

Timing Pulleys / Belts / MechaLock

Timing Pulleys Belts / MechaLock

Product Name	High Torque Timing Pulleys - 1.5GT, 2GT	3GT	5GT	8YU	Timing Pulleys - MXL
Page	1381	1383	1385	1387	1389
Timing Pulleys - XL	L	H	High Torque Timing Pulleys - S2M	S3M	S5M
1391	1393	1395	1397	1399	1401
High Torque Timing Pulleys - S8M	S14M	Non-Backlash Timing Pulleys - S8M	High Torque Timing Pulleys - P2M, P3M	P5M	
1403	1405	1407	1409	1411	
High Torque Timing Pulleys - P8M	Timing Pulleys - T2.5	T5	T10	AT5	AT10
1413	1415	1417	1419	1421	1421
Timing Pulleys - Width Configurable	Bar-Shaped Timing Pulleys - MXL, XL, S2M, S3M, S5M	Keyless Timing Pulleys - XL	Keyless Timing Pulleys - L	L (MechaLock Standard Type Incorporated)	H
1423	1424	1426	1427	1428	1429
H (MechaLock Standard Type Incorporated)	Keyless High Torque Timing Pulleys - S3M	S5M (MechaLock Standard Type Incorporated)	Keyless High Torque Timing Pulleys - S5M	S5M (MechaLock Standard Type Incorporated)	S8M
1430	1431	1432	1433	1434	1435
S8M (MechaLock Standard Type Incorporated)	P5M	Keyless High Torque Timing Pulleys - P8M	Keyless Timing Pulleys - T5	T5 (MechaLock Standard Type Incorporated)	
1436	1437	1438	1439	1440	

T10	T10 (MechaLock Standard Type Incorporated)	Clamping High Torque Timing Pulleys - S3M, S5M, S8M	Flanged Idlers with Teeth - MXL, XL Type	L, H	
1441	1442	1443	1445	1447	
Flanged Idlers with Teeth - S2M, S3M Type	S5M, S8M, S14M	P2M, P3M, P5M, 8M, 2GT, 3GT, 5GT, 8YU Type	T5, T10, AT5, AT10 Type	Idlers - Belt Backside Tensioning	
1449	1451	1453	1455	1457	
Idlers / Idler Shafts	High Torque Timing Belts - 2GT, 3GT	Super High Torque Timing Belts - EV5GT, EV8YU	Timing Belts - MXL, XL, L, H	High Torque Timing Belts - S2M, S3M, S5M, S8M, S14M	
1458	1459	1461	1463	1465	
High Torque Timing Belts - P2M, P3M, P5M, P8M Type	Super High Torque Timing Belts - MTS8M, UPSM, UP8M	Timing Belts - T5, T10	Timing Belt with Attachment	Long Timing Belts - Iron Rubber®	Polyurethane
1467	1469	1470	1471	1473	1474
Open End Belts - Iron Rubber®	Polyurethane / Chloroprene Rubber	Timing Belt Guide	Timing Belt Clamp Plates - Press Formed Multi Fitting	Timing Belt Clamp Plates - Linear Guide Mounting Plate Set	Timing Belt Clamp Plates - Anti-overtightening Type
1475	1476	1477	1479	1481	1483
Metal Clamps for Timing Belts - Anti-overtightening, Hole Position Configurable	Timing Belt Clamp Plates - Nut Fitting	Bottom Metal Short	MechaLock - Easy Mounting (Nut)	MechaLock - Thin	Standard
1484	1485	1486	1490	1490	1491
Straight	Straight for High Torque	Compact	Pulleys/Belts for Transfer	Idlers with Pins	Tensioner Units with Idler
1493	1494	1495	1418	1450	1456

Timing Belts / Pulleys - Overview ①

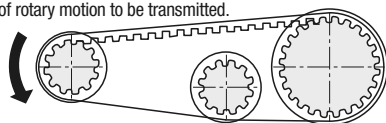
Overview

As the means of transmitting the power of rotary motion driven by a motor, a designing approach based on timing pulleys and belts is generally and widely used. Even for machinery parts which are required to have higher positioning accuracy than ever along with improvement of the machinery in precision and speed, MISUMI Timing Pulleys and Belts can be used with a sense of security due to their thorough control of quality. Various types of Pulleys and Belts are offered. For Belts, Conventional Timing Belts for Transmission, Timing Belts with Attachments for Conveyance, Tooth Count Configurable Long Timing Belts, and Open End Belts are available. As to delivery, the first day shipping is available at earliest (if the express service is used) for pulleys machined with shaft bores and surface-treated. And for Keyless Timing Pulleys, the 5th day shipping is available. For belts, as well as In Stock products, products 3rd-day-shipped even on a made-to-order basis are added to the product lineup.

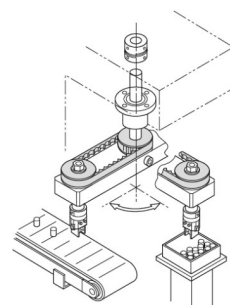
App. Example

<App. Example 1>

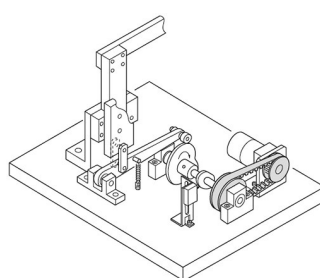
Driving: Is installed onto motors and rotary shafts to allow the driving force of rotary motion to be transmitted.



<App. Example 3>

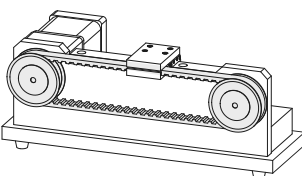


<App. Example 4>



<App. Example 2>

Conveyance: Is used for reciprocating motion with high positioning accuracy rather than for rotary motion.



Timing Pulley Belt Selection Steps

* When selecting timing pulleys and belts, please check each of the following steps for its details by referring to the page indicated on the right side.

[Step 1]	Determine conditions needed for designing.	P.2253
[Step 2]	Calculate the design power.	P.2253
[Step 3]	By using the simplified selection table, select the target belt types on an interim basis.	P.2255
[Step 4]	For each of Small/Large Dia. Pulley, determine the number of teeth, belt length and shaft center distance.	P.2256
[Step 5]	Determine the belt width.	P.2256
[Step 6]	Check the adjustment allowance of the shaft center distance for its adequacy.	P.2257
[Step 7]	Verify the transmission capacity.	P.2259
Others	Precautions for Use of Belts	P.2283
Technical Data	Pulleys with Teeth - JIS B 1856 (1993)	P.2285

Cautions

- Do not bend belts too hard.
- When core wire is steel cord, avoid giving tension from the backside.
- Avoid using and storing the products in an environment of extremely high or low temperature (beyond the operating temperature) and high humidity.
- Avoid direct contact with water, solvent, oil, acid, alkali, ultra-violet light, ozone, etc. If the belt swells due to contact with oil, its service life will be considerably shortened.
- Make sure to shut down the machine and confirm the complete stop of its behavior before starting installation or maintenance check.
- Timing Pulleys and Belts (MXL, XL, L, H) for general use are compliant with JIS and ISO Standards. Timing Pulleys: JIS B 1856(ISO5294) Timing Belts: JIS K6372 (ISO5296-1), JIS K6373 (ISO5296-2)

- S Type (S□M) timing pulleys and belts are compatible with S□M type from Mitsuboshi Belting Ltd. as well as Bando Chemical Industries Ltd.
- MTS Type (MTS8M) timing belts are compatible with MTS8M from Mitsuboshi Belting Ltd.
- P Type (P□M) timing pulleys and belts are compatible with P□M Type from Tsubakimoto Chain Co.
- UP Type (UP□M) timing belts are compatible with UP□M-HC Type from Tsubakimoto Chain Co.
- MA Type timing pulleys and belts are compatible with MA□ Type from NOK Corporation.
- GT Type (□GT) and EV Type (EV5GT, EV8YU) timing pulleys and belts are compatible with □GT, EV5GT, EV8YU Types from Gates Unitta Asia Company.

Timing Pulleys

MISUMI timing pulleys are shaft bore machined and surface-treated. In addition to regular pulleys, wide variety of pulleys including Non-Backlash Timing Pulley and MechaLock Incorporated Keyless Timing Pulleys are available.

[List of Timing Pulleys and Idlers]

Usage	Features	Belt Type	Pitch	Timing Pulleys			Idler	
				Timing Pulleys	Keyless Timing Pulley	Clamping Timing Pulley	Idlers with Teeth	Idler
Regular Torque	General purpose timing pulleys suitable for torque transmission and light load conveyance.	MXL	2.032mm (2/25inch)	P.1389	-	-	P.1445	P.1457
		XL	5.08mm (1/5inch)	P.1391	P.1426	-	P.1447	
		L	9.525mm (3/8inch)	P.1393	P.1427, 1428	-		
		H	12.7mm (1/2inch)	P.1395	P.1429, 1430	-		
High Torque	Timing pulleys for high torque transmission.	S2M	2.0mm	P.1397	-	-	P.1449	P.1457
		S3M	3.0mm	P.1399	P.1431, 1432	-	P.1451	
		S5M	5.0mm	P.1401	P.1433, 1434	P.1443		
		S8M	8.0mm	P.1403, 1407	P.1435, 1436	-		
		S14M	14.0mm	P.1405	-	-		
		P2M	2.0mm	P.1409	-	-	P.1453	
		P3M	3.0mm	P.1409	-	-		
		P5M	5.0mm	P.1411	P.1437	-		
		P8M	8.0mm	P.1413	P.1438	-		
		High Accuracy Positioning	Timing pulleys with small backlash. Suitable for positioning.	1.5GT	1.5mm	P.1381	-	
2GT	2.0mm			P.1381	-	-	P.1453	
3GT	3.0mm			P.1383	-	-		
5GT	5.0mm			P.1385	-	-		
8YU	8.0mm			P.1387	-	-		
Light Load Conveyance, Regular Torque	Trapezoidal toothed timing pulleys suitable for conveyance. Also usable for transmission.	T2.5	2.5mm	P.1415	-	-	-	P.1455
		T5	5.0mm	P.1417	P.1439, 1440	-	P.1457	
		T10	10.0mm	P.1419	P.1441, 1442	-		
Heavy Load Conveyance	Timing belts suitable for heavy load conveyance. Possesses 1.3 times larger allowable tension than T type.	AT5	5.0mm	P.1421	-	-	P.1455	P.1457
		AT10	10.0mm	P.1421	-	-		

⚠ Significantly reduced backlash timing pulley is available for S8M (P.1407). Special timing belts are not required.

⚠ For Belts dedicated for 1.5GT and T2.5, please contact MISUMI VONA.

Timing Belt

MISUMI offers a wide variety of timing belts.

Conventional Timing Belts for Transmission, Timing Belts with Attachments for Conveyance, Tooth Count Configurable Long Timing Belts, and Open End Belts are available. The GT series suitable for high accuracy positioning is also offered.

[List of Timing Belts]

Usage	Belt Type	Pitch	Timing Belt									
			Timing Belt	Timing Belt with Attachment	Long Timing Belt - Number of Teeth Configurable	Long Timing Belt - Number of Teeth Configurable, Cloth	Open End Belt					
Regular Torque	MXL	2.032mm (2/25inch)	P.1463	P.1463	-	P.1473	P.1474	P.1473	P.1474	P.1476	P.1475	P.1476
	XL	5.08mm (1/5inch)										
High Torque	L	9.525mm (3/8inch)	P.1465	P.1465	-	-	P.1474	-	-	P.1476	-	P.1476
	H	12.7mm (1/2inch)										
	S2M	2.0mm										
	S3M	3.0mm										
	S5M	5.0mm										
High Accuracy Positioning	S8M	8.0mm	P.1467	-	-	-	-	-	-	P.1476	-	-
	S14M	14.0mm										
	P2M	2.0mm										
	P3M	3.0mm										
Super High Torque	P5M	5.0mm	P.1469	-	-	-	-	-	-	-	-	-
	P8M	8.0mm										
	2GT	2.0mm										
	3GT	3.0mm										
	EV5GT	5.0mm										
Light Load Conveyance, Regular Torque	EV8YU	8.0mm	P.1461	-	-	-	-	-	-	-	-	-
	MA3	3.0mm										
	MA5	5.0mm										
	MA8	8.0mm										
Heavy Load Conveyance	MTS8M	8.0mm	P.1470	-	-	-	-	-	-	-	P.1475	P.1476
	UP5M	5.0mm										
	UP8M	8.0mm										
Heavy Load Conveyance	T5	5.0mm	-	P.1471	-	P.1473	P.1474	P.1473	P.1474	-	-	-
	T10	10.0mm										
	AT5	5.0mm										
Heavy Load Conveyance	AT10	10.0mm	-	-	-	-	-	-	-	-	-	-

⚠ MTS8M belts are applicable to S8M timing pulleys and idlers. ⚠ UP5M, UP8M belts are applicable to P5M, P8M timing pulleys and idlers.

⚠ EV5GT belts are applicable to 5GT and EV8YU belts are applicable to 8YU timing pulleys and idlers.

⚠ Iron Rubber® is a registered trademark of NOK Corp.

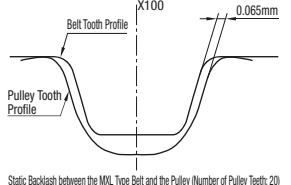
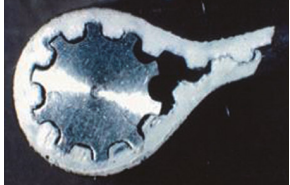
Timing Pulleys and Belts - Overview ②

Timing Pulley Alteration - Overview

Features of GT Belts

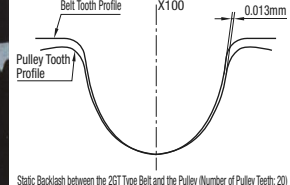
- The tooth engagements occur based on involute motion that closely assimilates the profiles of both teeth, thus minimizing backlash and making the scheme suitable for high accuracy positioning applications.
- * Backlash means the clearances between the belt tooth surface and the pulley tooth surface when engaged.

MXL (10 Toothed, Ø6.47mm)



Static Backlash between the MXL Type Belt and the Pulley (Number of Pulley Teeth: 20)

2GT (10 Toothed, Ø6.37mm)

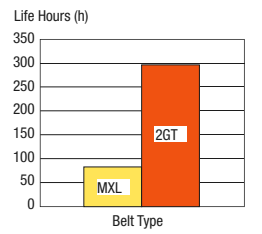


Static Backlash between the 2GT Type Belt and the Pulley (Number of Pulley Teeth: 20)

Performance Comparison between MXL and 2GT Belts

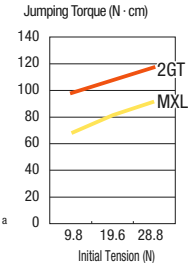
Reference ①: Durability

- <Performance Conditions>
 Number of belt teeth: 126
 Belt Width: 9.5mm
 Number of Pulley Teeth: 12 (2GT)
 : 14 (MXL)
 Speed: 7,900rpm
 Load Torque: 24.3Nm



Reference ②: Jumping Torque Capability

- <Performance Conditions>
 Number of belt teeth: 126
 Belt Width: 4.8mm
 Number of Pulley Teeth: 20 (2GT)
 : 20 (MXL)
 Speed: 1,130rpm
 Tooth Height
 MXL: 0.51mm 2GT: 0.75mm

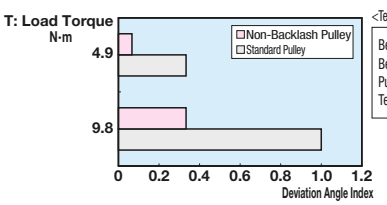


*Jumping Torque represents the max. torque when a jumping occurs.

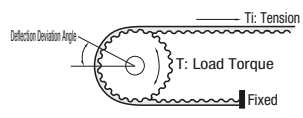
Features of Non-backlash Pulleys (S8M)

- Non-backlash pulley has reduced backlash compared to conventional type to work with high accuracy positioning mechanism.
- Backlash is significantly smaller than standard S8M pulleys. (The amount reduced depends on applications.)
- Use regular S8M timing belt.

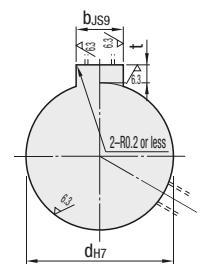
Reference: Comparison of Deviation Angles between Non-Backlash Pulleys and Standard Pulleys



- <Test Conditions>
 Belt Type :S8M
 Belt Width :25mm
 Pulley Size : 30 Toothed (P.D.76.39mm)
 Tension T_i :382N



Keyway Dimensions N: New JIS (B1301) Keyway Dimensions



Nominal	d _{H7}	b _{JIS9}	t Tolerance
N 8	8	3	±0.0125
N10	10	4	±0.0125
NK10	10	0	
N11	11	4	±0.0125
N12	12	4	±0.0125
N13	13	4	±0.0125
N14	14	4	±0.0125
N15	15	5	±0.0150
N16	16	5	±0.0150
N17	17	5	±0.0150
N18	18	5	±0.0150
N19	19	5	±0.0150
N20	20	6	±0.0150
N21	21	6	±0.0150
N22	22	6	±0.0150
N23	23	6	±0.0150
N24	24	6	±0.0150
N25	25	6	±0.0150
N26	26	6	±0.0150
N27	27	6	±0.0150
N28	28	6	±0.0150
N29	29	6	±0.0150
N30	30	6	±0.0150
N31	31	6	±0.0150
N32	32	6	±0.0150
N33	33	6	±0.0150
N34	34	6	±0.0150
N35	35	6	±0.0150
N36	36	6	±0.0150
N37	37	6	±0.0150
N38	38	6	±0.0150

Nominal	d _{H7}	b _{JIS9}	t Tolerance
N39	39	6	±0.0150
N40	40	6	±0.0150
N41	41	6	±0.0150
N42	42	6	±0.0150
N43	43	6	±0.0150
N44	44	6	±0.0150
N45	45	6	±0.0150
N46	46	6	±0.0150
N47	47	6	±0.0150
N48	48	6	±0.0150
N49	49	6	±0.0150
N50	50	6	±0.0150
N55	55	6	±0.0150
N60	60	6	±0.0150
N61	61	6	±0.0150
N62	62	6	±0.0150
N63	63	6	±0.0150
N64	64	6	±0.0150
N65	65	6	±0.0150
N66	66	6	±0.0150
N67	67	6	±0.0150
N68	68	6	±0.0150
N69	69	6	±0.0150
N70	70	6	±0.0150

Keyway Dimensions C: Old JIS Keyway Dimensions

DH7 Shaft Bore Dia. and Code	b _{F7}	t Tolerance
C10	4	±0.015
C12	4	±0.015
C15	5	±0.022
C16	5	±0.010
C18	5	±0.010
C19	5	±0.010
C20	5	±0.010
C30	7	±0.015
C33	7	±0.015
C34	7	±0.015
C35	7	±0.015
C36	7	±0.015
C37	7	±0.015
C38	7	±0.015
C39	7	±0.015
C40	7	±0.015
C41	7	±0.015
C42	7	±0.015
C43	7	±0.015
C44	7	±0.015
C45	7	±0.015
C50	10	±0.028
C55	10	±0.013
C60	10	±0.013
C61	10	±0.013
C62	10	±0.013
C63	10	±0.013
C64	10	±0.013
C65	10	±0.013
C66	10	±0.013
C67	10	±0.013
C68	10	±0.013
C69	10	±0.013
C70	10	±0.013

For alterations for S14M Type, see the relevant product page (P.1406).

Alterations	Code	Spec.		Ordering Code
		Description	Type-by-Type Condition Formula and Caution	
Set Screw Angle	KC90	Changes an angle of set screw to 90°.	For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	KC90
	KC120	Changes angle layout of set screws to 120°.	For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.	KC120
Flange Swaging	NFC	Flange is not installed. (Flange 2 pcs. Included)	Not applicable to Shape K.	NFC
	RFC	Flange installed by swaging only on either hub side (RFC) or the opposite side (LFC) at the time of shipment. (Flange 1 pc. Included)	Not applicable to Shapes K and D.	RFC
	LFC	Flange installed by swaging only on either hub side (RFC) or the opposite side (LFC) at the time of shipment. (Flange 1 pc. Included)	Not applicable to Shapes K and D.	LFC
	FC	Lowers flange by cutting.	No surface treatment is applied on flange circumference. Not available for Stainless Steel Type. FC: 0.5mm Increment	FC33
Adds taper for retaining bearing	BTC	Adds taper for retaining bearing inner ring.	Surface treatment may not be applied to shaft bores on the tapered area. Applicable to Shape A only. Applicable to Shaft Bore Specs. H and V only. Not available for GT and YU.	BTC4-TL1.5
	SLH	Changes the length of the included set screws.	Set Screws SLH M3x3 6 M4x3 5, 8 M5x4 6, 10 M6x5 10 M8x6 10, 12 M10x8 12, 15	SLH10
Hub Shortening	BC	Cuts the hub length in 0.5mm increment.	Applicable to Shape B only. Clear anodized products may not have surface treatment on machined hub surfaces. Not available for P2M, P3M	BC6.5

Alterations	Code	Spec.		Ordering Code	
		Description	Type-by-Type Condition Formula and Caution		
Side Hole Machining	KSC	Machines through hole on the side surface.	Applicable to Shaft Bore Specs. H and V only. Not available for P2M, P3M. Not applicable to Shape K.	KSC20-K5	
	KFC	Machines tapped hole on the side surface of hub side.	Minimum Thickness: 2mm Shape A: d+K+4<K C: E-(K+4) Shape B: d+K+4<K C: D-(K+4) Shape D: d+K+4<K C: D-(K+4) When the Shaft Bore Specs. is V, Z+K+4<K C: D-(K+4)	KFC20-K5	
	KTC	Machines side through holes and tooth face tapped holes might interfere with each other. For details, see the relevant CAD data.	Side through holes and tooth face tapped holes might interfere with each other. For details, see the relevant CAD data.	KTC20-K5	
	QSC	Machines tapped hole on the side surface of hub side.	Applicable to Shaft Bore Specs. H and V only. Not available for P2M, P3M. Not applicable to Shape K. Combination with KC90 is not available.	QSC28-M4	
	QFC	Machines side through holes and tooth face tapped holes might interfere with each other. For details, see the relevant CAD data.	Minimum Thickness: 2mm Shape A: d+M+4<Q C: E-(M+4) Shape B: d+M+4<Q C: D-(M+4) Shape D: d+M+4<Q C: D-(M+4) When the Shaft Bore Specs. is V, Z+K+4<Q C: D-(K+4)	QFC28-M4	
	QTC	Machines side through holes and tooth face tapped holes might interfere with each other. For details, see the relevant CAD data.	Minimum Thickness: 2mm Shape A: d+M+4<Q C: E-(M+4) Shape B: d+M+4<Q C: D-(M+4) Shape D: d+M+4<Q C: D-(M+4) When the Shaft Bore Specs. is V, Z+K+4<Q C: D-(K+4)	QTC28-M4	
	TPC	Changes the tapped hole dimension.	Applicable to Shaft Bore Specs. P, N, C only. Not available for GT, YU, P2M, P3M. Not applicable to MXL Type - Shape K.	TPC5	
	Changes the length of the included set screws	SLH	Changes the length of the included set screws.	Set Screws SLH M3x3 6 M4x3 5, 8 M5x4 6, 10 M6x5 10 M8x6 10, 12 M10x8 12, 15	SLH10

Timing Pulleys / Belts Information about Related Products

Timing Pulleys - Lineup Expanded

Small Equipment-dedicated

In response to sanitary / environmental needs

Belt Type Lineup Expanded the number of teeth expanded for **Stainless Steel Pulleys**



1.5GT	P.1381
T2.5	P.1415



MXL	P.1389
XL	P.1391
S2M	P.1397
S3M	P.1399
S5M	P.1401

Timing Pulleys Volume Discount Rate Expanded

For purchasing of 10 or more pcs., the discount rate has been expanded sharply.



Volume Discount Rate-based Price Example: HTPA20S5M100-A-N10

(S5M Type, 2000 Aluminum Alloy, Number of Teeth: 20, Belt Width: 10mm, With shaft bore and keyway)

Volume Discount Rate-expanded Products

Usage	Belt Type	Catalog Page
Regular Torque	MXL	P.1389
	XL	P.1391
	L	P.1393

Usage	Belt Type	Catalog Page
High Torque	S2M	P.1397
	S3M	P.1399
	S5M	P.1401
	S8M	P.1403

For detailed discount rate, see each relevant page on the catalog.

New Products of Timing Belt Clamp Plate

Timing Belt Clamp Plates - Multi Fitting Type TBC, TBCL (Catalog Page P.1-1479)

Lineup for small equipment

Space-saving belts compatible

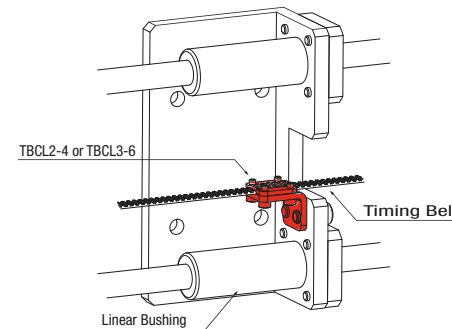
Width 4~15mm

Timing Belt Clamp Plates - Comparison in Specifications

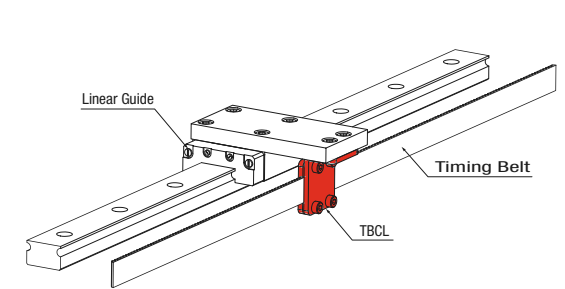
Item	New Product		Existing Product		
	Provided at low price with the size reduced		Various options are offered in the mounting hole/pitch.		
	TBC	TBCL	TBCK	TBCF	TBCR
Accessory	Fitting Plate Screw	Fitting Plate L Sheet Metal Screw	Rack Support Plate Screws	Rack	Rack
Overpressure Protection Function	Provided		Provided	Not Provided	

* The above unit prices are for products compatible with the 3mm belt pitch and the 6mm belt width.

Example of mounting the plate perpendicularly to the L-shaped Bracket (P.1-1479)



Example of mounting the plate horizontally to the L-shaped Bracket (P.1-1479)



New Related Products

Information about Linear Guide Mounting Plate Sets

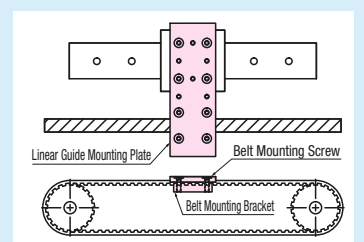
Timing Pulleys and Linear Guide Mount Plates unexpectedly hard to mate to each other are sold as standard sets.

- A Linear Guide Mounting Plate, Timing Belt Clamp Plate and Belt Mounting Screws are integrated into a single set.
- The belt Overpressure Protection function is provided.
- Extra Low Head Cap Screws are adopted to reduce plate thickness.

With such various features,

Applicable Belt TYPE	XL,L,S3M,S5M,S8M,T5
	TBLG
Catalog Page	P.1481

In case of TBLG



High Torque Timing Pulleys - 1.5GT, 2GT

Compatible with 1.5GT and 2GT Types from Gates Unitta Asia Company.

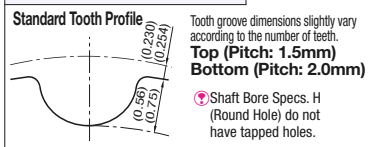
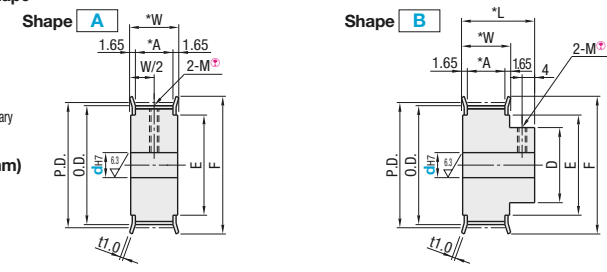
For 2GT High Torque Timing Belts, see **P.1459** and for 2GT Idlers with Teeth, see **1453**. For 1.5GT High Torque Timing Belts, see the VONA Site.

Type	Belt Width				Material*		Surface Treatment	Accessory* Set Screws
	4mm	6mm	8mm	9mm	Pulley	Flange		
GPA	GT15040	GT2040	GT2060	GT2090	A2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.

*The above material and accessory might be changed to the ones equivalent to the originals.
 Ⓢ Flange is installed, and set screws are included with Shaft Bores P and N.



Pulley Shape



Number of Teeth, Dimension: 1.5GT

mm	18	20	24	30	36
P.D.	8.59	9.55	11.46	14.32	17.19
O.D.	8.13	9.09	11.00	13.86	16.73
D	-	-	-	8	10
F	13	14	16	18	22
E	6	7	8	10	13

Belt Nominal Width / Dimension

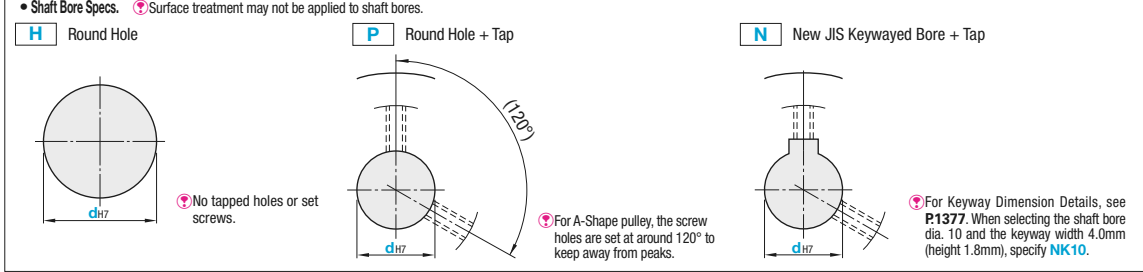
mm	GT15040	GT2040	GT2060	GT2090
A	5.0	5.0	7.0	10.0
W	8.3	8.3	10.3	13.3
L	16.0	16.0	18.0	21.0

Tapped Hole Dimensions (Shaft Bore Specs.: P, N)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screws
5	M3	M3x3
6-22	M4	M4x3

Number of Teeth, Dimension: 2GT

mm	14	15	16	18	20	21	22	24	25	26	28	30	32	34	36	38	40	44	48	50	60
P.D.	8.91	9.55	10.19	11.46	12.73	13.37	14.01	15.28	15.92	16.55	17.83	19.10	20.37	21.65	22.92	24.19	25.46	28.01	30.56	31.83	38.20
O.D.	8.40	9.04	9.68	10.95	12.22	12.86	13.50	14.77	15.41	16.04	17.32	18.59	19.86	21.14	22.41	23.68	24.95	27.50	30.05	31.32	37.69
D	-	-	-	-	-	8	10	10	10	11	13	14	14	16	17	19	22	22	22	22	28
F	13	14	14	16	17	18	18	20	21	23	24	25	27	27	29	30	32	35	36	42	42
E	6	7	7	8	9	10	10	12	12	12	14	15	17	18	18	20	21	23	26	27	33



1.5GT

Type	Part Number	Number of Teeth	Type Nominal Width	Pulley Shape	Pulley Shape							
					A			B				
Aluminum GPA	GT15040	18	A	H Round Hole			P Round Hole + Tap			N: Keyway + Tap		
		20		3			-			-		
		24		3, 4			-			-		
		30		4, 5			5			-		
		36		4, 5, 6			5, 6			4		
Aluminum GPA	GT2040	14	A	5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			8		
		15		3			-			-		
		16		3, 4			-			-		
		18		3, 4			-			-		
		20		4, 5			-			-		
		21		4, 6			-			-		
		22		4, 6			4			-		
		24		5, 6, 6.35, 7			5			-		
		25		5, 6, 6.35, 7			5, 6, 6.35, 7			-		
		26		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		28		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		30		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		32		5, 6, 6.35, 7-10			5, 6, 6.35, 7-10			5, 6		
		34		6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8		
		36		6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8		
38	6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8					
40	6, 6.35, 7-12			6, 6.35, 7-12			8					
44	6, 6.35, 7-15			6, 6.35, 7-15			8, 10, NK10					
48	8-17			8-15			8, 10, NK10, 11-13					
50	8-17			8-16			8, 10, NK10, 11-14					
60	8-24			8-22			8, 10, NK10, 11-19					

2GT

Type	Part Number	Number of Teeth	Type Nominal Width	Pulley Shape	Pulley Shape							
					A			B				
Aluminum GPA	GT2060	14	A	H Round Hole			P Round Hole + Tap			N: Keyway + Tap		
		15		3			-			-		
		16		3, 4			-			-		
		18		3, 4			-			-		
		20		4, 5			-			-		
		21		4, 6			-			-		
		22		4, 6			4			-		
		24		5, 6, 6.35, 7			5			-		
		25		5, 6, 6.35, 7			5, 6, 6.35, 7			-		
		26		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		28		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		30		5, 6, 6.35, 7, 8			5, 6, 6.35, 7, 8			-		
		32		5, 6, 6.35, 7-10			5, 6, 6.35, 7-10			5, 6		
		34		6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8		
		36		6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8		
		38		6, 6.35, 7-10			6, 6.35, 7-10			6, 6.35, 7, 8		
		40		6, 6.35, 7-12			6, 6.35, 7-12			8		
		44		6, 6.35, 7-15			6, 6.35, 7-15			8, 10, NK10, 11		
		48		8-17			8-15			8, 10, NK10, 11-13		
		50		8-17			8-16			8, 10, NK10, 11-14		
60	8-24			8-22			8, 10, NK10, 11-19					

Ordering Example: Part Number - Pulley Shape - Shaft Bore Specs., I.D.
 GPA32GT2060 - A - H8

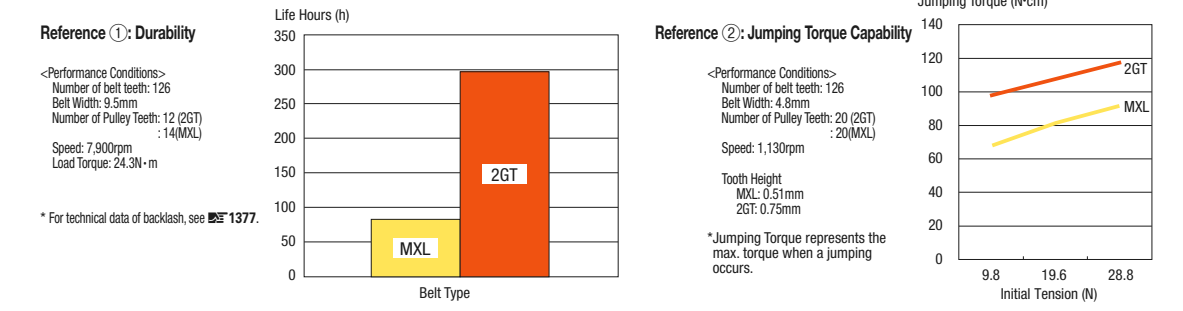
Number of Teeth	Body Price								Shaft Bore Machining Charge (Body Price +)			
	2000 Series Aluminum Alloy (Clear Anodize)											
	GT15040		GT2040		GT2060		GT2090		1.5GT		2GT	
	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	P Hole	N Hole	P Hole	N Hole
14												
15												
16												
18												
20												
21												
22												
24												
25												
26												
28												
30												
32												
34												
36												
38												
40												
44												
48												
50												
60												

Alterations: Part Number - Pulley Shape - Shaft Bore Specs., I.D. - (KC90-etc.)
 GPA32GT2060 - A - H8 - NFC

Alterations Code	Set Screw Angle	No Flange	Single Flange	Flange Cut	Hub Shortening
KC90	NFC	RFC, LFC	FC	BC	
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. Included) NFC	(Flange 1 pc. Included) RFC, LFC	Cuts the flange O.D. in 0.5mm increment. FC17 Application Notes: FC<(O.D.)+1 FC<F-2 No surface treatment is applied on flange circumference.	Cuts the hub length in 0.5mm increment. BC6.5 Application Notes: Shaft Bore Specs. H: 3<BC<L-W Shaft Bore Specs. P, N: M+3<BC<L-W Not available for Shape A.

Alterations Code	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
KTC, QTC	KFC, QFC	KSC, QSC	
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side KTC20-K5.0 QTC28-M4 K4.0-K8.0 (0.5mm Increment) M3, M4, M5, M6, M8 Application Notes: Specify KC90 when selecting KFC/QFC for Shaft Bore Specs. P, N and C. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data.	Machine Through Hole / Tapped Hole on the side surface of hub side KFC20-K5.0 QFC28-M4 K4.0-K8.0 (0.5mm Increment) M3, M4, M5, M6, M8 Application Notes: Specify KC90 when selecting KFC/QFC for Shaft Bore Specs. P, N and C. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data.	Machine Through Hole / Tapped Hole on the side surface of hub side KSC20-K5.0 QSC28-M4 K4.0-K8.0 (0.5mm Increment) M3, M4, M5, M6, M8 Application Notes: KSC/QSC is not applicable to the Shaft Bore Specs. P and N. Not available for 1.5GT

Performance Comparison between MXL and 2GT Belts



High Torque Timing Pulleys - 3GT

Compatible with 3GT Type from Gates Unitta Asia Company.

For High Torque Timing Belts, see **P.1459** and for Idlers with Teeth, see **P.1453**

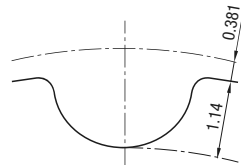


RoHS

Type	Belt Width			Material*		Surface Treatment	Accessory* Set Screws
	6mm	9mm	15mm	Pulley	Flange		
GPA	●	●	●	2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
GPT	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	-	Chrome Molybdenum Steel
GPM	●	●	●			Black Oxide	(Black Oxide)

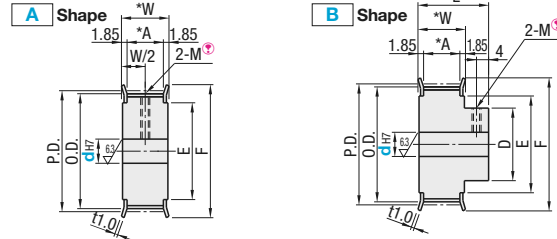
Flange is installed, and set screws are included with Shaft Bore P and N. *The above material and accessory might be changed to the ones equivalent to the originals.

Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:3.0mm)

Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N)

dh7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
5	M3	M3x3
6-17	M4	M4x3
18-38	M5	M5x4

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

For Shape B, 20 or less teeth is not selectable.

Number of Teeth / Dimension

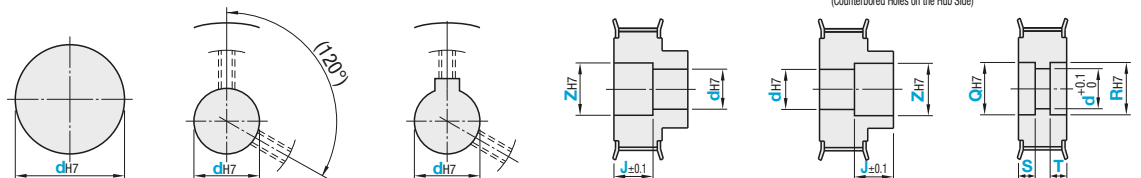
mm	Number of Teeth																
	16	18	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60
P.D.	15.28	17.19	19.10	21.01	22.92	23.87	24.83	26.74	28.65	30.56	32.47	34.38	38.20	42.02	45.84	47.75	57.30
O.D.	14.52	16.43	18.34	20.25	22.16	23.11	24.07	25.98	27.89	29.80	31.71	33.62	37.44	41.26	45.08	46.99	56.54
D	-	-	-	12	14	14	15	17	19	20	22	24	28	30	32	34	36
F	19	21	23	24	26	27	28	30	32	34	36	38	42	46	49	51	61
E	11	12	14	16	18	18	19	21	23	25	27	29	33	36	40	42	52

Belt Nominal Width / Dimension

mm	Nominal		
	GT3060	GT3090	GT3150
A	7.3	10.3	16.3
W	11.0	14.0	20.0
L	19.0	22.0	28.0

Shaft Bore Specs. Surface treatment may not be applied to shaft bores.

H Round Hole P Round Hole + Tap N New JIS Keywayed Bore + Tap V Stepped Hole F Stepped Hole Y Both Ends Stepped Hole



No tapped holes or set screws. For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks. For Keyway Dimension Details, see P.1377. When selecting the shaft bore dia. 10 and the keyway width 4.0mm (height 1.8mm), specify NK10. No tapped holes or set screws. Applicable to Shape B only. No tapped holes or set screws. Applicable to Shape A only. No tapped holes or set screws.

