operating conditions and select the optimum size synchronous belt / belt sprocket.
4. Jumping of belt tooth	Excessive shock load	Increase the belt size or install a shock absorber device.
	Insufficient belt installation tension	Apply an adequate installation tension.
	Insufficient number of meshed teeth	Increase the number of belt sprocket teeth or the number of meshed teeth by using an idler.
5. Shear fracture of belt teeth	Excessive load,shock load	Check motor specifications, inertia of driven unit, and operating conditions to eliminate the cause of overload, or increase the size of synchronous belt / belt sprocket.
	Too high installation tension	Apply an adequate installation tension.
	Insufficient installation tension	Apply an adequate installation tension.
6. Tear and wear on side of belt	Poor parallelism of the shafts	Correct the shafts parallel.
	Poor belt sprocket alignment	Align the belt sprockets accurately.
	Insufficient rigidity of equipment on which belt is used	Use equipment with sufficient rigidity.
7. Longitudinal scratches on belt tooth surface	Belt is running on edges of belt sprocket	Align the belt sprockets and correct the shafts parallel.
	Belt is riding up on flange	Apply an adequate belt installation tension and correct the shafts parallel accurately.
	Insufficient installation tension	Apply an adequate installation tension.
8. Rubber wear on back of belt	Poor parallelism of back side idler shaft	Correct the idler shaft parallel.
	Poor rotation of back side idler	Improve idler rotation.
	Poor alignment of the belt sprocket in contact with the back of the belt	Adjust the belt sprocket alignment.
9. Hardening of back of belt rubber	Thermal degradation of the belt rubber due to high temperatures	Lower the environment temperature.
	Heat generation caused by contact with obstructions	Remove the obstructions.
	Heat generation due to malfunction in the external idler belt sprocket rotation.	Repair and ensure proper rotation.
10. Crack on rubber on back of synchronous belt	Belt sprocket diameter is too small	Increase the belt sprocket diameter.
	Use in low temperature environment	Change environment temperature.
	Degradation of the rubber due to ozone	Insulate it from the ozone source.
11. Belt looks like its elongated	Shafts (of belt sprockets) move closer to each other	Secure the bearing rigidly. If shock is strong, use a stopper to prevent the bearing from moving.
12.Sticky or softened rubber on back of belt	Slipping of back side idler	Improve idler rotation.
	Adhesion of oil	Either improve environment so that the belt is not wetted by oil or install a cover.
	Use in high temperature environment	Lower the environment temperature.
13. Swelling of synchronous belt	Swelling due to oil	Improve environment to prevent oil splattering or install a cover.
14. Excessive Wear of belt sprocket teeth	Inadequate belt sprocket material	Improve wear resistance to the belt sprocket by using harder material, having the tooth hardened or surface treatment
	Use in dusty environment	Improve the environment or install a cover.
	Excessive load	Modify the design.
15. Noise	Too high installation tension	Apply an adequate installation tension.
	Excessive load	Increase the belt size.
	Poor shaft parallelism or poor belt sprocket alignment	Make the shafts parallel and align the belt sprockets.

Inquiry form for synchronous belts

Tel +81-120-251-664 Fax +81-120-252-665

Please fill in the items listed below to request for the selection and survey of synchronous belts.

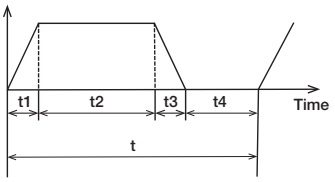
		Date of entry	(MM/DD/YYYY)
Company name		Department name	
Name		E-mail address	
Phone number		Fax number	
Address			

Important: We check the following items from the standpoint of the observation of safe work.

If there is any relevant item, be sure to check the appropriate box(es).

☐ Related to nuclear power ☐ Amusement machine ☐ Hanging application ☐ Vehicles for human use ☐ For food industry ☐ For medical use ☐ For military use

Machine used						☐	← Check in the case of suspension
Load type	☐	Almost smooth transmission	☐	Transmission with mild impact		☐	Transmission with major impact
Motor type	☐ Induction motor ☐ Servomotor or others ( )			Actual load applied to the drive belt sprocket			N·m
Motor output			kW	Drive belt sprocket Usual RPM			r/min
Rated torque of motor			N·m	Facility operating time per day			hour(s)/day
Maximum torque of motor			N·m	Annual operating days			day(s)/year
Drive belt sprocket	No. of teeth		teeth	Start-stop frequency			time(s)/day
	Outer dia.		mm				
Drive belt sprocket rpm			r/min	Operation pattern cycle time (Acceleration, constant speed, and speed reduction cycle time)			sec/cycle
Driven belt sprocket	No. of teeth		teeth	Belt operation time/cycle (Time during which the belt operates in the cycle time)			sec/cycle
	Outer dia.		mm				
Driven belt sprocket rpm			r/min	Acceleration (Speed reduction) time			sec
Speed reducer of motor section	☐ Absent Check in the case of internal reduction Present (Speed reduction ratio /) ☐		--	Constant speed time			sec
Rotation direction of motor	☐ Unidirectional rotation ☐ Bidirectional rotation		--	Belt operation time			hour(s)/day
Restriction on the size of belt sprocket dia.	Dia. on the drive side Dia. on the driven side		mm	With/ Without idler	☐ Without ☐ With Outside Inside		--
Restriction on shaft dia.	Dia. on the drive side Dia. on the driven side		mm	Usage environment	to °C		Others and chemicals
				Exposure to water	Large amount / Small amount / None	Exposure to oil	Large amount / Small amount / None
Restriction on belt width	max		mm or less	Weight of rotating/ transferred body			kg
Distance between shafts	to		mm	Application of belt to multiple rows			Application of rows
Optional comment field	Please draw a simplified figure, explain the mechanism, describe your request, etc.						



t: Cycle time
t1: Acceleration time
t2: Constant speed time
t3: Speed reduction time
t4: Stop time

TSUBAKIMOTO CHAIN CO.

Japan	Tsubakimoto Chain Co.	https://tsubakimoto.com/

Global Group Companies

AMERICAS

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EUROPE

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INDIAN OCEAN RIM

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Indonesia	PT. Tsubaki Indonesia Trading	https://tsubaki.id/
Malaysia	Tsubaki Power Transmission (Malaysia) Sdn. Bhd.	https://en.tsubaki.my/
New Zealand	Tsubaki Australia Pty. Limited - New Zealand Branch	https://tsubaki.com.au/
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Vietnam	Tsubakimoto Vietnam Co., Ltd.	https://tsubaki.net.vn/

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CHINA

China	Tsubakimoto Chain (Shanghai) Co., Ltd.	https://www.tsubaki-sh.cn/

The Tsubaki Eco Link logo is used only on products that satisfy the standards for environmental friendliness set by the Tsubaki Group.

Note: In accordance with the policy of TSUBAKIMOTO CHAIN CO. to constantly improve its products, the specifications in this catalog are subject to change without notice.
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