Part Number	Type	Number of Teeth	Nominal Width	Pulley Shape															
				A						B									
				Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter						
				H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	
16	Aluminum			4-6, 6.35, 7	-	-	4, 5, 6, 7	4, 5, 6, 7											
18				5, 6, 6.35, 7, 8	5	-	5, 6, 7, 8	5, 6, 7, 8											
20				5, 6, 6.35, 7-9	5, 6	-	5-7, 7-9	5-7, 7-9											
22				6, 6.35, 7-10	6, 6.35, 7	-	6-7, 8-9	6-7, 8-9											
24				6, 6.35, 7-10	6, 6.35, 7, 8	-	6-7, 8-9	6-7, 8-9											
25				6, 6.35, 7-11	6, 6.35, 7-10	-	6-8, 8-11	6-8, 8-11											
26				6, 6.35, 7-11	6, 6.35, 7-11	8	6-8, 8-11	6-8, 8-11											
28				6, 6.35, 7-13	6, 6.35, 7-13	8, 10, NK10	6-10, 8-12	6-10, 8-12											
30				6, 6.35, 7-15	6, 6.35, 7-14	8, 10, NK10	6-13, 8-15	6-13, 8-15											
32				6, 6.35, 7-17	6, 6.35, 7-14	8, 10, NK10, 11, 12	6-15, 8-17	6-15, 8-17											
34				8-20	8-16	8, 10, NK10, 11-13	8-18, 10-23	8-18, 10-23											
36				8-20	8-18	8, 10, NK10, 11-14	8-18, 10-23	8-18, 10-20											
40				8-24	8-23	8, 10, NK10, 11-17	8-22, 10-24	8-22, 10-24											
44				10-28	10-25	10, NK10, 11-20	10-26, 12-28	10-26, 12-28											
48				10-30	10-25	10, NK10, 11-23	10-28, 12-30	10-28, 12-30											
50				10-32	10-28	10, NK10, 11-24	10-30, 12-32	10-30, 12-32											
60				12-38	12-38	12-30	12-36, 14-38	12-36, 14-38											

Ordering Example (Shaft Bore Specs.: H, P, N) GPA30GT3060 - A - H10 (Shaft Bore Specs.: V, F) GPA40GT3150 - B - V12 - Z14 - J18.0 (Shaft Bore Specs.: Y) GPA36GT3090 - A - Y15 - Q18 - R20 - S3 - T4

Number of Teeth	Body Price												Shaft Bore Machining Charge (Body Price +)				
	2000 Aluminum Alloy (Clear Anodize)				EN 1.1191 Equiv.				EN 1.1191 Equiv. (Black Oxide)								
	GT3060	GT3090	GT3150	GT3060	GT3090	GT3150	GT3060	GT3090	GT3150	GT3060	GT3090	GT3150	P Hole	N/V/F Hole	Y Hole		
16																	
18																	
20																	
22																	
24																	
25																	
26																	
28																	
30																	
32																	
34																	
36																	
40																	
44																	
48																	
50																	
60																	

Alterations Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC90...etc.) - FC30.0

Alterations Code	Set Screw Angle	No Flange	Single Flange	Flange Cut	Hub Shortening
KC90	NFC	RFC, LFC	FC	BC	
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. Included) NFC	(Flange 1 pc. Included) RFC	Cut the flange O.D. in 0.5mm increment. FC17	Cuts the hub length in 0.5mm increment. BC6.5

Alterations Code	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
KTC, QTC	KFC, QFC	KSC, QSC	
Spec.	Machines through hole / tapped hole on the side surface. KTC20-K5.0, QTC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8	Machines through hole / tapped hole on the side surface. KFC20-K5.0, QFC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8	Machines through hole / tapped hole on the side surface. KSC20-K5.0, QSC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8

For details, see the "Timing Pulley Alterations - Overview" section P.1378.

High Torque Timing Pulleys - 5GT

Compatible with 5GT Type from Gates Unitta Asia Company.

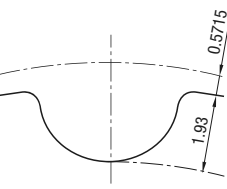
For Super High Torque Timing Belts (compatible with EV5GT belts), see **P.1461** and for Idlers with Teeth, see **P.1453**



Type	Belt Width			Material*		Surface Treatment	Accessory* Set Screws
	9mm	12mm	15mm	Pulley	Flange		
GPA	●	●	●	2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
GPT	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	-	Chrome Molybdenum Steel (Black Oxide)
GPM	●	●	●			Black Oxide	(Black Oxide)

*Flange is installed, and set screws are included with Shaft Bore P and N. *The above material and accessory might be changed to the ones equivalent to the originals.

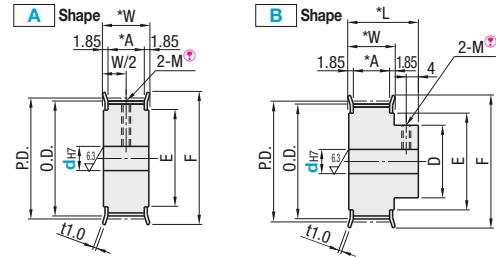
Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:5.0mm)

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
6~12	M4	M4x3
13~30	M5	M5x4
31~45	M6	M6x5 (Shape A only)

Number of Teeth / Dimension

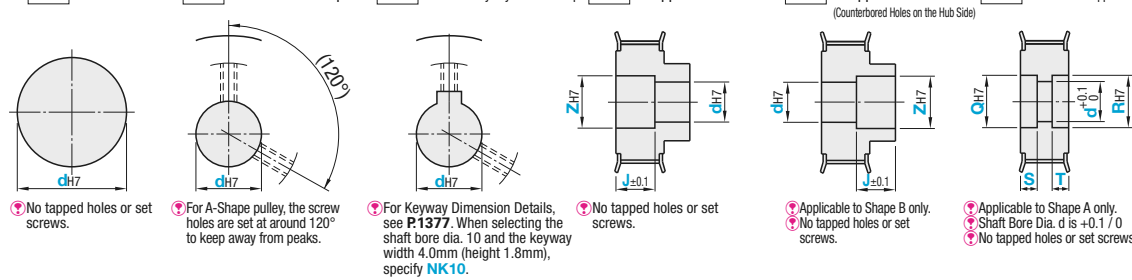
mm	Number of Teeth																		
	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60
P.D.	22.28	23.87	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49
O.D.	21.14	22.73	24.32	27.51	30.69	33.87	37.06	38.65	40.24	43.42	46.61	49.79	52.97	56.16	62.52	68.89	75.25	78.44	94.35
D	12	13	15	18	20	22	26	28	28	30	32	34	36	38	40	42	46	46	52
F	26	27	29	32	35	39	42	43	45	48	51	55	58	61	67	74	80	83	99
E	16	17	19	22	24	27	30	32	33	36	39	42	46	49	55	62	68	71	87

Belt Nominal Width / Dimension

mm	Nominal		
	GT5090	GT5120	GT5150
A	10.3	13.3	16.3
W	14.0	17.0	20.0
L	22.0	25.0	28.0

Shaft Bore Specs.

Surface treatment may not be applied to shaft bores.



Type	Number of Teeth	Type	Nominal Width	Pulley Shape														
				A							B							
				Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter							Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter							
				H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Both Ends Stepped	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Both Ends Stepped	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	Both Ends Stepped
Aluminum GPA	14	GT5090	A	6, 6.35, 7-10	6, 6.35, 7, 8	8, 10, NK10	6, 8	6, 8	6, 6.35, 7, 8			6, 8	6, 8	6, 6.35, 7, 8			6, 8	6, 8
Steel GPT	15	GT5120	B	6, 6.35, 7-10	6, 6.35, 7, 8	8, 10, NK10, 11, 12	6-8	8-10	6, 6.35, 7-10			6, 8	8-10	6, 6.35, 7-10			6, 8	8-10
GPM	16	GT5150	A	6, 6.35, 7-12	6, 6.35, 7-10	8, 10, NK10	8	6-10	6, 6.35, 7-12	6		6-8	8-10	6, 6.35, 7-12	6		6-8	8-10
	18			6, 6.35, 7-14	6, 6.35, 7-13	8, 10, NK10	6-10	8-12	6, 6.35, 7-14	6, 6.35, 7-9		6-10	8-12	6, 6.35, 7-14	6, 6.35, 7-9		6-10	8-12
	20			8-16	8-14	8, 10, NK10, 11, 12	8-14	10-16	8-15	8-10	8	8-13	10-15	8-15	8-10	8	8-14	10-16
	22			8-19	8-17	8, 10, NK10, 11, 12	8-17	10-19	8-19	8-12	8	8-14	10-16	8-17	10-19	8	8-14	10-16
	24			8-22	8-18	8, 10, NK10, 11-14	8-20	10-23	8-22	8-16	8, 10, NK10	8-16	10-18	8-22	8-16	8, 10, NK10	8-16	10-18
	25			8-22	8-20	8, 10, NK10, 11-16	8-20	10-23	8-22	8-16	8, 10, NK10, 11, 12	8-18	10-20	8-22	8-16	8, 10, NK10, 11, 12	8-18	10-20
	26			10-27	10-21	10, NK10, 11-17	10-25	12-27	10-24	10-16	10, NK10, 11-13	10-20	12-22	10-24	10-16	10, NK10, 11-13	10-20	12-22
	28			10-27	10-24	10, NK10, 11-19	10-25	12-27	10-27	10-20	10, NK10, 11-15	10-25	12-27	10-27	10-20	10, NK10, 11-15	10-25	12-27
	30			10-28	10-26	10, NK10, 11-20	10-26	12-28	10-26	10-22	10, NK10, 11-16	10-26	12-28	10-26	10-22	10, NK10, 11-16	10-26	12-28
	32			10-32	10-30	10, NK10, 11-23	10-30	12-32	10-30	10-22	10, NK10, 11-17	10-26	12-28	10-30	10-22	10, NK10, 11-17	10-26	12-28
	34			12-37	12-32	12-26	12-35	14-37	12-37	12-24	12-18	12-28	14-30	12-37	12-24	12-18	12-28	14-30
	36			12-37	12-34	12-30	12-35	14-37	12-37	12-26	12-20	12-30	14-32	12-37	12-26	12-20	12-30	14-32
	40			12-42	12-36	12-30	12-40	14-42	12-42	12-26	12-22	12-32	14-34	12-42	12-26	12-22	12-32	14-34
	44			12-50	12-42	12-30	12-48	14-50	12-48	12-26	12-23	12-34	14-36	12-50	12-26	12-23	12-34	14-36
	48			12-55	12-45	12-30	12-53	14-55	12-53	12-30	12-26	12-36	14-38	12-55	12-30	12-26	12-36	14-38
	50			12-59	12-45	12-30	12-57	14-59	12-57	12-30	12-27	12-38	14-40	12-59	12-30	12-27	12-38	14-40
	60			12-72	12-45	12-30	12-70	14-72	12-70	12-30	12-30	12-40	14-42	12-72	12-30	12-30	12-40	14-42

Ordering Example: Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T

(Shaft Bore Specs.: H, P, N) GPA20GT5090 - A - N10

(Shaft Bore Specs.: V, F) GPA36GT5120 - B - V20 - Z22 - J10.0

(Shaft Bore Specs.: Y) GPA40GT5150 - A - Y25 - Q27 - R35 - S5 - T7

Number of Teeth	Body Price									Shaft Bore Machining Charge (Body Price +)			
	2000 Aluminum Alloy (Clear Anodize)			EN 1.1191 Equiv.			EN 1.1191 Equiv. (Black Oxide)						
	GT5090	GT5120	GT5150	GT5090	GT5120	GT5150	GT5090	GT5120	GT5150				
	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	P Hole	N, V, F Hole	Y Hole
14													
15													
16													
18													
20													
22													
24													
25													
26													
28													
30													
32													
34													
36													
40													
44													
48													
50													
60													

Alterations: Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC90...etc.)

GPA20GT5090 - A - N10 - KC90

Alterations	Set Screw Angle	No Flange	Single Flange	Flange Cut	Hub Shortening
Code	KC90	NFC	RFC, LFC	FC	BC
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. included) Ordering Code: NFC	(Flange 1 pc. included) Ordering Code: RFC	Cut the flange O.D. in 0.5mm increment. Ordering Code: FC17. Application Notes: FC$(O.D.)+1$, FC$F-2$. No surface treatment is applied on flange circumference.	Cuts the hub length in 0.5mm increment. Ordering Code: BC5. Application Notes: Shaft Bore Specs. H, V, F, 3$\leq BC$-L-W, P, N: M-3, BC$\leq L-W$. Not available for Shape A.

Alterations	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
Code	KTC, QTC	KFC, QFC	KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KTC20-K5.0, (Tapped Hole): QTC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment), Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Application Notes: Not applicable to Shaft Bore Specs. F or Y. When KTC/QTC is selected for Shaft Bore Specs. P and N, KC90 is not available.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KFC20-K5.0, (Tapped Hole): QFC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment), Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Application Notes: Not applicable to Shaft Bore Specs. F or Y. Specify KC90 when selecting KFC/QFC for Shaft Bore Specs. P and N. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KSC20-K5.0, (Tapped Hole): QSC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment), Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Application Notes: Not applicable to Shaft Bore Specs. F or Y. KSC/QSC is not applicable to the Shaft Bore Specs. P and N.

For details, see the "Timing Pulley Alterations - Overview" section P.1378.

High Torque Timing Pulleys - 8YU

Compatible with EV8YU
Type from Gates Unitta Asia
Company.

For Super High Torque Timing Belts (compatible EV8YU belts), see **P.1461** and for Idlers with Teeth, see **P.1453**.

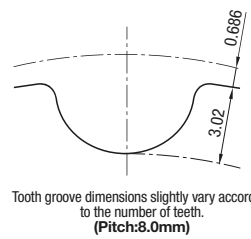


RoHS

Type	Belt Width			Material*		Surface Treatment	Accessory* Set Screws
	15mm	20mm	25mm	Pulley	Flange		
GPA	●	●	●	2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
GPT	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	-	Chrome Molybdenum Steel (Black Oxide)
GPM	●	●	●			Black Oxide	

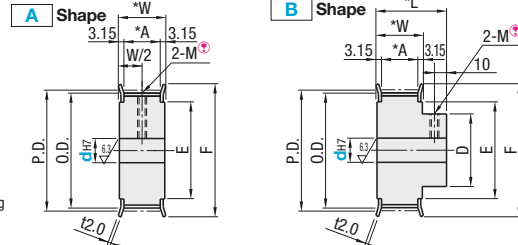
*Flange is installed, and set screws are included with Shaft Bores P and N. *The above material and accessory might be changed to the ones equivalent to the originals.

Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:8.0mm)

Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N)

dh7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screws
16~17	M5	M5x4
18~30	M6	M6x5
31~45	M8	M8x6
46~65	M10	M10x8

Belt Nominal Width / Dimension

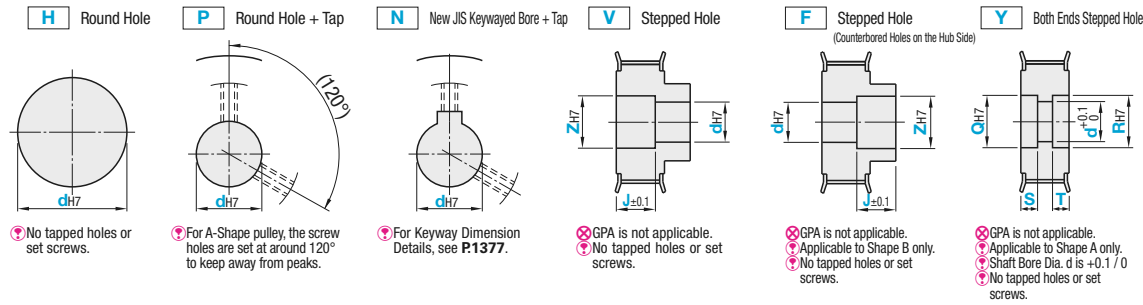
mm	Nominal		
	YU8150	YU8200	YU8250
A	16.7	21.7	26.7
W	23.0	28.0	33.0
L	43.0	48.0	53.0

Number of Teeth / Dimension

mm	Number of Teeth															
	20	22	24	25	26	28	30	32	34	36	38	40	44	48	50	60
P.D.	50.93	56.02	61.12	63.66	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	152.79
O.D.	49.56	54.65	59.75	62.29	64.84	69.93	75.02	80.12	85.21	90.30	95.40	100.49	110.68	120.86	125.95	151.42
D	36	40	44	46	48	52	56	60	64	68	72	74	78	80	82	88
F	62	64	70	72	75	80	85	90	95	100	105	110	121	131	136	161
E	40	45	50	52	54	59	64	69	74	79	84	89	99	109	114	140

Shaft Bore Specs.

Surface treatment may not be applied to shaft bores.



Part Number	Type	Number of Teeth	Type	Pulley Shape	Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter														
					A						B								
Aluminum GPA	YU8150	20	A	A	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	F Stepped Hole	Y Both Ends Stepped Hole	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V Stepped Hole	F Stepped Hole	Y Both Ends Stepped Hole			
					16-32	16-28	16-21	16-30	18-32	16-30	16-20	16-18	16-30	18-32	16-30	16-20	16-18	16-30	18-32
					16-37	16-29	16-26	16-35	18-37	16-35	16-24	16-22	16-32	18-34	16-37	16-24	16-22	16-32	18-34
					16-42	16-34	16-30	16-40	18-42	16-40	16-28	16-24	16-38	18-40	16-40	16-28	16-24	16-38	18-40
					16-48	16-36	16-30	16-46	18-48	16-46	16-30	16-26	16-40	18-42	16-42	16-30	16-26	16-40	18-42
					16-50	16-38	16-30	16-48	18-50	16-48	16-30	16-28	16-43	18-45	16-48	16-32	16-28	16-43	18-45
					16-52	16-42	16-30	16-50	18-52	16-50	16-30	16-26	16-44	18-46	16-50	16-35	16-30	16-44	18-46
					16-59	16-45	16-30	16-57	18-59	16-57	16-30	16-26	16-48	18-50	16-50	16-39	16-30	16-48	18-50
					20	20-59	20-48	20-30	20-57	22-59	20-57	22-59	20-57	22-59	20-55	20-42	20-30	20-48	22-50
					22	20-67	20-52	20-30	20-65	22-67	20-65	22-67	20-65	22-67	20-58	20-45	20-30	20-54	22-56
					24	20-72	20-58	20-30	20-70	22-72	20-70	22-72	20-70	22-72	20-64	20-48	20-30	20-60	22-62
					25	20-76	20-62	20-30	20-74	22-76	20-74	22-76	20-74	22-76	20-68	20-52	20-30	20-62	22-64
					26	25-80	25-65	25-30	25-80	27-82	25-75	27-82	25-75	27-82	25-70	25-54	25-30	25-64	27-66
					28	25-80	25-65	25-30	25-80	27-92	25-75	27-92	25-75	27-92	25-72	25-56	25-30	25-66	27-68
					28	25-80	25-65	25-30	25-80	27-95	25-75	27-95	25-75	27-95	25-74	25-58	25-30	25-68	27-70
					32	25-80	25-65	25-30	25-80	27-95	25-75	27-95	25-75	27-95	25-76	25-60	25-30	25-70	27-72
36	30-80	30-65	30	30-80	32-95	30-75	32-95	30-75	32-95	30-80	30-65	30	30-72	32-74					

Ordering Example: (Shaft Bore Specs.: H, P, N) **GPA30YU8150 - A - P25**
 (Shaft Bore Specs.: V, F) **GPT36YU8200 - B - V20 - Z24 - J20.0**
 (Shaft Bore Specs.: Y) **GPM40YU8250 - A - Y30 - Q34 - R38 - S10 - T15**

Number of Teeth	Body Price														Shaft Bore Machining Charge (Body Price +)		
	2000 Aluminum Alloy (Clear Anodize)				EN 1.1191 Equiv.				EN 1.1191 Equiv. (Black Oxide)								
	YU8150	YU8200	YU8250	YU8150	YU8200	YU8250	YU8150	YU8200	YU8250	YU8150	YU8200	YU8250	YU8150	YU8200	YU8250	P Hole	N, V, F Hole
20																	
22																	
24																	
25																	
26																	
28																	
30																	
32																	
34																	
36																	
38																	
40																	
44																	
48																	
50																	
60																	



Alterations Code	Set Screw Angle KC90	No Flange NFC	Single Flange RFC, LFC	Flange Cut FC	Hub Shortening BC
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. Included) NFC	(Flange 1 pc. Included) RFC, LFC	Cut the flange O.D. in 0.5mm increment. FC17	Cuts the hub length in 0.5mm increment. BC6.5

Alterations Code	Side Through Hole / Side Tapped Hole, 3 places KTC, QTC	Side Through Hole / Side Tapped Hole, 4 places KFC, QFC	Side Through Hole / Side Tapped Hole, 6 places KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side. KTC20-K5.0, QTC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8.	Machine Through Hole / Tapped Hole on the side surface of hub side. KFC20-K5.0, QFC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8.	Machine Through Hole / Tapped Hole on the side surface of hub side. KSC20-K5.0, QSC28-M4, K4.0-K13.0 (0.5mm Increment), M3, M4, M5, M6, M8.

Timing Pulleys - XL

For Timing Pulleys, see **P.1463**, for Keyless Timing Pulleys, see **P.1426** and for Idlers with Teeth, see **P.1445**.

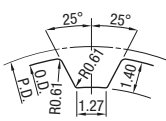


RoHS

Type	Belt Width				Material *1		Surface Treatment	Accessory *1 Set Screw
	6.4 mm (1/4 inch)	7.9 mm (5/16 inch)	9.5 mm (3/8 inch)	12.7 mm (1/2 inch)	Pulley	Flange		
ATP	XL025	XL031	XL037	XL050	A2000 Aluminum Alloy	Aluminum Alloy	Clear Anodize Black Anodize Hard Clear Anodize *2 Electroless Nickel Plating	EN 1.4301 Equiv.
BTP	●	●	●	●				
KTP	●	●	●	●				
NTP	●	●	●	●				
MTP	●	-	-	-	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide Electroless Nickel Plating	EN 1.7220 Equiv. (Black Oxide)
MTPB	●	-	-	-				
MTTP	●	-	-	-				
STP	●	-	-	-	EN 1.4301 Equiv.	EN 1.4301 Equiv.	-	EN 1.4301 Equiv.

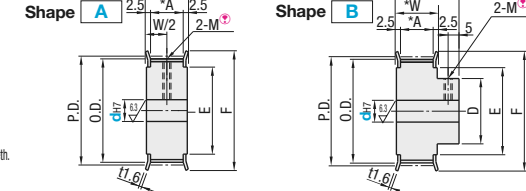
*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV ~
● Flange is installed, and set screws are included with Shaft Bores P, N and C.

Tooth Profile (ISO Standard Rack Dimensions)



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch: 5.08mm)

Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screw
4	M3	M3x3
5-12	M4	M4x3
13-17	M5	M5x4
18-30	M6	M6x5

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Number of Teeth / Dimension

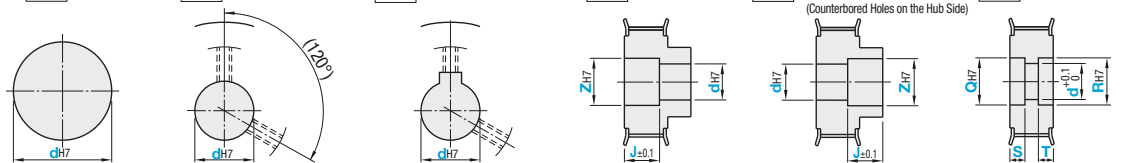
mm	Number of Teeth																				mm	Nominal						
	10	11	12	14	15	16	18	19	20	21	22	24	25	26	28	30	32	34	36	38		40	42	44	46	48	50	60
P.D.	16.17	17.79	19.40	22.64	24.26	25.87	29.11	30.72	32.34	33.96	35.57	38.81	40.43	42.05	45.29	46.91	51.74	54.98	58.21	61.45	64.68	67.91	71.15	74.38	77.62	80.85	97.01	116.43
O.D.	15.66	17.28	18.90	22.13	23.75	25.36	28.60	30.22	31.83	33.45	35.07	38.30	39.92	41.53	44.77	48.00	51.24	54.47	57.70	60.94	64.17	67.41	70.64	73.87	77.11	80.34	96.51	115.92
D	10	10	12	15	17	17	21	21	24	24	26	26	30	30	35	35	40	40	40	40	40	40	40	40	40	40	40	40
F	24	24	25	28	32	32	36	36	40	40	45	45	48	48	55	55	61	61	67	67	74	74	80	80	87	104	123	
E	12	12	15	18	20	20	24	24	27	27	30	30	35	35	40	40	45	45	50	50	58	58	60	60	67	84	102	

Belt Nominal Width / Dimension

mm	XL025	XL031	XL037	XL050
A	7.5	9.0	11.0	14.0
W	12.5	14.0	16.0	19.0
L	21.0	23.0	25.0	28.0

Shaft Bore Specs. Surface treatment may not be applied to shaft bores.

H Round Hole P Round Hole + Tap C Old JIS Keywayed Bore + Tap V Stepped Hole F Stepped Hole (Counterbored Holes on the Hub Side) Y Both Ends Stepped Hole



* No tapped holes or set screws.
 * Not applicable to Shape A with 15 or less teeth and nominal width 025.
 * For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.
 * Shape A with 15 or less teeth and nominal width 025 has keywayed bores only, not tapped holes.
 * For Keyway Dimension Details, see P.1377. When selecting the shaft bore dia. 10 and the keyway with 4.0mm (height 1.8mm) for New JIS Keywayed Bore, specify NK10.
 * Applicable to Shape B only.
 * No tapped holes or set screws.
 * Applicable to Shape A only.
 * Shaft Bore Dia. d is +0.1 / 0
 * No tapped holes or set screws.

Part Number	Type	Number of Teeth	Type Nominal Width	Pulley Shape																				
				Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter						Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter														
				Round Hole		Round Hole + Tap		Keyway + Tap		Stepped Hole		Both Ends Stepped		Round Hole		Round Hole + Tap		Keyway + Tap		Stepped Hole				
				H	P	N, C	V	Y	Q, R	S, T	H	P	N, C	V	Y	Q, R	S, T	H	P	N, C	V	Y	Q, R	S, T
				4-6, 6.35, 7	4-6, 6.35, 7	4-6, 6.35, 7-10	4-6, 6.35, 7-13	4-6, 6.35, 7-11	4-6, 6.35, 7-13	4-6, 6.35, 7-13	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7, 8	4-6, 6.35, 7-11	4-6, 6.35, 7-11	4-6, 6.35, 7-11	4-6, 6.35, 7-11	4-6, 6.35, 7-11	4-6, 6.35, 7-11	4-6, 6.35, 7-11
				5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13	5, 6, 6.35, 7-13
				6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16	6, 6.35, 7-16
				8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19
				8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19	8-19
				8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22
				8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22	8-22
				8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27	8-27
				8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32	8-32
				10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32	10-32
				10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37	10-37
				10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38	10-38
				10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42	10-42
				10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43	10-43
				10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50
				10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50	10-50
				10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52	10-52
				10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55	10-55
				10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59	10-59
				10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76	10-76
				10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80	10-80

Shaft Bore Dia. 8, 11, 13, 14, 17, 21-30 are not available for Shaft Bore Spec. C. Shape A with 15 or less teeth and nominal width XL025 is not available for Shaft Bore Specs. P, and no tapped holes is not added for Shaft Bore Specs. N and C.

Ordering Example	Part Number	Pulley Shape	Shaft Bore Specs., I.D.	Z	J	Q	R	S	T
(Shaft Bore Specs.: H, P, N, C)	ATP24XL037	B	N10	-	-	-	-	-	-
(Shaft Bore Specs.: V, F)	ATP60XL050	B	V20	Z28	J16.0	-	-	-	-
(Shaft Bore Specs.: Y)	ATP40XL050	A	Y20	Q32	R32	S7	T7	-	-

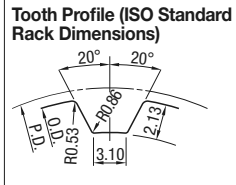
Number of Teeth	Body Price												Shaft Bore Machining Charge (Body Price +)			
	ATP (x1.0)	BTP, KTP (x1.1)	NTP (x1.2)	MTP (x1.0)	MTPB (x1.1)	MTTP (x1.2)	STP (x1.0)	XL025	XL031	XL037	XL050	ATP	BTP, KTP, NTP	MTP, MTPB, MTTP	STP	
10																
11																
12																
14																
15																
16																
18																
19																
20																
21																
22																
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36																
38																

Timing Pulleys - L

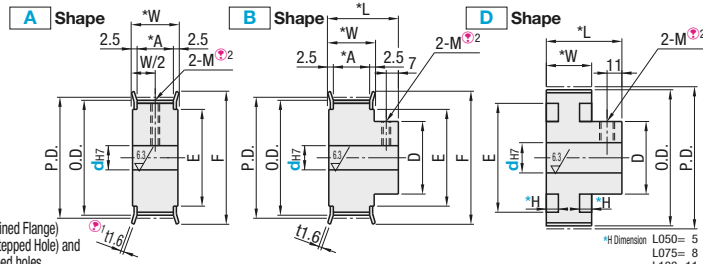
For Timing Belts, see **P.1463**. For Long Timing Belts, see **P.1473**. For Keyless Timing Pulleys, see **P.1428**. For Idlers with Teeth, see **P.1447**.

Type	Belt Width				Material *1		Surface Treatment	Accessory *1 Set Screws
	12.7mm (1/2inch)	19.1mm (3/4inch)	25.4mm (1inch)	38.1mm (1.5inch)	Pulley	Flange		
ATPA	L050	L075	L100	L150	Extra Super Duralumin Aluminum Alloy	Aluminum Alloy	Clear Anodize Black Anodize Hard Clear Anodize *2 Electroless Nickel Plating	EN 1.4301 Equiv.
ATPB	●	●	●	●				
ATPK	●	●	●	●				
ATPN	●	●	●	●				
ATPT	●	●	●	●				
ATP	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide Electroless Nickel Plating	EN 1.7220 Equiv. (Black Oxide)
ATPP	●	●	●	●				

*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Clear Anodize; Film Hardness 300HV -



Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screw
6-12	M4	M4x3
13-17	M5	M5x4
18-30	M6	M6x5
31-45	M8	M8x6
46-65	M10	M10x8

Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch: 9.525mm)
*1 t=2.0 for 60 and 72 toothed pulleys. (Machined Flange)
*2 Shaft Bore Specs. H (Round Hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

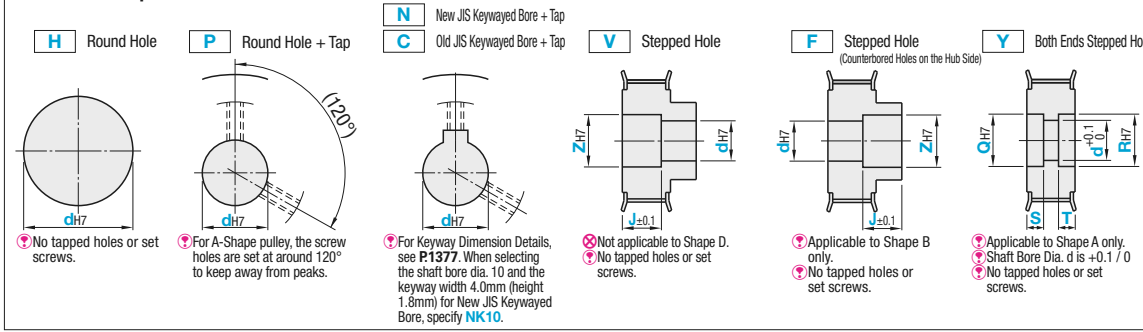
Number of Teeth / Dimension

mm	Number of Teeth																												
	10	12	14	15	16	17	18	19	20	21	22	24	25	26	28	30	32	34	36	38	40	42	44	46	48	50	60	72	
P.D.	33.32	36.38	42.45	45.48	48.51	51.54	54.57	57.61	60.64	63.67	66.70	72.77	75.80	78.83	84.89	87.92	90.95	97.02	103.08	106.15	111.21	121.28	127.34	133.40	138.47	144.53	151.60	161.91	218.30
O.D.	28.56	35.62	41.68	44.72	47.75	50.78	53.81	56.84	59.88	62.91	65.94	72.00	75.04	78.07	84.13	87.20	90.26	102.32	108.39	114.45	120.51	126.58	132.64	138.71	144.77	150.83	161.15	217.53	
D	22	27	30	32	34	36	38	40	42	45	50	50	50	50	56	56	63	63	63	63	71	71	71	71	71	71	71	71	
F	36	45	48	48	55	55	61	67	67	70	80	87	87	87	95	99	104	111	123	127	131	135	140	144	152	160	190	225	
E	24	30	35	35	40	40	45	50	50	56	60	67	67	67	75	80	84	90	102	105	110	115	120	125	130	140	170/160	200/197	

Belt Nominal Width / Dimension

mm	Nominal			
	L050	L075	L100	L150
A	14	21	27	40
W	19	26	32	45
L Number of Teeth 10-50	31	38	44	57
L Number of Teeth 60, 72	39	46	53	57

Shaft Bore Specs.



Part Number	Pulley Shape												
	A						B, D						
	Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter												
Type	Number of Teeth	Type Nominal Width	Pulley Shape	H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V, F Stepped Hole	J Z-d-2
Aluminum	10	L050	A	6, 6.35, 7-16	6, 6.35, 7-14	8, 10, NK10, 11-14	6-14	8-16	6, 6.35, 7-16	6, 6.35, 7-14	8, 10, NK10, 11-14	6-14	8-16
ATPA	12	L050, L075	A	8-22	8-18	8, 10, NK10, 11-18	8-20	10-23	8-22	8-18	8, 10, NK10, 11-18	8-20	10-23
ATPB	14		A	8-27	8-21	8, 10, NK10, 11-21	8-25	10-27	8-26	8-20	8, 10, NK10, 11-20	8-24	10-26
ATPK	15		A	8-27	8-23	8, 10, NK10, 11-23	8-25	10-27	8-25	8-20	8, 10, NK10, 11-20	8-24	10-26
ATPN	16		A	10-32	10-26	10, NK10, 11-23	10-30	12-32	10-28	10-22	10, NK10, 11-22	10-26	12-28
	17		A	10-32	10-26	10, NK10, 11-26	10-30	12-32	10-30	10-24	10, NK10, 11-23	10-28	12-30
	18		A	10-37	10-29	10, NK10, 11-29	10-35	12-37	10-32	10-26	10, NK10, 11-23	10-30	12-32
	19		A	12-42	12-34	12-30	12-40	14-42	12-34	12-28	12-25	12-32	14-34
	20		A	12-42	12-34	12-30	12-40	14-42	12-36	12-30	12-26	12-34	14-36
	21		A	12-48	12-40	12-32	12-46	14-48	12-38	12-30	12-26	12-36	14-38
	22		A	12-52	12-42	12-34	12-50	14-52	12-40	12-33	12-30	12-39	14-41
	24		A	12-59	12-49	12-41	12-57	14-59	12-46	12-36	12-30	12-44	14-46
	25		A	12-59	12-49	12-41	12-57	14-59	12-46	12-38	12-30	12-44	14-46
	26		A	12-59	12-49	12-41	12-57	14-59	12-46	12-38	12-30	12-44	14-46
	28		A	12-59	12-49	12-41	12-57	14-59	12-46	12-38	12-30	12-44	14-46
	28		A	12-59	12-49	12-41	12-57	14-59	12-46	12-38	12-30	12-44	14-46
	30		A	12-72	12-62	12-50	12-70	14-72	12-52	12-42	12-34	12-50	14-52
	32		A	14-76	14-65	14-50	14-74	16-76	14-52	14-42	14-34	14-50	16-52
	34		A	14-80	14-65	14-50	14-80	16-82	14-59	14-49	14-41	14-57	16-59
	36		A	14-80	14-65	14-50	14-80	16-82	14-59	14-49	14-41	14-57	16-59
	38		A	15-80	15-65	15-50	15-80	17-85	15-59	15-49	15-41	15-57	17-59
	40		A	15-80	15-65	15-50	15-80	17-85	15-59	15-49	15-41	15-57	17-59
	42		A	16-80	16-65	16-50	16-80	18-85	16-57	16-57	16-49	16-65	18-67
	44		A	16-80	16-65	16-50	16-80	18-85	16-57	16-57	16-49	16-65	18-67
	46		A	16-80	16-65	16-50	16-80	18-85	16-57	16-57	16-49	16-65	18-67
	48		A	16-80	16-65	16-50	16-80	18-85	16-57	16-57	16-49	16-65	18-67
	50		A	16-80	16-65	16-50	16-80	18-85	16-57	16-57	16-49	16-65	18-67
ATP	60		A	16-100	16-65	16-50	16-100	18-125	16-67	16-57	16-49	-	-
ATPP	72		A	16-100	16-65	16-50	16-100	18-125	16-67	16-57	16-49	-	-

Shaft Bore Dia. 8, 11, 13, 14, 17, 21-50 are not available for Shaft Bore Spec. C.

Ordering Example	Part Number	- Pulley Shape	- Shaft Bore Spec. I.D.	- Z	- J	- Q	- R	- S	- T
(Shaft Bore Specs.: H, P, N, C)	ATP14L075	- A	- N10	-	-	-	-	-	-
(Shaft Bore Specs.: V, F)	ATP36L100	- A	- V15	- Z29	- J18.0	-	-	-	-
(Shaft Bore Specs.: Y)	ATP50L150	- A	- Y25	-	-	-	-	-	-

Number of Teeth	Body Price												Shaft Bore Machining Charge (Body Price +)		
	ATPA (x1.0)		ATPB, ATPK (x1.1)		ATPN (x1.2)		ATPT (x1.0)		ATP (x1.05)		ATPP (x1.15)		P Hole	N, C, V, F Hole	Y Hole
	L050	L075	L100	L150	L050	L075	L100	L150							
10															
12															
14															
15															
16															
17															
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50															
60															
72															

Alterations Part Number - Pulley Shape - Shaft Bore Spec. I.D. - Z - J - Q - R - S - T - (KC90-etc.) - KSC36 - K5

Alterations	Set Screw Angle	No Flange	Single Flange	Flange Cut
Code	KC90	NFC	RFC, LFC	FC
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. included) Ordering Code: NFC	(Flange 1 pc. included) Ordering Code: RFC Application Notes: * Not applicable to Shape D.	Cut the flange O.D. in 0.5mm increment. Ordering Code: FC17 Application Notes: * FC2(O.D.)+1 * FC3F-2 * No surface treatment is applied on flange circumference.

Alterations	Adds taper for retaining bearing	Hub Shortening	Tapped Hole Dimensions	Changes the length of the included set screws.
Code	BTC	BC	TPC	SLH
Spec.	Add taper for retaining bearing inner ring. Ordering Code: BTC8-TL1.5 Application Notes: * Applicable to Shape A only. * Applicable to Shaft Bore Specs. H and P only. * TL<L-W	Cuts the hub length in 0.5mm increment. Ordering Code: EN CC491K Equiv.5 Application Notes: * Shaft Bore Specs. H, V, F: 3<BC<L-W * Shaft Bore Specs. P, N, C: M+3<BC<L-W * Not applicable to Shapes A and D.	Ordering Code: TPC5 Application Notes: * Applicable to Shaft Bore Specs. P, N, C only. * Not applicable to Shapes A and D.	Ordering Code: SLH10 Application Notes: * Applicable to Shaft Bore Specs. P, N, C only.

Alterations	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
Code	KTC, QTC	KFC, QFC	KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side Ordering Code (Through Hole): KTC20-K5.0 Ordering Code (Tapped Hole): QTC28-M4 Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8 Application Notes: * Not applicable to Shaft Bore Specs. F or Y. * When KTC/QTC is selected for Shaft Bore Specs. P, N and C, KC		

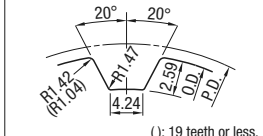
Timing Pulleys - H

For Timing Belts, see **P.1463** and for Idlers with Teeth, see **P.1473**. For Timing Belts, see **P.1429**. For Long Timing Belts, see **P.1447**.

Type	Belt Width					Material **		Surface Treatment	Accessory ** Set Screw
	19.1mm (3/4inch) H075 Number of Teeth: Up to 36	25.4mm (1inch) H100	38.1mm (1.5inch) H150	50.8mm (2inch) H200 Number of Teeth: Up to 36	76.2mm (3inch) H300 Number of Teeth: Up to 36	Pulley	Flange		
ATPA	●	●	●	●	●	Extra Super Duralumin Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
ATPB	●	●	●	●	●			Black Anodize	
ATPK	●	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Hard Clear Anodize **	EN 1.7220 Equiv. (Black Oxide)
ATPN	●	●	●	●	●			Electroless Nickel Plating	
ATPT	●	●	●	●	●				
ATP	●	●	●	●	●			Black Oxide	
ATPP	●	●	●	●	●			Electroless Nickel Plating	

* Flange is installed, and set screws are included with Shaft Bores P, N and C. ** The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Clear Anodize: Film Hardness 300HV ~

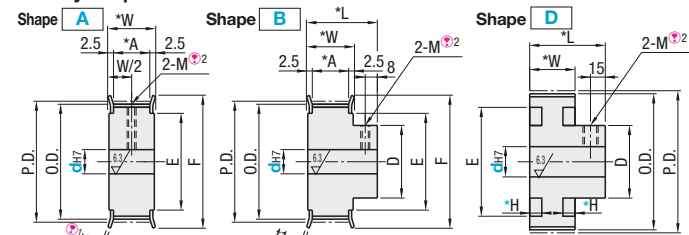
Tooth Profile (ISO Standard Rack Dimensions)



Tooth groove dimensions slightly vary according to the number of teeth.
 (Pitch: 12.7mm)

- 1. t=2.0 for 38~50 teeth, (Machined Flange)
- 2. Shaft Bore Specs. H (Round Hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dh7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
12	M4	M4x3
13~17	M5	M5x4
18~30	M6	M6x5
31~46	M8	M8x6
47~65	M10	M10x8

Number of Teeth / Dimension

mm	Number of Teeth																								
	14	15	16	17	18	19	20	21	22	24	25	26	28	30	32	34	36	38	40	42	44	48	50	60	72
P.D.	56.60	60.64	64.68	68.72	72.77	76.81	80.85	84.89	88.94	97.01	101.06	105.11	113.19	121.26	129.36	137.45	145.53	153.62	161.70	169.79	177.87	194.04	202.13	242.55	291.06
O.D.	55.22	59.27	63.31	67.35	71.39	75.44	79.48	83.52	87.56	95.63	99.69	103.73	111.82	119.90	127.99	136.07	144.16	152.24	160.33	168.41	176.50	182.67	200.78	241.18	288.69
D	39	45	48	48	50	58	58	58	58	63	63	63	63	71	71	71	71	71	71	71	71	71	71	71	71
F	61	67	70	80	80	87	87	95	95	104	111	111	123	127	135	144	152	165	170	180	190	205	210	-	-
E	45	50	56	60	60	67	67	75	75	84	90	90	102	105	115	125	130	140(126)	150(135)	155(143)	170(152)	180(168)	185(175)	216	265

Belt Nominal Width / Dimension

mm	Nominal				
	H075	H100	H150	H200	H300
A	21	27	40	54	80
W	26	32	45	59	85
L (Number of Teeth 14-36)	41	47	60	74	100
L (Number of Teeth 38-60)	-	53	65	-	-
L (Number of Teeth 72)	-	58	70	-	-

Shaft Bore Specs.

Surface treatment may not be applied to shaft bores.

H Round Hole

No tapped holes or set screws.

P Round Hole + Tap

For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.

N New JIS Keyway Bore + Tap

For Keyway Dimension Details, see P.1377.

V Stepped Hole

Not applicable to Shape D. No tapped holes or set screws.

F Stepped Hole (Counterbored Holes on the Hub Side)

Applicable to Shape B only. No tapped holes or set screws.

Y Both Ends Stepped Hole

Applicable to Shape A only. No tapped holes or set screws.

Part Number	Pulley Shape														
	A							B, D							
	Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter							Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter							
Type	Number of Teeth	Type Nominal Width	Pulley Shape	H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N Keyway + Tap	V, F Stepped Hole	Z Z-d±2 (0.1mm Increment)	J (0.1mm Increment)	
															Q R Q(R)-d±2
Aluminum	14	H075	A	12-37	12-30	12-29	12-35	14-37	12-35	12-29	12-25	12-33	14-35		
ATPA	15		A	12-42	12-34	12-30	12-30	14-42	12-40	12-33	12-29	12-39	14-41		
ATPB	16		A	12-48	12-40	12-35	12-46	14-48	12-44	12-36	12-30	12-42	14-44		
ATPK	17		A	12-52	12-44	12-40	12-50	14-52	12-44	12-36	12-30	12-42	14-44		
ATPN	18		A	12-52	12-44	12-43	12-50	14-52	12-46	12-38	12-35	12-44	14-46		
	19		B	14-59	14-49	14-47	14-57	16-59	14-54	14-46	14-38	14-52	16-54		
	20		B	14-67	14-57	14-50	14-65	16-67	14-54	14-46	14-38	14-52	16-54		
	21		B	14-67	14-57	14-50	14-65	16-67	14-54	14-46	14-38	14-52	16-54		
	22		B	16-76	16-65	16-50	16-74	18-76	16-74	16-66	16-38	16-52	18-54		
	24		B	16-80	16-65	16-50	16-80	18-82	16-75	16-66	16-41	16-57	18-59		
	25		B	20-80	20-65	20-50	20-80	22-82	20-75	20-66	20-41	20-67	22-59		
	26		B	20-80	20-65	20-50	20-80	22-82	20-75	20-66	20-41	20-67	22-59		
	28		B	20-80	20-65	20-50	20-80	22-94	20-75	20-66	20-41	20-57	22-59		
	30		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	32		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	34		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	36		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	38		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	40		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	42		B	20-80	20-65	20-50	20-80	22-95	20-75	20-66	20-41	20-57	22-59		
	44		B	20-100	20-65	20-50	20-100	22-125	20-67	20-57	20-49	-	-		
	46		B	20-100	20-65	20-50	20-100	22-125	20-67	20-57	20-49	-	-		
	48		B	20-100	20-65	20-50	20-100	22-125	20-67	20-57	20-49	-	-		
	50		B	20-100	20-65	20-50	20-100	22-125	20-67	20-57	20-49	-	-		
	60		B	-	-	-	-	-	25-67	25-57	25-49	-	-		
	72		B	-	-	-	-	-	25-67	25-57	25-49	-	-		

Shaft Bore Dia. 13, 14, 17 or 21~50 are not available for Shaft Bore Specs. C.

Ordering Example (Shaft Bore Specs.: H, P, N, C) Part Number - Pulley Shape - Shaft Bore Specs. I.D. - Z - J - Q - R - S - T

(Shaft Bore Specs.: V, F) ATP18H150 - B - N20

(Shaft Bore Specs.: Y) ATP20H100 - A - V20 - Z38 - J23.0

ATP30H150 - A - Y25 - Q42 - R42 - S9 - T9

Number of Teeth	Body Price										Shaft Bore Machining Charge (Body Price +)
	ATPA (x1.0) H075	ATPB, ATPK (x1.1) H100	ATPN (x1.2) H150	H200	H300	ATPT (x1.0) H075	ATP (x1.05) H100	ATPP (x1.15) H150	H200	H300	
14											
15											
16											
17											
18											
19											
20											
21											
22											
24											
25											
26											
28											
30											
32											
34											
36											
40											
42											
44											
48											
50											

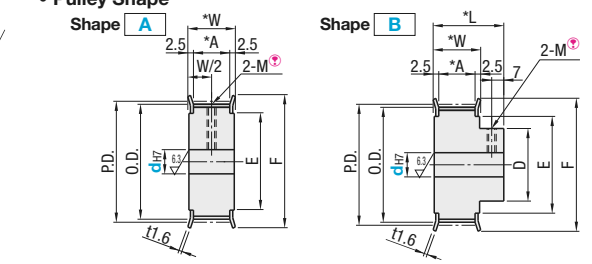
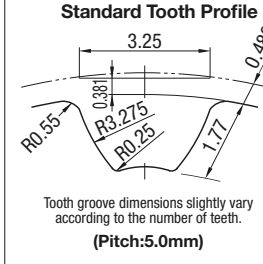
High Torque Timing Pulleys - S5M

Compatible with S2M type from Mitsubishi Belling Ltd. as well as Bando Chemical Industries Ltd.
Compatible with SSM type from Mitsubishi Belling Ltd. as well as Bando Chemical Industries Ltd.

For High Torque Timing Belts, see **P.1465** and for Idlers with Teeth, see **P.1433**. For High Torque Timing Belts, see **P.1451**.

Type	Belt Width			Material *1		Surface Treatment	Accessory *1 Set Screws
	10mm	15mm	25mm	Pulley	Flange		
HTPA	●	●	●	A2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
HTPB	●	●	●			Black Anodize	
HTPK	●	●	●			Hard Clear Anodize *2	
HTPN	●	●	●			Electroless Nickel Plating	
HTPT	●	●	●			-	
HTPM	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide	EN 1.7220 Equiv. (Black Oxide)
HTPP	●	●	●	EN 1.4301 Equiv.	EN 1.4301 Equiv.	Electroless Nickel Plating	EN 1.4301 Equiv.
HTPS	●	●	●	-	-	-	-

*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Clear Anodize: Film Hardness 300HV ~



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screw
5	M3	M3x3
6~12	M4	M4x3
13~17	M5	M5x4
18~30	M6	M6x5
31~45	M8	M8x6
46~65	M10	M10x8

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

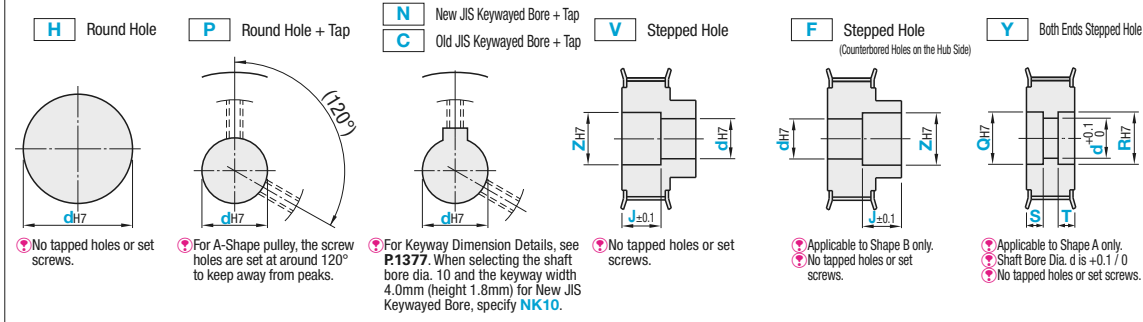
Number of Teeth / Dimension

mm	Number of Teeth																				
	14	15	16	18	19	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60	72
P.D.	22.28	23.87	25.46	28.65	30.24	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49	114.59
O.D.	21.32	22.91	24.50	27.69	29.28	30.87	34.05	37.24	38.83	40.42	43.60	46.79	49.97	53.15	56.34	62.70	69.07	75.43	78.62	94.53	113.63
D	14	15	17	19	19	24	27	27	31	32	33	37	40	40	47	50	60	63	75	90	
F	26	28	32	33	36	36	40	45	45	48	48	52	55	61	61	67	74	83	87	99	119
E	16	18	20	22	24	24	27	30	30	35	35	36	40	45	45	50	58	63	67	80	100

Belt Nominal Width / Dimension

mm	Nominal		
	SSM100	SSM150	SSM250
A	11	17	27
W	16	22	32
L	28	34	44

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.



Part Number	Type	Number of Teeth	Type Nominal Width	Pulley Shape																				
				Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter						Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter														
				A		B		C		D		E		F										
				H Round Hole	P Round Hole + Tap	N,C Keyway + Tap	V Stepped Hole	Z Z-d±2 (0.1mm Increment)	J J (0.1mm Increment)	Y Stepped Hole	Q,R Q(R)-d±2	S,T Stepped Hole	H Round Hole	P Round Hole + Tap	N,C Keyway + Tap	V Stepped Hole	Z Z-d±2 (0.1mm Increment)	J J (0.1mm Increment)	Y Stepped Hole	Q,R Q(R)-d±2	S,T Stepped Hole			
14	HTPA	14	S5M100	5, 6, 6.35, 7-10	5, 6, 6.35, 7-10	8, 10, NK10	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 6.35, 7-10	5, 6, 6.35, 7-10	8, 10, NK10	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 6.35, 7-10	5, 6, 6.35, 7-10	8, 10, NK10

Shaft Bore Dia. 8, 11, 13, 14, 17, 21~50 are not available for Shaft Bore Spec. C.

Ordering Example (Shaft Bore Specs.: H, P, N, C) **HTPA20S5M150** - **B** - **NK10**
 (Shaft Bore Specs.: V, F) **HTPA26S5M150** - **A** - **V10** - **Z23** - **J16.0**
 (Shaft Bore Specs.: Y) **HTPA40S5M250** - **A** - **Y17** - **Q35** - **R35** - **S10** - **T10**

Number of Teeth	Body Price												Shaft Bore Machining Charge (Body Price +)									
	HTPA (x1.0)		HTPB, HTPK (x1.1)		HTPN (x1.2)		HTPT (x1.0)		HTPM (x1.05)		HTPP (x1.15)		HTPS (x1.0)		HTPA, HTPB, HTPK, HTPN, HTPPT, HTPM, HTPP			HTPS				
	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	P Hole	N, C, V, F Hole	Y Hole	P Hole	N, C, V, F Hole	Y Hole		
14																						
15																						
16																						
18																						
19																						
20																						
22																						
24																						
25																						
26																						
28																						
30																						
32																						
34																						
36																						
40																						
44																						
48																						
50																						
60																						
72																						

Alterations Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC90...etc.)
 HTPM60SSM150 - A - H30 - KSC50

Alterations	Set Screw Angle	No Flange	Single Flange	Flange Cut
Code	KC90	NFC	RFC, LFC	FC
Spec.	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. Included) [Ordering Code] NFC	(Flange 1 pc. Included) [Ordering Code] RFC	Cut the flange O.D. in 0.5mm increment. [Ordering Code] FC17


Alterations	Adds taper for retaining bearing	Hub Shortening	Tapped Hole Dimensions	Changes the length of the included set screws
Code	BTC	BC	TPC	SLH
Spec.	Add taper for retaining bearing inner ring [Ordering Code] BTC6-TL1.5	Cuts the hub length in 0.5mm increment. [Ordering Code] EN CC491K Equiv.5	[Ordering Code] TPC5	[Ordering Code] SLH10

Alterations	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
Code	KTC, QTC	KFC, QFC	KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KTC20-K5.0 [Ordering Code (Tapped Hole)] QTC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KFC20-K5.0 [Ordering Code (Tapped Hole)] QFC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KSC20-K5.0 [Ordering Code (Tapped Hole)] QSC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8

High Torque Timing Pulleys - S14M

Compatible with S14M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

For High Torque Timing Belts, see **P.1465** and for Idlers with Teeth, see **P.1451**. On 2014 and later, S14M Type is to be delivered with flange included.



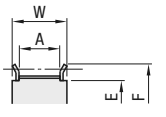
Shipped with flange included. **RoHS**

Type	Belt Width		Material*		Surface Treatment
	40mm	60mm	Pulley	Flange Accessory	
HTPTNF	●	●	EN 1.1191 Equiv.	EN 1.1191 Equiv.	-
HTPMNF	●	●			

* The above material might be changed to the one equivalent to the original.

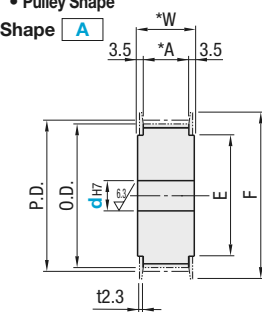
Flange Shape

Flanges are normally machined but may be substituted with press formed products in some cases.
Press formed flange may be shaped as shown below.

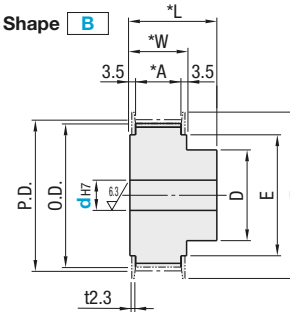


Pulley Shape

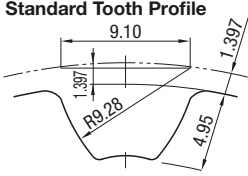
Shape **A**



Shape **B**



Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:14.0mm)

Number of Teeth / Dimension

mm	Number of Teeth										
	28	30	32	34	36	40	42	44	48	50	56
P.D.	124.78	133.69	142.60	151.52	160.43	178.25	187.17	196.08	213.90	222.82	249.55
O.D.	121.98	130.90	139.81	148.72	157.63	175.46	184.37	193.28	211.11	220.02	246.76
D	90	100	110	120	120	135	145	155	160	160	160
F	136	144	152	161	172	190	200	208	224	235	260
E	101	111	121	131	141	161	164	173	190	200	224

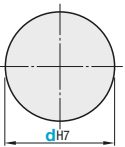
Belt Nominal Width / Dimension

mm	Nominal	
	S14M400	S14M600
A	46	67
W	53	74
L Number of Teeth 28-40	73	94
L Number of Teeth 44-56	78	99

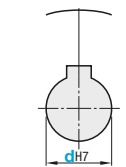
Shaft Bore Specs

Surface treatment may not be applied to shaft bores. Upon delivery, Flange is included without being swaged on.

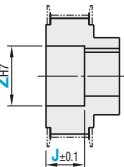
H Round Hole



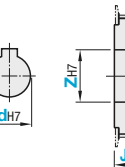
N New JIS Keywayed Bore



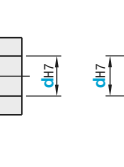
C Old JIS Keywayed Bore



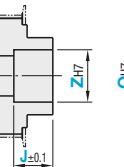
G New JIS Keywayed Bore + Stepped Hole



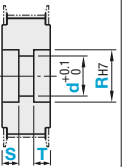
V Stepped Hole



F Stepped Hole (Counterbored Holes on the Hub Side)



Y Both Ends Stepped Hole



No tapped holes or set screws.
Specify Alteration TP when tapped hole is required.

Type	Number of Teeth	Type	Nominal Width	Pulley Shape															
				Shape A						Shape B									
				Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter		Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter		Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter		Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter		Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter		Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter					
Steel	HTPTNF	S14M400	A	H Round Hole	N, C, G Keyway	V Stepped Hole	Y Both Ends Stepped	H Round Hole	N, C, G Keyway	V, F Stepped Hole	Y Both Ends Stepped	H Round Hole	N, C, G Keyway	V, F Stepped Hole	Y Both Ends Stepped				
				30-70	30-70	30-66	30-70	30-66	35-75	30-60	30-60	30-56	30-60	30-60	30-60	30-60	30-60	30-60	
				30-80	30-70	30-76	30-80	30-76	35-85	30-70	30-70	30-66	30-70	30-70	30-70	30-70	30-70	30-70	30-70
				30-85	30-70	30-81	30-85	30-81	35-90	30-75	30-70	30-71	30-75	30-75	30-70	30-71	30-75	30-75	30-75
				30-90	30-70	30-86	30-90	30-86	35-95	30-85	30-70	30-81	30-85	30-85	30-70	30-81	30-85	30-85	30-85
				30-95	30-70	30-91	30-95	30-91	35-100	30-85	30-70	30-81	30-85	30-85	30-70	30-81	30-85	30-85	30-85
	HTPMNF	S14M600	B	H Round Hole	N, C, G Keyway	V Stepped Hole	Y Both Ends Stepped	H Round Hole	N, C, G Keyway	V, F Stepped Hole	Y Both Ends Stepped	H Round Hole	N, C, G Keyway	V, F Stepped Hole	Y Both Ends Stepped	H Round Hole	N, C, G Keyway	V, F Stepped Hole	Y Both Ends Stepped
				35-105	35-70	35-101	35-105	35-101	40-110	35-95	35-70	35-91	35-95	35-100	35-70	35-91	35-95	35-95	35-95
				35-110	35-70	35-106	35-110	35-106	40-115	35-100	35-70	35-96	35-100	35-100	35-70	35-96	35-100	35-100	35-100
				35-115	35-70	35-111	35-115	35-111	40-120	35-100	35-70	35-96	35-100	35-100	35-70	35-96	35-100	35-100	35-100
				40-120	40-70	40-116	40-120	40-116	45-125	40-110	40-70	40-106	40-110	40-110	40-70	40-106	40-110	40-110	40-110
				40-130	40-70	40-126	40-130	40-126	45-135	40-110	40-70	40-106	40-110	40-110	40-70	40-106	40-110	40-110	40-110

Shaft Bore Dia. 31, 32, 46 ~ 49, 51 ~ 54, or 56 ~ 59 are not available for Shaft Bore Specs. N, C and G.
When Z<d+ key height for Shaft Bore Specs. G, keyway is added to the Z dimension part.

Ordering Example

Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T

(Shaft Bore Specs.: H, N, C) HPTNF32-S14M400 - A - H40

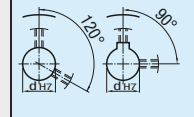
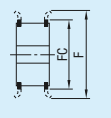
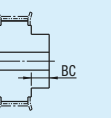
(Shaft Bore Specs.: G, V, F) HTPMNF48-S14M600 - B - G70 - Z90 - J90.0

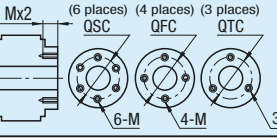
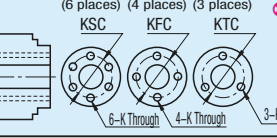
(Shaft Bore Specs.: Y) HPTNF56-S14M400 - A - Y80 - Q120 - R120 - S20 - T20

Number of Teeth	Body Price								Shaft Bore Machining Charge (Body Price +)	
	HTPTNF				HTPMNF					
	S14M400	S14M600	S14M400	S14M600	S14M400	S14M600	S14M400	S14M600	N, C, V, F Hole	G, Y Hole
28										
30										
32										
34										
36										
40										
42										
44										
48										
50										
56										

Alterations **Part Number** - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (TP...etc.)

HTPMNF40-S14M400 - A - H65 - Z - J - Q - R - S - T - (TP...etc.) - NFC

Alterations	Tapped Hole	Flange Cut	Hub Shortening																												
Code	TP	FC	BC																												
Spec.	<p>Adds a tapped hole.</p>  <table border="1"> <thead> <tr> <th>dh7</th> <th>TP</th> <th>A (Tapped Hole Angle)</th> <th>Accessory Set Screws</th> <th>Counterbore Dia.</th> </tr> </thead> <tbody> <tr> <td>30-45</td> <td>M8</td> <td>120°</td> <td>M8x6</td> <td>9</td> </tr> <tr> <td>46-65</td> <td>M10</td> <td>90°</td> <td>M10x8</td> <td>11</td> </tr> <tr> <td rowspan="3">66-150</td> <td>M12</td> <td>120°</td> <td>M12x10</td> <td>14</td> </tr> <tr> <td>M12</td> <td>120°</td> <td>M12x10</td> <td>14</td> </tr> <tr> <td>M16</td> <td>120°</td> <td>M16x15</td> <td>18</td> </tr> </tbody> </table> <p>Applicable to Shaft Bore Specs. H, N, C and G only. Adds a tapped hole at tooth (A/2) for Shape A, at hub ((L-W)/2) for Shape B. For Shape A, the tapped holes are set at around 90° or 120° to keep away from peaks. Depth of tapped hole is Mx2, and the rest is counterbore.</p>	dh7	TP	A (Tapped Hole Angle)	Accessory Set Screws	Counterbore Dia.	30-45	M8	120°	M8x6	9	46-65	M10	90°	M10x8	11	66-150	M12	120°	M12x10	14	M12	120°	M12x10	14	M16	120°	M16x15	18	<p>Lowers flange by cutting.</p> <p>FC: 0.5mm Increment FC<math>\geq(0. D.)+2</math> FC<math>\leq F-2</math> (Ordering Code) FC185</p> 	<p>Cuts the hub length in 0.5mm increment.</p> <p>BC<math>\leq 3 \times BC \leq L-W</math> When combined with Alteration TP, M+3<math>\times BC \leq L-W</math> (Ordering Code) EN CC491K Equiv.5 Not available for Shape A.</p> 
dh7	TP	A (Tapped Hole Angle)	Accessory Set Screws	Counterbore Dia.																											
30-45	M8	120°	M8x6	9																											
46-65	M10	90°	M10x8	11																											
66-150	M12	120°	M12x10	14																											
	M12	120°	M12x10	14																											
	M16	120°	M16x15	18																											

Alterations	Side Tapped Hole	Side Through Hole
Code	QSC, QFC, QTC	KSC, KFC, KTC
Spec.	<p>Machines tapped hole on the side surface of hub side. (QSC, QFC, QTC: 1mm Increment)</p> <p>Minimum Thickness: 4mm Shape A: d+M+8<math>\leq QSC</math> (QFC, QTC)<math>\leq E-(M+8)</math> Shape B: d+M+8<math>\leq QSC</math> (QFC, QTC)<math>\leq D-(M+8)</math> * d=Z when the Shaft Bore Specs. is G or V.</p> <p>The pilot hole for tapping may go through. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data. When Shaft Bore Specs. is V, the pilot holes for tapping may break through the step part. Not applicable to Shaft Bore Specs. F or Y. (M Selection) M5, M6, M8 (Ordering Code) QTC120-M8</p> 	<p>Machines tapped hole on the side surface of hub side. (KSC, KFC, KTC: 1mm Increment)</p> <p>Minimum Thickness: 4mm Shape A: d+K+8<math>\leq KSC</math> (KFC, KTC)<math>\leq E-(K+8)</math> Shape B: d+K+8<math>\leq KSC</math> (KFC, KTC)<math>\leq D-(K+8)</math> * d=Z when the Shaft Bore Specs. is G or V.</p> <p>When Shaft Bore Specs. is V, through holes may break through the step part. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data. Not applicable to Shaft Bore Specs. F or Y. (Through Hole Dia. Selection) K12-K17 (1mm Increment) (Ordering Code) KSC80-K12</p> 

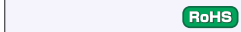
Non-Backlash Timing Pulleys - S8M

Compatible with S8M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

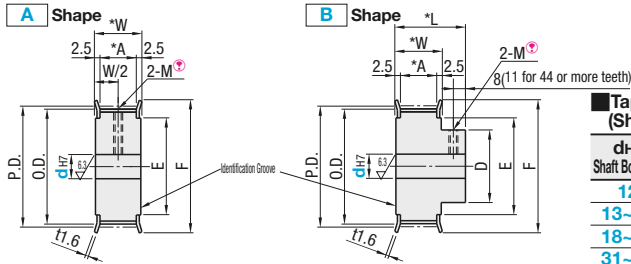
Features: Timing pulleys with significantly reduced backlash compared to the conventional pulleys. Special timing belts are not required. For Timing Belts, see P.1465, P.1469.

Type	Belt Width				Material **		Surface Treatment	Accessory ** Set Screws
	15mm S8M150	25mm S8M250	30mm S8M300	40mm S8M400	Pulley	Flange		
BLPA	●	●	●	●	Extra Super Duralumin Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
BLPK	●	●	●	●				
BLPN	●	●	●	●				
BLPT	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide	EN 1.7220 Equiv. (Black Oxide)
BLPM	●	●	●	●				
BLPP	●	●	●	●				

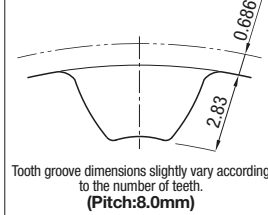
* Flange is installed, and set screws are included with Shaft Bore Specs. P, N and C. ** The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Clear Anodize: Film Hardness 300HV -



Pulley Shape



Standard Tooth Profile



Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dH7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
12	M4	M4x3
13~17	M5	M5x4
18~30	M6	M6x5
31~45	M8	M8x6
46~65	M10	M10x8

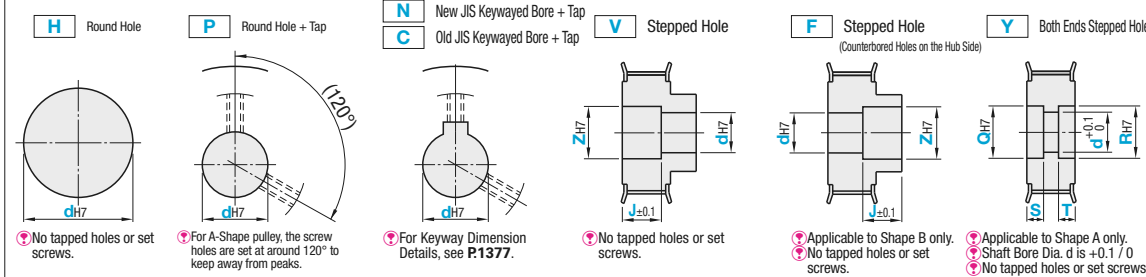
Number of Teeth / Dimension

mm	18	19	20	21	22	24	25	26	28	30	32	34	36	38	40	44	48	50	60
P.D.	45.84	48.38	50.93	53.48	56.02	61.12	63.66	66.21	71.30	76.39	81.49	86.58	91.67	96.77	101.86	112.05	122.23	127.32	152.79
O.D.	44.46	47.01	49.56	52.10	54.65	59.74	62.29	64.84	69.93	75.02	80.12	85.21	90.30	95.39	100.49	110.67	120.86	125.95	151.42
D	32	35	36	40	41	46	48	51	55	60	63	70	75	80	85	90	100	100	100
F	52	55	58	61	61	67	70	74	80	87	87	95	99	104	111	119	127	135	160
E	36	40	40	45	45	50	56	58	60	67	67	75	80	84	90	100	105	115	140

Belt Nominal Width / Dimension

mm	Nominal			
	S8M150	S8M250	S8M300	S8M400
A	17.0	28.0	33.0	44.0
W	22.0	33.0	38.0	49.0
L (Number of Teeth 18-40)	37.0	48.0	53.0	64.0
L (Number of Teeth 44-60)	42.0	53.0	58.0	69.0

Shaft Bore Specs.



Part Number	Type	Number of Teeth	Nominal Width	Pulley Shape																			
				A						B													
				Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter			Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter										
				H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V, F Stepped Hole	Y Both Ends Stepped	H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V, F Stepped Hole	Y Both Ends Stepped					
				18	19	20	21	22	24	25	26	28	30	32	34	36	38	40	44	48	50	60	
	Aluminum			12-28	12-26	12-26	12-26	12-26	14-28	12-30	14-28	12-30	14-28	12-30	14-28	12-30	14-28	12-30	14-28	12-30	14-28	12-30	14-28
	Steel			14-52	14-50	14-50	14-50	14-50	16-59	14-54	16-59	14-54	16-59	14-54	16-59	14-54	16-59	14-54	16-59	14-54	16-59	14-54	16-59

Shaft Bore Dia. 13, 14, 17 or 21~50 are not available for Shaft Bore Specs. C.

Ordering Example

Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T

(Shaft Bore Specs.: H, P, N, C) BLPA40S8M150 - A - N30

(Shaft Bore Specs.: V, F) BLPK60S8M400 - B - F40 - Z60 - J25.0

(Shaft Bore Specs.: Y) BLPA20S8M250 - A - Y15 - Q20 - R23 - S3 - T15

Number of Teeth	Body Price								Shaft Bore Machining Charge (Body Price +)
	BLPA (x1.0)	BLPK (x1.1)	BLPN (x1.2)	BLPT (x1.0)	BLPM (x1.05)	BLPP (x1.15)			
18									
19									
20									
21									
22									
24									
25									
26									
28									
30									
32									
34									
36									
38									
40									
44									
48									
50									
60									

Alterations Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC90...etc.)

BLPA36S8M250 - A - H65 - NFC

Alterations	Set Screw Angle	No Flange	Single Flange	Flange Cut
	KC90	NFC	RFC, LFC	FC
Code	Changes an angle of set screw to 90°. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks.	(Flange 2 pcs. Included) [Ordering Code] NFC	(Flange 1 pc. Included) [Ordering Code] RFC	Cut the flange O.D. in 0.5mm increment. [Ordering Code] FC17
Spec.				

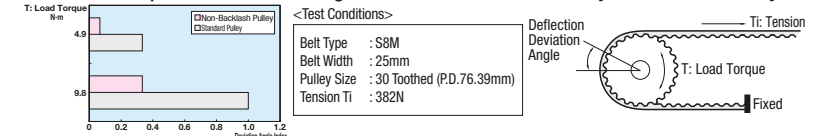
Alterations	Adds taper for retaining bearing	Hub Shortening	Tapped Hole Dimensions	Changes the length of the included set screws.
	BTC	BC	TPC	SLH
Code	Add taper for retaining bearing inner ring [Ordering Code] BTC12-TL3	Cuts the hub length in 0.5mm increment. [Ordering Code] EN CC491K Equiv.5	[Ordering Code] TPC5	[Ordering Code] SLH10
Spec.				

Alterations	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
	KTC, QTC	KFC, QFC	KSC, QSC
Code	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KTC20-K5.0 [Ordering Code (Tapped Hole)] QTC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KFC20-K5.0 [Ordering Code (Tapped Hole)] QFC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KSC20-K5.0 [Ordering Code (Tapped Hole)] QSC28-M4 Selection (Through Hole) K Selection K4.0~K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8
Spec.			

Features of Non-backlash Pulleys (S8M)

- Non-backlash pulley has reduced backlash compared to conventional type to work with high accuracy positioning mechanism.
- Backlash is significantly smaller than standard S8M pulleys. (The amount reduced depends on applications.)
- Use regular S8M timing belt.


Reference: Comparison of Deviation Angles between Non-Backlash Pulleys and Standard Pulleys



High Torque Timing Pulleys - P2M, P3M

Compatible with P2M, P3M Types from Tsubakimoto Chain Co.

For High Torque Timing Belts, see P.1467. For Idlers with Teeth, see P.1453



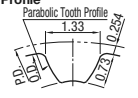
RoHS

Type	Belt Width			Material		Surface Treatment	Accessory Set Screws
	6mm	10mm	15mm	Pulley	Flange		
PTPA	●	●	●	High Strength Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
PTPM	-	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide	EN 1.7220 Equiv. (Black Oxide)
PTPP	-	●	●			Electroless Nickel Plating	

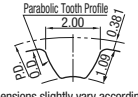
Flange is installed, and set screws are included with Shaft Bores P, N and C. * The above material and accessory might be changed to the ones equivalent to the originals.

Standard Tooth Profile

P2M
(Pitch:2.0mm)



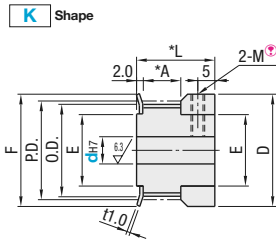
P3M
(Pitch:3.0mm)



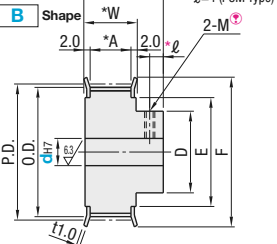
(Tooth groove dimensions slightly vary according to the number of teeth.)

•Pulley Shape

K Shape



B Shape



Tapped Hole Dimensions

dh7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
3~ 6.35	M3	M3x3
7~19	M4	M4x3

dh7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
4~ 6.35	M3	M3x3
7~12	M4	M4x3
13~18	M5	M5x4

Number of Teeth / Dimension

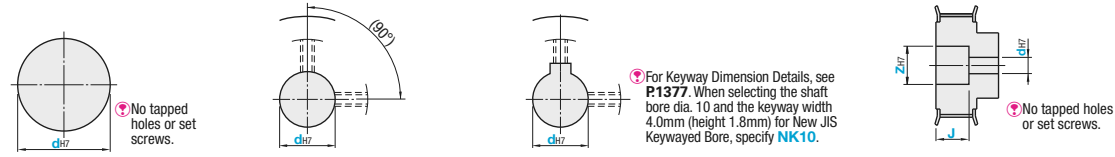
Standard	mm	Number of Teeth																				
		14	15	16	18	20	22	24	25	28	30	32	36	40	42	44	48	50	60			
P2M Type	P.D.	8.91	9.55	10.19	11.46	12.73	14.01	15.28	16.55	17.83	19.10	20.37	21.64	22.91	24.18	25.45	26.72	28.00	30.56	31.83	38.20	
	O.D.	8.40	9.04	9.68	10.95	12.22	13.50	14.77	16.04	17.32	18.59	19.86	21.13	22.41	23.68	24.95	26.23	27.50	30.05	31.32	37.69	
	D	12	13	13	15	17	17	17	17	20	22	22	22	24	24	24	24	24	28	28	28	28
	F	12	12	14	14	16	16	16	16	22	22	22	25	28	28	32	32	35	35	40	44	44
	E	6	6	8	8	10	10	10	10	14	14	16	18	18	23	23	25	25	28	28	32	32

Belt Nominal Width / Dimension

mm	Nominal		
	P2M060	P3M100	P3M150
A. Number of Teeth 20 or less	7.5	11.0	17.0
A. Number of Teeth 20 or more	7.5	12.0	17.0
W	11.5	16.0	21.0
L	20.0	23.0	29.0

Shaft Bore Specs. Surface treatment may not be applied to shaft bores.

H Round Hole **P** Round Hole + Tap **N** New JIS Keywayed Bore + Tap **C** Old JIS Keywayed Bore + Tap **V** Stepped Hole



No tapped holes or set screws.

For Keyway Dimension Details, see P.1377. When selecting the shaft bore dia. 10 and the keyway width 4.0mm (height 1.8mm) for New JIS Keywayed Bore, specify **NK10**.

No tapped holes or set screws.

P2M

Type	Part Number	Number of Teeth	Type	Nominal Width	Pulley Shape	Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter						
						H Round Hole	P Round Hole + Tap	N Keyway + Tap	C Old JIS Keyway + Tap	V Stepped Hole	Z Z-d≥2	U (0.1mm Increment)
Aluminum	PTPA	14	P2M060	K	-	-	3, 4	-	-	-	-	-
		15				3, 4, 5	-	-	-	-		
		16				3, 4, 5	-	-	-	-		
		18				3-6	-	-	-	-		
		20				4-6, 6.35	-	-	-	-		
		22				4-6, 6.35	-	-	-	-		
		24				4-6, 6.35	-	-	-	-		
		25				4-6, 6.35	-	-	-	-		
		28				5, 6, 6.35	5, 6, 6.35	-	-	-	-	
		30				5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	-	-	-	-	
		32				5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	-	-	-	-	
		36				5, 6, 6.35, 7-9	5, 6, 6.35, 7, 8	-	-	6	9	
		40				5, 6, 6.35, 7-10	5, 6, 6.35, 7-10	8	-	6, 7	9-10	
		42				5, 6, 6.35, 7-12	5, 6, 6.35, 7-12	8, 10, NK10	-	6-9	9-12	
		44				5, 6, 6.35, 7-12	5, 6, 6.35, 7-12	8, 10, NK10	-	6-9	9-12	
48	5, 6, 6.35, 7-12	5, 6, 6.35, 7-12	8, 10, NK10	-	6-9	9-12						
50	5, 6, 6.35, 7-15	5, 6, 6.35, 7-15	8, 10, NK10, 11-13	-	6-9	9-12						
60	5, 6, 6.35, 7-19	5, 6, 6.35, 7-19	8, 10, NK10, 11-18	10, 12	6-12	9-15						

P3M

Type	Part Number	Number of Teeth	Type	Nominal Width	Pulley Shape	Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter						
						H Round Hole	P Round Hole + Tap	N Keyway + Tap	C Old JIS Keyway + Tap	V Stepped Hole	Z Z-d≥2	U (0.1mm Increment)
Steel	PTPM PTPP	10	P3M100	K	-	-	4	-	-	-	-	-
		12				4, 5	-	-	-	-		
		14				4-6, 6.35	-	-	-	-		
		15				4-6, 6.35	-	-	-	-		
		16				4-6, 6.35	-	-	-	-		
		18				4-6, 6.35	-	-	-	-		
		20				4-6, 6.35	-	-	-	-		
		22				4-6, 6.35	-	-	-	-		
		24				5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	-	-	-	-	
		25				5, 6, 6.35, 7-9	5, 6, 6.35, 7-9	-	-	6	9	
26	6, 6.35, 7-10	6, 6.35, 7-10	8	-	7	10						
28	6, 6.35, 7-12	6, 6.35, 7-12	8, 10, NK10	-	7, 8, 9	10-12						
30	6, 6.35, 7-12	6, 6.35, 7-12	8, 10, NK10	-	7, 8, 9	10-12						
32	6, 6.35, 7-12	6, 6.35, 7-12	8, 10, NK10	-	7, 8, 9	10-12						
36	6, 6.35, 7-16	6, 6.35, 7-16	8, 10, NK10, 11-14	-	7-13	10-16						
40	6, 6.35, 7-18	6, 6.35, 7-18	8, 10, NK10, 11-15	10, 12, 15, 16	7-14	10-18						

Ordering Example (Shaft Bore Specs.: H, P, N, C) (Shaft Bore Specs.: V)

Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J

PTPA48P2M060 - B - NK10 - Z10 - J6

PTPM32P3M100 - B - V7 - Z10 - J6

Number of Teeth	Body Price		Body Price						Shaft Bore Machining Charge (Body Price +)	
	PTPA	P2M060	P3M100	P3M150	P3M100	P3M150	P3M100	P3M150	P Hole	N, C, V Hole
14										
15										
16										
18										
20										
22										
24										
25										
28										
30										
32										
36										
40										
42										
44										
48										
50										
60										

Alterations **Part Number** - Pulley Shape - Shaft Bore Specs., Hole Dia. - Z - J - (KC120-etc.)

PTPA48P2M060 - B - N10 - NFC

Alterations	Set Screw Angle	No Flange	Single Flange
Code	KC120	NFC	RFC, LFC
Spec.	Changes angle layout of set screws to 120°. For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks. Not available for Shape K.	(Flange 2 pcs. Included) Ordering Code NFC Application Notes Not available for Shape K.	(Flange 1 pc. Included) Ordering Code RFC Application Notes Not available for Shape K.

Alterations	Side Tapped Hole, 3 places	Side Tapped Hole, 4 places
Code	QTC	QFC
Spec.	Machine Tapped Hole on the side surface of hub side. Ordering Code (Tapped Hole) QTC28-M4 Selection (Tapped Hole) M Selection M3, M4, M5 Application Notes Not available for Shape K. Specify KC120 when selecting KTC/QTC for Shaft Bore Specs. P, N and C.	Machine Tapped Hole on the side surface of hub side. Ordering Code (Tapped Hole) QFC28-M4 Selection (Tapped Hole) M Selection M3, M4, M5 Application Notes Not available for Shape K. When KFC/QFC is selected for Shaft Bore Specs. P, N and C, KC120 is not available. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data.

For details, see the "Timing Pulley Alterations - Overview" section P.1387.

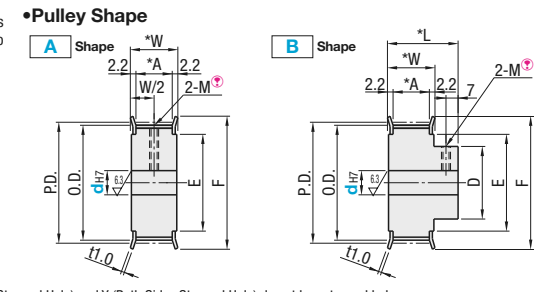
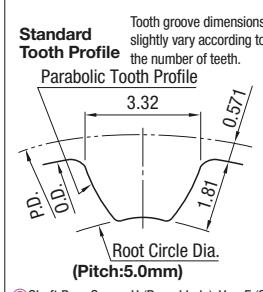
High Torque Timing Pulleys - P5M

Compatible with P5M Type from Tsubakimoto Chain Co.

For High Torque Timing Belts, see **P.1467** and for Keyless High Torque Timing Pulleys, see **P.1437**. For Idlers with Teeth, see **P.1453**.

Type	Belt Width		Material *1		Surface Treatment	Accessory *1 Set Screws
	10mm	15mm	Pulley	Flange		
PTPA	●	●	2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
PTPB	●	●				
PTPK	●	●				
PTPN	●	●				
PTPP	●	●				
			EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide	EN 1.7220 Equiv. (Black Oxide)

*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dH7 Shaft Bore I.D. (Coarse)	M	Accessory Set Screw
5~12	M4	M4x3
13~17	M5	M5x4
18~30	M6	M6x5
31~45	M8	M8x6
46~65	M10	M10x8

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Number of Teeth / Dimension

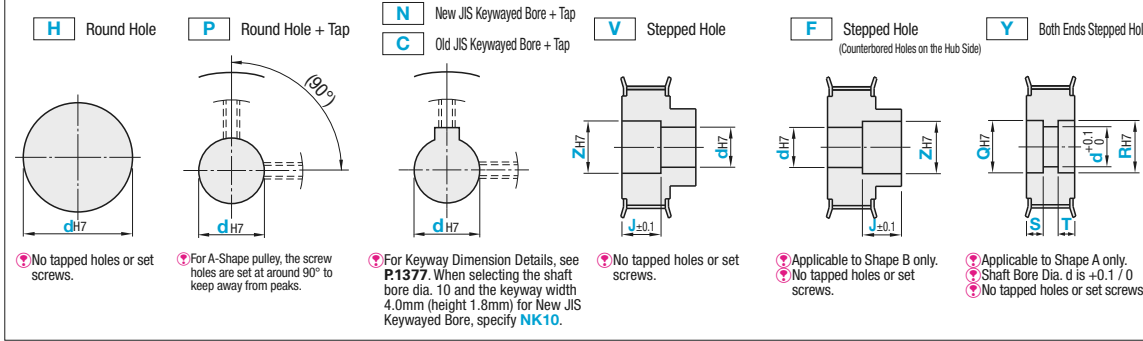
mm	Number of Teeth																				
	12	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60	72
P.D.	19.10	22.28	23.87	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49	114.59
O.D.	17.96	21.14	22.73	24.32	27.51	30.69	33.87	37.06	38.65	40.24	43.42	46.60	49.79	52.97	56.15	62.52	68.89	75.25	78.44	94.35	113.45
D	11	13	15	17	19	19	25	25	30	30	32	35	38	42	44	48	56	58	64	80	90
Aluminum	22	25	28	30	32	35	40	44	44	48	50	55	55	61	67	74	83	87	104	119	-
Steel	22	25	-	30	32	35	40	44	48	50	55	55	-	67	67	74	83	87	104	-	-
Aluminum	14	16	18	20	23	25	28	32	32	36	38	40	40	46	50	58	63	67	84	100	-
Steel	14	16	-	20	23	25	28	32	32	36	38	40	40	-	50	58	63	67	84	-	-

Belt Nominal Width / Dimension

mm	Nominal	
	P5M100	P5M150
A	11.6	16.6
W	16.0	21.0
L	28.0	33.0

Shaft Bore Specs.

Surface treatment may not be applied to shaft bores.



Part Number	Type	Number of Teeth	Type Nominal Width	Shaft Bore Specifications (-): Specify in 1mm Increment, (:): Select the former or latter																				
				H Round Hole	P Round Hole + Tap	N Keyway + Tap	C Old JIS Keyway + Tap	V, F Stepped Hole		Y Both Ends Stepped (Shape A only)														
12	Aluminum PTPA PTPB PTPK PTPN Steel PTPM PTPP	P5M100	A	5,6	5,6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
14				5,6	5,6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15				5,6, 6.35, 7~10	5,6, 6.35, 7, 8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16				5,6, 6.35, 7~10	5,6, 6.35, 7, 10	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18				6, 6.35, 7~12	6, 6.35, 7~12	8, 10, NK10, 11	10	6~7	9, 10	7~10	12, 13	-	-	-	-	-	-	-	-	-	-	-	-	-
20				6, 6.35, 7~12	6, 6.35, 7~12	8, 10, NK10, 11	10	6~7	9, 10	7~12	12~15	-	-	-	-	-	-	-	-	-	-	-	-	-
22				8~17	8~17	8, 10, NK10, 11~15	10, 12, 15	8, 9, 10	11~14	7~14	12~18	-	-	-	-	-	-	-	-	-	-	-	-	-
24				8~17	8~17	8, 10, NK10, 11~15	10, 12, 15	8, 9, 10	11~14	7~16	12~20	-	-	-	-	-	-	-	-	-	-	-	-	-
25				10~20	10~20	10, NK10, 11~18	10, 12, 15, 16, 18, 19	10~13	13~16	7~16	12~20	-	-	-	-	-	-	-	-	-	-	-	-	-
26				10~20	10~20	10, NK10, 11~18	10, 12, 15, 16, 18, 19	10~13	13~16	8~20	12~25	-	-	-	-	-	-	-	-	-	-	-	-	-
28				10~22	10~22	10, NK10, 11~20	10, 12, 15, 16, 18~20	10~14	13~18	8~20	12~25	-	-	-	-	-	-	-	-	-	-	-	-	-
30				12~24	12~24	12~22	12, 15, 16, 18~20	12~16	15~20	10~20	15~25	-	-	-	-	-	-	-	-	-	-	-	-	-
32				12~26	12~26	12~25	12, 15, 16, 18~20	12~17	15~21	10~24	15~29	-	-	-	-	-	-	-	-	-	-	-	-	-
34				12~30	12~30	12~25	12, 15, 16, 18~20	12~20	15~25	10~28	15~32	-	-	-	-	-	-	-	-	-	-	-	-	-
36				12~30	12~30	12~30	12, 15, 16, 18~20	12~20	15~25	10~28	15~32	-	-	-	-	-	-	-	-	-	-	-	-	-
40				12~32	12~32	12~32	12, 15, 16, 18~20	12~22	15~26	10~30	15~35	-	-	-	-	-	-	-	-	-	-	-	-	-
44				15~38	15~38	15~38	15, 16, 18~20	15~28	19~32	12~30	19~45	-	-	-	-	-	-	-	-	-	-	-	-	-
48	15~38	15~38	15~38	15, 16, 18~20	15~28	19~32	12~30	19~46	-	-	-	-	-	-	-	-	-	-	-	-	-			
50	15~42	15~40	15~40	15, 16, 18~20	15~30	19~35	12~35	19~50	-	-	-	-	-	-	-	-	-	-	-	-	-			
60	15~52	15~40	15~40	15, 16, 18~20	15~30	19~43	12~38	19~60	-	-	-	-	-	-	-	-	-	-	-	-	-			
72	15~80	15~65	15~50	15, 16, 18~20	15~80	19~86	12~75	19~92	-	-	-	-	-	-	-	-	-	-	-	-	-			

Ordering Example (Shaft Bore Specs.: H, P, N, C) PTPA20P5M150 - A - NK10
(Shaft Bore Specs.: V, F) PTPA60P5M100 - B - V20 - Z29 - J22
(Shaft Bore Specs.: Y) PTPA36P5M150 - A - Y17 - Q30 - R30 - S7 - T7

Number of Teeth	Body Price								Shaft Bore Machining Charge (Body Price +)					
	PTPA (x1.0)		PTPB, PTPK (x1.1)		PTPN (x1.2)		PTPM, PTPP (+JPY500)		PTPA, PTPB, PTPK, PTPN			PTPM, PTPP		
	P5M100	P5M150	P5M100	P5M150	P5M100	P5M150	P5M100	P5M150	P Hole	N, C, V, F Hole	Y Hole	P Hole	N, C, V, F Hole	Y Hole
12														
14														
15														
16														
18														
20														
22														
24														
25														
26														
28														
30														
32														
34														
36														
40														
44														
48														
50														
60														
72														

Alterations Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC120...etc.)
PTPA60P5M150 - B - H40 - BC8.5

Alterations Code	Set Screw Angle	No Flange	Single Flange	Flange Cut
Code	KC120	NFC	RFC, LFC	FC
Spec.	Changes angle layout of set screws to 120°. For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.	(Flange 2 pcs. Included) (Ordering Code) NFC	(Flange 1 pc. Included) (Ordering Code) RFC, LFC	Cut the flange O.D. in 0.5mm increment. (Ordering Code) FC45 Application Notes: FC<(O.D.)+1, FC<F-2, No surface treatment is applied on flange circumference.

Alterations Code	Adds taper for retaining bearing	Hub Shortening	Tapped Hole Dimensions	Changes the length of the included set screws.
Code	BTC	BC	TPC	SLH
Spec.	Add taper for retaining bearing inner ring (Ordering Code) BTC<TL1.5 Application Notes: Applicable to Shape A only, Applicable to Shaft Bore Specs. H and P only, TL<L-W	Cuts the hub length in 0.5mm increment. (Ordering Code) EN CC491K Equiv.5 Application Notes: Shaft Bore Specs. H, V, F: 3<BC<L-W, Shaft Bore Specs. P, N, C: M+3<BC<L-W, Not available for Shape A.	(Ordering Code) TPC5 Application Notes: Applicable to Shaft Bore Specs. P, N, C only. M TPC, M4 M5, M5 M4, M6, M6 M5, M8, M8 M6, M10 M8	(Ordering Code) SLH10 Application Notes: Applicable to Shaft Bore Specs. P, N, C only. Set Screws SLH, M4x3 5, 8, M5x4 6, 10, M6x5 10, M8x6 10, 12, M10x8 12, 15

For details, see the "Timing Pulley Alterations - Overview" section P.1378.

Alterations Code	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
Code	KTC, QTC	KFC, QFC	KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side (Ordering Code Through Hole) KTC20-K5.0, (Ordering Code Tapped Hole) QTC28-M4, (Selection Through Hole K Selection) K4.0~K13.0 (0.5mm Increment), (Selection Tapped Hole M Selection) M3, M4, M5, M6, M8 Application Notes: Not applicable to Shaft Bore Specs. F or Y, Specify KC120 when selecting KTC/QTC for Shaft Bore Specs. P, N and C.	Machine Through Hole / Tapped Hole on the side surface of hub side (Ordering Code Through Hole) KFC20-K5.0, (Ordering Code Tapped Hole) QFC28-M4, (Selection Through Hole K Selection) K4.0~K13.0 (0.5mm Increment), (Selection Tapped Hole M Selection) M3, M4, M5, M6, M8 Application Notes: Not applicable to Shaft Bore Specs. F or Y, When KFC/QFC is selected for Shaft Bore Specs. P, N and C, KC120 is not available.	Machine Through Hole / Tapped Hole on the side surface of hub side (Ordering Code Through Hole) KSC20-K5.0, (Ordering Code Tapped Hole) QSC28-M4, (Selection Through Hole K Selection) K4.0~K13.0 (0.5mm Increment), (Selection Tapped Hole M Selection) M3, M4, M5, M6, M8 Application Notes: Not applicable to Shaft Bore Specs. F or Y, KSC/QSC is not applicable to the Shaft Bore Specs. P, N and C.

For details, see the "Timing Pulley Alterations - Overview" section P.1378.

High Torque Timing Pulleys - P8M

Compatible with P8M Type from Tsubakimoto Chain Co.

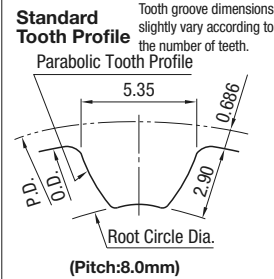
For High Torque Timing Belts, see **P.1467** and for Keyless High Torque Timing Pulleys, see **P.1438**. For Idlers with Teeth, see **P.1453**.



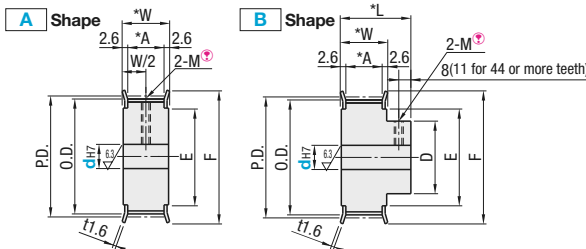
Type	Belt Width		Pulley	Flange	Surface Treatment	Accessory Set Screws
	15mm P8M150	25mm P8M250				
PTPA	●	●	Extra Super Duralumin Aluminum Alloy	Aluminum Alloy	Clear Anodize Hard Clear Anodize *2	EN 1.4301 Equiv.
PTPK	●	●				
PTPN	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide Electroless Nickel Plating	EN 1.7220 Equiv. (Black Oxide)
PTPM	●	●				
PTPP	●	●				

*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

RoHS



Pulley Shape



Tapped Hole Dimensions (Shaft Bore Specs.: P, N, C)

dh7 Shaft Bore I.D.	M (Coarse)	Accessory Set Screw
12	M4	M4x3
13-17	M5	M5x4
18-30	M6	M6x5
31-45	M8	M8x6
46-62	M10	M10x8

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes. It may have a relief in the tapped hole depending on its size.

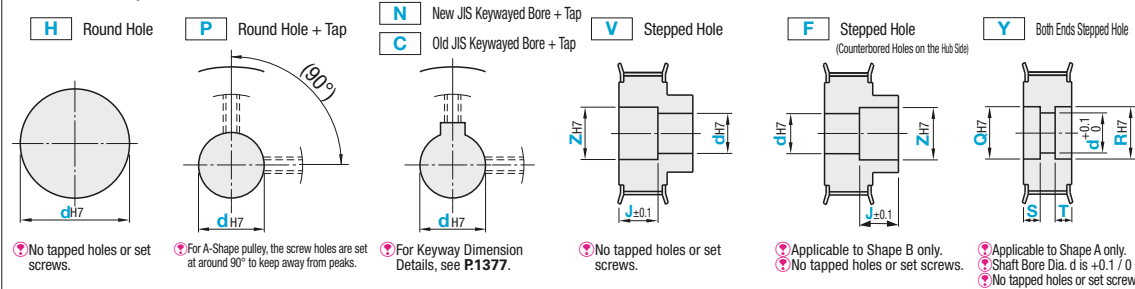
Number of Teeth / Dimension

mm	Number of Teeth														
	20	22	24	26	28	30	32	34	36	40	44	48	50	60	
P.D.	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	101.86	112.05	122.23	127.32	152.79	
O.D.	49.56	54.65	59.74	64.84	69.93	75.02	80.12	85.21	90.30	100.49	110.67	120.86	125.95	151.42	
D	36	41	46	51	55	60	65	70	75	85	90	100	100	100	
F	Aluminum	55	61	67	74	80	83	87	95	99	111	119	127	135	160
Steel	55	61	67	74	80	83	87	95	99	111	119	127	135	160	
E	Aluminum	40	45	50	58	60	63	67	75	80	90	100	105	115	140
Steel	40	45	50	58	60	63	67	75	80	90	100	105	115	140	

Belt Nominal Width / Dimension

mm	Nominal	
	P8M150	P8M250
A	16.8	27.8
W	22.0	33.0
L Number of Teeth 20-40	39.0	50.0
L Number of Teeth 44-60	44.0	55.0

Shaft Bore Specs. Surface treatment may not be applied to shaft bores.



No tapped holes or set screws. For A-Shape pulley, the screw holes are set at around 90° to keep away from peaks. For Keyway Dimension Details, see P1377. No tapped holes or set screws. Applicable to Shape B only. No tapped holes or set screws. Applicable to Shape A only. No tapped holes or set screws.

Part Number	Type	Number of Teeth	Type Nominal Width	Pulley Shape	Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter											
					H Round Hole	P Round Hole + Tap	N Keyway + Tap	C Old JIS Keyway + Tap	V, F Stepped Hole			Y Both Ends Stepped * Shape A only				
Aluminum PTPA PTPK PTPN	P8M150	A	20	12-22	12-22	12-22	12,15,16,18-20	12-14	12-18	12-22	18-26	18-26	18-26	3-23 S-T:W-3		
			22	12-25	12-25	12-25	12,15,16,18-20	12-17	12-21	12-25	18-30	18-30	18-30			
			24	12-28	12-28	12-28	12,15,16,18-20	12-18	12-23	12-30	18-35	18-35	18-35			
			26	16-30	16-30	16-30	16,18-20	16-20	16-25	16-30	21-40	21-40	21-40			
			28	16-34	16-34	16-34	16,18-20	16-24	16-29	16-30	21-42	21-42	21-42			
			30	16-35	16-35	16-35	16,18-20	16-25	16-30	16-35	21-50	21-50	21-50			
	P8M250	B	32	16-38	16-38	16-38	16,18-20	16-28	16-32	16-35	21-50	21-50	21-50			
			34	16-42	16-42	16-42	16,18-20	16-30	16-35	16-35	26-55	26-55	26-55			
			36	16-45	16-45	16-45	16,18-20	16-30	16-38	16-38	26-60	26-60	26-60			
			40	20-50	20-50	20-50	20	20-30	20-40	20-42	27-65	27-65	27-65			
			44	20-55	20-55	20-50	20	20-30	20-43	20-50	27-72	27-72	27-72			
			48	20-62	20-62	20-50	20	20-35	20-50	20-50	27-80	27-80	27-80			
Steel PTPM PTPP			50	20-62	20-62	20-50	20	20-35	20-50	20-50	27-80	27-80	27-80			
			60	20-62	20-62	20-50	20	20-35	20-50	20-50	27-80	27-80	27-80			

Ordering Example: (Shaft Bore Specs.: H, P, N, C) PTPA50P8M250 - A - H50
 (Shaft Bore Specs.: V, F) PTPA48P8M250 - B - V25 - Z43 - J25
 (Shaft Bore Specs.: Y) PTPA36P8M150 - A - Y20 - Q32 - R37 - S7 - T9

Number of Teeth	Body Price								Shaft Bore Machining Charge (Body Price +)					
	PTPA (x1.0)		PTPK (x1.1)		PTPN (x1.2)		PTPM, PTPP (+JPY500)		PTPA, PTPK, PTPN			PTPM, PTPP		
	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	Shape A	Shape B	P Hole	N, C, V, F Hole	Y Hole	P Hole	N, C, V, F Hole	Y Hole
20														
22														
24														
26														
28														
30														
32														
34														
36														
40														
44														
48														
50														
60														

Alterations Part Number - Pulley Shape - Shaft Bore Specs., I.D. - Z - J - Q - R - S - T - (KC90...etc.)
 PTPA50P8M250 - A - H60 - QSC80 - M8


Alterations	Set Screw Angle	No Flange	Single Flange	Flange Cut
Code	KC120	NFC	RFC, LFC	FC
Spec.	Changes angle layout of set screws to 120°. For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.	(Flange 2 pcs. Included) Ordering Code: NFC	(Flange 1 pc. Included) Ordering Code: RFC, LFC	Cut the flange O.D. in 0.5mm increment. Ordering Code: FC17. FC2(O.D.)+1. FC<F-2. No surface treatment is applied on flange circumference.

Alterations	Adds taper for retaining bearing	Hub Shortening	Tapped Hole Dimensions	Changes the length of the included set screws.
Code	BTC	BC	TPC	SLH
Spec.	Add taper for retaining bearing inner ring. Ordering Code: BTC12-TL3. Applicable to Shape A only. Applicable to Shaft Bore Specs. H and P only. TL<L-W.	Cuts the hub length in 0.5mm increment. Ordering Code: BC491K Equiv.5. Shaft Bore Specs. H, V, F: 3<BC<L-W. Shaft Bore Specs. P, N, C: M+3<BC<L-W. Not available for Shape A.	Ordering Code: TPC5. Applicable to Shaft Bore Specs. P, N, C only.	Ordering Code: SLH10. Applicable to Shaft Bore Specs. P, N, C only.

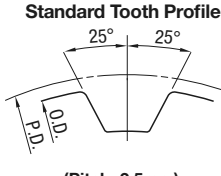
Alterations	Side Through Hole / Side Tapped Hole, 3 places	Side Through Hole / Side Tapped Hole, 4 places	Side Through Hole / Side Tapped Hole, 6 places
Code	KTC, QTC	KFC, QFC	KSC, QSC
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KTC20-K5.0, QTC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment). Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Not applicable to Shaft Bore Specs. F or Y. Specify KC120 when selecting KTC/QTC for Shaft Bore Specs. P, N and C.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KFC20-K5.0, QFC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment). Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Not applicable to Shaft Bore Specs. F or Y. When KFC/QFC is selected for Shaft Bore Specs. P, N and C, KC120 is not available. Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data.	Machine Through Hole / Tapped Hole on the side surface of hub side. Ordering Code (Through Hole): KSC20-K5.0, QSC28-M4. Selection (Through Hole) K Selection: K4.0-K13.0 (0.5mm Increment). Selection (Tapped Hole) M Selection: M3, M4, M5, M6, M8. Not applicable to Shaft Bore Specs. F or Y. KSC/QSC is not applicable to the Shaft Bore Specs. P, N and C.

Timing Pulleys - T2.5

Small Dia. Size Type has become available. For applicable timing belts, see VONA Web site.



Standard Tooth Profile



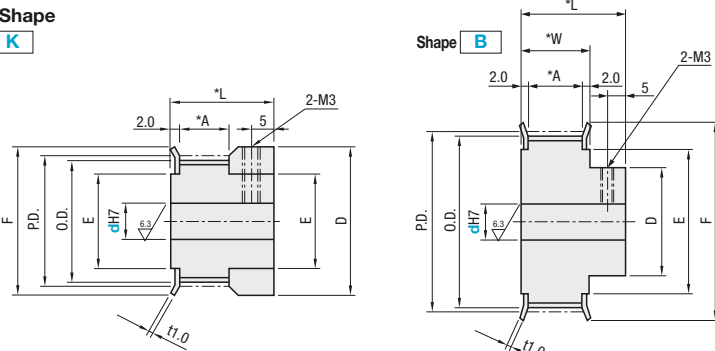
(Pitch: 2.5mm)

RoHS

Type	Belt Width	Material *1		Surface Treatment	Accessory *1
	T2.5	Pulley	Flange		
TPPA	●	A2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.

*1. The above material and accessory might be changed to the ones equivalent to the originals. ⚠ Flange is installed, and set screws are included with Shaft Bores P, N and C.

• **Pulley Shape**
Shape **K**



Shape **B**

Shape **K**

⚠ Shaft Bore Specs. H (Round hole) and V / F (Stepped Hole) do not have tapped holes.

■ **Number of Teeth / Dimension**

mm	Number of Teeth																			
	12	14	15	16	18	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60
P.D.	9.55	11.14	11.94	12.73	14.32	15.92	17.51	19.10	19.89	20.69	22.28	23.87	25.46	27.06	28.65	31.83	35.01	38.20	39.79	47.75
O.D.	9.00	10.60	11.40	12.20	13.80	15.40	17.00	18.55	19.35	20.15	21.75	23.35	24.95	26.55	28.10	31.30	34.50	37.70	39.25	47.25
D	12	14	14	18	18	21	12	12	12	12	14	14	16	16	16	18	24	26	28	30
F	12	14	14	18	18	20	22	25	25	25	28	28	30	32	32	35	44	44	44	50
E	6	8	8	11	11	13	14	16	16	16	18	18	20	23	23	25	28	28	32	38

■ **Tapped Hole Dimensions**
(Shaft Bore Specs.: P, N, C)

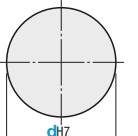
d _{H7} Shaft Bore I.D. (Coarse)	M	Accessory Set Screw
4, 5	M3	M3x3
6-14	M4	M4x3

■ **Belt Nominal Width / Dimension**

mm	Nominal T25070
A (Shape K)	6
A (Shape B)	8
W (Shape K)	10
W (Shape B)	12
L	20

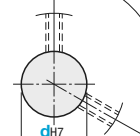
• **Shaft Bore Specs.** ⚠ Surface treatment may not be applied to shaft bores.

H Round Hole

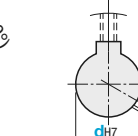


⚠ No tapped holes or set screws.

P Round Hole + Tap

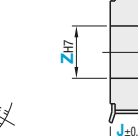


C Old JIS Keywayed Bore + Tap



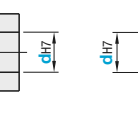
⚠ For Keyway Dimension Details, see P1377. When selecting the shaft bore dia. 10 and the keyway width 4.0mm (height 1.8mm) for New JIS Keywayed Bore, specify **NK10**.

V Stepped Hole



⚠ No tapped holes or set screws.

F Stepped Hole (Counterbored Holes on the Hub Side)



⚠ Applicable to Shape B only.
⚠ No tapped holes or set screws.

Type	Number of Teeth	Type Nominal Width	Pulley Shape	Shaft Bore Specifications (-): Specify in 1mm increment, (.): Select the former or latter				
				H Round Hole	P Round Hole + Tap	N, C Keyway + Tap	V, F Stepped Hole	
							V, F	Z Z-d≥2 (0.1mm Increment)
Aluminum TPPA	12	T25070	K	4, 5	4, 5	-	-	-
	14			4, 5	4, 5	-	-	-
	15			4, 5	4, 5	-	-	-
	16			4, 5	4, 5	-	-	-
	18			4, 5	4, 5	-	-	-
	20			5, 6, 6.35	5, 6, 6.35	-	-	-
	22			5, 6, 6.35	5, 6, 6.35	-	5, 6	7, 8
	24			5, 6, 6.35	5, 6, 6.35	-	5, 6	7, 8
	25			5, 6, 6.35	5, 6, 6.35	-	5, 6	7, 8
	26			5, 6, 6.35	5, 6, 6.35	-	5, 6	7, 8
	28		5, 6, 6.35	5, 6, 6.35	-	5, 6	7, 8	
	30		5, 6, 6.35	5, 6, 6.35	-	5-8	7-10	
	32		5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	8	5-10	7-12	
	34		5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	8	5-10	7-12	
	36		5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	8	5-13	7-15	
	40		5, 6, 6.35, 7, 8	5, 6, 6.35, 7, 8	8	5-14	7-16	
	44		6, 6.35, 7-10	6, 6.35, 7-10	8, 10, NK10	6-14	8-16	
	48		6, 6.35, 7-12	6, 6.35, 7-12	8, 10, NK10, 11, 12	6-14	8-16	
	50		6, 6.35, 7-12	6, 6.35, 7-12	8, 10, NK10, 11, 12	6-22	8-24	
	60		6, 6.35, 7-14	6, 6.35, 7-14	8, 10, NK10, 11-14	6-24	8-26	

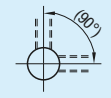
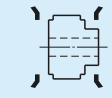
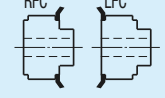
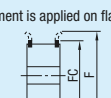
⚠ Shaft Bore Dia. 8, 11, 13, 14 are not available for Shaft Bore Spec. C.

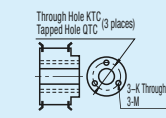
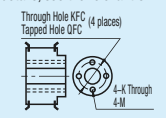
Ordering Example (Shaft Bore Specs.: H, P, N, C) **TPPA18T25070** - **K** - **P4**

(Shaft Bore Specs.: V, F) **TPPA60T25070** - **B** - **V15** - **Z20** - **J8**

Number of Teeth	Body Price EN AW-2017 Equiv. (Clear Anodize)	Shaft Bore Machining Charge (Body Price +)		
	T25070	P Hole	N, C Hole	V, F Hole
12				
14				
15				
16				
18				
20				
22				
24				
25				
26				
28				
30				
32				
34				
36				
40				
44				
48				
50				
60				

Alterations **TPPA40T25070** - **B** - **P5** - **Z** - **J** - **(KC90...etc.)** - **FC33**

Alterations Code	Set Screw Angle KC90	No Flange NFC	Single Flange RFC, LFC	Flange Cut FC
Spec.	Changes an angle of set screw to 90. 	(Flange 2 pcs. Included) [Ordering Code] NFC 	(Flange 1 pc. Included) [Ordering Code] RFC ⚠ Not applicable to Shape K. 	Cut the flange O.D. in 0.5mm increment. [Ordering Code] FC17 ⚠ FC2(O.D.)+1 ⚠ FC<F-2 ⚠ No surface treatment is applied on flange circumference. 

Alterations Code	Side Through Hole / Side Tapped Hole, 3 places KTC, QTC	Side Through Hole / Side Tapped Hole, 4 places KFC, QFC	Tapped Hole Dimensions TPC	Changes the length of the included set screws. SLH												
Spec.	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KTC20-K5.0 [Ordering Code (Tapped Hole)] QTC28-M4 Selection (Through Hole) K Selection K4.0-K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8 ⚠ Not applicable to Shape K. ⚠ Not applicable to Shaft Bore Spec. F. ⚠ When KTC/QTC is selected for Shaft Bore Specs. P, N and C, KC90 is not available. 	Machine Through Hole / Tapped Hole on the side surface of hub side [Ordering Code (Through Hole)] KFC20-K5.0 [Ordering Code (Tapped Hole)] QFC28-M4 Selection (Through Hole) K Selection K4.0-K13.0 (0.5mm Increment) Selection (Tapped Hole) M Selection M3, M4, M5, M6, M8 ⚠ Not applicable to Shape K. ⚠ Not applicable to Shaft Bore Spec. F. ⚠ Specify KC90 when selecting KFC/QFC for Shaft Bore Specs. P, N and C. ⚠ Side holes and tooth side tapped holes might interfere with each other. For details, see the relevant CAD data. 	[Ordering Code] TPC5 ⚠ Applicable to Shaft Bore Specs. P, N, C only. <table border="1"> <tr><td>M</td><td>TPC</td></tr> <tr><td>M3</td><td>M4</td></tr> <tr><td>M4</td><td>M3</td></tr> </table>	M	TPC	M3	M4	M4	M3	[Ordering Code] SLH10 ⚠ Applicable to Shaft Bore Specs. P, N, C only. <table border="1"> <tr><td>Set Screw</td><td>SLH</td></tr> <tr><td>M3x3</td><td>6</td></tr> <tr><td>M4x3</td><td>5, 8</td></tr> </table>	Set Screw	SLH	M3x3	6	M4x3	5, 8
M	TPC															
M3	M4															
M4	M3															
Set Screw	SLH															
M3x3	6															
M4x3	5, 8															

For details, see the "Timing Pulley Alterations - Overview" section (P1378).

Timing Pulleys - T5

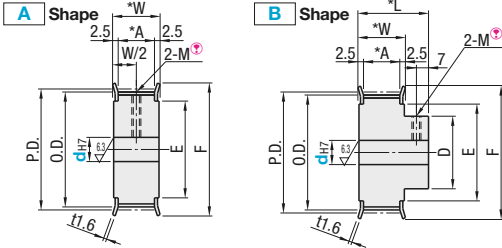
For Timing Belts, see **P.1470** and for Long Timing Belts, see **P.1473**. For Keyless Timing Pulleys, see **P.1439**. For Idlers with Teeth, see **P.1455**.



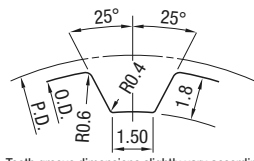
Type	Belt Width				Material *1		Surface Treatment	Accessory *1 Set Screws
	10mm	15mm	20mm	25mm	Pulley	Flange		
TTPA	●	●	●	●	2000 Aluminum Alloy	Aluminum Alloy	Clear Anodize	EN 1.4301 Equiv.
TTPB	●	●	●	●				
TTPK	●	●	●	●				
TTPN	●	●	●	●				
TTPT	●	●	●	●				
TTPM	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	Black Oxide	EN 1.7220 Equiv. (Black Oxide)
TTPP	●	●	●	●				

*1 Flange is installed, and set screws are included with Shaft Bores P, N and C. *1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Clear Anodize: Film Hardness 300HV ~

Pulley Shape



Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:5.0mm)

Shaft Bore Specs. H (Round hole), V or F (Stepped Hole) and Y (Both Sides Stepped Hole) do not have tapped holes.

Number of Teeth / Dimension

mm	Number of Teeth																			
	12	14	15	16	18	20	22	24	25	26	30	32	34	36	40	44	48	50	60	
P.D.	19.10	22.28	23.87	25.46	28.65	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49
O.D.	18.25	21.45	23.05	24.60	27.80	31.00	34.25	37.40	39.00	40.60	43.75	46.95	50.10	53.25	56.45	62.85	69.20	75.55	78.75	94.65
D	-	14	15	17	19	21	23	27	27	31	32	33	37	40	40	47	50	60	63	75
F	24	26	28	32	33	36	40	45	45	48	48	52	55	61	61	67	74	83	87	99
E	12	16	18	20	22	24	27	30	30	35	35	36	40	45	45	50	58	63	67	80

Tapped Hole Dimensions (Shaft Bore Specs: P, N, C)

dh7 Shaft Bore I.D.	M (Coarse)	Accessory: Set Screw
5	M3	M3x3
6-12	M4	M4x3
13-17	M5	M5x4
18-30	M6	M6x5
31-45	M8	M8x6

Belt Nominal Width / Dimension

mm	Nominal			
	T5100	T5150	T5200	T5250
A	11	17	22	27
W	16	22	27	32
L	28	34	39	44

Shaft Bore Specs.

Surface treatment may not be applied to shaft bores.

H Round Hole

dh7

P Round Hole + Tap

dh7

N New JIS Keywayed Bore + Tap

C Old JIS Keywayed Bore + Tap

dh7

V Stepped Hole

dh7

F Stepped Hole (Counterbored Holes on the Hub Side)

dh7

Y Both Ends Stepped Hole

dh7

*No tapped holes or set screws.

*For A-Shape pulley, the screw holes are set at around 120° to keep away from peaks.

*For Keyway Dimension Details, see P.1377. When selecting the shaft bore dia. 10 and the keyway width 4.0mm (height 1.8mm) for New JIS Keywayed Bore, specify NK10.

*No tapped holes or set screws.

*Applicable to Shape B only.

*No tapped holes or set screws.

*Applicable to Shape A only.

*Shaft Bore Dia. d is +0.1 / 0

*No tapped holes or set screws.


Part Number	Type	Number of Teeth	Type Nominal Shape	Pulley Shape																	
				A						B											
				Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter						Shaft Bore Specifications (-): Specify in 1mm Increment, (,): Select the former or latter											
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both Ends Stepped		H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V, F Stepped Hole	
				H Round Hole		P Round Hole + Tap		N, C Keyway + Tap		V Stepped Hole		Y Both									

Timing Pulleys

Width Configurable - MXL, XL, S2M, S3M, S5M

Bar-Shaped Timing Pulleys

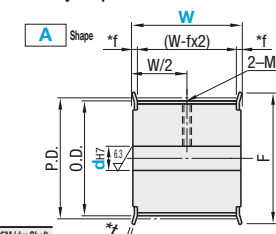
MXL, XL, S2M, S3M, S5M



RoHS

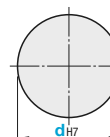
FTPAA **MXL**
XL
S2M
S3M
S5M

Pulley Shape

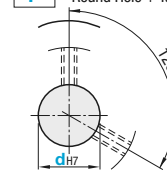


Shaft Bore Specs. Surface treatment may not be applied to shaft bores.

H Round Hole



P Round Hole + Tap



*No tapped holes or set screws. *The set screw holes are set at around 120° to keep away from peaks.

Tapped Hole Dimensions

M (Coarse)	Accessory: Set Screw	MXL (dr Shaft Bore LD.)	XL (dr Shaft Bore LD.)	S2M (dr Shaft Bore LD.)	S3M (dr Shaft Bore LD.)	S5M (dr Shaft Bore LD.)
M 3	M 3x3	3-5	-	3-5	4-5	-
M 4	M 4x3	6-12	6-12	6-22	6-12	6-12
M 5	M 5x4	19-20	13-17	-	18-32	13-17
M 6	M 6x5	-	18-30	-	-	18-30
M 8	M 8x6	-	31-47	-	-	31-38


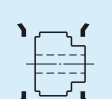
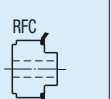
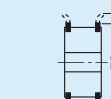
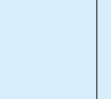
*MXL, S2M, S3M : f=2.0 t=1.0
XL, S5M : f=2.5 t=1.6


Type	Material	Surface Treatment	Accessory Set Screws
FTPAA	Aluminum Alloy 2000 series	EN AW-5052 Equiv.	Clear Anodize EN 1.4301 Equiv.

Part Number Type	Pulley Shape	W mm Increment	Shaft Bore Specs	Shaft Bore Dia. d _{H7} (mm Increment)	P.D.	O.D.	F	Unit Price				Shaft Bore Machined Charge	
								W15-25	W25-50	W51-75	W75-100		
FTPAA	MXL	A	H	15-100	3-4	9.06	8.55	12					
					3-4	9.70	9.19	12					
					3-5	10.35	9.84	14					
					3-5	11.00	10.49	14					
					3-5	11.64	11.14	14					
					3-5	12.29	11.78	14					
					4-6	12.94	12.43	16					
					4-6	13.58	13.07	16					
					4-6	14.23	13.72	16					
					4-7	14.88	14.37	16					
	FTPAA	XL	A	P	W5dx5	4-10	15.52	15.02	20				
						4-7	16.17	15.66	20				
						4-8	16.82	16.31	20				
						4-8	17.46	16.96	22				
						4-8	18.11	17.60	22				
						4-10	18.76	18.25	22				
						4-10	19.40	18.90	22				
						4-10	20.04	19.54	25				
						4-10	20.68	20.18	25				
						4-10	21.32	20.82	25				
FTPAA	S2M	A	H	15-100	3-4	8.91	8.40	12					
					3-4	9.55	9.04	12					
					3-5	10.19	9.68	14					
					3-5	10.83	10.32	14					
					3-6	11.47	10.96	14					
					3-6	12.11	11.60	14					
					3-7	12.75	12.24	16					
					3-7	13.39	12.88	16					
					3-8	14.03	13.52	16					
					3-8	14.67	14.16	16					
	FTPAA	S3M	A	P	W5dx5	4-10	15.16	14.65	20				
						4-10	15.80	15.29	20				
						4-10	16.44	15.93	20				
						4-10	17.08	16.57	20				
						4-10	17.72	17.21	20				
						4-10	18.36	17.85	20				
						4-10	19.00	18.49	20				
						4-10	19.64	19.13	20				
						4-10	20.28	19.77	20				
						4-10	20.92	20.41	20				
FTPAA	S5M	A	H	20-100	6-10	13.37	12.61	16					
					6-10	14.32	13.56	16					
					6-10	15.27	14.51	16					
					6-10	16.22	15.46	16					
					6-10	17.17	16.41	16					
					6-10	18.12	17.36	16					
					6-10	19.07	18.31	16					
					6-10	20.02	19.26	16					
					6-10	20.97	20.21	16					
					6-10	21.92	21.16	16					
	FTPAA	S5M	A	P	W5dx5	8-12	14.32	13.56	18				
						8-12	15.27	14.51	18				
						8-12	16.22	15.46	18				
						8-12	17.17	16.41	18				
						8-12	18.12	17.36	18				
						8-12	19.07	18.31	18				
						8-12	20.02	19.26	18				
						8-12	20.97	20.21	18				
						8-12	21.92	21.16	18				
						8-12	22.87	22.11	18				

Ordering Example: Part Number - Pulley Shape - W - Shaft Bore Specs., I.D.
FTPAA20S5M - A - W80 - P16

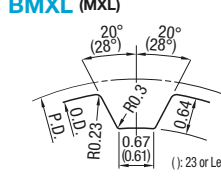
Alterations: Part Number - Pulley Shape - W - Shaft Bore Specs., I.D. (KC90, NFC, RFC, FC, WMC)
FTPAA20S5M - A - W80 - P16 - KC90-WMC40-WA20

Alterations Code	Set Screw Angle	No Flange	Single Flange	Flange Cut	Tapped Hole
	KC90	NFC	RFC	FC	WMC
Spec.	 Changes an angle of set screw to 90°. The set screw hole is set at around 90° to keep away from peaks.	 Flange is not installed. (Flange Included)	 Flange installed by swaging only on one side at the time of shipment. (Flange 1 pc. Included)	 Lowers flange by cutting. FC: 0.5mm Increment FC=(O.D.)+1 FC=F-2 Ordering Code FC35	 Adds a tapped hole. WMC=M+3 WA=M/2+3 WMC+WA=W-(M/2+3) Ordering Code WMC20-WA5

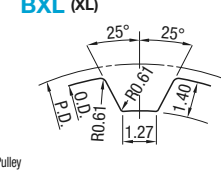


RoHS

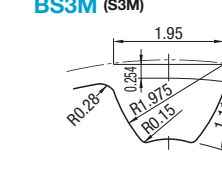
BMXL (MXL)



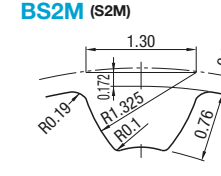
BXL (XL)



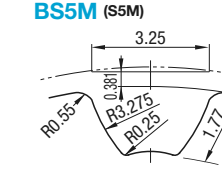
BS3M (S3M)



BS2M (S2M)



BS5M (S5M)



Tooth groove dimensions slightly vary according to the number of teeth. Material: EN AW-2017 Equiv.

Part Number Type	Number of Teeth	P.D.	O.D.	Unit Price
BMXL MXL	10	6.47	5.96	
	11	7.11	6.61	
	12	7.76	7.25	
	13	8.41	7.90	
	14	9.06	8.55	
	15	9.70	9.19	
	16	10.35	9.84	
	17	11.00	10.49	
	18	11.64	11.14	
	19	12.29	11.78	
	20	12.94	12.43	
	21	13.58	13.07	
	22	14.23	13.72	
	23	14.88	14.37	
	24	15.52	15.02	
	25	16.17	15.66	
	26	16.82	16.31	
	27	17.46	16.96	
	28	18.11	17.60	
	29	18.76	18.25	
30	19.40	18.90		
31	20.04	19.54		
32	20.68	20.18		
33	21.32	20.82		
34	21.96	21.46		
35	22.60	22.10		
36	23.24	22.74		
37	23.88	23.38		
38	24.52	24.02		
39	25.16	24.66		
40	25.80	25.30		
41	26.44	25.94		
42	27.08	26.58		
43	27.72	27.22		
44	28.36	27.86		
45	29.00	28.50		
46	29.64	29.14		
47	30.28	29.78		
48	30.92	30.42		
49	31.56	31.06		
50	32.20	31.70		
51	32.84	32.34		
52	33.48	32.98		
53	34.12	33.62		
54	34.76	34.26		
55	35.40	34.90		
56	36.04	35.54		
57	36.68	36.18		
58	37.32	36.82		
59	37.96	37.46		
60	38.60	38.10		
61	39.24	38.74		
62	39.88	39.38		
63	40.52	40.02		
64	41.16	40.66		
65	41.80	41.30		
66	42.44	41.94		
67	43.08	42.58		
68	43.72	43.22		
69	44.36	43.86		
70	45.00	44.50		
71	45.64	45.14		
72	46.28	45.78		

Ordering Example: Part Number **BMXL20**

Part Number Type	Number of Teeth	P.D.	O.D.	Unit Price
BXL XL	16	25.87	25.36	
	18	29.11	28.60	
	19	30.72	30.22	
	20	32.34	31.83	
	22	35.57	35.07	
	24	38.81	38.30	
	25	40.43	39.92	
	26	42.04	41.53	
	28	45.28	44.77	
	30	48.51	48.00	
BS2M S2M	20	12.73	12.22	
	22	14.01	13.50	
	24	15.28	14.77	
	25	15.92	15.41	
	26	16.55	16.04	
	28	17.83	17.32	
	30	19.10	18.59	
	32	20.37	19.86	
	36	22.92	22.41	
	40	25.46	24.96	
BS3M S3M	14	13.37	12.61	
	15	14.32	13.56	
	16	15.27	14.51	
	18	17.17	16.41	
	19	18.12	17.36	
	20	19.07	18.31	
	22	20.97	20.21	
	24	22.87	22.11	
	26	24.77	24.01	
	28	26.67	25.91	
BS5M S5M	14	22.28	21.32	
	16	25.46	24.50	
	20	31.83	30.87	
	24	38.20	37.24	
	25	39.79	38.83	
	30	47.75	46.79	
	32	50.93	49.97	
	36	57.30	56.34	
	40	63.66	62.70	

Keyless Timing Pulleys Overview

Features of Keyless Timing Pulleys

- Machining on shafts such as keyway is not required.
- Unnecessity of machining on shafts retains the strength of shaft.
- Easy positioning.

Installation

1. Wipe off the shaft surface and apply oil or grease. (Do not use any oil or grease containing molybdenum disulfide agent.)
2. Wipe off and apply oil or grease on mating surfaces of pulley and bushing as well. Apply to the threads and seat of the screws also.
3. Temporarily assemble the pulley and bushing, then insert the shaft. (Do not tighten the bushing before inserting the shaft.)
4. After locating, tighten the clamping screws using a torque wrench in the diagonal line order, beginning lightly (at approx. 1/4 of the specified tightening torque).
5. Tighten the screws further to an increased torque value (approximately 1/2 of specified torque).
6. Tighten the screws at the specified torque.
7. Finally, tighten the screws in a circumferential order.

Cautions on Installation

• Be sure to apply oil or grease to the shaft surfaces, the contact surfaces b/w pulleys, bushings, and the locking screws before installation. If not, the MechaLock may not be tightened firmly; the shaft may slip at rotation.

- Screw tighten the bushing after inserting the shaft. (Bushing deforms if the screw is tightened before inserting the shaft.)
- Use a torque wrench to tighten the screws.
- Do not use screws other than the included tightening screws.

Removal

- Be sure to work after the system is completely shut down.
- Loosen the tightening screws in circumferential order.
- Insert a screw in a hole for removal and tighten evenly.
- Repeat "Installation" process for re-installation.

*** 3-Screw Tightening Type 4-Screw Tightening Type 6-Screw Tightening Type**

⚠ No Slits on SH Bushings

⚠ Operating Temp.: -20~+80°C

* SH bushings have 3 tapped holes for removal.

⚠ Material Main Body: EN 1.1191 Equiv. Screw EN 1.7220 Equiv. (Black Oxide)

Bushing Dimension Table

Standard Type Shape E (ST Bushings)

Shaft Bore Dia. d	Screw Qty.	Screw Size	Tapped Hole for Removal	Max. Allowable Torque N·m	Allowable Thrust Load kN	Tightening Torque N·m	D	D ₁	D ₂	d ₁	L	ℓ
8	4	M3x12	M3x2	16	4.0	2.0	25.5	19	10	3.3	15.5	4
10				39			30	22	12			
11	3	M4x16	M4x2	43	5.34	4.0	31	23	13	4.5	16.5	5
12				48			32	24	14			
14				73			35	27	16.6		22	6
15				78			36	28	17.6			
16				83	5.34	4.0	37	29	18.6	4.5		
17				88			38	30	19.6			
18				154			43	33	20.6			
19				163			45	35	22.4		23	7
20				171			46	36	23.4			
22				186	8.74	8.3	48	38	24.6	5.5		
24				206			50	40	26.6			
25				216			52	42	28.4			
28				353			54	44	30.6		24	8
30				382			57	47	33.4	5.5	25	9
32				412	8.74	8.3	59	49	34.7		26.5	
35				451			63	53	38.4		28	
38				686			70	58	42		30.5	10
40				725	12.3	13.7	71	59	43.5	6.6	31.5	11
42				757			74	62	46			
45				1490			84	69	49.5			
48				1600	22.7	34.3	87	72	52.5	8.8	38.5	13
50				1660			89	74	54.5			

Short Type Shape F (SH Bushings)

Shaft Bore Dia. d	Screw Qty.	Screw Size	Tapped Hole for Removal	Max. Allowable Torque N·m	Allowable Thrust Load kN	Tightening Torque N·m	D	D ₁	D ₂	d ₁	L	ℓ
6				5.6	1.87		22.5	16	8.5			
8				8.5	2.12	1.9	24.5	18	10.5	3.3	10.5	3
10	3	M3x10	M3x3	18	3.59		29	21	12.75			
11				20	3.63	3.9	30	22	13.75	4.4	13	4
12				23	3.76		31	23	14.75			
14				37	5.21		36	26	17.65			
15				39	5.10		37	27	18.65			
16				42	5.17		38	28	19.65			
17				45	5.23	3.9	39	29	20.65	4.4	17	5
18				48	5.28		40	30	21.85			
19				49	5.12		42	32	22.85			
20				97	9.68		46	36	24.1			
22				110	9.98		47	37	25.75			
24				121	10.00		49	39	27.75			
25				124	9.90		51	41	28.75			
28				141	10.00	7.8	53	43	31.75	5.5	19	6
30				149	9.89		56	46	33.75			
32				163	10.12		58	47	35.75			
35				173	9.88		61	50	39.1		20	

kgf=Nx0.101972

* Shaft tolerance g6, shaft surface roughness Ra6.3 are standard. kgf=Nx0.101972
 * When there are keyway and D cut on the installation shaft, transmitting torque is reduced by approximately more than 15%.

MechaLock Standard Type Incorporated

In addition to the above bushings, MechaLock Standard Type Incorporated Keyless Timing Pulleys (P1491) have been newly added to the lineup. It provides centering function and tolerates average 1.2 times and 2.5 times greater torque than ST bushing and SH bushings respectively.

Keyless Timing Pulleys - XL

For Timing Belts, see P.1463.

Table 1: Select Shaft Bore Dia.

Type	Part Number	Material **	Surface Treatment	Max. Allowable Torque N·m				D (L)	
				ST Bushing	SH Bushing	ST Bushing	SH Bushing		
MTPLA	XL050	EN AW-7075 Equiv. / Aluminum Alloy 7000 series EN 1.1191 Equiv. / EN 1.1191 Equiv. / EN 1.0330 Equiv. / EN 1.1191 Equiv.	Clear Anodize	8	16	8.5	25.5	24.5	8.5
				11	43	20	31	30	29
MTPL		EN 1.1191 Equiv. / EN 1.0330 Equiv. / EN 1.1191 Equiv.	Black Oxide	12	48	23	32	31	10.5
				14	73		35		12
				15	78		36		
				16	83		37		13
				17	88		38		
				18	154		43		14
				19	163		45		
				20	171		46		
				22	186		48		14
				24	206		50		
				25	216		52		15.5
				28	353		54		
				30	382		57		16.5
				32	412		59		

*1. The above material and accessory might be changed to the ones equivalent to the originals.

• Pulley Shape
 E Shape F Shape

⚠ Surface treatment may not be applied to shaft bores.
 ⚠ Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). See P.1425.

⚠ Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

Number of Teeth	20	21	22	24	25	26	28	30	32	34	36	38	40	42	44	46	48	50	60	72
P.D.	32.34	33.96	35.57	38.81	40.43	42.04	45.28	48.51	51.74	54.98	58.21	61.45	64.68	67.91	71.15	74.38	77.62	80.85	97.02	116.43
O.D.	31.83	33.45	35.07	38.30	39.92	41.53	44.77	48.00	51.24	54.47	57.70	60.94	64.17	67.41	70.64	73.87	77.11	80.34	96.51	115.92
F	40	40	45	45	48	48	55	55	61	61	67	67	74	74	80	80	87	87	104	123
E	27	27	30	30	35	35	40	40	45	45	50	50	58	58	60	60	67	67	84	102

Type	Part Number	Number of Teeth	Type, Nominal Width	Pulley Shape	Unit Price			
					Shape E (ST Bushing)	Shape F (SH Bushing)	Shape E	Shape F
MTPLA MTPL	XL050 *A:14 *W:19	20	E	8	-	-	-	-
		21		-	-	-	-	
		22		8	-	-	-	
		24		8	-	-	-	
		25		8, 10-12	8, 10, 11	-	-	
		26		8, 10-12	8, 10, 11	-	-	
		28		8, 10-12, 14-17	8, 10-12	-	-	
		30		10-12, 14-17	10-12	-	-	
		32		10-12, 14-18	10-12	-	-	
		34		10-12, 14-18	10-12	-	-	
		36		10-12, 14-20, 22	10-12	-	-	
		38		10-12, 14-20, 22	10-12	-	-	
		40		10-12, 14-20, 22, 24, 25, 28, 30	10-12	-	-	
		44		10-12	-	-	-	
		46		10-12, 14-20, 22, 24, 25, 28, 30, 32	10-12	-	-	
		48		10-12	-	-	-	
		50		10-12	-	-	-	
		60		10-12, 14-20, 22, 24, 25, 28, 30, 32	10-12	-	-	
		72		10-12	-	-	-	

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
 MTPL30XL050 - E - 17

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (FC, NFC, LFC, RFC, BMC, BMR)
 MTPL30XL050 - E - 17 - FC52.5

Code	Flange Cut	No Flange	Single Flange	Surface Treatment
	FC	NFC	LFC, RFC	BMC, BMR
Spec.	Lowers flange by cutting. FC: 0.5mm Increment ⚠ No surface treatment is applied on flange circumference.	Flange is not installed. (Flange Included)	Flange is installed on either the bushing side (LFC) or the opposite side (RFC) prior to shipping. (Flange 1 pc. Included)	Applies electroless nickel plating on a bushing. (Antitrust treatment is applied to screws.) ⚠ Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)

Keyless Timing Pulleys - L

Keyless Timing Pulleys - L

MechaLock Standard Type Incorporated (With Centering Function)

For Timing Belts, see **P.1463**. For Open End Belts, see **P.1476**.

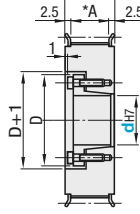
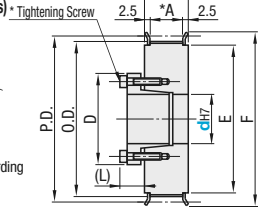


Type	Part Number				Material		Surface Treatment			
	Belt Width 12.7mm (1/2inch) A:14 W:19	Belt Width 19.1mm (3/4inch) A:21 W:26	Belt Width 25.4mm (1inch) A:27 W:32	Belt Width 38.1mm (1.5inch) A:40 W:45	Pulley	Flange	Bushing	Pulley	Flange	Bushing
MTPLA	L050	L075	L100	L150	Aluminum Alloy 7000 series	Aluminum Alloy	EN 1.1191 Equiv.	Clear Anodize	-	-
MTPLK	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Hard Clear Anodize	-	-
MTPLN	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-
MTPL	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Black Oxide	-	-
MTPLP	●	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-

*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV -

Pulley Shape

E Shape



* For quantity and size of tightening screws with flange installed, see **P.1425**.
 * Surface treatment may not be applied to shaft bores.
 * Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings).
P.1425 Cut Flange for 60 and 72 Toothed Pulleys.

Table 1: Select Shaft Bore Dia.

dH7	Max. Allowable Torque N · m				D (L)	
	ST Bushing	SH Bushing	ST Bushing	SH Bushing	ST Bushing	SH Bushing
8	16	8.5	25.5	24.5	8.5	
10	39	18	30	29		10.5
11	43	20	31	30		
12	48	23	32	31		12
14	73	37	35	36		
15	78	39	36	37		13
16	83	42	37	38		
17	88	45	38	39		14
18	154	48	43	40		
19	163	49	45	42		15
20	171	97	46	46		
22	186	110	48	47		16
24	206	121	50	49		
25	216	124	52	51		17
28	353	141	54	53		
30	382	149	57	56		18
32	412	163	59	58		
35	451	173	63	61		19
38	686		70			
40	725		71			20
42	757		74			
45	1490		84			24.5
48	1600		87			
50	1660		89			20

Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 - 30%.

Number of Teeth	14	15	16	17	18	19	20	21	22	24	25	26	28	30	32	34	36	38	40	42	44	48	50	60	72
P.D.	42.45	45.48	48.51	51.54	54.57	57.61	60.64	63.67	66.70	72.77	75.80	78.83	84.89	90.96	97.02	103.08	109.15	115.21	121.28	127.34	133.40	145.53	151.60	181.91	218.30
O.D.	41.68	44.72	47.75	50.78	53.81	56.84	59.88	62.91	65.94	72.00	75.04	78.07	84.13	90.20	96.26	102.32	108.39	114.45	120.51	126.58	132.64	144.77	150.83	181.15	217.53
F	48	48	55	55	61	67	67	70	80	87	87	95	99	104	111	123	127	131	135	140	152	160	190	225	
E	35	35	40	40	45	50	50	56	60	67	67	75	80	84	90	102	105	110	115	120	130	140	170	200	

Part Number	Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dH7 Range (-): Specify in 1mm increment, (,): Select the former or latter							
					Shape E				Shape F			
					L050	L075	L100	L150	L050	L075	L100	L150
					ST Bushing	ST Bushing	ST Bushing	ST Bushing	SH Bushing	SH Bushing	ST Bushing: 10-25 SH Bushing: 28-35	ST Bushing
14		14			8, 10-12	10-12	10-12	11, 12	8, 10	8, 10		11, 12
15		15			8, 10-12	10-12	10-12	11, 12	8, 10	8, 10		11, 12
16		16			10-12, 14-17	10-12, 14-17	10-12, 14-17	11, 12, 4-17	10-12	10-12, 14, 15	10-12, 14, 15	11, 12, 14, 15
17		17			10-12, 14-17	10-12, 14-17	10-12, 14-17	11, 12, 14-17	10-12	10-12, 14-17	10-12, 14-17	11, 12, 14, 17
18		18			12, 14-17	12, 14-17	12, 14-17	12, 14-17	12	12, 14-17	12, 14-17	12, 14-17
19	L050	19	*A:14	E	12, 14-20, 22, 24, 25		12, 14-20, 22, 24, 25		12	12, 14-20, 22, 24, 25		
20	*A:14	20	*W:19	E	12, 14-20, 22, 24, 25, 28, 30		12, 14-20, 22, 24, 25, 28, 30		12	12, 14-20, 22, 24, 25, 28, 30		
21		21			12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
22	L075	22	*A:21	F	12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
23	*A:21	23	*W:26	F	12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
24		24			12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
25	L100	25	*A:27	F	12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
26	*A:27	26	*W:32	F	12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
27		27			12, 14-20, 22, 24, 25, 28, 30, 32		12, 14-20, 22, 24, 25, 28, 30, 32		12	12, 14-20, 22, 24, 25, 28, 30, 32		
28	L150	28	*A:40	F	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42		12	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35	
29	*A:40	29	*W:45	F	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42		12	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35	
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47		47			15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42		12	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35	
48		48			15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	15-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42		12	15-20, 22, 24, 25, 28, 30, 32	15-20, 22, 24, 25, 28, 30, 32, 35	

Keyless High Torque Timing Pulleys - S3M

Compatible with S3M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

Keyless High Torque Timing Pulleys - S3M MechaLock Standard Type Incorporated (with Centering Function)

Compatible with S3M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

For High Torque Timing Belts, see **P.1465**. For Open End Belts, see **P.1476**.

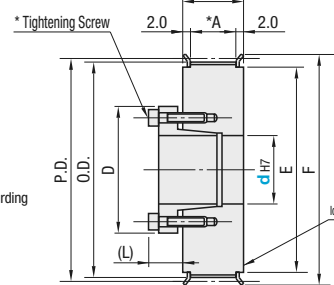


Type	Part Number		Material		Surface Treatment			
	Belt Width: 10mm A:11 W:15	Belt Width: 15mm A:17 W:21	Pulley	Flange	Bushing	Pulley	Flange	Bushing
HTLA	●	●	EN AW-7075 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Clear Anodize	-	-
HTLK	●	●	EN AW-7075 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Hard Clear Anodize	-	-
HTLN	●	●	EN 1.1191 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-
HTPL	●	●	EN 1.1191 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Black Oxide	-	-
HTLG	●	●	EN 1.1191 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-

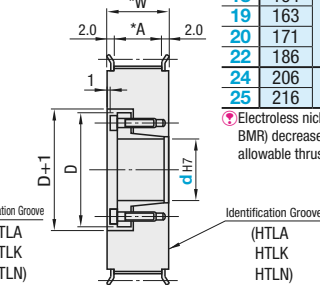
*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

Pulley Shape

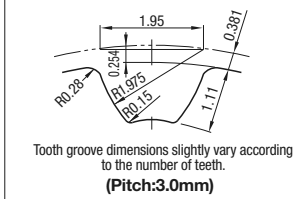
E Shape



F Shape



Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:3.0mm)

Number of Teeth	34	36	40	44	48	50	60	72
P.D.	32.47	34.38	38.20	42.02	45.84	47.75	57.30	68.75
O.D.	31.71	33.62	37.44	41.25	45.07	46.98	56.53	67.99
F	40	40	44	48	50	52	61	74
E	28	28	32	36	38	40	46	58

* For quantity and size of tightening screws with flange installed, see **P.1425**.

⊕ Surface treatment may not be applied to shaft bores.

⊕ Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings).

See **P.1425**.

Table 1: Select Shaft Bore Dia.

dh7	Max. Allowable Torque N·m		D		(L)
	ST Bushing	SH Bushing	ST Bushing	SH Bushing	
6	-	5.6	-	22.5	-
8	16	8.5	25.5	24.5	8.5
10	39	18	30	29	-
11	43	20	31	30	10.5
12	48	23	32	31	-
14	73	-	35	-	12
15	78	-	36	-	-
16	83	-	37	-	13
17	88	-	38	-	-
18	154	-	43	-	14
19	163	-	45	-	-
20	171	-	46	-	-
22	186	-	48	-	-
24	206	-	50	-	-
25	216	-	52	-	14

⊕ Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

HHAA, Aluminum MechaLock Incorporated Type, is approx. 65% lighter than EN 1.1191 Equiv. MechaLock, and thus, is applicable for high speed rotation-based operations.

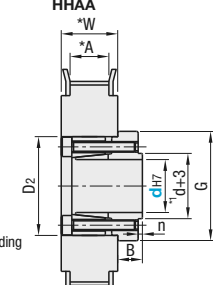


Type	Part Number		Material		Surface Treatment			
	Belt Width: 10mm A:11W:15	Belt Width: 15mm A:17W:21	Pulley	Flange	MechaLock	Pulley	Flange	MechaLock
HHAA	●	●	EN AW-2017 Equiv.	EN AW-5052 Equiv.	EN AW-2014 Equiv.	Clear Anodize	-	-
HHTA	●	●	EN AW-7075 Equiv.	EN AW-5052 Equiv.	EN 1.1191 Equiv.	Clear Anodize	-	-
HHTK	●	●	EN AW-7075 Equiv.	EN AW-5052 Equiv.	EN 1.1191 Equiv.	Hard Clear Anodize	-	-

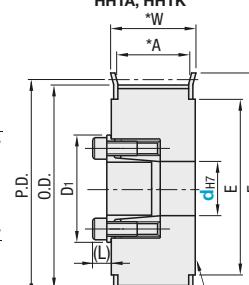
*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

Pulley Shape

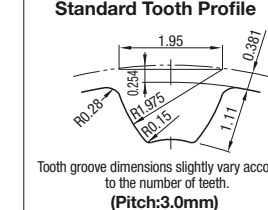
E Shape



F Shape



Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:3.0mm)

*1. When d=6, d+2.5; and when d=15, d+3.5

Number of Teeth	30	34	36	40	44	48	50	60	72
P.D.	28.65	32.47	34.38	38.20	42.02	45.84	47.75	57.30	68.75
O.D.	27.89	31.71	33.62	37.44	41.25	45.07	46.98	56.53	67.99
F	32	40	40	44	48	50	52	61	74
E	23	28	28	32	36	38	40	46	58

⊕ Surface treatment may not be applied to shaft bores.

⊕ For installation of flange swaging, see **P.1489**.

Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (,): Select the former or latter, (-): Specify in 1mm Increment		Unit Price											
				Shape E	Shape F	HTLA (x1.0)		HTLK (x1.1)		HTLN (x1.2)		HTPL (x1.0)		HTLG (x1.1)			
				S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	S3M100	S3M150		
				ST Bushing	ST Bushing	SH Bushing	SH Bushing	Shape E	Shape F	Shape E	Shape F	Shape E	Shape F	Shape E	Shape F		
HTLA	34		E	8	8	6	6										
HTLK	36	A:11	E	8	8	6	6										
HTLN	40	W:15	E	8, 10, 11	8, 10, 11	8	8										
HTPL	44		F	8, 10~12, 14	8, 10~12, 14	8	8, 10~12										
HTPL	48		F	8, 10~12, 14~16	8, 10~12, 14~16	8	8, 10~12										
HTLG	50	A:17	F	8, 10~12, 14~17	8, 10~12, 14~17	8	8, 10~12										
HTLG	60	W:21	F	8, 10~12, 14~19	8, 10~12, 14~19	8	8, 10~12										
	72		F	8, 10~12, 14~20, 22, 24, 25	8, 10~12, 14~20, 22, 24, 25	8	8, 10~12										

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HTPL 60S3M100 - E - 18

Alterations	Flange Cut	No Flange	Single Flange	Surface Treatment
Spec.	Lowers flange by cutting. FC: 0.5mm Increment ⊕ No surface treatment is applied on flange circumference. 	Flange is not installed. (Flange Included) 	Flange is installed on either the bushing side (LFC) or the opposite side (RFC) prior to shipping. (Flange 1 pc. Included) 	Applies electroless nickel plating on a bushing. (Antirusting treatment is applied to screws.) ⊕ Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (FC, NFC, LFC, RFC, BMC, BMR)
HTLA 60S3M100 - E - 18 - FC59

Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (,): Select the former or latter, (-): Specify in 1mm Increment		Body Price 1 ~ 10 pc(s).						MechaLock Assembly Charge (+Body Price)	dh7	
				Shape E	Shape F	HHAA		HHTA, HHTK		HHTK				
				S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	S3M100	S3M150	
HHAA	30		E	6	-	-	-	-	-	-	-	-	-	6
HHTA	34	A:11	E	6, 8	-	6	6	6	6	-	-	-	-	8
HHTK	36	W:15	E	6, 8	-	6	6	6	6	-	-	-	-	10
	40		F	8, 10	8	8	8	8	8	-	-	-	-	12
	44		F	8, 10, 12	8, 10, 12	8, 10	8, 10	8, 10	8, 10	-	-	-	-	14
	48	A:17	F	8, 10, 12	8, 10, 12, 14	8, 10	8, 10, 12	8, 10	8, 10	-	-	-	-	15
	50	W:21	F	8, 10, 12, 14	8, 10, 12, 14	8, 10	8, 10, 12, 14	8, 10	8, 10	-	-	-	-	16
	60	Y:14	F	8, 10, 12, 14	8, 10, 12, 14, 15	8, 10	8, 10, 12, 14~17	8, 10	8, 10	-	-	-	-	17
	72		F	-	-	8, 10	8, 10, 12, 14~19	8, 10	8, 10	-	-	-	-	18
			F	-	-	8, 10	8, 10, 12, 14~19	8, 10	8, 10	-	-	-	-	19

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HHTA60S3M150 - F - 15

HHAA Aluminum MechaLock Performance, Weight

dh7	Locking Screw			Surface Treatment	Allowable Thrust Load (kN)	Weight of MechaLock (g)
	MxL	Qty.	Tightening Torque (N·m)			
6	M2.5x12	3	0.9	Black Oxide	1.33	8
8	M2.5x14	4	0.9		1.51	11
10	M2.5x14	4	0.9		1.63	12
12	M2.5x15	5	0.9		1.99	17
14	M2.5x15	6	0.9		2.56	19
15	M3x18	4	1.5		3.34	24
16	M3x18	4	1.5	3.34	25	

⊕ For details of EN 1.1191 Equiv. MechaLock, see **P.1491**.

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (FC, NFC, LFC, RFC, BMC, BMR)
HHTA34S3M150 - F - 6 - BMC

Alteration Code	Flange Cut	No Flange	Single Flange	Surface Treatment
Spec.	Lowers flange by cutting. FC: 0.5mm Increment ⊕ No surface treatment is applied on flange circumference. 	Flange is not installed. (Flange Included) 	Flange is installed on either the bushing side (LFC) or the opposite side (RFC) prior to shipping. (Flange 1 pc. Included) 	Applies electroless nickel plating on a MechaLock. (Antirusting treatment is applied to screws.) ⊕ Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. HHAA is not applicable. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)

Keyless High Torque Timing Pulleys - S5M

Compatible with S5M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

Keyless High Torque Timing Pulleys - S5M

MechaLock Standard Type Incorporated (with Centering Function)

Compatible with S5M type from Mitsubishi Belting Ltd. as well as Bando Chemical Industries Ltd.

For High Torque Timing Belts, see **P.1465**. For Open End Belts, see **P.1476**.

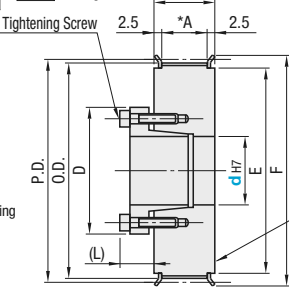


Type	Part Number			Material	Surface Treatment
	Belt Width: 10mm A:11 W:16	Belt Width: 15mm A:17 W:22	Belt Width: 25mm A:27 W:32		
HTLA	S5M100	S5M150	S5M250	EN AW-7075 Alloy 5000 series	Clear Anodize
HTLK				EN 1.1191 Equiv.	Hard Clear Anodize
HTLN				EN 1.1191 Equiv.	Electroless Nickel Plating
HTPL				EN 1.1191 Equiv.	Black Oxide
HTLG				EN 1.0330 Equiv.	Electroless Nickel Plating

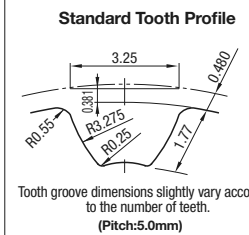
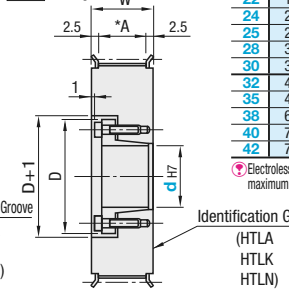
*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

Pulley Shape

E Shape



F Shape



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch: 5.0mm)

Number of Teeth	22	24	25	26	28	30	32	34	36	40	44	48	50	60	72
P.D.	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49	114.59
O.D.	34.05	37.24	38.83	40.42	43.60	46.79	49.97	53.15	56.34	62.70	69.07	75.43	78.62	94.53	113.63
F	40	45	45	48	48	52	55	61	61	67	74	83	87	99	119
E	27	30	30	35	35	36	40	45	45	50	58	63	67	80	100

Surface treatment may not be applied to shaft bores.
Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). See **P.1425**.
For quantity and size of tightening screws with flange installed, see **P.1425**.

Table 1: Select Shaft Bore Dia.

dH7	Max. Allowable Torque N·m			D		(L)
	ST Bushing	SH Bushing	ST Bushing	SH Bushing		
8	16	8.5	25.5	24.5	8.5	
10	39	18	30	29		
11	43	20	31	30	10.5	
12	48	23	32	31		
14	73	37	35	36		
15	78	39	36	37	12	
16	83	42	37	38		
17	88	45	38	39	13	
19	154	48	43	40		
20	163	49	45	42	14	
22	171	97	46	46		
24	206	121	50	49		
25	216	124	52	51	15.5	
28	353	141	54	53		
30	382	149	57	56		
32	412	163	59	58	16.5	
35	451	173	63	61		
38	686	-	70	-	19	
40	725	-	71	-		
42	757	-	74	-	20	

Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

Part Number	Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dH7 Range (-): Specify in 1mm Increment, (,): Select the former or latter					
					Shape E			Shape F		
					S5M100 ST Bushing	S5M150 ST Bushing	S5M250 ST Bushing	S5M100 SH Bushing	S5M150 SH Bushing	S5M250 SH Bushing
HTLA		22	*A:11 *W:16	E	8	10	10	8	8	8
HTLK		24			8, 10	10	10	8	8	8
HTLN		25			8, 10-12	10-12	10-12	8	8, 10-12	8, 10-12
HTPL		26			10-12, 14, 15	10-12, 14, 15	10-12, 14, 15	-	10-12	10-12
HTLG		32	*A:17 *W:22	F	10-12, 14-17	10-12, 14-17	10-12, 14-17	-	10-12	10-12
		34			10-12, 14-17	10-12, 14-17	10-12, 14-17	-	10-12	10-12, 14-17
		40			12, 14-20, 22, 24, 25	12, 14-20, 22, 24, 25	12, 14-20, 22, 24, 25	-	12	12, 14-20, 22, 24, 25
		44			12, 14-20, 22, 24, 25, 28	12, 14-20, 22, 24, 25, 28	12, 14-20, 22, 24, 25, 28	-	12	12, 14-20, 22, 24, 25, 28
		48			12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	-	12	12, 14-20, 22, 24, 25, 28, 30, 32
		50			12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	-	12	12, 14-20, 22, 24, 25, 28, 30, 32
		60			12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	-	12	12, 14-20, 22, 24, 25, 28, 30, 32
		72			12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32	-	12	12, 14-20, 22, 24, 25, 28, 30, 32

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HTPL 60S5M100 - E - 32

Number of Teeth	Unit Price					
	HTLA (x1.0)	HTLK (x1.1)	HTLN (x1.2)	HTPL (x1.0)	HTLG (x1.1)	
	S5M100	S5M150	S5M250	S5M100	S5M150	S5M250
22	Shape E	Shape F	Shape F	Shape E	Shape F	Shape F
24						
25						
26						
28						
30						
32						
34						
36						
40						
44						
48						
50						
60						
72						

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (BMC, BMR, FC, NFC, LFC, RFC)
HTLA 44S5M150 - F - 12 - FC72

Alterations	Surface Treatment		
Code	BMC, BMR		
Spec.	Applies electroless nickel plating on a bushing. (Antirusting treatment is applied to screws.) Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Decaritized treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)		

Alterations	Flange Cut	No Flange	Single Flange
Code	FC	NFC	LFC, RFC
Spec.	Lowers flange by cutting. FC: 0.5mm Increment No surface treatment is applied on flange circumference.	Flange is not installed. (Flange Included)	Flange is installed on either the bushing side (LFC) or the opposite side (RFC) prior to shipping. (Flange 1 pc. Included)

HHAA, Aluminum MechaLock Incorporated Type, is approx. 45% lighter than EN 1.1191 Equiv. MechaLock, and thus, is applicable for high speed rotation-based operations.

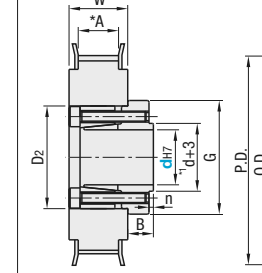


Type	Part Number			Material	Surface Treatment
	Belt Width: 10mm A:11 W:16	Belt Width: 15mm A:17 W:22	Belt Width: 25mm A:27 W:32		
HHAA	S5M100	S5M150	S5M250	EN AW-7075 Alloy 5052 Equiv.	Clear Anodize
HHTA				EN AW-7075 Alloy 5052 Equiv.	Clear Anodize
HHTK				EN 1.1191 Equiv.	Hard Clear Anodize
HHTN				EN 1.1191 Equiv.	Electroless Nickel Plating
HHTT				EN 1.1191 Equiv.	Black Oxide
HHTM				EN 1.0330 Equiv.	Electroless Nickel Plating
HHTP				EN 1.0330 Equiv.	Electroless Nickel Plating

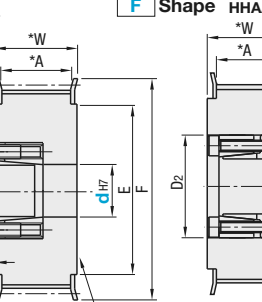
*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

Pulley Shape

E Shape



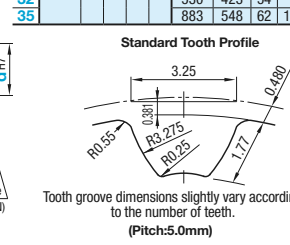
F Shape



*1. When d=6, d+2.5; and when d=15, 16, d+3.5

Table 1: Select Shaft Bore Dia.

dH7	HHAA					HHTA	HHTK	HHTN	HHTT	HHTM	HHTP	D1	(L)
	Max. Allowable Torque (N·m)	D2	B	G	n								
6	4	17	4	20	0.5	-	-	-	-	-	-	-	-
8	6	19	5	22	0.5	19.6	16.6	23.5	-	-	-	6	-
10	8	21	5	24	0.5	27.5	19.6	25.5	-	-	-	-	-
12	12	24	6	27	1.0	44.1	36.2	28.5	-	-	-	-	-
14	18	26	6	29	1.0	63.7	50.9	30.5	-	-	-	-	-
15	25	28	7	31	1.2	80.4	54.8	31.5	-	-	-	-	-
16	26	29	7	32	1.2	83.3	58.8	33	-	-	-	6.5	-
17						92.2	76.4	33.5	-	-	-	-	-
18						95.1	80.3	34.5	-	-	-	-	-
19						98.1	85.2	35.5	-	-	-	-	-
20						216	183	42	-	-	-	-	-
22						255	201	44	-	-	-	8	-
24						363	252	46	-	-	-	-	-
25						392	264	47	-	-	-	-	-
28						441	295	50	-	-	-	-	-
30						500	396	52	-	-	-	8.5	-
32						530	423	54	-	-	-	-	-
35						883	548	62	-	-	-	10	-



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch: 5.0mm)

Number of Teeth	dH7 Range (-): Specify in 1mm Increment, (,): Select the former or latter															
	Shape E		Shape F		Shape E		Shape F		Shape E		Shape F		Shape E		Shape F	
P.D.	31.83	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49	114.59
O.D.	30.87	34.05	37.24	38.83	40.42	43.60	46.79	49.97	53.15	56.34	62.70	69.07	75.43	78.62	94.53	113.63
F	36	40	45	45	48	48	52	55	61	61	67	74	83	87	99	119
E	24	27	30	30	35	35	36	40	45	45	50	58	63	67	80	100

Surface treatment may not be applied to shaft bores.
Flange is installed.
Y dimensions in () require the shaft bore diameter of 12 or more.
For installation, see **P.1489**.

Part Number	Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dH7 Range (-): Specify in 1mm Increment, (,): Select the former or latter							
					HHAA		HHTA, HHTK, HHTN, HHTT, HHTM, HHTP		Shape F			
					Shape E	Shape F	S5M100	S5M150	S5M150	S5M250	S5M150	S5M250
HHAA		20		E	6	-	-	-	-	-	-	-
HHTA		22			8	-	-	-	-	-	-	-
HHTK		24	*A:11 *W:16	E	8, 10	-	8	8	8	8	8	8
HHTN		25			8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10
HHTT		26			10, 12	10, 12	10	10	10	10	10	10
HHTM		30	*A:17 *W:22	F	10, 12, 14, 15	10, 12, 14, 15	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14
HHTP		34	*Y:14	</								


Keyless High Torque Timing Pulleys - P5M

Compatible with P5M Type from Tsubakimoto Chain Co.

Keyless High Torque Timing Pulleys - P8M

Compatible with P8M Type from Tsubakimoto Chain Co.

For High Torque Timing Belts, see **P.1467**. For Open End Belts, see **P.1476**.

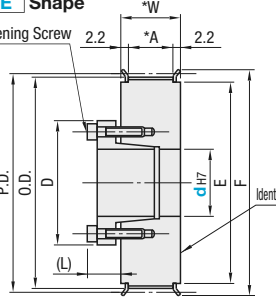


Type	Part Number		Material		Surface Treatment			
	Belt Width: 10mm A:11.6 W:16	Belt Width: 15mm A:16.6 W:21	Pulley	Flange	Bushing	Pulley	Flange	Bushing
PTLA	●	●	EN AW-7075 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Clear Anodize	-	-
PTLN	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-
PTLM	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Black Oxide	-	-
PTLG	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-

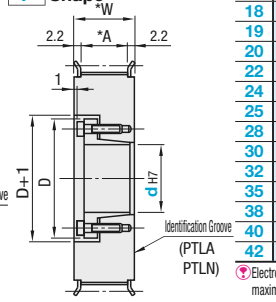
*1. The above material and accessory might be changed to the ones equivalent to the originals.

• Pulley Shape

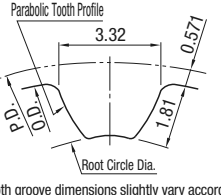
E Shape



F Shape



Standard Tooth Profile




Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:5.0mm)

Number of Teeth	22	24	25	26	28	30	32	34	36	40	44	48	50	60	72
P.D.	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49	114.59
O.D.	33.87	37.06	38.65	40.24	43.42	46.60	49.79	52.97	56.15	62.52	68.89	75.25	78.44	94.35	113.45
F	40	44	44	48	50	55	61	67	67	74	83	87	104	104	119
E	28	32	32	36	38	40	40	46	50	50	58	63	67	84	100

• Surface treatment may not be applied to shaft bores.
 • Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). See **P.1425**.
 • For quantity and size of tightening screws with flange installed, see **P.1425**.

For High Torque Timing Belts, see **P.1467**.

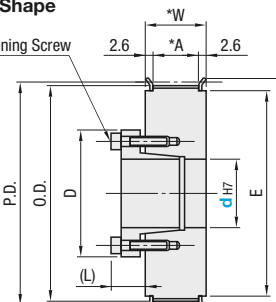


Type	Part Number		Material		Surface Treatment			
	Belt Width: 15mm A:16.8 W:22	Belt Width: 25mm A:27.8 W:33	Pulley	Flange	Bushing	Pulley	Flange	Bushing
PTLA	●	●	EN AW-7075 Equiv.	EN AW-5052 Equiv.	EN 1.1191 Equiv.	Clear Anodize	-	-
PTLK	●	●	EN AW-7075 Equiv.	EN AW-5052 Equiv.	EN 1.1191 Equiv.	Hard Clear Anodize	-	-
PTLN	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-
PTLM	-	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Black Oxide	-	-
PTLG	-	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Electroless Nickel Plating	-	-

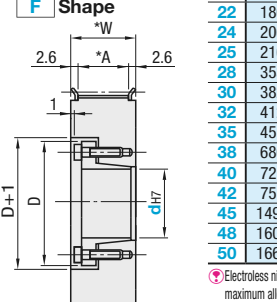
*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV

• Pulley Shape

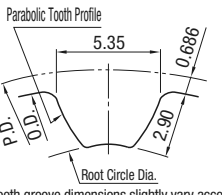
E Shape



F Shape



Standard Tooth Profile



Tooth groove dimensions slightly vary according to the number of teeth. (Pitch:8.0mm)

Number of Teeth	20	22	24	26	28	30	32	34	36	40	44	48	50	60
P.D.	50.93	56.02	61.12	66.21	71.30	76.39	81.49	86.58	91.67	101.86	112.05	122.23	127.32	152.79
O.D.	49.56	54.65	59.74	64.84	69.93	75.02	80.12	85.21	90.30	100.49	110.67	120.86	125.95	151.42
F	55	61	67	74	80	83	87	95	99	111	119	127	135	160
E	40	45	50	58	60	63	67	75	80	90	100	105	115	140

• Surface treatment may not be applied to shaft bores.
 • Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). See **P.1425**.
 • For quantity and size of tightening screws with flange installed, see **P.1425**.

Part Number	Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (,): Select the former or latter, (-): Specify in 1mm Increment				Unit Price			
					Shape E		Shape F		PTLA (x1.0)		PTLN (x1.2)	
					P5M100 (ST Bushing)	P5M150 (ST Bushing)	SH Bushing	SH Bushing	Shape E	Shape F	Shape E	Shape F
PTLA		22	*A:11.6 *W:16	E	8	8	8	8				
PTLN		24		F	8, 10, 11	8, 10, 11	8	8				
		25			8, 10-12, 14		8	8, 10-12				
		26			8, 10-12, 14-16		8	8, 10-12				
		28										
		30			10-12, 14-17	10-12, 14-17		10-12				
		32										
		34			10-12, 14-20, 22			10-12				
		40										
		44			12, 14-20, 22, 24, 25			12				
		48			12, 14-20, 22, 24, 25, 28			12				
		50			12, 14-20, 22, 24, 25, 28, 30, 32, 35			12				
		60			12, 14-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42			12				
		72										

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
 PTLA40P5M150 - F - 12

Part Number	Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (-): Specify in 1mm Increment, (,): Select the former or latter				Unit Price			
					Shape E (ST Bushing)		Shape F (SH Bushing)		PTLA (x1.0)		PTLN (x1.2)	
					P8M150 (ST Bushing)	P8M250 (ST Bushing)	SH Bushing	SH Bushing	Shape E	Shape F	Shape E	Shape F
PTLA		20		E	12, 14-17	12, 14-17	12	12				
PTLK		22		F	12, 14-17	12, 14-17	12	12, 14-17				
PTLN		24			12, 14-20, 22	12, 14-20, 22	12	12, 14-18				
		26			16-20, 22, 24, 25	16-20, 22, 24, 25		16-20, 22, 24				
		28			16-20, 22, 24, 25	16-20, 22, 24, 25		16-20, 22, 24, 25				
		30										
		32			20, 22, 24, 25, 28, 30, 32, 35			16-20, 22, 24, 25, 28, 30, 32, 35				
		34						16-20, 22, 24, 25, 28, 30, 32, 35				
		36			20, 22, 24, 25, 28, 30, 32, 35			20, 22, 24, 25, 28, 30, 32, 35				
		40			16-20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42			20, 22, 24, 25, 28, 30, 32, 35				
		44						20, 22, 24, 25, 28, 30, 32, 35				
		48			20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45		20, 22, 24, 25, 28, 30, 32, 35				
		50			20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50		20, 22, 24, 25, 28, 30, 32, 35				
		60						20, 22, 24, 25, 28, 30, 32, 35				

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
 PTLA24P8M250 - F - 16

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (FC, NFC, LFC, RFC, BMC, BMR, OP)
 PTLA30P5M150 - E - 14 - BMC

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (FC, NFC, LFC, RFC, BMC, BMR, OP)
 PTLA30P8M250 - F - 20 - BMC

Alterations Code	Flange Cut		Surface Treatment		Pulley for Replacement (Pulley only) Code
	FC	NFC	BMC, BMR	OP	
Spec.	Lowers flange by cutting. FC: 0.5mm increment No surface treatment is applied on flange circumference.	Flange is not installed. (Flange Included)	Applies electroless nickel plating on a bushing. (Antirusting treatment is applied to screws.) Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)	Pulleys will be shipped bushings uninstalled.	

Alterations Code	Flange Cut		Surface Treatment		Pulley for Replacement (Pulley only) Code
	FC	NFC	BMC, BMR	OP	
Spec.	Lowers flange by cutting. FC: 0.5mm increment No surface treatment is applied on flange circumference.	Flange is not installed. (Flange Included)	Applies electroless nickel plating on a bushing. (Antirusting treatment is applied to screws.) Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)	Pulleys will be shipped bushings uninstalled.	

Keyless Timing Pulleys - T5

Keyless Timing Pulleys - T5

MechaLock Standard Type Incorporated (With Centering Function)

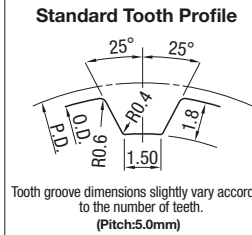
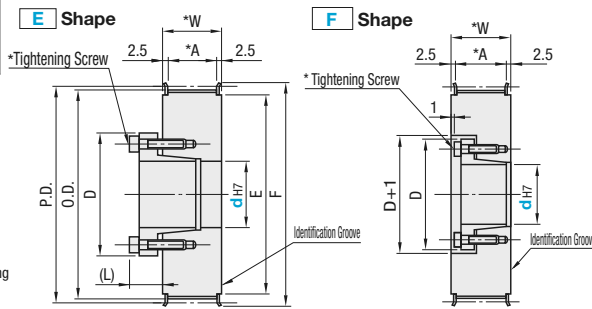
For Timing Belts, see P.1470.



Type	Part Number				Material		Surface Treatment	
	Belt Width: 10mm A:11 W:16	Belt Width: 15mm A:17 W:22	Belt Width: 20mm A:22 W:27	Belt Width: 25mm A:27 W:32	Pulley	Flange	Bushing	Pulley
TTLA	T5100	T5150	T5200	T5250	EN AW-7075 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Clear Anodize
TTLK							Hard Clear Anodize	

*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV ~

Pulley Shape



Standard Tooth Profile
Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:5.0mm)

Number of Teeth	22	24	25	26	28	30	32	34	36	40	44	48	50	60
P.D.	35.01	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49
O.D.	34.25	37.40	39.00	40.60	43.75	46.95	50.10	53.25	56.45	62.85	69.20	75.55	78.75	94.65
F	40	45	45	48	48	52	55	61	61	67	74	83	87	99
E	27	30	30	35	35	36	40	45	45	50	58	63	67	80

Surface treatment may not be applied to shaft bores.
Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). See P.1425.
For quantity and size of tightening screws with flange installed, see P.1425.

Table 1: Select Shaft Bore Dia.

dh7	Max. Torque N · m				D	(L)
	ST Bushing	SH Bushing	ST Bushing	SH Bushing		
8	16	8.5	25.5	24.5	8.5	
10	39	18	30	29		
11	43	20	31	30	10.5	
12	48	23	32	31		
14	73	37	35	36	12	
15	78	39	36	37		
16	83	42	37	38	13	
17	88	45	38	39		
18	154	48	43	40	14	
19	163	49	45	42		
20	171	97	46	46	15.5	
22	186	110	48	47		
24	206	121	50	49	16.5	
25	216	124	52	51		
28	353	141	54	53	19	
30	382	149	57	56		
32	412	163	59	58		
35	451	173	63	61		
38	686	-	70	-		
40	725	-	71	-		

Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (): Select the former or latter, (-): Specify in 1mm Increment											
				Shape E				Shape F							
				T5100 ST Bushing	T5150 ST Bushing	T5200 ST Bushing	T5250 ST Bushing	T5100 SH Bushing	T5150 SH Bushing	T5200 SH Bushing	T5250 SH Bushing				
TTLA TTLK	22	T5100	E	8											
	24	*A:11		8, 10					8		8				
	25	*W:16							8		8				
	26			8, 10-12	10-12	12	12	8	8, 10	8, 10	8, 10				
	28	T5150		8, 10-12	10-12	12	12	8	8, 10, 11	8, 10, 11	8, 10, 11				
	30	*A:17		10-12, 14, 15					10-12	10-12	10-12				
	32	*W:22		10-12, 14-17					10-12	10-12, 14	10-12, 14				
	34			10-12, 14-17	10-12, 14-17				10-12	10-12, 14-18	10-12, 14-18				
	36	T5200							10-12	10-12, 14-19	10-12, 14-19				
	40	*A:22		10-12, 14-17					12	12, 14-20, 22, 24, 25	12, 14-20, 22, 24, 25				
	44	*W:27		12, 14-20, 22, 24, 25					12	12, 14-20, 22, 24, 25, 28	12, 14-20, 22, 24, 25, 28				
	48			12, 14-20, 22, 24, 25, 28					12	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32				
50	T5250	12, 14-20, 22, 24, 25, 28, 30, 32					12	12, 14-20, 22, 24, 25, 28, 30, 32	12, 14-20, 22, 24, 25, 28, 30, 32						
60	*A:27	12, 14-20, 22, 24, 25, 28, 30, 32, 35, 38					12	12, 14-20, 22, 24, 25, 28, 30, 32, 35, 38, 40	12, 14-20, 22, 24, 25, 28, 30, 32, 35, 38, 40						

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
TTLA40T5250 - E - 15

Number of Teeth	Unit Price							
	TTLA (x1.0)				TTLK (x1.1)			
	T5100	T5150	T5200	T5250	T5100	T5150	T5200	T5250
22								
24								
25								
26								
28								
30								
32								
34								
36								
40								
44								
48								
50								
60								

Alterations	Surface Treatment		Pulley for Replacement (Pulley only)
	BMC, BMR		OP
Spec.	Applies electroless nickel plating on a bushing. (Anti-rust treatment is applied to screws.) Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC: Not RoHS Compliant (Screw: EN 1.7220 Equiv. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)		Pulleys will be shipped bushings uninstalled.

Alterations	Flange Cut	No Flange	Single Flange
	FC	NFC	LFC, RFC
Spec.	Lowers flange by cutting. FC: 0.5mm Increment No surface treatment is applied on flange circumference.	Flange is not installed. (Flange Included)	Flange is installed on either the bushing side (LFC) or the opposite side (RFC) prior to shipping. (Flange 1 pc. Included)

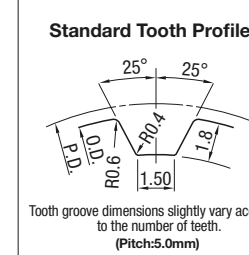
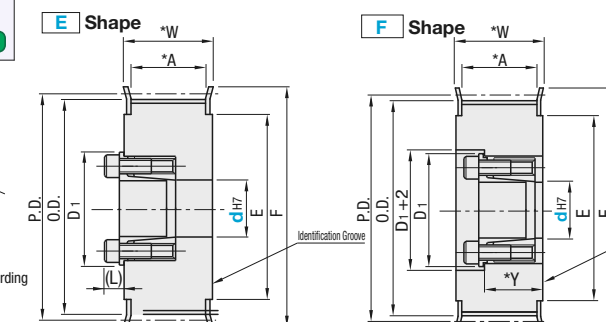
Features: MechaLock Standard Type P.1491 Incorporated Timing Pulleys. It tolerates an average of 1.2 times and 2.5 times greater torque compared to the conventional ST bushing and SH bushing respectively.



Type	Part Number				Material		Surface Treatment	
	Belt Width: 10mm A:11 W:16	Belt Width: 15mm A:17 W:22	Belt Width: 20mm A:22 W:27	Belt Width: 25mm A:27 W:32	Pulley	Flange	Pulley	Flange
HTTA	T5100	T5150	T5200	T5250	EN AW-7075 Equiv.	EN AW-5052 Equiv.	EN 1.1191 Equiv.	Clear Anodize
HTTK							Hard Clear Anodize	

*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV ~

Pulley Shape



Standard Tooth Profile
Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:5.0mm)

Number of Teeth	24	25	26	28	30	32	34	36	40	44	48	50	60
P.D.	38.20	39.79	41.38	44.56	47.75	50.93	54.11	57.30	63.66	70.03	76.39	79.58	95.49
O.D.	37.40	39.00	40.60	43.75	46.95	50.10	53.25	56.45	62.85	69.20	75.55	78.75	94.65
F	45	45	48	48	52	55	61	61	67	74	83	87	99
E	30	30	35	35	36	40	45	45	50	58	63	67	80

Surface treatment may not be applied to shaft bores.
Flange is installed.
For installation, see P.1489. For details of MechaLock, see P.1491
Y dimensions in () require the shaft bore diameter of 12 or more.

Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dh7 Range (-): Specify in 1mm Increment, (): Select the former or latter											
				Shape E				Shape F							
				T5100	T5150	T5200	T5250	T5150	T5200	T5250	T5250				
HTTA HTTK	24	T5100	E	8	8	8	8	8	8	8	8	8	8		
	25	*A:11		8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10		
	26	*W:16													
	28	*A:17		8, 10-12	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	
	30	*W:22		10	10	10	10	10	10	10	10	10	10	10	
	32	*Y:14		10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	
	34	*A:22		10, 12, 14	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	10, 12, 14-16	
	36	*W:27													
	40	(d12~Y=18)		10, 12, 14	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	10, 12, 14-19	
	44	T5250		12, 14	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	
	48	*A:27		12, 14	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	
	50	*W:32		12, 14	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	
60	(d12~Y=22)	12, 14	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22	12, 14-20, 22			

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HTTA48T5250 - F - 20

Number of Teeth	Body Price 1 ~ 10 pc(s).								dh7
	HTTA				HTTK				
	T5100	T5150	T5200	T5250	T5100	T5150	T5200	T5250	
24									8
25									10
26									12
28									14
30									15
32									16
34									17
36									18
40									19
44									20
48									22
50									24
60									25


For orders larger than indicated quantity, please request a quotation.

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (BMC-etc.)
HTTA40T5250 - E - 18 - BMC

Alterations	Surface Treatment	Flange Cut
	BMC, BMR	

Clamping High Torque Timing Pulleys - S3M, S5M, S8M

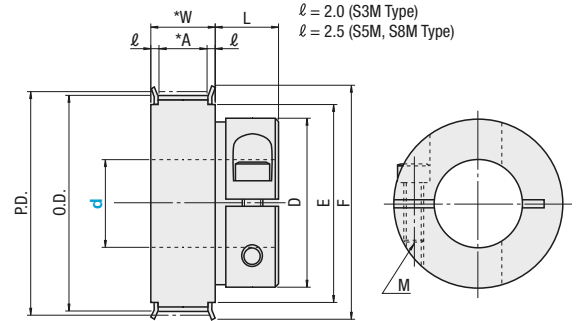
■ **Features:** Can be connected with a shaft by screwing. Easy positioning.



HTCPA □ □ **S3M060**
S3M100
(Pitch 3.0mm)

HTCPA □ □ **S5M100**
S5M150
(Pitch 5.0mm)

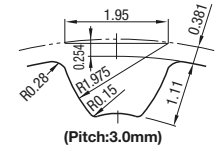
HTCPA □ □ **S8M150**
S8M250
(Pitch 8.0mm)



$\ell = 2.0$ (S3M Type)
 $\ell = 2.5$ (S5M, S8M Type)

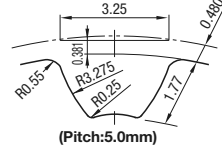
Standard Tooth Profile

S3M



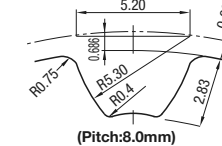
(Pitch:3.0mm)

S5M



(Pitch:5.0mm)

S8M



(Pitch:8.0mm)

■ **Recommended Shaft Tolerance h7 (g6)**
 * Finish Surface Roughness: Ra = 3.2a or less.

Type	Material	Surface Treatment
HTCPA	EN AW-7075 Equiv. Aluminum Alloy 5000 series	Clear Anodize

* Flange is installed.
 * Hex socket head cap screws are included. (EN 1.7220 Equiv., Black-Oxide)

⚠ Surface treatment may not be applied to shaft bores. Tooth groove dimensions slightly vary according to the number of teeth.

■ **S3M** For High Torque Timing Belts, see P.1465.

Part Number	Type	Number of Teeth	Type, Nominal Width	d Selection	P.D.	O.D.	D	F	E	L	Clamp Screw		Unit Price		
											M	Tightening Torque (N·m)	S3M060	S3M100	
24	HTCPA	24	S3M060 *A:7 *W:11	4	22.92	22.16	13	25	16	9	2	0.4			
26		4		24.83	24.07	28		18							
28		4		26.74	25.98	30		20							
30		6 8		28.65	27.89	32	23								
32		6 8		30.56	29.80	35	25								
36		6 8		34.38	33.62	40	28								
40		S3M100 *A:11 *W:15	8 10	38.20	37.44	44	32	26	44	32	12.5	3	1.5		
44			8 10	42.02	41.25	48	36								
48			8 10 11 12	45.84	45.07	50	38								
50			8 10 11 12 13 14	47.75	46.98	52	40								
55			8 10 11 12 13 14 15 16	51.30	50.53	56	44								
60			8 10 11 12 13 14 15 16	57.30	56.53	61	46								

■ **S5M** For High Torque Timing Belts, see P.1465.

Part Number	Type	Number of Teeth	Type, Nominal Width	d Selection	P.D.	O.D.	D	F	E	L	Clamp Screw		Unit Price								
											M	Tightening Torque (N·m)	S5M100	S5M150	S5M100	S5M150	S5M100	S5M150			
24	HTCPA	24	S5M100 *A:11 *W:16	8 10	38.20	37.24	26	45	30	12.5	3	1.5									
25		8 10		39.79	38.83	48		35													
26		8 10		41.38	40.42	52		36													
28		8 10		44.56	43.60	55	40														
30		10		47.75	46.79	58	42														
32		10 11 12 13 14		50.93	49.97	61	45														
34		10 11 12 13 14 15 16		54.11	53.15	64	48														
36		10 11 12 13 14 15 16		57.30	56.34	67	50														
40		10 11 12 13 14 15 16 17 18 19		63.66	62.70	70	55														
44		S5M150 *A:17 *W:22		12 13 14 15 16 17 18 19	70.03	69.07	74	58	15.5				74	58	15.5	5	6				
48				12 13 14 15 16 17 18 19	76.39	75.43	78	63													
50				12 13 14 15 16 17 18 19	79.58	78.62	81	67													
55			12 13 14 15 16 17 18 19	85.94	85.00	84	71														
60			12 13 14 15 16 17 18 19	95.49	94.53	88	75														

■ **S8M** For High Torque Timing Belts, see P.1465.

Part Number	Type	Number of Teeth	Type, Nominal Width	d Selection	P.D.	O.D.	D	F	E	L	Clamp Screw		Unit Price						
											M	Tightening Torque (N·m)	S8M150	S8M250					
20	HTCPA	20	S8M150 *A:17 *W:22	12 13 14	50.93	49.56	36	58	40	16	5	6							
22		12 13 14 15 16		56.02	54.65	61		45											
24		12 13 14 15 16 17 18 19		61.12	59.74	67		50											
25		12 13 14 15 16 17 18 19		63.66	62.29	70	56												
28		15 16 17 18 19		71.30	69.93	80	60												
30		S8M250 *A:28 *W:33		15 16 17 18 19	76.39	75.02	87	67	46				87	67	17	6	12		
32				18 19	81.49	80.12	95	75											
34				18 19	86.58	85.21	103	83											
36				18 19	91.67	90.30	111	91											

■ **Allowable Torque (S3M)**

Type	Number of Teeth	Shaft Dia.	Allowable Torque (N·m)
S3M	24 26 28	4	0.16
	30 32	6	0.95
	36	6	2.6
	40	8	2.6
	44	8	2.6
	48	8	2.6
	50	10	2.6
	60	10	2.6

■ **Allowable Torque (S5M)**

Type	Number of Teeth	Shaft Dia.	Allowable Torque (N·m)
S5M	24 25	8	2.6
	26 28	8	2.6
	30	10	2.6
	32	10	2.6
	34 36	11	2.6
	40	11	2.6
	44 48 50 60	12	2.6
	44 48 50 60	13	2.6
	44 48 50 60	14	2.6
	44 48 50 60	15	2.6
	44 48 50 60	16	2.6
	44 48 50 60	17	2.6
	44 48 50 60	18	2.6
	44 48 50 60	19	2.6
	44 48 50 60	20	2.6
	44 48 50 60	21	2.6
	44 48 50 60	22	2.6
	44 48 50 60	23	2.6
	44 48 50 60	24	2.6
	44 48 50 60	25	2.6

■ **Allowable Torque (S8M)**

Type	Number of Teeth	Shaft Dia.	Allowable Torque (N·m)
S8M	20	12	2.6
	20	13	7.6
	20	14	2.6
	22	12	2.6
	22	13	7.6
	22	14	7.6
	22	15	7.6
	22	16	7.6
	24 25	12	2.6
	24 25	13	7.6
	24 25	14	7.6
	24 25	15	7.6
	24 25	16	7.6
	24 25	17	7.6
	24 25	18	7.6
	24 25	19	7.6
	24 25	20	7.6
	24 25	21	48
	24 25	22	66
	24 25	23	95
	24 25	24	95
	24 25	25	95

Ordering Example

Part Number	Shaft Bore Dia. d
Type - Number of Teeth - Type, Nominal Width	
HTCPA40 - S3M060 - 10	

Flanged Idlers with Teeth

MXL, XL

The shaft bore specifications for the Timing Pulleys is applicable to the Idlers. P.1389, 1391 Idler shafts (cantilever shafts) are selectable from P.881-906. Tensioners can be selected from P.1555, P.1556.

Type		Material			Surface Treatment
Center Bearing	Both Sides Bearing	Main Body	Flange	Bearing	
AATF	AATFW	Aluminum Alloy 2000 series	EN AW-5052 Equiv.	Steel	Clear Anodize
ANTF	-	-	-	-	Electroless Nickel Plating

• Center Bearing

• Both Sides Bearing

* Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)
 Bearings are press-fitted.

MXL (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price	
												No.	D	B	AATF	ANTF
20	MXL019	3	MXL019	3	12.94	12.43	18	11	6	10	3	693ZZx1	8	4		
22	MXL019	3	MXL019	3	14.23	13.72	18	11	6	10	3	693ZZx1	8	4		
24	MXL019	3	MXL019	3	15.52	15.02	20	13	6	10	3	693ZZx1	8	4		
30	MXL019	5	MXL019	5	19.40	18.90	25	16	6	10	3	695ZZx1	13	4		
36	MXL019	5	MXL019	5	23.29	22.78	28	18	6	10	3	695ZZx1	13	4		
40	MXL019	6	MXL019	6	25.87	25.36	30	20	6	10	2.5	696ZZx1	15	5		
	MXL025		7.5						11.5	3.25						
	MXL037		11						15	5						
50	MXL019	8	MXL019	8	32.34	31.84	35	25	6	10	2	698ZZx1	19	6		
	MXL025		7.5						11.5	2.75						
	MXL037		11						15	4.5						
60	MXL019	10	MXL019	10	38.81	38.30	44	32	6	10	2	6900ZZx1	22	6		
	MXL025		7.5						11.5	2.75						
	MXL037		11						15	4.5						

MXL (Both Sides Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price	
												No.	D	B	AATF	ANTF
16	MXL019	3	MXL019	3	10.35	9.84	14	8	6	10	5	673ZZx2	6	2.5		
20	MXL019	3	MXL019	3	12.94	12.43	18	11	6	10	5	673ZZx2	6	2.5		
22	MXL025	3	MXL025	3	14.23	13.72	18	11	7.5	11.5	5	673ZZx2	6	2.5		
	MXL037		11						15							
	MXL050		14						18							
24	MXL025	4	MXL025	4	15.52	15.02	20	13	7.5	11.5	6	674ZZx2	7	2.5		
	MXL037		11						15							
	MXL050		14						18							
30	MXL019	4	MXL019	4	19.40	18.90	25	16	6	10	6	674ZZx2	7	2.5		
36	MXL025	5	MXL025	5	23.29	22.78	28	18	7.5	11.5	11	695ZZx2	13	4		
	MXL037		11						15							
	MXL050		14						18							
40	MXL025	5	MXL025	5	25.87	25.36	30	20	7.5	11.5	11	695ZZx2	13	4		
	MXL037		11						15							
	MXL050		14						18							
50	MXL025	5	MXL025	5	32.34	31.84	35	25	7.5	11.5	11	695ZZx2	13	4		
	MXL037		11						15							
	MXL050		14						18							
60	MXL025	5	MXL025	5	38.81	38.30	44	32	7.5	11.5	11	695ZZx2	13	4		
	MXL037		11						15							
	MXL050		14						18							

Ordering Example

• Center Bearing

Part Number		
Type	Number of Teeth	Applicable Belt
AATF	40	MXL037

• Both Sides Bearing

Part Number		
Type	Number of Teeth	Applicable Belt
AATFW	22	MXL050 - 3

XL (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price	
												No.	D	B	AATF	ANTF
18	XL025	6	XL025	6	29.11	28.60	36	24	7.5	12.5	3.25	626ZZx1	19	6		
	XL031		9						14	4						
	XL037		11						16	5						
20	XL025	6	XL025	6	32.34	31.83	40	27	7.5	12.5	3.25	626ZZx1	19	6		
	XL031		9						14	4						
	XL037		11						16	5						
22	XL025	8	XL025	8	35.57	35.07	45	30	7.5	12.5	2.25	628ZZx1	24	8		
	XL031		9						14	3						
	XL037		11						16	4						
	XL050		14						19	5.5						
	XL025		7.5						12.5	2.25						
25	XL031	10	XL031	10	40.43	39.92	48	35	9	14	3	6000ZZx1	26	8		
	XL037		11						16	4						
	XL050		14						19	5.5						
	XL025		7.5						12.5	2.25						
28	XL025	10	XL025	10	45.28	44.77	55	40	7.5	12.5	2.25	6000ZZx1	26	8		
	XL031	10	XL031	10	45.28	44.77	55	40	9	14	2.5	6200ZZx1	30	9		
30	XL025	10	XL025	10	48.51	48.00	55	40	7.5	12.5	2.25	6200ZZx1	30	9		
	XL031		9						14	2.5						
	XL037		11						16	3.5						
	XL050		14						19	5						
36	XL025	12	XL025	12	58.21	57.70	67	50	7.5	12.5	2.25	6001ZZx1	28	8		
	XL031	12	XL031	12	58.21	57.70	67	50	9	14	2	6201ZZx1	32	10		
	XL037	12	XL037	12	58.21	57.70	67	50	11	16	3	6201ZZx1	32	10		
	XL050	14	XL050	14	58.21	57.70	67	50	14	19	4.5	6201ZZx1	32	10		

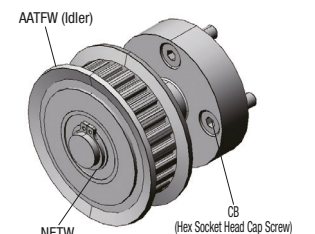
XL (Both Sides Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price	
												No.	D	B	AATF	ANTF
16	XL025	5	XL025	5	25.87	25.36	32	20	7.5	12.5	11	695ZZx2	13	4		
	XL031		9						14							
	XL037		11						16							
	XL050		14						19							
18	XL037	6	XL037	6	29.11	28.60	36	24	11	16	13	696ZZx2	15	5		
	XL050		14						19							
	XL037		11						16							
20	XL037	8	XL037	8	32.34	31.83	40	27	11	16	16.5	698ZZx2	19	6		
	XL050		14						19							
	XL037		11						16							
22	XL037	8	XL037	8	35.57	35.07	45	30	11	16	16.5	698ZZx2	19	6		
	XL050		14						19							
	XL037		11						16							
25	XL037	10	XL037	10	40.43	39.92	48	35	11	16	19.5	6900ZZx2	22	6		
	XL050		14						19							
28	XL037	10	XL037	10	45.28	44.77	55	40	11	16	19.5	6900ZZx2	22	6		
	XL050	12	XL050	12	45.28	44.77	55	40	14	19	25	6001ZZx2	28	8		
30	XL037	10	XL037	10	48.51	48.00	55	40	11	16	19.5	6900ZZx2	22	6		
	XL050	12	XL050	12	48.51	48.00	55	40	14	19	25	6001ZZx2	28	8		
36	XL037	10	XL037	10	58.21	57.70	67	50	11	16	19.5	6900ZZx2	22	6		
	XL050	12	XL050	12	58.21	57.70	67	50	14	19	25	6001ZZx2	28	8		

Example Combination of these app. examples can be selected on our website. Details about Selection Procedure P.87

Alterations Part Number - (FC, NFC, LFC, RFC)
AATF25XL037 - FC43

Alteration Code	Flange Cut FC	No Flange NFC	Single Flange LFC, RFC
Spec.	<p>Lowers flange by cutting. FC: 0.5mm Increment</p> <p>No surface treatment is applied on flange circumference. FC₂=(O. D.)+1 FC₃=F-2 Ordering Code: FC43</p>	<p>Flange is not installed. (Flange Included)</p>	<p>Flange installed by swaging only on either hub side (RFC) or the opposite side (LFC) at the time of shipment. (Flange 1 pc. Included)</p>



Flanged Idlers with Teeth

L, H

The shaft bore specifications for the Timing Pulleys is applicable to the Idlers. P.1393, 1395 Idler shafts (cantilever shafts) are selectable from P.881~906. Tensioners can be selected from P.1555, P.1556.

Type	Material	Surface Treatment
Center Bearing	Main Body: EN AW-7075 Equiv. Flange: Aluminum Alloy 5000 series	Clear Anodize Hard Clear Anodize*
Both Sides Bearing	Main Body: EN 1.1191 Equiv. Flange: EN 1.0330 Equiv.	Black Oxide Electroless Nickel Plating

* Hard Clear Anodize: Film Hardness 300HV ~

• Center Bearing
<Bearing 1 pc.>

• Both Sides Bearing
<Bearing 2 pcs.>

RoHS Bearings are press-fitted. * Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)

L (Center Bearing)

Type	Part Number		Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price		
	Number of Teeth	Applicable Belt									No.	D	B	AATF	BATF	MATF
AATF BATF MATF	16	L050	10	48.51	47.75	55	40	14	19	5	6200ZZx1	30	9			
		L075						21	26	8.5						
		L150						40	45	18.5						
	18	L075	12	54.57	53.81	61	45	14	19	4.5	6201ZZx1	32	10			
		L100						21	26	8						
		L150						27	32	6						
	20	L050	12	60.64	59.88	67	50	14	19	4.5	6201ZZx1	32	10			
		L075						21	26	8						
		L100						27	32	6						
	22	L050	15	66.70	65.94	80	60	14	19	4	6202ZZx1	35	11			
		L075						21	26	8						
		L150						27	32	6						
30	L050	15	90.96	90.20	99	80	14	19	4	6202ZZx1	35	11				
	L075						21	26	8							
	L150						27	32	6							

L (Both Sides Bearing)

Type	Part Number		Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price		
	Number of Teeth	Applicable Belt									No.	D	B	AATFW	AKTFW	BATFW
AATFW BATFW MATFW	14	L050	8	42.45	41.68	48	35	14	19	16.5	698ZZx2	19	6			
		L075						21	26							
		L100						27	32							
	15	L050	8	45.48	44.72	48	35	14	19	16.5	698ZZx2	19	6			
		L075						21	26							
		L100						27	32							
	16	L050	8	48.51	47.75	55	40	14	19	16.5	698ZZx2	19	6			
		L075						21	26							
		L100						27	32							
	16	L050	10	48.51	47.75	55	40	14	19	19.5	6900ZZx2	22	6			
		L075						21	26							
		L100						27	32							
18	L050	12	54.57	53.81	61	45	14	19	25	6001ZZx2	28	8				
	L075						21	26								
	L100						27	32								
20	L050	15	60.64	59.88	67	50	14	19	29	6002ZZx2	32	9				
	L075						21	26								
	L100						27	32								
22	L050	15	66.70	65.94	80	60	14	19	29	6004ZZx2	42	12				
	L075						21	26								
	L100						27	32								
30	L050	12	90.96	90.20	99	80	14	19	22	6901ZZx2	24	6				
	L075						21	26								
	L150						27	32								

Ordering Example

Center Bearing: Part Number AATF 22 L050

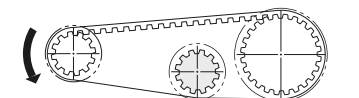
Both Sides Bearing: Part Number BATFW 20 L100 15

H (Center Bearing)

Type	Part Number		Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price		
	Number of Teeth	Applicable Belt									No.	D	B	AATF	BATF	MATF
AATF BATF MATF	14	H075	12	56.60	55.22	61	45	21	26	3	6201ZZx2	32	10			
		H100						27	32	6						
		H150						40	45	11.5						
	16	H075	12	64.68	63.31	70	56	21	26	3	6201ZZx2	32	10			
		H100						27	32	6						
		H150						40	45	11.5						
	18	H075	15	72.77	71.39	80	60	21	26	4	6002ZZx2	32	9			
		H100						27	32	6						
		H150						40	45	11.5						
	20	H075	15	80.85	79.48	87	67	21	26	4	6002ZZx2	32	9			
		H100						27	32	6						
		H150						40	45	11.5						
22	H075	15	88.94	87.56	95	75	21	26	4	6002ZZx2	32	9				
	H100						27	32	6							
	H150						40	45	11.5							
24	H075	15	97.02	95.65	104	84	21	26	4	6002ZZx2	32	9				
	H100						27	32	6							
	H150						40	45	11.5							
25	H075	15	101.06	99.69	111	90	21	26	4	6002ZZx2	32	9				
	H100						27	32	6							
	H150						40	45	11.5							
28	H075	15	113.19	111.82	123	102	21	26	4	6002ZZx2	32	9				
	H100						27	32	6							
	H150						40	45	11.5							

H (Both Sides Bearing)

Type	Part Number		Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price			
	Number of Teeth	Applicable Belt									No.	D	B	AATFW	AKTFW	BATFW	MATFW
AATFW AKTFW BATFW MATFW	14	H075	12	56.60	55.22	61	45	21	26	27	6201ZZx2	32	10				
		H100						27	32								
		H150						40	45								
	15	H075	12	60.64	59.27	67	50	21	26	27	6201ZZx2	32	10				
		H100						27	32								
		H150						40	45								
	16	H075	12	64.68	63.31	70	56	21	26	27	6201ZZx2	32	10				
		H100						27	32								
		H150						40	45								
	16	H075	15	72.77	71.39	80	60	21	26	27	6201ZZx2	32	10				
		H100						27	32								
		H150						40	45								
18	H075	20	80.85	79.48	87	67	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									
20	H075	20	88.94	87.56	95	75	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									
22	H075	20	97.02	95.65	104	84	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									
24	H075	25	101.06	99.69	111	90	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									
25	H075	25	113.19	111.82	123	102	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									
28	H075	30	141.19	139.82	153	112	21	26	27	6201ZZx2	32	10					
	H100						27	32									
	H150						40	45									



Be sure to use the idler on the loose side.
Install the idler as close as possible to the larger pulley.

Alterations Part Number - (FC, NFC, LFC, RFC)
AATF20L100 - FC65

Alteration Code	Flange Cut	No Flange	Single Flange
	FC	NFC	LFC, RFC
Spec.	<p>Low flange by cutting. FC: 0.5mm Increment</p> <p>No surface treatment is applied on flange circumference. FC_z=(O. D.)+1 FC_sF-2 (Ordering Code) FC65</p>	<p>Flange is not installed. (Flange Included)</p>	<p>Flange installed by swaging only on either hub side (RFC) or the opposite side (LFC) at the time of shipment. (Flange 1 pc. Included)</p>

Flanged Idlers with Teeth

S2M, S3M

The shaft bore specifications for the Timing Pulleys is applicable to the Idlers. P.1397, 1399 Idler shafts (cantilever shafts) are selectable from P.881-906. Tensioners can be selected from P.1555, P.1556.

Type		Material		Surface Treatment	
Center Bearing	Both Sides Bearing	Main Body	Flange	Bearing	
AHTF	AHTFW	Aluminum Alloy 2000 series	EN AW-5052 Equiv.	Steel	Clear Anodize
NHTF	NHTFW				Hard Clear Anodize *
SHTF	-	EN 1.4301 Equiv.	Stainless Steel		Electroless Nickel Plating

* Hard Clear Anodize: Film Hardness 300HV ~

• Center Bearing <Bearing 1 pc.> • Both Sides Bearing <Bearing 2 pcs.>

RoHS Bearings are press-fitted. * Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)

S2M (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price								
												No.	D	B	AHTF	NHTF							
40	AHTF	40	S2M040	5	25.46	24.96	30	20	5	9	2.5	695ZZx1	13	4									
																	S2M060	7	11	3	696ZZx1	15	5
																	S2M100	11	15	5			
48	AHTF	48	S2M040	6	30.56	30.05	35	25	5	9	2	696ZZx1	15	5									
																	S2M060	7	11	3			
																	S2M100	11	15	5			
50	AHTF	50	S2M040	6	31.83	31.32	35	25	5	9	2	696ZZx1	15	5									
																	S2M060	7	11	2.5	698ZZx1	19	6
																	S2M100	11	15	1.5	6900ZZx1	22	6
60	AHTF	60	S2M040	10	38.20	37.69	44	32	5	9	1.5	6900ZZx1	22	6									
																	S2M060	7	11	2.5			

S2M (Both Sides Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price								
												No.	D	B	AHTFW	NHTFW							
20	AHTFW	20	S2M040	3	12.73	12.22	16	10	5	9	5	673ZZx2	6	2.5									
																	S2M060	7	11	6	674ZZx2	7	
																	S2M100	11	15	6			
30	AHTFW	30	S2M040	3	19.01	18.59	22	14	5	9	5	673ZZx2	6	2.5									
																	S2M060	7	11	6	674ZZx2	7	
																	S2M100	11	15	6			
32	AHTFW	32	S2M040	3	20.37	19.86	25	16	5	9	5	673ZZx2	6	2.5									
																	S2M060	7	11	6	694ZZx2	11	4
																	S2M100	11	15	9.5			
36	AHTFW	36	S2M040	4	22.92	22.41	28	18	5	9	6	674ZZx2	7	2.5									
																	S2M060	7	11	6			
																	S2M100	11	15	11	695ZZx2	13	4
40	AHTFW	40	S2M040	4	25.46	24.96	30	20	5	9	6	674ZZx2	7	2.5									
																	S2M060	7	11	11	695ZZx2	13	4
																	S2M100	11	15	13	696ZZx2	15	5
48	AHTFW	48	S2M040	8	30.56	30.05	35	25	11	15	16.5	698ZZx2	19	6									
																	S2M060	7	11	11	695ZZx2	13	4
																	S2M100	11	15	13	696ZZx2	15	5
50	AHTFW	50	S2M040	8	31.83	31.32	35	25	11	15	16.5	698ZZx2	19	6									
																	S2M060	7	11	11	695ZZx2	13	4
																	S2M100	11	15	13	696ZZx2	15	5
60	AHTFW	60	S2M040	8	38.20	37.69	44	32	11	15	16.5	698ZZx2	19	6									
																	S2M060	7	11	11	695ZZx2	13	4
																	S2M100	11	15	13	696ZZx2	15	5

Ordering Example

Center Bearing Part Number Both Sides Bearing Part Number

Type Number of Teeth Applicable Belt Type Number of Teeth Applicable Belt - d

AHTF 40 S2M060 AHTFW 32 - S3M100 - 8

S3M (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price		
												No.	D	B	AHTF	NHTF	SHTF
20	AHTF	20	S3M060	5	19.10	18.34	22	14	7	11	3	685ZZx1	11*	5			
24	AHTF	24	S3M060	5	22.92	22.16	25	16	7	11	3.5	695ZZx1	13	4			
25	AHTF	25	S3M060	5	23.87	23.11	28	18	7	11	3.5	695ZZx1	13	4			
26	AHTF	26	S3M060	6	24.83	24.07	28	18	7	11	3	696ZZx1	15	5			
28	AHTF	28	S3M060	6	26.74	25.98	30	20	7	11	3	696ZZx1	15	5			
30	AHTF	30	S3M060	6	28.65	27.89	32	23	7	11	3	696ZZx1	15	5			
32	AHTF	32	S3M060	8	30.56	29.80	35	25	7	11	2.5	698ZZx1	19	6			
36	AHTF	36	S3M060	8	34.38	33.62	40	28	7	11	2.5	698ZZx1	19	6			
40	AHTF	40	S3M060	10	38.20	37.44	44	32	7	11	2.5	6900ZZx1	22	6			
44	AHTF	44	S3M060	10	42.02	41.25	48	36	7	11	2.5	6900ZZx1	22	6			
48	AHTF	48	S3M060	10	45.84	45.07	50	38	7	11	2.5	6900ZZx1	22	6			
50	AHTF	50	S3M060	10	47.75	46.98	52	40	7	11	2.5	6900ZZx1	22	6			
60	AHTF	60	S3M060	10	57.30	56.53	61	46	7	11	2.5	6900ZZx1	22	6			

* The Opening on the hub side is Ø12.

S3M (Both Sides Bearing)

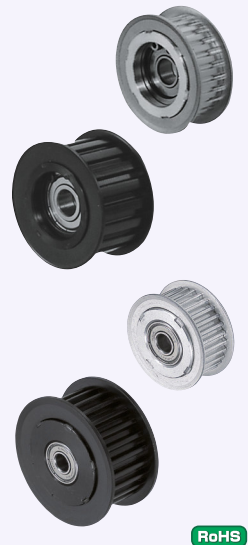
Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price															
												No.	D	B	AHTFW	KHTFW														
20	AHTFW	20	S3M060	3	19.10	18.34	22	14	7	11	5	673ZZx2	6	2.5																
																	S3M100	4	19.10	18.34	22	14	7	11	5	674ZZx2	7			
																	S3M150	5	19.10	18.34	22	14	7	11	9	685ZZx2	11	5		
24	AHTFW	24	S3M060	5	22.92	22.16	25	16	7	11	11	695ZZx2	13	4																
																	S3M100	5	22.92	22.16	25	16	7	11	11					
																	S3M150	5	22.92	22.16	25	16	7	11	17	21				
25	AHTFW	25	S3M100	6	23.87	23.11	28	18	11	15	13	696ZZx2	15	5																
																	S3M150	6	23.87	23.11	28	18	17	21	13	696ZZx2	15	5		
																	S3M100	6	23.87	23.11	28	18	11	15	17	21				
26	AHTFW	26	S3M100	6	24.83	24.07	28	18	11	15	13	696ZZx2	15	5																
																	S3M150	6	24.83	24.07	28	18	11	15	17	21	13	696ZZx2	15	5
																	S3M100	6	24.83	24.07	28	18	11	15	17	21				
28	AHTFW	28	S3M100	6	26.74	25.98	30	20	11	15	13	696ZZx2	15	5																
																	S3M150	6	26.74	25.98	30	20	11	15	17	21	13	696ZZx2	15	5
																	S3M100	6	26.74	25.98	30	20	11	15	17	21				
30	AHTFW	30	S3M100	6	28.65	27.89	32	23	11	15	13	696ZZx2	15	5																
																	S3M150	6	28.65	27.89	32	23	11	15	17	21	13	696ZZx2	15	5
																	S3M100	6	28.65	27.89	32	23	11	15	17	21				
32	AHTFW	32	S3M100	8	30.56	29.80	35	25	11	15	16.5	698ZZx2	19	6																
																	S3M150	8	30.56	29.80	35	25	11	15	17	21	16.5	698ZZx2	19	6
																	S3M100	8	30.56	29.8										

Flanged Idlers with Teeth

S5M, S8M, S14M

The shaft bore specifications for the Timing Pulleys is applicable to the Idlers. P.1401-1405

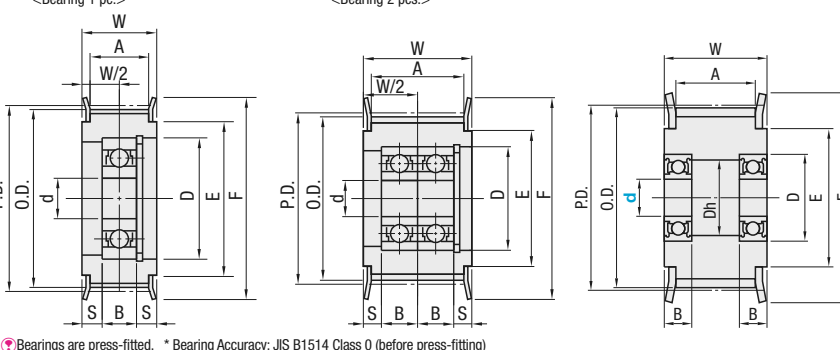
Idler shafts (cantilever shafts) are selectable from P.881-906. Tensioners can be selected from P.1555, P.1556.



Type		Material			Surface Treatment	
Center Bearing	Both Sides Bearing	Main Body			Flange	Bearing
AHTF	AHTFW	S5M	S8M	S14M	EN AW-5052 Equiv.	Steel
KHTF	KHTFW	Aluminum Alloy 2000 series	EN AW-7075 Equiv.	-	EN 1.1191 Equiv.	Steel
BHTF	BHTFW	EN 1.1191 Equiv.			EN 1.1191 Equiv.	Steel
MHTF	MHTFW	EN 1.1191 Equiv.			EN 1.1191 Equiv.	Steel
SHTF	-	EN 1.4301 Equiv.	-	-	EN 1.4301 Equiv.	Stainless Steel

*1 Hard Clear Anodize: Film Hardness 300HV ~
*2 Compatible with S14M Type only. On 2014 and later, S14M Type is to be delivered with flange not swaged on, but included.

• Center Bearing <Bearing 1 pc.> • Both Sides Bearing <Bearing 2 pcs.>



Ⓡ Bearings are press-fitted. * Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)

S5M (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price					
												No.	D	B	AHTF	KHTF	BHTF	MHTF	SHTF	
16	S5M100	6		6	25.46	24.50	32	20	11	16	5	606ZZx1	17	6						
18	S5M100	8		8	28.65	27.69	33	22	11	16	5	698ZZx1	19	6						
20	S5M100	8		8	31.83	30.87	36	24	11	16	5	698ZZx1	19	6						
	S5M150											698ZZx2								
22	S5M100	8		8	35.01	34.05	40	27	11	16	4	628ZZx1	24	8						
	S5M150											628ZZx2								
24	S5M100	10		10	38.20	37.24	45	30	11	16	4	600ZZx1	26	8						
	S5M150											600ZZx2								
25	S5M100	10		10	39.79	38.83	45	30	11	16	4	600ZZx1	26	8						
	S5M150											600ZZx2								
26	S5M100	10		10	41.38	40.42	48	35	11	16	3.5	6200ZZx1	30	9						
	S5M150											6200ZZx2								
28	S5M100	10		10	44.56	43.60	48	35	11	16	3.5	6200ZZx1	30	9						
	S5M150											6200ZZx2								
30	S5M100	12		12	47.75	46.79	52	36	11	16	3	6201ZZx1	32	10						
	S5M150											6201ZZx2								
32	S5M100	12		12	50.93	49.97	55	40	11	16	3	6201ZZx1	32	10						
	S5M150											6201ZZx2								
36	S5M100	12		12	57.30	56.34	61	45	11	16	3	6201ZZx1	32	10						
	S5M150											6201ZZx2								
40	S5M100	12		12	63.66	62.70	67	50	11	16	3	6201ZZx1	32	10						
	S5M150											6201ZZx2								

S5M (Both Sides Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price					
												No.	D	B	AHTFW	KHTFW	BHTFW	MHTFW		
16	S5M150	6		6	25.46	24.50	32	20	17	22	14.5	606ZZx2	17	6						
	S5M250								27	32										
18	S5M150	8		8	28.65	27.69	33	22	17	22	16.5	698ZZx2	19	6						
	S5M250								27	32										
20	S5M150	8		8	31.83	30.87	36	24	17	22	16.5	698ZZx2	19	6						
	S5M250								27	32										
22	S5M150	8		8	35.01	34.05	40	27	17	22	19.5	608ZZx2	22	7						
	S5M250								27	32										
24	S5M150	8		8	38.20	37.24	45	30	17	22	19.5	608ZZx2	22	7						
	S5M250								27	32										
25	S5M100	6		6	39.79	38.83	45	30	11	16	13	696ZZx2	15	5						
	S5M150								17	22										
	S5M250								27	32	14.5	606ZZx2	17	6						
25	S5M100	8		8	39.79	38.83	45	30	17	22	16.5	698ZZx2	19	6						
	S5M150								17	22										
	S5M250								27	32	19.5	608ZZx2	22	7						
26	S5M150	10		10	41.38	40.42	48	35	17	22	25	6200ZZx2	30	9						
	S5M250								27	32										
28	S5M100	10		10	44.56	43.60	48	35	11	16	19.5	6900ZZx2	22	6						
	S5M150								17	22										
	S5M250								27	32	25	6200ZZx2	30	9						
30	S5M150	12		12	47.75	46.79	52	36	17	22	25	6001ZZx2	28	8						
	S5M250								27	32	27	6201ZZx2	32	10						
32	S5M150	12		12	50.93	49.97	55	40	17	22	25	6001ZZx2	28	8						
	S5M250								27	32	27	6201ZZx2	32	10						
36	S5M150	15		15	57.30	56.34	61	45	17	22	29	6002ZZx2	32	9						
	S5M250								27	32	30	6202ZZx2	35	11						
40	S5M150	15		15	63.66	62.70	67	50	17	22	29	6002ZZx2	32	9						
	S5M250								27	32	30	6202ZZx2	35	11						

S8M (Center Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price					
												No.	D	B	AHTF	KHTF	BHTF	MHTF		
20	S8M150	12		12	50.93	49.56	58	40	17	22	6	6201ZZx1	32	10						
	S8M250								28	33	5.5	6202ZZx2	35	11						
22	S8M150	12		12	56.02	54.65	61	45	17	22	6	6201ZZx1	32	10						
	S8M250								17	22	6	6201ZZx1								
	S8M300								28	33	6.5	6201ZZx2								
24	S8M150	12		12	61.12	59.74	67	50	17	22	6	6201ZZx1	32	10						
	S8M250								28	33	6.5	6201ZZx2								
	S8M300								33	38	8	6202ZZx2	35	11						
	S8M400								44	49	13.5	6202ZZx2								
25	S8M150	15		15	63.66	62.29	70	56	17	22	5.5	6202ZZx1	35	11						
26	S8M150	15		15	66.21	64.84	74	58	17	22	5.5	6202ZZx1	35	11						
28	S8M150	15		15	71.30	69.93	80	60	17	22	5.5	6202ZZx1	35	11						
	S8M150								17	22	5.5	6202ZZx1								
	S8M250								28	33	5.5	6202ZZx2								
	S8M300								33	38	5	6204ZZx2	47	14						
	S8M400								44	49	10.5	6204ZZx2								
32	S8M150	20		20	81.49	80.12	87	67	17	22	4	6204ZZx1	47	14						
34	S8M150	20		20	86.58	85.21	95	75	17	22	4	6204ZZx1	47	14						
40	S8M150	25		25	101.86	100.49	111	90	17	22	3.5	6205ZZx1	52	15						

S8M (Both Sides Bearing)

Part Number	Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price							
												No.	D	B	AHTFW	KHTFW	BHTFW	MHTFW				
22	S8M250	12		12	56.02	54.65	61	45	28	33	27	6201ZZx2	32	10								
	S8M300								33	38												
	S8M400								44	49												
24	S8M250	12		12	61.12	59.74	67	50	28	33	27	6201ZZx2	32	10								
	S8M300								33	38												
	S8M400								44	49												
25	S8M250	12		12	63.66	62.29	70	56	28	33	27	6201ZZx2	32	10								
	S8M300								33	38												
	S8M400								44	49												
26	S8M150	12		12	66.21	64.84	74	58	17	22	25	6001ZZx2	28	8								
	S8M300								33	38												
	S8M400								44	49												

Flanged Idlers with Teeth

P2M, P3M, P5M, P8M / 2GT, 3GT, 5GT, 8YU

The Shaft Bore Specs. can also be selected for idler use. **P.1381~1387, P.1409~1413**
 Idler shafts (cantilever shafts) are selectable from **P.881~906**.

Type				Material			Surface Treatment	
P2M, P3M, P5M, P8M		2GT, 3GT, 5GT, 8YU		Main Body	Flange	Bearing		
Center Bearing	Both Sides Bearing	Center Bearing	Both Sides Bearing	(*) Aluminum Alloy 2000 series	EN AW-5052 Equiv.	Steel	Clear Anodize	
APTF	KPTFW	AGTF	BGTF	EN AW-5052 Equiv.	EN AW-5052 Equiv.		Hard Clear Anodize*	
BPTF	BPTFW	BGTF	BGTFW	EN AW-5052 Equiv.	EN AW-5052 Equiv.		Black Oxide	

*Hard Clear Anodize: Film Hardness 300HV ~
 *Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)
 *Bearings are press-fitted.
 (*1) Body material of P8M is EN AW-7075 Equiv.

• Center Bearing
-<Bearing 1 pc.>

• Both Sides Bearing
-<Bearing 2 pcs.>

P2M, P3M, P5M, P8M (Center Bearing)

Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F		E		A	W	S	Bearing Dimensions			Unit Price	
						APTF	BPTF	APTF	BPTF				No.	D	B	APTF	BPTF
APTF BPTF	40	P2M060	6	25.46	24.96	32	-	23	-	7.5	11.5	3.25	696ZZx1	15	5	-	-
		P3M100	6	28.65	27.89	35	35	25	25	12	16	5	626ZZx1	19	6	-	-
	P3M150	6	28.65	27.89	35	35	25	25	17	21	4.5	626ZZx2	19	6	-	-	
	20	P5M100	8	31.83	30.69	35	-	25	-	11.6	16	5	698ZZx1	19	6	-	-
		P5M150	8	31.83	30.69	35	-	25	-	16.6	21	4.5	698ZZx2	19	6	-	-
	28	P5M100	10	44.56	43.42	50	50	38	38	11.6	16	3.5	6200ZZx1	30	9	-	-
		P5M150	10	44.56	43.42	50	50	38	38	16.6	21	6	6200ZZx1	30	9	-	-
	20	P8M150	12	50.93	49.56	55	-	40	-	16.8	22	6	6201ZZx1	32	10	-	-
		P8M250	15	50.93	49.56	55	-	40	-	27.8	33	5.5	6202ZZx2	35	11	-	-
	24	P8M250	12	61.12	59.74	67	-	50	-	27.8	33	6.5	6201ZZx2	32	10	-	-
		P8M150	12	61.12	59.74	67	-	50	-	16.8	22	5.5	6202ZZx1	35	11	-	-
	30	P8M150	15	76.39	75.02	83	83	63	63	27.8	33	5.5	6202ZZx1	35	11	-	-
P8M250		15	76.39	75.02	83	83	63	63	27.8	33	5.5	6202ZZx2	35	11	-	-	

Radial G dimensions of the opening on the hub side are the same as D dimensions.

P5M, P8M (Both Sides Bearing)

Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F		E		A	W	Dh	Bearing Dimensions			Unit Price			
						APTFW	KPTFW	BPTFW	APTFW				KPTFW	BPTFW	No.	D	B	APTFW	KPTFW
APTFW KPTFW BPTFW	25	P5M100	6	39.79	38.65	-	-	-	-	11.6	16	13	696ZZx2	15	5	-	-	-	
		P5M150	6	39.79	38.65	-	-	-	-	16.6	21	16.5	698ZZx2	19	6	-	-	-	
		P5M100	8	39.79	38.65	44	44	32	32	11.6	16	16.5	698ZZx2	19	6	-	-	-	
		P5M150	8	39.79	38.65	44	44	32	32	16.6	21	16.5	698ZZx2	19	6	-	-	-	
	28	P5M100	10	44.56	43.42	50	50	38	38	11.6	16	19.5	6900ZZx2	22	6	-	-	-	
		P5M150	10	44.56	43.42	50	50	38	38	16.6	21	19.5	6900ZZx2	22	6	-	-	-	
	30	P5M150	12	47.75	46.60	-	55	-	40	16.6	21	24	6001ZZx2	28	8	-	-	-	
		P5M150	15	57.30	56.15	-	67	-	50	16.6	21	28	6002ZZx2	32	9	-	-	-	
	26	P8M150	P8M150	12	66.21	64.84	74	74	58	58	16.8	22	24	6001ZZx2	28	8	-	-	-
			P8M250	12	66.21	64.84	74	74	58	58	27.8	33	24	6001ZZx2	28	8	-	-	-
		P8M150	P8M150	15	76.39	75.02	83	83	63	63	16.8	22	28	6002ZZx2	32	9	-	-	-
			P8M250	15	76.39	75.02	83	83	63	63	27.8	33	28	6002ZZx2	32	9	-	-	-
30	P8M250	P8M250	20	76.39	75.02	83	83	63	63	27.8	33	36	6004ZZx2	42	12	-	-	-	

Alterations Part Number - (FC, NFC, LFC, RFC)
 APTF30P8M250 - NFC

Alterations Code	Flange Cut	No Flange	Single Flange
	FC	NFC	LFC, RFC
Spec.	Lowers flange by cutting. FC: 0.5mm Increment FC=(O. D.)+1 FC=F-2 Ordering Code FC35	Flange is not installed. (Flange Included)	Flange installed by swaging only on either hub side (RFC) or the opposite side (LFC) at the time of shipment. (Flange 1 pc. Included)

2GT, 3GT, 5GT, 8YU (Center Bearing)

Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions				Unit Price 1 ~ 9 pc(s).		
											No.	D	B	G	AGTF	BGTF	
AGTF BGTF	40	GT2060	6	25.46	24.96	30	21	7.0	10.3	2.15	606ZZx1	17	6	17	-	-	
		GT2090	6	25.46	24.96	30	21	10.0	13.3	3.65	606ZZx1	17	6	17	-	-	
	30	GT3060	6	28.65	27.89	32	23	7.3	11.0	2.50	606ZZx1	17	6	17	-	-	
		GT3090	6	28.65	27.89	32	23	10.3	14.0	4.00	606ZZx1	17	6	17	-	-	
	20	GT5090	8	31.83	30.69	35	24	10.3	14.0	4.00	698ZZx1	19	6	19	-	-	
		GT5120	8	31.83	30.69	35	24	13.3	17.0	5.50	698ZZx1	19	6	19	-	-	
	24	GT5090	10	38.20	37.06	42	30	10.3	14.0	4.50	6800ZZx1	19	5	20	-	-	
		GT5120	10	38.20	37.06	42	30	13.3	17.0	3.50	6800ZZx2	19	5	20	-	-	
	28	GT5090	10	44.56	43.42	48	36	10.3	14.0	4.50	6800ZZx1	19	5	20	-	-	
		GT5120	10	44.56	43.42	48	36	13.3	17.0	6.00	6800ZZx1	19	5	20	-	-	
	30	GT5090	12	47.75	46.61	51	39	10.3	14.0	4.50	6801ZZx1	21	5	22	-	-	
		GT5120	12	47.75	46.61	51	39	13.3	17.0	6.00	6801ZZx1	21	5	22	-	-	
	20	YU8150	20	50.93	49.56	62	40	16.7	23.0	8.00	6804ZZx1	32	7	34	-	-	
		YU8200	20	50.93	49.56	62	40	21.7	28.0	7.00	6804ZZx2	32	7	34	-	-	
	30	YU8150	YU8150	25	76.39	75.02	85	64	16.7	23.0	8.00	6805ZZx1	37	7	38	-	-
			YU8200	25	76.39	75.02	85	64	21.7	28.0	7.00	6805ZZx2	37	7	38	-	-
		YU8250	YU8250	25	76.39	75.02	85	64	26.7	33.0	9.50	6805ZZx2	37	7	38	-	-

2GT, 3GT, 5GT, 8YU (Both Sides Bearing)

Type	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price 1 ~ 9 pc(s).	
											No.	D	B	AGTFW	BGTFW
AGTFW BGTFW	30	GT2040	5	19.10	18.59	24	15	5.0	8.3	7	675ZZx2	8	2.5	-	-
		GT2060	5	19.10	18.59	24	15	7.0	10.3	7	675ZZx2	8	2.5	-	-
		GT2090	5	19.10	18.59	24	15	10.0	13.3	7	675ZZx2	8	2.5	-	-
		GT3090	5	19.10	18.34	23	14	10.3	14.0	7	675ZZx2	8	2.5	-	-
	20	GT3150	5	19.10	18.34	23	14	16.3	20.0	7	675ZZx2	8	2.5	-	-
		GT3090	6	22.92	22.16	26	18	10.3	14.0	9	676ZZx2	10	3	-	-
	24	GT3150	6	22.92	22.16	26	18	16.3	20.0	9	676ZZx2	10	3	-	-
		GT3090	8	28.65	27.89	32	23	10.3	14.0	11	678ZZx2	12	3.5	-	-
	30	GT3150	8	28.65	27.89	32	23	16.3	20.0	11	678ZZx2	12	3.5	-	-
		GT5120	8	31.83	30.69	35	24	13.3	17.0	11	678ZZx2	12	3.5	-	-
	20	GT5150	8	31.83	30.69	35	24	16.3	20.0	11	678ZZx2	12	3.5	-	-
		GT5120	8	47.75	46.61	51	39	13.3	17.0	11	678ZZx2	12	3.5	-	-
	30	GT5150	12	47.75	46.61	51	39	16.3	20.0	18.5	6801ZZx2	21	5	-	-
		GT5150	12	47.75	46.61	51	39	16.3	20.0	18.5	6801ZZx2	21	5	-	-
	32	GT5120	12	50.93	49.79	55	42	13.3	17.0	18.5	6801ZZx2	21	5	-	-
		GT5150	12	50.93	49.79	55	42	16.3	20.0	18.5	6801ZZx2	21	5	-	-
	36	GT5120	15	57.30	56.16	61	49	13.3	17.0	21.5	6802ZZx2	24	5	-	-
		GT5150	15	57.30	56.16	61	49	16.3	20.0	21.5	6802ZZx2	24	5	-	-
	30	YU8200	25	76.39	75.02	85	64	21.7	28.0	34.5	6805ZZx2	37	7	-	-
		YU8250	25	76.39	75.02	85	64	26.7	33.0	34.5	6805ZZx2	37	7	-	-

Ordering Example • Center Bearing

Part Number		
Type	Number of Teeth	Applicable Belt
APTF	20	P5M100
AGTF	30	GT5090


• Both Sides Bearing

Part Number			
Type	Number of Teeth	Applicable Belt	d
APTFW	25	P5M150	6
AGTFW</			

Flanged Idlers with Teeth

T5, T10, AT5, AT10 Type

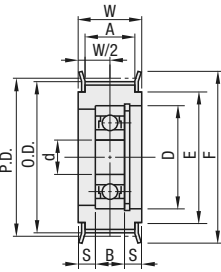
The Shaft Bore Specs. [Y] for the Timing Pulleys is applicable to the Idlers. [X] P1417~1421
 Idler shafts (cantilever shafts) are selectable from [X] P881~906.



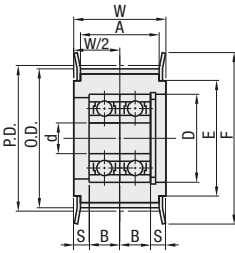
Type		Material		Surface Treatment	
Center Bearing	Both Sides Bearing	Main Body	Flange	Bearing	
AHTF	AHTFW KHTFW	Aluminum Alloy 2000 series	EN AW-5052 Equiv.	Steel	Clear Anodize Hard Clear Anodize*

* Hard Clear Anodize: Film Hardness 300HV ~

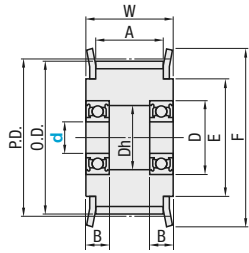
• Center Bearing
<Bearing 1 pc.>



<Bearing 2 pcs.>



• Both Sides Bearing



⊕ Bearings are press-fitted. * Bearing Accuracy: JIS B1514 Class 0 (before press-fitting)

T5 (Center Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price	
												No.	D	B		
AHTF	18	T5100		8	28.65	27.80	33	22	11	16	5	698ZZx1	19	6		
	20	T5100		8	31.83	31.00	36	24	11	16	5	698ZZx1	19	6		
	22	T5100		10	35.01	34.25	40	27	11	16	5	6900ZZx1	22	6		
	24	T5100		10	38.20	37.40	45	30	11	16	4	6000ZZx1	26	8		
	25	T5100		10	39.79	39.00	45	30	11	16	4	6000ZZx1	26	8		
	28	T5100		10	44.56	43.75	48	35	11	16	3.5	6200ZZx1	30	9		
	30	T5100		12	47.75	46.95	52	36	11	16	3	6201ZZx1	32	10		
			T5150						17	22	6					

T5 (Both Sides Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price
												No.	D	B	
AHTFW	18	T5100		6	28.65	27.80	33	22	11	16	13	696ZZx2	15	5	
		T5150		8					17	22	16.5	698ZZx2	19	6	
		T5200		8					22	27	16.5	698ZZx2	19	6	
		T5250		8					27	32	16.5	698ZZx2	19	6	
	20	T5100		8	31.83	31.00	36	24	11	16	16.5	698ZZx2	19	6	
		T5150		8					17	22	16.5	698ZZx2	19	6	
		T5200		8					22	27	16.5	698ZZx2	19	6	
		T5250		8					27	32	16.5	698ZZx2	19	6	
	22	T5100		10	35.01	34.25	40	27	11	16	19.5	6900ZZx2	22	6	
		T5150		10					17	22	19.5	6900ZZx2	22	6	
		T5200		10					22	27	19.5	6900ZZx2	22	6	
		T5250		10					27	32	19.5	6900ZZx2	22	6	
	24	T5100		10	38.20	37.40	45	30	11	16	19.5	6900ZZx2	22	6	
		T5150		10					17	22	19.5	6900ZZx2	22	6	
		T5200		10					22	27	23	6000ZZx2	26	8	
		T5250		10					27	32	23	6000ZZx2	26	8	
	25	T5100		10	39.79	39.00	45	30	11	16	23	6000ZZx2	26	8	
		T5150		10					17	22	23	6000ZZx2	26	8	
		T5200		10					22	27	23	6000ZZx2	26	8	
		T5250		10					27	32	23	6000ZZx2	26	8	
28	T5100		10	44.56	43.75	48	35	11	16	25	6200ZZx2	30	9		
	T5150		10					17	22	25	6200ZZx2	30	9		
	T5200		10					22	27	25	6200ZZx2	30	9		
	T5250		10					27	32	25	6200ZZx2	30	9		
30	T5100		12	47.75	46.95	52	36	11	16	25	6001ZZx2	28	8		
	T5150		12					17	22	25	6001ZZx2	28	8		
	T5200		12					22	27	27	6201ZZx2	32	10		
	T5250		12					27	32	27	6201ZZx2	32	10		

T10 (Center Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price
												No.	D	B	
AHTF	16	T10150		12	50.93	49.05	58	40	17	22	6	6201ZZx1	32	10	
		T10250		15	57.30	55.45	61	45	17	22	5	6202ZZx2	35	11	
	18	T10150		12	63.66	61.80	67	50	17	22	6	6201ZZx1	32	10	
		T10250		15	70.03	68.15	80	60	17	22	5.5	6202ZZx1	35	11	
	20	T10150		15	76.39	74.55	87	67	17	22	5.5	6202ZZx1	35	11	
		T10250		15	82.76	80.90	87	67	17	22	5.5	6202ZZx1	35	11	

Ordering Example

Center Bearing

Part Number: AHTF 25 - T5100

Both Sides Bearing

Part Number: AHTFW 24 - T5200 - 10

Part Number: AHTFW 16 - AT10150 - 12

* Only for AT10, hyphen ("-") is inserted between the "Number of Teeth" order No. and the "Applicable Belt" order No.

T10 (Both Sides Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price
												No.	D	B	
AHTFW	16	T10150		12	50.93	49.05	58	40	17	22	25	6001ZZx2	28	8	
		T10200		15					22	27	25	6001ZZx2	28	8	
		T10250		15					27	32	25	6001ZZx2	28	8	
		T10300		15					32	37	27	6201ZZx2	32	10	
		T10150		15					17	22	29	6002ZZx2	32	9	
		T10200		15					22	27	29	6002ZZx2	32	9	
		T10250		15					27	32	29	6002ZZx2	32	9	
		T10300		15					32	37	29	6002ZZx2	32	9	
		T10400		15					43	48	30	6202ZZx2	35	11	
		T10500		15					53	58	30	6202ZZx2	35	11	
	18	T10200		15	57.30	55.45	61	45	22	27	29	6002ZZx2	32	9	
		T10250		15					27	32	30	6202ZZx2	35	11	
		T10300		15					32	37	29	6002ZZx2	32	9	
		T10200		15					22	27	29	6002ZZx2	32	9	
		T10250		15					27	32	29	6002ZZx2	32	9	
		T10300		15					32	37	29	6002ZZx2	32	9	
		T10400		15					43	48	30	6202ZZx2	35	11	
		T10500		15					53	58	30	6202ZZx2	35	11	
		T10200		20					22	27	37	6004ZZx2	42	12	
		T10250		20					27	32	37	6004ZZx2	42	12	
20	T10200		15	63.66	61.80	67	50	22	27	29	6002ZZx2	32	9		
	T10250		15					27	32	30	6202ZZx2	35	11		
	T10300		15					32	37	29	6002ZZx2	32	9		
	T10400		15					43	48	30	6202ZZx2	35	11		
22	T10200		20	70.03	68.15	80	60	22	27	37	6004ZZx2	42	12		
	T10250		20					27	32	41	6204ZZx2	47	14		
	T10300		20					32	37	37	6004ZZx2	42	12		
	T10200		20					22	27	37	6004ZZx2	42	12		
24	T10200		20	76.39	74.55	87	67	22	27	37	6004ZZx2	42	12		
	T10250		20					27	32	41	6204ZZx2	47	14		
	T10300		20					32	37	37	6004ZZx2	42	12		
	T10200		20					22	27	37	6004ZZx2	42	12		
26	T10250		20	82.76	80.90	87	67	22	27	37	6004ZZx2	42	12		
	T10250		20					27	32	41	6204ZZx2	47	14		
	T10300		20					32	37	37	6004ZZx2	42	12		
	T10300		20					32	37	41	6204ZZx2	47	14		

AT5 (Center Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	S	Bearing Dimensions			Unit Price
												No.	D	B	
AHTF	20	AT5100		8	31.83	30.60	36	24	11.6	16.5	5.25	698ZZx1	19	6	
		AT5150		8	31.83	30.60	36	24	11.6	16.5	4.75	698ZZx2	19	6	
	28	AT5100		10	44.56	43.35	48	35	11.6	16.5	3.75	6200ZZx1	30	9	
		AT5150		10	44.56	43.35	48	35	11.6	16.5	6.25	6200ZZx1	30	9	
	30	AT5100		12	47.75	46.55	55	40	11.6	16.5	3.25	6201ZZx1	32	10	
		AT5150		12	47.75	46.55	55	40	11.6	16.5	5.75	6201ZZx1	32	10	

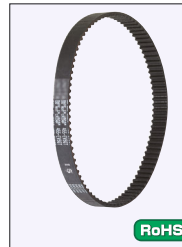
AT5 (Both Sides Bearing)

Type	Part Number	Number of Teeth	Applicable Belt	Shaft Dia. d	P.D.	O.D.	F	E	A	W	Dh	Bearing Dimensions			Unit Price	
												No.	D	B	AHTFW	KHTFW
AHTFW KHTFW	18	AT5100		6	28.65	27.40	33	22	11.6	16.5	13	696ZZx2	15	5		
		AT5100		8	31.83	30.60	36	24	11.6	16.5	16.5	698ZZx2	19	6		
		AT5150		8	31.83	30.60	36	24	11.6	16.5	16.5	698ZZx2	19	6		
		AT5150		8	31.83	30.60	36	24	11.6	16.5	16.5	698ZZx2	19	6		

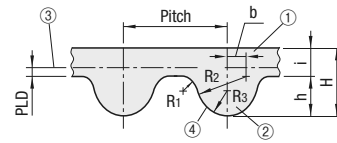
High Torque Timing Belts - 2GT, 3GT

■ **Features:** Circular Tooth Profile Timing Belts with little backlash, suitable for positioning.

■ 2GT is applicable to High Torque Timing Pulleys 2GT on **P.1381**, while 3GT is applicable to High Torque Timing Pulleys 3GT on **P.1383**.



GBN



Type	Material									
GBN	① Back Rubber	Chloroprene Rubber								
	② Tooth Rubber	Glass Fiber Cord								
	③ Core Wire	Nylon Cloth								
	④ Tooth Fabric									
Type	Pitch	R1	R2	R3	b	H	h	i	PLD	Unit Mass g/m (Width: 10mm)
2GT	2	0.15	1.00	0.555	0.40	1.38	0.75	0.63	0.254	13.0
3GT	3	0.25	1.52	0.85	0.61	2.40	1.14	1.26	0.381	25.0

* Operating Temp.: -10~80°C (Reference Value)
 * Belt Circumference Length is the length of Core Wire.
 * Features and Cautions **P.1375**
 * Selection Method **P.2253**

■ **Type: 2GT** (Pitch: 2mm)

Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					40	60	90
68 2GT			33	66			
72 2GT			36	72			
74 2GT			37	74			
76 2GT			38	76			
78 2GT			39	78			
80 2GT			40	80			
82 2GT			41	82			
84 2GT			42	84			
86 2GT			43	86			
88 2GT			44	88			
90 2GT			45	90			
92 2GT			46	92			
94 2GT			47	94			
96 2GT			48	96			
98 2GT			49	98			
100 2GT			50	100			
102 2GT			51	102			
106 2GT			53	106			
108 2GT			54	108			
110 2GT			55	110			
112 2GT			56	112			
114 2GT			57	114			
116 2GT			58	116			
118 2GT			59	118			
120 2GT			60	120			
122 2GT			61	122			
124 2GT			62	124			
126 2GT			63	126			
128 2GT			64	128			
130 2GT			65	130			
132 2GT			66	132			
134 2GT			67	134			
136 2GT			68	136			
138 2GT			69	138			
140 2GT			70	140			
142 2GT			71	142			
144 2GT			72	144			
146 2GT			73	146			
148 2GT			74	148			
150 2GT			75	150			
152 2GT			76	152			
154 2GT			77	154			
156 2GT			78	156			
158 2GT			79	158			
160 2GT			80	160			
162 2GT		40	81	162			
164 2GT		(4mm)	82	164			
166 2GT			83	166			
168 2GT			84	168			
170 2GT		60	85	170			
172 2GT		(6mm)	86	172			
174 2GT			87	174			
176 2GT		90	88	176			
178 2GT		(9mm)	89	178			
180 2GT			90	180			
182 2GT			91	182			
184 2GT			92	184			
186 2GT			93	186			
188 2GT			94	188			
190 2GT			95	190			
192 2GT			96	192			
194 2GT			97	194			
196 2GT			98	196			
200 2GT			100	200			
202 2GT			101	202			
204 2GT			102	204			
208 2GT			104	208			
210 2GT			105	210			
212 2GT			106	212			
214 2GT			107	214			
216 2GT			108	216			
220 2GT			110	220			
224 2GT			112	224			
226 2GT			113	226			
228 2GT			114	228			
230 2GT			115	230			
232 2GT			116	232			
236 2GT			118	236			
240 2GT			120	240			
242 2GT			121	242			
244 2GT			122	244			
248 2GT			124	248			
250 2GT			125	250			
252 2GT			126	252			
254 2GT			127	254			
256 2GT			128	256			
258 2GT			129	258			
260 2GT			130	260			
264 2GT			132	264			
266 2GT			133	266			
268 2GT			134	268			
270 2GT			135	270			
278 2GT			139	278			
280 2GT			140	280			
282 2GT			141	282			
284 2GT			142	284			
286 2GT			143	286			
288 2GT			144	288			
290 2GT			145	290			

Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					40	60	90
146 2GT	292 2GT		146	292			
147 2GT	294 2GT		147	294			
150 2GT	300 2GT		150	300			
151 2GT	302 2GT		151	302			
152 2GT	304 2GT		152	304			
154 2GT	308 2GT		154	308			
155 2GT	310 2GT		155	310			
157 2GT	314 2GT		157	314			
159 2GT	318 2GT		159	318			
160 2GT	320 2GT		160	320			
161 2GT	322 2GT		161	322			
162 2GT	324 2GT		162	324			
163 2GT	326 2GT		163	326			
164 2GT	328 2GT		164	328			
166 2GT	332 2GT		166	332			
168 2GT	336 2GT		168	336			
169 2GT	338 2GT		169	338			
170 2GT	340 2GT		170	340			
172 2GT	344 2GT		172	344			
173 2GT	346 2GT		173	346			
174 2GT	348 2GT		174	348			
175 2GT	350 2GT		175	350			
176 2GT	352 2GT		176	352			
177 2GT	354 2GT		177	354			
179 2GT	358 2GT		179	358			
180 2GT	360 2GT		180	360			
183 2GT	366 2GT		183	366			
185 2GT	370 2GT		185	370			
186 2GT	372 2GT		186	372			
188 2GT	376 2GT		188	376			
190 2GT	380 2GT		190	380			
191 2GT	382 2GT		191	382			
193 2GT	386 2GT		193	386			
197 2GT	394 2GT		197	394			
200 2GT	400 2GT		200	400			
203 2GT	406 2GT		203	406			
206 2GT	412 2GT		206	412			
210 2GT	420 2GT		210	420			
213 2GT	426 2GT		213	426			
215 2GT	430 2GT		215	430			
218 2GT	436 2GT		218	436			
220 2GT	440 2GT		220	440			
222 2GT	444 2GT		222	444			
223 2GT	446 2GT		223	446			
224 2GT	448 2GT		224	448			
226 2GT	452 2GT		226	452			
230 2GT	460 2GT	40	230	460			
235 2GT	470 2GT	(4mm)	235	470			
239 2GT	478 2GT		239	478			
242 2GT	484 2GT	60	242	484			
243 2GT	486 2GT	(6mm)	243	486			
244 2GT	488 2GT		244	488			
246 2GT	492 2GT	90	246	492			
247 2GT	494 2GT	(9mm)	247	494			
250 2GT	500 2GT		250	500			
251 2GT	502 2GT		251	502			
252 2GT	504 2GT		252	504			
253 2GT	506 2GT		253	506			
258 2GT	516 2GT		258	516			
262 2GT	524 2GT		262	524			
265 2GT	530 2GT		265	530			
272 2GT	544 2GT		272	544			
275 2GT	550 2GT		275	550			
279 2GT	558 2GT		279	558			
285 2GT	570 2GT		285	570			
286 2GT	572 2GT		286	572			
289 2GT	578 2GT		289	578			
293 2GT	586 2GT		293	586			
299 2GT	598 2GT		299	598			
300 2GT	600 2GT		300	600			
303 2GT	606 2GT		303	606			
308 2GT	616 2GT		308	616			
315 2GT	630 2GT		315	630			
317 2GT	634 2GT		317	634			
323 2GT	646 2GT		323	646			
330 2GT	660 2GT		330	660			
335 2GT	670 2GT		335	670			
338 2GT	676 2GT		338	676			
345 2GT	690 2GT		345	690			
348 2GT	696 2GT		348	696			
351 2GT	702 2GT		351	702			
353 2GT	706 2GT		353	706			
358 2GT	726 2GT		358	726			
371 2GT	742 2GT		371	742			
376 2GT	752 2GT		376	752			
380 2GT	760 2GT		380	760			
386 2GT	772 2GT		386	772			
391 2GT	782 2GT		391	782			
400 2GT	800 2GT		400	800			
405 2GT	810 2GT		405	810			
426 2GT	852 2GT		426	852			
430 2GT	860 2GT		430	860			
433 2GT	866 2GT		433	866			
446 2GT	892 2GT		446	892			
450 2GT	900 2GT		450	900			
465 2GT	930 2GT		465	930			
475 2GT	950 2GT		475	950			
488 2GT	976 2GT		488	976			
497 2GT	994 2GT		497	994			

■ **Type: 3GT** (Pitch: 3mm)

Type</

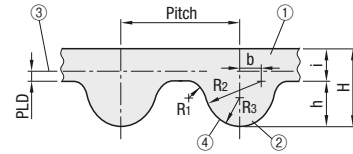
Super High Torque Timing Belts (EV5GT, EV8YU)

■ **Features:** Circular Tooth Profile Timing Belts with little backlash, suitable for positioning.

■ EV5GT is compatible with the High Torque Timing Pulley 5GT on P.1385, while EV8YU is compatible with the High Torque Timing Pulley 8YU on P.1387.



GBN



Type	Material									
GBN	① Back Rubber	High Modulus Rubber								
	② Tooth Rubber	Glass Fiber Cord								
	③ Core Wire	Nylon Cloth								
	④ Tooth Fabric									
Type	Pitch	R ₁	R ₂	R ₃	b	H	h	i	PLD	Unit Mass g/m (Width: 10mm)
EV5GT	5	0.51	2.54	1.37	1.03	3.80	1.93	1.87	0.5715	40.0
EV8YU	8	1.08	3.80	2.10	1.43	5.0	3.02	1.98	0.686	51.0

⚠ Operating Temp.: -10~80°C (Reference Value)
 ⚠ Belt Circumference Length is the length of Core Wire.
 ⚠ Features and Cautions P.1375
 ⚠ Selection Method P.2253

■ **Type: EV5GT** (Pitch: 5mm)

Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					90	120	150
GBN (High Modulus Rubber)	185 EV5GT	90	37	185			
	225 EV5GT	90	45	225			
	230 EV5GT	90	46	230			
	240 EV5GT	90	48	240			
	245 EV5GT	90	49	245			
	250 EV5GT	90	50	250			
	255 EV5GT	90	51	255			
	260 EV5GT	90	52	260			
	270 EV5GT	90	54	270			
	275 EV5GT	90	55	275			
	295 EV5GT	90	59	295			
	300 EV5GT	90	60	300			
	315 EV5GT	90	63	315			
	320 EV5GT	90	64	320			
	340 EV5GT	90	68	340			
	350 EV5GT	90	70	350			
	360 EV5GT	90	72	360			
	365 EV5GT	90	73	365			
	370 EV5GT	90	74	370			
	375 EV5GT	90	75	375			
	385 EV5GT	90	77	385			
	390 EV5GT	90	78	390			
	400 EV5GT	90	80	400			
	405 EV5GT	90	81	405			
	410 EV5GT	90	82	410			
	415 EV5GT	90	83	415			
	420 EV5GT	90	84	420			
	430 EV5GT	90	86	430			
	435 EV5GT	90	87	435			
	440 EV5GT	90	88	440			
	450 EV5GT	90	88	450			
	460 EV5GT	120	92	460			
	465 EV5GT	120	93	465			
	470 EV5GT	120	94	470			
	475 EV5GT	120	95	475			
	485 EV5GT	120	97	485			
	490 EV5GT	120	98	490			
	500 EV5GT	120	100	500			
	505 EV5GT	120	101	505			
	510 EV5GT	120	102	510			
	520 EV5GT	120	104	520			
	525 EV5GT	120	105	525			
	530 EV5GT	120	106	530			
	540 EV5GT	120	108	540			
	545 EV5GT	120	109	545			
	550 EV5GT	120	110	550			
	560 EV5GT	120	112	560			
	565 EV5GT	120	113	565			
	570 EV5GT	120	114	570			
	575 EV5GT	120	115	575			
	580 EV5GT	120	116	580			
	595 EV5GT	120	119	595			
	600 EV5GT	120	120	600			
	610 EV5GT	120	122	610			
	615 EV5GT	120	123	615			
	625 EV5GT	120	125	625			
	635 EV5GT	120	127	635			
	645 EV5GT	120	129	645			
	655 EV5GT	120	131	655			
	670 EV5GT	120	134	670			
	675 EV5GT	120	135	675			
	695 EV5GT	120	139	695			

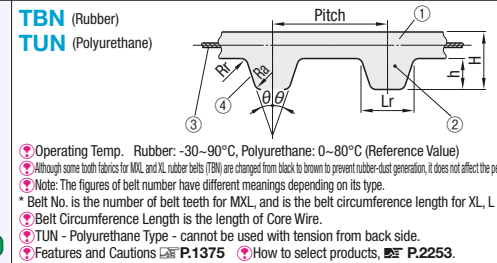
Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					90	120	150
GBN (High Modulus Rubber)	700 EV5GT	90	140	700			
	710 EV5GT	90	142	710			
	720 EV5GT	90	144	720			
	730 EV5GT	90	146	730			
	740 EV5GT	90	148	740			
	750 EV5GT	90	150	750			
	770 EV5GT	90	154	770			
	775 EV5GT	90	155	775			
	800 EV5GT	90	160	800			
	810 EV5GT	90	162	810			
	815 EV5GT	90	163	815			
	825 EV5GT	90	165	825			
	830 EV5GT	90	166	830			
	840 EV5GT	90	168	840			
	845 EV5GT	90	169	845			
	850 EV5GT	90	170	850			
	860 EV5GT	90	172	860			
	870 EV5GT	90	174	870			
	880 EV5GT	90	176	880			
	895 EV5GT	90	179	895			
	900 EV5GT	90	180	900			
	920 EV5GT	90	184	920			
	935 EV5GT	90	187	935			
	960 EV5GT	90	192	960			
	970 EV5GT	90	194	970			
	1000 EV5GT	90	200	1000			
	1015 EV5GT	90	203	1015			
	1025 EV5GT	90	205	1025			
	1050 EV5GT	90	210	1050			
	1080 EV5GT	90	216	1080			
	1090 EV5GT	90	218	1090			
	1145 EV5GT	90	229	1145			
	1155 EV5GT	90	231	1155			
	1165 EV5GT	90	233	1165			
	1170 EV5GT	90	234	1170			
	1180 EV5GT	90	236	1180			
	1190 EV5GT	90	238	1190			
	1210 EV5GT	90	242	1210			
	1225 EV5GT	90	245	1225			
	1250 EV5GT	90	250	1250			
	1270 EV5GT	90	254	1270			
	1290 EV5GT	90	258	1290			
	1315 EV5GT	90	263	1315			
	1330 EV5GT	90	266	1330			
	1390 EV5GT	90	278	1390			
	1400 EV5GT	90	280	1400			
	1440 EV5GT	90	288	1440			
	1475 EV5GT	90	295	1475			
	1500 EV5GT	90	300	1500			
	1530 EV5GT	90	306	1530			
	1535 EV5GT	90	307	1535			
	1550 EV5GT	90	310	1550			
	1585 EV5GT	90	317	1585			
	1615 EV5GT	90	323	1615			
	1630 EV5GT	90	326	1630			
	1675 EV5GT	90	335	1675			
	1690 EV5GT	90	338	1690			
	1715 EV5GT	90	343	1715			
	1800 EV5GT	90	360	1800			
	1875 EV5GT	90	375	1875			
	1960 EV5GT	90	392	1960			

■ **Type: EV8YU** (Pitch: 8mm)

Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					150	200	250
GBN (High Modulus Rubber)	408 EV8YU	150	51	408			
	416 EV8YU	150	52	416			
	432 EV8YU	150	54	432			
	440 EV8YU	150	55	440			
	464 EV8YU	150	58	464			
	472 EV8YU	150	59	472			
	480 EV8YU	150	60	480			
	488 EV8YU	150	61	488			
	504 EV8YU	150	63	504			
	512 EV8YU	150	64	512			
	520 EV8YU	150	65	520			
	536 EV8YU	150	67	536			
	544 EV8YU	150	68	544			
	552 EV8YU	150	69	552			
	560 EV8YU	150	70	560			
	576 EV8YU	150	72	576			
	600 EV8YU	150	75	600			
	608 EV8YU	150	76	608			
	616 EV8YU	150	77	616			
	624 EV8YU	150	78	624			
	632 EV8YU	150	79	632			
	640 EV8YU	150	80	640			
	656 EV8YU	150	82	656			
	664 EV8YU	150	83	664			
	680 EV8YU	150	85	680			
	704 EV8YU	150	88	704			
	720 EV8YU	150	90	720			
	728 EV8YU	150	91	728			
	744 EV8YU	150	93	744			
	752 EV8YU	150	94	752			
	760 EV8YU	150	95	760			
	768 EV8YU	150	96	768			
	776 EV8YU	150	97	776			
	784 EV8YU	150	98	784			
	792 EV8YU	150	99	792			
	800 EV8YU	150	100	800			
	808 EV8YU	150	101	808			
	816 EV8YU	150	102	816			
	824 EV8YU	150	103	824			
	832 EV8YU	150	104	832			
	840 EV8YU	150	105	840			
	848 EV8YU	150	106	848			
	856 EV8YU	150	107	856			
	864 EV8YU	150	108	864			
	872 EV8YU	150	109	872			
	880 EV8YU	150	110	880			
	888 EV8YU	150	111	888			
	896 EV8YU	150	112	896			
	904 EV8YU	150	113	904			
	912 EV8YU	150	114	912			
	920 EV8YU	150	115	920			
	928 EV8YU	150	116	928			
	936 EV8YU	150	117	936			
	944 EV8YU	150	118	944			
	952 EV8YU	150	119	952			
	960 EV8YU	150	120	960			
	968 EV8YU	150	121	968			
	976 EV8YU	150	122	976			
	984 EV8YU	150	123	984			
	992 EV8YU	150	124	992			
	1000 EV8YU	150	125	1000			
	1008 EV8YU	150	126	1008			
	1016 EV8YU	150	127	1016			
	1032 EV8YU	150	129	1032			
	1040 EV8YU	150	130	1040			
	1064 EV8YU	150	133	1064			
	1072 EV8YU	150	134	1072			
	1080 EV8YU	150	135	1080			
	1088 EV8YU	150	136	1088			

Timing Belts (MXL, XL, L, H)

Timing Belts MXL, XL, L, H are compatible with the Timing Pulleys MLX, XL, L, H on **P.1389~P.1396**.



Type	Pitch	2θ	Lr	h	H	Rr	Ra	Unit Mass g/m (Width: 10mm)
MXL (Rubber)	2.032	40°	1.14	0.51	1.11	0.13	0.13	11.0
MXL (Polyurethane)	2.032	60°	-	0.46	1.22	-	-	10.0
XL	5.08	50°	2.57	1.27	2.27	0.38	0.38	22.0(20.0)
L	9.525	40°	4.65	1.91	3.61	0.51	0.51	32.0(30.0)
H	12.7	40°	6.12	2.29	4.59	1.00	1.00	40.0

- Operating Temp. Rubber: -30~90°C, Polyurethane: 0~80°C (Reference Value)
- Although some both fabrics for MXL and XL rubber belts (TBN) are changed from black to brown to prevent rubber-dust generation, it does not affect the performance.
- Note: The figures of belt number have different meanings depending on its type.
- Belt No. is the number of belt teeth for MXL, and is the belt circumference length for XL, L and H.
- TUN - Polyurethane Type - cannot be used with tension from back side.
- Features and Cautions **P.1375** How to select products, **P.2253**

Type: MXL (Pitch: 2.032mm)

Type	Part Number	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price					
						TBN			TUN		
						019	025	037	050	025	037
TBN (Rubber)	45MXL	45	91.44								
	46MXL	46	97.54								
	50MXL	50	101.6								
	52MXL	52	105.66								
	53MXL	53	107.7								
	54MXL	54	109.73								
	55MXL	55	110.76								
	56MXL	56	113.79								
	57MXL	57	115.82								
	59MXL	59	119.89								
	60MXL	60	121.92								
	61MXL	61	123.95								
	63MXL	63	128.02								
	65MXL	65	132.08								
	67MXL	67	136.14								
	68MXL	68	138.18								
	70MXL	70	142.24								
	71MXL	71	144.27								
	72MXL	72	146.3								
	73MXL	73	148.34								
	75MXL	75	152.4								
	76MXL	76	154.43								
	77MXL	77	156.46								
	78MXL	78	158.5								
	79MXL	79	160.53								
	80MXL	80	162.56								
	82MXL	82	166.62								
	83MXL	83	168.66								
	85MXL	85	172.72								
	87MXL	87	176.78								
	88MXL	88	178.82								
	89MXL	89	180.85								
	90MXL	90	182.88								
	91MXL	91	184.91								
	92MXL	92	186.94								
	93MXL	93	188.98								
	94MXL	94	191.01								
	95MXL	95	193.04								
	96MXL	96	195.07								
	97MXL	97	197.1								
	98MXL	98	199.14								
	99MXL	99	201.17								
	100MXL	100	203.2								
	101MXL	101	205.23								
	102MXL	102	207.26								
	103MXL	103	209.3								
	104MXL	104	211.33								
	105MXL	105	213.36								
	106MXL	106	215.39								
	108MXL	108	219.46								
	110MXL	110	223.52								
	112MXL	112	227.58								
	114MXL	114	231.65								
	115MXL	115	233.68								
	118MXL	118	239.78								
	120MXL	120	243.84								
	121MXL	121	245.87								
	122MXL	122	247.9								
	123MXL	123	249.94								
	124MXL	124	251.97								
	125MXL	125	254								
	126MXL	126	256.03								
	127MXL	127	258.06								
	128MXL	128	260.1								
	129MXL	129	262.13								
	130MXL	130	264.16								
	131MXL	131	266.19								
	132MXL	132	268.22								
	134MXL	134	272.29								
	135MXL	135	274.32								
	138MXL	138	280.42								
	140MXL	140	284.48								
	142MXL	142	288.54								
	144MXL	144	292.61								
	145MXL	145	294.64								
	146MXL	146	296.67								
	148MXL	148	300.74								
	150MXL	150	304.8								
	155MXL	155	314.96								
	158MXL	158	321.06								
	160MXL	160	325.12								
	162MXL	162	329.18								

Type	Part Number	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price					
						TBN			TUN		
						019	025	037	050	025	037
TBN (Rubber)	165MXL	165	335.28								
	170MXL	170	345.44								
	175MXL	175	355.6								
	180MXL	180	365.76								
	184MXL	184	373.89								
	190MXL	190	386.08								
	192MXL	192	390.14								
	195MXL	195	396.24								
	200MXL	200	406.4								
	210MXL	210	426.72								
	212MXL	212	430.78								
	221MXL	221	449.07								
	222MXL	222	451.1								
	224MXL	224	455.17								
	226MXL	226	459.23								
	228MXL	228	463.3								
	230MXL	230	467.36								
	232MXL	232	471.42								
	235MXL	235	477.52								
	236MXL	236	479.55								
	239MXL	239	485.65								
	240MXL	240	487.68								
	245MXL	245	497.84								
	248MXL	248	503.94								
	249MXL	249	505.97								
	250MXL	250	508								
	256MXL	256	520.19								
	260MXL	260	528.32								
	262MXL	262	532.38								
	265MXL	265	538.48								
	273MXL	273	554.74								
	275MXL	275	558.8								
	277MXL	277	562.86								
	280MXL	280	568.96								
	281MXL	281	570.99								
	285MXL	285	579.12								
	288MXL	288	585.22								
	290MXL	290	589.28								
	295MXL	295	599.44								
	296MXL	296	601.47								
	297MXL	297	603.5								
	300MXL	300	609.6								
	305MXL	305	619.76								
	310MXL	310	629.92								
	312MXL	312	633.98								
	315MXL	315	640.08								
	316MXL	316	645.18								
	320MXL	320	653.24								
	330MXL	330	670.56								
	332MXL	332	674.62								
	334MXL	334	678.69								
	336MXL	336	682.75								
	337MXL	337	684.78								
	340MXL	340	690.88								
	347MXL	347	705.1								
	350MXL	350	711.2								
	355MXL	355	721.36								
	358MXL	358	727.46								
	359MXL	359	729.49								
	360MXL	360	731.52								
	364MXL	364	739.65								
	365MXL	365	741.68								
	370MXL	370	751.84								
	372MXL	372	755.9								
	380MXL	380	772.16								
	390MXL	390	792.48								
	397MXL	397	806.7								
	400MXL	400	812.8								
	405MXL	405	822.96								
	420MXL	420	853.44								
	434MXL	434	881.89								
	435MXL	435	883.92								
	448MXL	448	910.34								

High Torque Timing Belts (S2M, S3M, S5M, S8M, S14M)

High Torque Timing Belts are compatible with High Torque Timing Pulleys on P.1397~1408.

HTBN (Rubber)

HTUN (Polyurethane)

Type	Material									
HTBN	① Back Rubber	Chloroprene Rubber								
	② Tooth Rubber	Fiberglass Cord S/Z Alternately Twisted Continuous								
	③ Core Wire	Mylon Cloth								
HTUN	①② Main Body	Polyurethane								
	③ Core Wire	Aramid Fiber								
Type	Pitch	Ra	Lr	H	h	i	PLD	Unit Mass g/m (Width: 10mm)		
S2M	2	1.3	1.3	1.36	0.76	0.6	0.254	13.0	11.0	
S3M	3	1.95	1.95	1.94	1.14	0.8	0.381	19.0	15.0	
S5M	5	3.25	3.25	3.41	1.91	1.5	0.480	34.0		
S8M	8	5.2	5.2	5.3	3.05	2.25	0.686	52.0		
S14M	14	9.1	9.1	10.2	5.3	4.9	1.397	100.0		

Operating Temp. Rubber: -30~90°C, Polyurethane: 0~80°C (Reference Value)
 Although some tooth fabrics for S2M, S3M and S5M rubber belts (HTBN) are changed from black to brown to prevent rubber-dust generation, it does not affect the performance.
 HTBN has no groove between teeth. (* Marked Parts)
 Belt Circumference Length is the length of Core Wire.
 HTUN - Polyurethane Type - cannot be used with tension from back side.
 Features and Cautions P.1375 How to select products. P.2253. Values in () are the unit mass of polyurethane.

Type: S2M (Pitch: 2mm)

Type	Part Number	Belt Nominal Width	Number of Teeth	Unit Price		
				HTBN	HTUN	100
HTBN (Rubber)	76 S2M	38	76			
	78 S2M	39	78			
	80 S2M	40	80			
	83 S2M	44	86			
	90 S2M	45	90			
	100 S2M	50	100			
	112 S2M	56	112			
	116 S2M	58	116			
	118 S2M	59	118			
	122 S2M	61	122			
	124 S2M	62	124			
	126 S2M	63	126			
	128 S2M	64	128			
	130 S2M	65	130			
	132 S2M	66	132			
	134 S2M	67	134			
	138 S2M	69	138			
	140 S2M	70	140			
	142 S2M	71	142			
	144 S2M	72	144			
152 S2M	76	152				
160 S2M	80	160				
164 S2M	82	164				
166 S2M	83	166				
172 S2M	86	172				
176 S2M	88	176				
180 S2M	90	180				
186 S2M	93	186				
190 S2M	95	190				
194 S2M	97	194				
200 S2M	100	200				
204 S2M	102	204				
210 S2M	105	210				
212 S2M	106	212				
214 S2M	107	214				
218 S2M	109	218				
220 S2M	110	220				
224 S2M	112	224				
230 S2M	115	230				
234 S2M	117	234				
236 S2M	118	236				
240 S2M	120	240				
242 S2M	121	242				
244 S2M	122	244				
246 S2M	123	246				
250 S2M	125	250				
256 S2M	128	256				
260 S2M	130	260				
266 S2M	133	266				
280 S2M	140	280				
290 S2M	145	290				
300 S2M	150	300				
320 S2M	160	320				
324 S2M	162	324				
328 S2M	164	328				
330 S2M	165	330				
340 S2M	170	340				
360 S2M	180	360				
370 S2M	185	370				
380 S2M	190	380				
396 S2M	198	396				
400 S2M	200	400				
436 S2M	218	436				
448 S2M	224	448				
486 S2M	243	486				
488 S2M	244	488				
500 S2M	250	500				
520 S2M	260	520				
560 S2M	280	560				
572 S2M	286	572				
580 S2M	290	580				
600 S2M	300	600				
630 S2M	315	630				
710 S2M	355	710				
800 S2M	400	800				
900 S2M	450	900				
984 S2M	492	984				
1196 S2M	598	1196				
1250 S2M	625	1250				
1274 S2M	637	1274				
1290 S2M	645	1290				

Type: S3M (Pitch: 3mm)

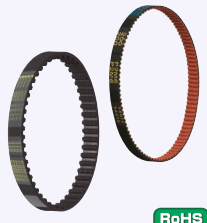
Type	Part Number	Belt Nominal Width	Number of Teeth	Unit Price		
				HTBN	HTUN	150
HTBN (Rubber)	120 S3M	40	120			
	123 S3M	41	123			
	129 S3M	43	129			
	141 S3M	47	141			
	144 S3M	48	144			
	150 S3M	50	150			
	162 S3M	54	162			
	171 S3M	57	171			
	174 S3M	58	174			
	177 S3M	59	177			
	180 S3M	60	180			
	186 S3M	62	186			
	189 S3M	63	189			
	192 S3M	64	192			
	195 S3M	65	195			
	201 S3M	67	201			
	207 S3M	69	207			
	210 S3M	70	210			
	213 S3M	71	213			
	219 S3M	73	219			
223 S3M	74	223				
225 S3M	75	225				
234 S3M	78	234				
237 S3M	79	237				
246 S3M	82	246				
249 S3M	83	249				
252 S3M	84	252				
255 S3M	85	255				
264 S3M	88	264				
273 S3M	91	273				
276 S3M	92	276				
279 S3M	93	279				
285 S3M	95	285				
288 S3M	96	288				
291 S3M	97	291				
300 S3M	100	300				
312 S3M	104	312				
318 S3M	106	318				
327 S3M	109	327				
339 S3M	113	339				
345 S3M	115	345				
354 S3M	118	354				
360 S3M	120	360				
363 S3M	121	363				
369 S3M	123	369				
375 S3M	125	375				
384 S3M	128	384				
387 S3M	129	387				
396 S3M	132	396				
402 S3M	134	402				
405 S3M	135	405				
408 S3M	136	408				
420 S3M	140	420				
423 S3M	141	423				
432 S3M	144	432				
453 S3M	151	453				
456 S3M	152	456				
459 S3M	153	459				
474 S3M	158	474				
480 S3M	160	480				
483 S3M	161	483				
486 S3M	162	486				
501 S3M	167	501				
507 S3M	169	507				
519 S3M	173	519				
525 S3M	175	525				
537 S3M	179	537				
540 S3M	180	540				
564 S3M	186	564				
591 S3M	197	591				
600 S3M	200	600				
612 S3M	204	612				
633 S3M	211	633				
645 S3M	215	645				
660 S3M	220	660				
681 S3M	227	681				
741 S3M	247	741				
750 S3M	250	750				
804 S3M	268	804				
810 S3M	270	810				
852 S3M	284	852				
900 S3M	300	900				
918 S3M	306	918				
1050 S3M	350	1050				
1080 S3M	360	1080				
1119 S3M	373	1119				
1170 S3M	390	1170				
1203 S3M	401	1203				
1221 S3M	407	1221				
1236 S3M	412	1236				
1245 S3M	415	1245				
1260 S3M	420	1260				
1290 S3M	430	1290				
1299 S3M	433	1299				
1332 S3M	444	1332				
1401 S3M	467	1401				
1598 S3M	532	1598				
1680 S3M	560	1680				
1788 S3M	596	1788				
2100 S3M	700	2100				

Type: S5M (Pitch: 5mm)

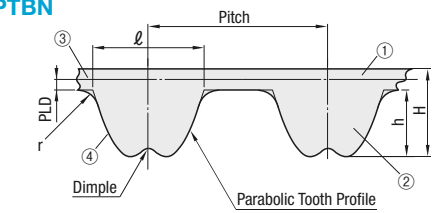
Type	Part Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price		
					HTBN	HTUN	250
HTBN (Rubber)	225 S5M	45	225				
	230 S5M	46	230				
	235 S5M	51	235				
	260 S5M	52	260				
	275 S5M	59	275				
	300 S5M	60	300				
	305 S5M	61	305				
	320 S5M	64	320				
	325 S5M	65	325				
	340 S5M	68	340				
	350 S5M	70	350				
	360 S5M	72	360				
	370 S5M	74	370				
	375 S5M	75	375				
	380 S5M	76	380				
	390 S5M	78	390				
	400 S5M	80	400				
	415 S5M	83	415				
	425 S5M	85	425				
	435 S5M	87	435				
440 S5M	88	440					
450 S5M	90	450					
475 S5M	95	475					
490 S5M	98	490					
500 S5M	100	500					
510 S5M	104	510					
525 S5M	105	525					
530 S5M	106	530					
545 S5M	109	545					
560 S5M	110	560					
560 S5M	112	560					
575 S5M	115	575					
590 S5M	118	590					
595 S5M	119	595					
600 S5M	120	600					
625 S5M	125	625					
640 S5M	128	640					
650 S5M	130	650					
665 S5M	133	665					
670 S5M	134	670					
675 S5M	135	675					
690 S5M	138	690					
695 S5M	139	695					
700 S5M	140	700					
710 S5M	142	710					
720 S5M	144	720					
725 S5M	145	725					
730 S5M	146	730					
740 S5M	148	740					
750 S5M	150	750					
765 S5M	153	765					
780 S5M	156	780					
800 S5M	160	800					
810 S5M	162	810					
830 S5M	166	830					
845 S5M	169	845					

High Torque Timing Belts (P2M, P3M, P5M, P8M)

High Torque Timing Belts are compatible with High Torque Timing Pulleys on P1409~1414.



PTBN



Type	Material
PTBN	Chloroprene Rubber
	Glass Fiber
	Nylon Cloth

Type	Pitch	L	H	h	PLD	r	Unit Mass g/m (Width: 10mm)
P2M	2	1.30	1.3	0.73	0.254	0.2	14.0
P3M	3	1.95	2.1	1.09	0.381	0.3	22.0
P5M	5	3.25	3.6	1.81	0.571	0.5	41.0
P8M	8	5.20	5.5	2.90	0.686	0.8	56.0

Operating Temp.: -25~80°C (Reference Value)
 Belt Circumference Length is the length of Core Wire.
 Features and Cautions P.1375
 How to select products, P.2253

Type: P2M (Pitch: 2mm)

Type	Part Number	Belt Number	Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price
PTBN	060 (6mm)	80 P2M	40	80		
		84 P2M	42	84		
		88 P2M	44	88		
		98 P2M	49	98		
		100 P2M	50	100		
		112 P2M	56	112		
		116 P2M	58	116		
		118 P2M	59	118		
		124 P2M	62	124		
		126 P2M	63	126		
		132 P2M	66	132		
		134 P2M	67	134		
		136 P2M	68	136		
		140 P2M	70	140		
		142 P2M	71	142		
		144 P2M	72	144		
		146 P2M	73	146		
		152 P2M	76	152		
		154 P2M	77	154		
		160 P2M	80	160		
		162 P2M	81	162		
		166 P2M	83	166		
		170 P2M	85	170		
172 P2M	86	172				
176 P2M	88	176				
180 P2M	90	180				
186 P2M	93	186				
190 P2M	95	190				
196 P2M	98	196				
200 P2M	100	200				
204 P2M	102	204				
208 P2M	104	208				
212 P2M	106	212				
214 P2M	107	214				
216 P2M	108	216				
220 P2M	110	220				
224 P2M	112	224				
230 P2M	115	230				
PTBN	060 (6mm)	234 P2M	117	234		
		236 P2M	118	236		
		240 P2M	120	240		
		244 P2M	122	244		
		246 P2M	123	246		
		250 P2M	125	250		
		258 P2M	129	258		
		262 P2M	131	262		
		266 P2M	133	266		
		270 P2M	135	270		
		274 P2M	137	274		
		280 P2M	140	280		
		284 P2M	142	284		
		290 P2M	145	290		
		300 P2M	150	300		
		302 P2M	151	302		
		310 P2M	155	310		
		318 P2M	159	318		
		320 P2M	160	320		
		324 P2M	162	324		
		328 P2M	164	328		
		330 P2M	165	330		
		334 P2M	167	334		
340 P2M	170	340				
348 P2M	174	348				
354 P2M	177	354				
360 P2M	180	360				
370 P2M	185	370				
378 P2M	189	378				
380 P2M	190	380				
390 P2M	195	390				
400 P2M	200	400				
408 P2M	204	408				
416 P2M	208	416				
420 P2M	210	420				
424 P2M	212	424				
426 P2M	213	426				
434 P2M	217	434				
PTBN	060 (6mm)	440 P2M	220	440		
		448 P2M	224	448		
		464 P2M	232	464		
		488 P2M	244	488		
		490 P2M	245	490		
		500 P2M	250	500		
		516 P2M	258	516		
		520 P2M	260	520		
		530 P2M	265	530		
		560 P2M	280	560		
		576 P2M	288	576		
		590 P2M	295	590		
		600 P2M	300	600		
		630 P2M	315	630		
		638 P2M	319	638		
		656 P2M	328	656		
		676 P2M	338	676		
		680 P2M	340	680		
		704 P2M	352	704		
		710 P2M	355	710		
		754 P2M	377	754		
		764 P2M	382	764		
		774 P2M	387	774		
788 P2M	394	788				
800 P2M	400	800				
808 P2M	404	808				
824 P2M	412	824				
846 P2M	423	846				
866 P2M	433	866				
898 P2M	449	898				
900 P2M	450	900				
940 P2M	470	940				
956 P2M	478	956				
992 P2M	496	992				
1040 P2M	520	1040				
1242 P2M	641	1242				

Type: P3M (Pitch: 3mm)

Type	Part Number	Belt Number	Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price
PTBN	100 (10mm)	120 P3M	40	120		
		123 P3M	41	123		
		138 P3M	46	138		
		141 P3M	47	141		
		144 P3M	48	144		
		147 P3M	49	147		
		150 P3M	50	150		
		153 P3M	51	153		
		159 P3M	53	159		
		162 P3M	54	162		
		171 P3M	57	171		
		174 P3M	58	174		
		177 P3M	59	177		
		183 P3M	61	183		
		186 P3M	62	186		
		192 P3M	64	192		
		195 P3M	65	195		
		198 P3M	66	198		
		201 P3M	67	201		
		207 P3M	69	207		
		210 P3M	70	210		
		213 P3M	71	213		
		219 P3M	73	219		
222 P3M	74	222				
225 P3M	75	225				
231 P3M	77	231				
234 P3M	78	234				
237 P3M	79	237				
240 P3M	80	240				
243 P3M	81	243				
246 P3M	82	246				
252 P3M	84	252				
255 P3M	85	255				
264 P3M	88	264				
270 P3M	90	270				
273 P3M	91	273				
PTBN	100 (10mm)	276 P3M	92	276		
		279 P3M	93	279		
		285 P3M	95	285		
		288 P3M	96	288		
		291 P3M	97	291		
		294 P3M	98	294		
		300 P3M	100	300		
		303 P3M	101	303		
		306 P3M	102	306		
		309 P3M	103	309		
		312 P3M	104	312		
		318 P3M	106	318		
		330 P3M	110	330		
		339 P3M	113	339		
		345 P3M	115	345		
		354 P3M	118	354		
		360 P3M	120	360		
		363 P3M	121	363		
		369 P3M	123	369		
		372 P3M	124	372		
		384 P3M	128	384		
		387 P3M	129	387		
		393 P3M	131	393		
399 P3M	133	399				
402 P3M	134	402				
411 P3M	137	411				
420 P3M	140	420				
423 P3M	141	423				
432 P3M	144	432				
447 P3M	149	447				
450 P3M	150	450				
453 P3M	151	453				
459 P3M	153	459				
477 P3M	159	477				
483 P3M	161	483				
486 P3M	162	486				
PTBN	150 (15mm)	489 P3M	163	489		
		501 P3M	167	501		
		504 P3M	168	504		
		507 P3M	169	507		
		510 P3M	170	510		
		525 P3M	175	525		
		537 P3M	179	537		
		552 P3M	184	552		
		561 P3M	187	561		
		588 P3M	196	588		
		600 P3M	200	600		
		633 P3M	211	633		
		660 P3M	220	660		
		675 P3M	225	675		
		681 P3M	227	681		
		693 P3M	231	693		
		699 P3M	233	699		
		738 P3M	246	738		
		753 P3M	251	753		
		756 P3M	252	756		
		789 P3M	263	789		
		804 P3M	268	804		
		852 P3M	284	852		
861 P3M	287	861				
879 P3M	293	879				
891 P3M	297	891				
918 P3M	306	918				
933 P3M	311	933				
948 P3M	316	948				
957 P3M	319	957				
1005 P3M	335	1005				
1023 P3M	341	1023				
1041 P3M	347	1041				
1050 P3M	350	1050				
1191 P3M	397	1191				

Type: P5M (Pitch: 5mm)

Type	Part Number	Belt Number	Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price
PTBN	100 (10mm)	215 P5M	43	215		
		225 P5M	45	225		
		255 P5M	51	255		
		260 P5M	52	260		
		275 P5M	55	275		
		295 P5M	59	295		
		300 P5M	60	300		
		310 P5M	62	310		
		320 P5M	64	320		
		325 P5M	65	325		
		340 P5M	68	340		
		350 P5M	70	350		
		370 P5M	74	370		
		375 P5M	75	375		
		400 P5M	80	400		
		420 P5M	84	420		
		425 P5M	85	425		
		430 P5M	86	430		
		440 P5M	88	440		
		450 P5M	90	450		
		475 P5M	95	475		
		490 P5M	98	490		
		500 P5M	100	500		
515 P5M	103	515				
520 P5M	104	520				
525 P5M	105	525				
530 P5M	106	530				
550 P5M	110	550				
555 P5M	111	555				
560 P5M	112	560				
565 P5M	113	565				
570 P5M	114	570				
575 P5M	115	575				
595 P5M	119	595				
PTBN	150 (15mm)	600 P5M	120	600		
		605 P5M	121	605		
		625 P5M	125	625		
		635 P5M	127	635		
		645 P5M	129	645		
		650 P5M	130	650		
		670 P5M	134	670		
		675 P5M	135	675		
		690 P5M	138	690		
		695 P5M	139	695		
		700 P5M	140	700		
		710 P5M	142	710		
		725 P5M	145	725		
		730 P5M	146	730		
		740 P5M	148	740		
		750 P5M	150	750		
		765 P5M	153	765		
		780 P5M	156	780		
		800 P5M	160			

Super High Torque Timing Belts (MTS8M, UP5M, UP8M)

Timing Belts (T5, T10)

Features: Having nearly doubled transmission capacity compared to standard timing belts, higher-load transmission and space-saving design can be realized.
 Super High Torque Timing Belt MTS8M is compatible with Super High Torque Timing Pulley S8M on **P.1403**. UP5M/UP8M is compatible with P5M/P8M on **P.1411~P.1414**.

HTBN (MTS8M)

① Belt Circumference Length is the length of Core Wire.
 ② Features and Cautions **P.1375**
 ③ Selection Method **P.2253**

Type	Material
HTBN	① Rubber High Hardness Synthetic Rubber: Hardness 80° ② Core Wire Glass Core Wire ③ Cloth Nylon Cloth

Operating Temp.: -30~90°C
 Applicable to the Timing Pulley S8M **P.1403**
 Backside color of MTS8M is black.

PTBN (UP5M, UP8M)

① Belt Circumference Length is the length of Core Wire.
 ② Features and Cautions **P.1375**
 ③ Selection Method **P.2253**

Type	Material
PTBN	① Rubber Chloroprene Rubber ② Core Wire Glass Core Wire ③ Cloth Nylon Cloth

Operating Temp.: -15~80°C
 Applicable to Timing Pulleys P5M and P8M **P.1411~P.1414**
 Rubber color of UP5M on the back side is black and that of UP8M is blue.

Type	Pitch	i	H	h	i	PLD	Unit Mass g/m (Width: 10mm)
MTS8M	8	5.2	5.3	3.05	2.25	0.686	45.0
UP5M	5	3.25	3.60	1.81	1.79	0.571	41.0
UP8M	8	5.2	5.20	2.90	2.30	0.686	50.8

Timing Belt T5 is compatible with Timing Pulley T5 on **P.1417** and Timing Belt T10 is compatible with Timing Pulley T10 on **P.1419**.

TTBU

		Material	
① Main Body		Polyurethane	
② Core Wire		Steel Cord	

Type	Pitch	H	h	L	Unit Mass g/m (Width: 10mm)
T5	5	2.2	1.2	1.8	20.0
T10	10	4.5	2.5	3.5	42.0

Operating Temp.: 0~80°C
 Belt Circumference Length is the length of Core Wire.
 Cannot be used with tension from back side.
 How to select products. **P.2253**.

Type: MTS8M (Pitch: 8mm)

Type	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price			
					150	250	300	400
HTBN (Rubber)	528-MTS8M	66	528					
	560-MTS8M	70	560					
	584-MTS8M	73	584					
	600-MTS8M	75	600					
	632-MTS8M	79	632					
	640-MTS8M	80	640					
	656-MTS8M	82	656					
	712-MTS8M	89	712					
	720-MTS8M	90	720					
	760-MTS8M	95	760					
	800-MTS8M	100	800					
	824-MTS8M	103	824					
	848-MTS8M	106	848					
	856-MTS8M	107	856					
	880-MTS8M	110	880					
	896-MTS8M	112	896					
	920-MTS8M	115	920					
	928-MTS8M	116	928					
	944-MTS8M	118	944					
	960-MTS8M	120	960					
	976-MTS8M	122	976					
	1000-MTS8M	125	1000					
	1024-MTS8M	128	1024					
	1056-MTS8M	132	1056					
	1080-MTS8M	135	1080					
	1120-MTS8M	140	1120					
	1152-MTS8M	144	1152					
	1160-MTS8M	145	1160					
1200-MTS8M	150	1200						
1216-MTS8M	152	1216						
1248-MTS8M	156	1248						
1280-MTS8M	160	1280						
1304-MTS8M	163	1304						
1320-MTS8M	165	1320						
1352-MTS8M	169	1352						
1360-MTS8M	170	1360						
1400-MTS8M	175	1400						
1480-MTS8M	185	1480						
1520-MTS8M	190	1520						
1600-MTS8M	200	1600						
1640-MTS8M	205	1640						
1680-MTS8M	210	1680						
1760-MTS8M	220	1760						
1800-MTS8M	225	1800						
1880-MTS8M	235	1880						
1960-MTS8M	245	1960						
2000-MTS8M	250	2000						
2064-MTS8M	258	2064						
2400-MTS8M	300	2400						
2600-MTS8M	325	2600						
2800-MTS8M	350	2800						

Type: UP5M (Pitch: 5mm)

Type	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price 1 - 4 pcs.	
					100	150
PTBN (Rubber)	215-UP5M	43	215			
	225-UP5M	45	225			
	255-UP5M	51	255			
	260-UP5M	52	260			
	275-UP5M	55	275			
	295-UP5M	59	295			
	300-UP5M	60	300			
	310-UP5M	62	310			
	320-UP5M	64	320			
	325-UP5M	65	325			
	340-UP5M	68	340			
	350-UP5M	70	350			
	370-UP5M	74	370			
	375-UP5M	75	375			
	400-UP5M	80	400			
	420-UP5M	84	420			
	425-UP5M	85	425			
	430-UP5M	86	430			
	440-UP5M	88	440			
	450-UP5M	90	450			
	475-UP5M	95	475			
	490-UP5M	98	490			
	500-UP5M	100	500			
	515-UP5M	103	515			
	520-UP5M	104	520			
	525-UP5M	105	525			
	530-UP5M	106	530			
	550-UP5M	110	550			
560-UP5M	112	560				
575-UP5M	115	575				
595-UP5M	119	595				
600-UP5M	120	600				
605-UP5M	121	605				
635-UP5M	127	635				
650-UP5M	130	650				
670-UP5M	134	670				
675-UP5M	135	675				
690-UP5M	138	690				
725-UP5M	145	725				
740-UP5M	148	740				
750-UP5M	150	750				
780-UP5M	156	780				
800-UP5M	160	800				
835-UP5M	167	835				
850-UP5M	170	850				
900-UP5M	180	900				
1000-UP5M	200	1000				
1050-UP5M	210	1050				

Type: UP8M (Pitch: 8mm)

Type	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price 1 - 4 pcs.	
					150	250
PTBN (Rubber)	480-UP8M	60	480			
	512-UP8M	64	512			
	520-UP8M	65	520			
	536-UP8M	67	536			
	560-UP8M	70	560			
	584-UP8M	73	584			
	600-UP8M	75	600			
	632-UP8M	79	632			
	640-UP8M	80	640			
	680-UP8M	85	680			
	712-UP8M	89	712			
	720-UP8M	90	720			
	760-UP8M	95	760			
	800-UP8M	100	800			
	832-UP8M	104	832			
	840-UP8M	105	840			
	856-UP8M	107	856			
	880-UP8M	110	880			
	960-UP8M	120	960			
	1040-UP8M	130	1040			
	1080-UP8M	135	1080			

For orders larger than indicated quantity, please request a quotation.

Comparison of Transmission Capacity between UP8M and P8M (Ref.)

Comparison of Transmission Capacity between MTS8M and S8M (Ref.)

Type: T5 (Pitch: 5mm)

Type	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price			
					100	150	200	250
TTBU	185T5	37	185					
	200T5	40	200					
	225T5	45	225					
	250T5	50	250					
	275T5	55	275					
	280T5	56	280					
	295T5	59	295					
	300T5	60	300					
	325T5	65	325					
	350T5	70	350					
	375T5	75	375					
	400T5	80	400					
	425T5	85	425					
	440T5	88	440					
	450T5	90	450					
	475T5	95	475					
	500T5	100	500					
	525T5	105	525					
	550T5	110	550					
	575T5	115	575					
	590T5	118	590					
	600T5	120	600					
	625T5	125	625					
	630T5	126	630					
	650T5	130	650					
	675T5	135	675					
	690T5	138	690					
	700T5	140	700					
725T5	145	725						
750T5	150	750						
780T5	156	780						
800T5	160	800						
850T5	170	850						
900T5	180	900						
1000T5	200	1000						
1075T5	215	1075						
1090T5	218	1090						
1100T5	220	1100						
1115T5	223	1115						
1215T5	243	1215						
1350T5	270	1350						
1380T5	276	1380						

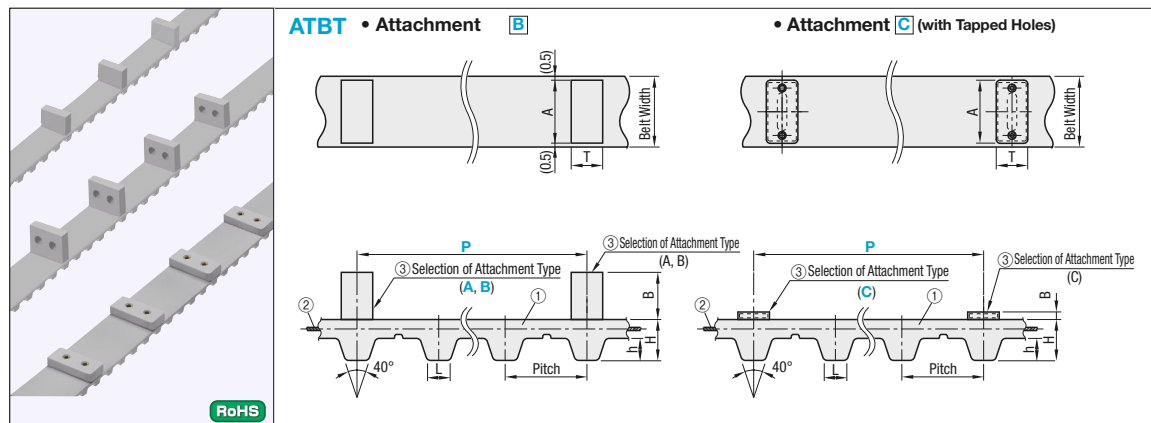
Type: T10 (Pitch: 10mm)

Type	Belt Number	Belt Nominal Width	Number of Teeth	Belt Circumference Length (mm)	Unit Price					
					150	200	250	300	400	500
TTBU	400T10	40	400							
	450T10	45	450							
	500T10	50	500							
	530T10	53	530							
	550T10	55	550							
	560T10	56	560							
	600T10	60	600							
	630T10	63	630							
	650T10	65	650							
	700T10	70	700							
	720T10	72	720							
	750T10	75	750							
	800T10	80	800							
	850T10	85	850							
	900T10	90	900							
	910T10	91	910							
	920T10	92	920							
	950T10	95	950							
	960T10	96	960							
	980T10	98	980							
	1000T10	100	1000				</			

Timing Belts with Attachments (T5, T10)

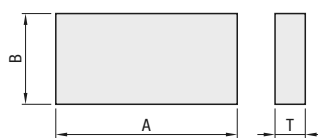
Joining Process

■ **Features:** Attachments are thermally bonded to the backside of the Timing Belt enabling constant pitch conveyance of various work pieces.
 ■ Timing Belt with Attachment T5 is compatible with Timing Pulley T5 on P.1417 and Timing Belt with Attachment T10 is compatible with Timing Pulley T10 on P.1419.

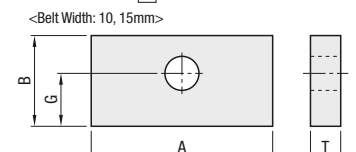


Attachment Shape Details

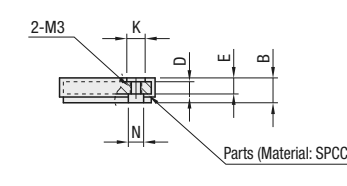
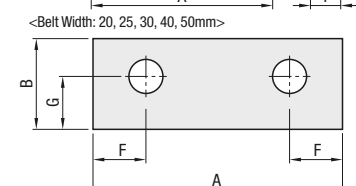
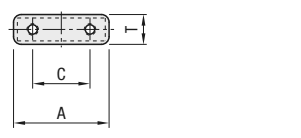
Attachment A



Attachment B



Attachment C (with Tapped Holes)



Material	
① Main Body	Polyurethane (for Joint Process)
② Core Wire	Aramid Core Wire
③ Attachment	Polyurethane (for Joint Process)

Type	Pitch	H	h	L
T5	5	2.2	1.2	1.8
T10	10	4.5	2.5	3.5

Attachment A Dimension

Type	Belt Width	A	B	T	Belt Unit Mass g/m (Width:10mm)	Attachment Weight (g)
T5	10mm	9	10	3	20.0	0.34
	15mm	14	10	3	20.0	0.52
	20mm	19	10	3	20.0	0.71
	25mm	24	10	3	20.0	0.89
T10	15mm	14	15	5	40.0	0.86
	20mm	19	15	5	40.0	1.17
	25mm	24	15	5	40.0	1.47
	30mm	29	15	5	40.0	2.67
	40mm	39	20	7	40.0	3.59
50mm	49	20	7	40.0	6.02	

Attachment B Dimension

Type	Belt Width	A	B	Through Hole	G	F	T	Belt Unit Mass g/m (Width:10mm)	Attachment Weight (g)
T5	10mm	9	10	3.5	5.5	-	3	20.0	0.30
	15mm	14	15	4.5	9	5	3	20.0	0.72
	20mm	19	20	2-4.5	13	6	3	20.0	0.94
	25mm	24	20	2-5.5	13	6	3	20.0	1.61
T10	15mm	14	15	4.5	9	-	5	40.0	1.19
	20mm	19	15	2-4.5	9	5	5	40.0	1.55
	25mm	24	20	2-5.5	13	6	5	40.0	2.66
	30mm	29	20	2-5.5	13	7	5	40.0	3.15
	40mm	39	20	2-6.5	13	7	5	40.0	4.38
50mm	49	20	2-6.5	13	7	5	40.0	5.61	

Attachment C Dimension

Type	Belt Width	A	B	T	C	D	E	K	N	Belt Unit Mass g/m (Width:10mm)	Attachment Weight (g)
T10	25mm	25.0	6.5	7.8	15.0	3.2	5.0	4.8	4.0	40.0	3.9

* B dimension is a dimension after adhesion.

* B and G dimensions are dimensions after adhesion.

⚠ Operating Temp.: -20 ~ 70°C (Reference Value)

⚠ Attachment is mounted on the backside above the belt teeth.

⚠ Attachment C is mounted nearly on the center of the belt.

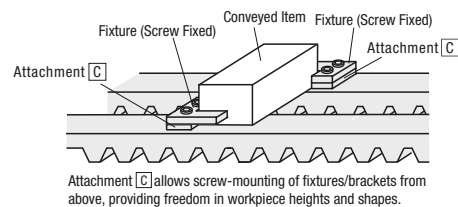
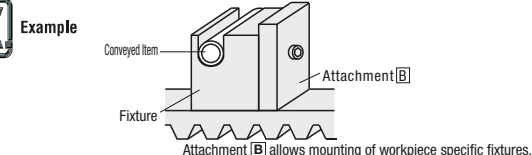
⚠ Joining process reduces allowable tension to approx. 50% of Open End Belts.

⚠ Adhesion burrs occur at the base of the adhered attachment.

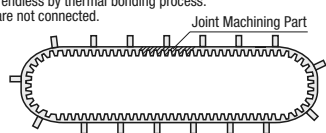
⚠ For material properties of polyurethane for joint process, see P.1478.

⚠ For allowable tension of belts and design data, see P.2253.

⚠ If the attachments are to receive vibrations or large loads, test the applicability before using.



■ **Joining Process**
 Open ended belts are made endless by thermal bonding process.
 Core wires of the joint part are not connected.



Type: T5 (Pitch: 5mm)

Part Number	Attachment Type	Attachment Mounting Pitch P	Number of Teeth	Circumference Length (mm)	Body Price 1~5 pc(s).			
					Belt Nominal Width			
Type	Belt Number	Belt Nominal Width			100	150	200	250
ATBT	A	30	700T5	700				
			750T5	750				
			800T5	800				
			850T5	850				
			900T5	900				
			950T5	950				
			1000T5	1000				
			1050T5	1050				
			1100T5	1100				
			1150T5	1150				
			1200T5	1200				
			1250T5	1250				
			1300T5	1300				
			1350T5	1350				
			1400T5	1400				
			1450T5	1450				
			1500T5	1500				
			1550T5	1550				
			1600T5	1600				
			1650T5	1650				
	1700T5	1700						
	1750T5	1750						
	1800T5	1800						
	1850T5	1850						
	1900T5	1900						
	1950T5	1950						
	2000T5	2000						
	2050T5	2050						
	2100T5	2100						
	2150T5	2150						
	2200T5	2200						
	2250T5	2250						
	2300T5	2300						
	2350T5	2350						
	2400T5	2400						
	2450T5	2450						
	2500T5	2500						
	2550T5	2550						
	2600T5	2600						
	2650T5	2650						
2700T5	2700							
2750T5	2750							
2800T5	2800							
2850T5	2850							
2900T5	2900							
2950T5	2950							
3000T5	3000							
3050T5	3050							
3100T5	3100							
3150T5	3150							
3200T5	3200							
3250T5	3250							
3300T5	3300							
3350T5	3350							
3400T5	3400							
3450T5	3450							
3500T5	3500							
3550T5	3550							
3600T5	3600							
3650T5	3650							
3700T5	3700							
3750T5	3750							
3800T5	3800							
3850T5	3850							
3900T5	3900							
3950T5	3950							
4000T5	4000							
ATBT	B	50-1200 (50mm Increment)	100					
			150					
			200					
			250					
			300					
			350					
			400					
			450					
			500					
			550					
	C	50-1950 (50mm Increment)	100					
			150					
			200					
			250					
			300					
			350					
			400					
			450					
			500					
			550					


Type: T10 (Pitch: 10mm)

Part Number	Attachment Type	Attachment Mounting Pitch P	Number of Teeth	Circumference Length (mm)	Body Price 1~5 pc(s).					
					Belt Nominal Width					
Type	Belt Number	Belt Nominal Width			150	200	250	300	400	500
ATBT	A	30	700T10	700						
			750T10	750						
			800T10	800						
			850T10	850						
			900T10	900						
			950T10	950						
			1000T10	1000						
			1050T10	1050						
			1100T10	1100						
			1150T10	1150						
			1200T10	1200						
			1250T10	1250						
			1300T10	1300						
			1350T10	1350						
			1400T10	1400						
			1450T10	1450						
			1500T10	1500						
			1550T10	1550						
			1600T10	1600						
			1650T10	1650						
	1700T10	1700								
	1750T10	1750								
	1800T10	1800								
	1850T10	1850								
	1900T10	1900								
	1950T10	1950								
	2000T10	2000								
	2050T10	2050								
	2100T10	2100								
	2150T10	2150								
	2200T10	2200								
	2250T10	2250								
	2300T10	2300								
	2350T10	2350								
	2400T10	2400								
	2450T10	2450								
	2500T10	2500								
	2550T10	2550								
	2600T10	2600								
	2650T10	2650								
2700T10	2700									
2750T10	2750									
2800T10	2800									
2850T10	2850									
2900T10	2900									
2950T10	2950									
3000T10	3000									
3050T10	3050									
3100T10	3100									
3150T10	3150									
3200T10	3200									
3250T10	3250									
3300T10	3300									
3350T10	3350									
3400T10	3400									
3450T10	3450			</						

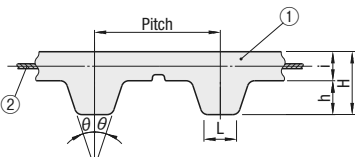
Long Timing Belts - Polyurethane

Tooth Count Configurable Jointing Process

- **Features:** The belt length is selectable as desired, and suitable for a long span synchronous conveyance.
- Long Timing Belts are compatible with Timing Pulleys on [P.1393~1422](#).

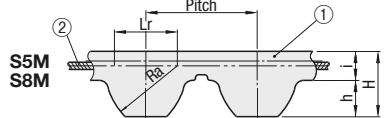


LTBJ (Standard)

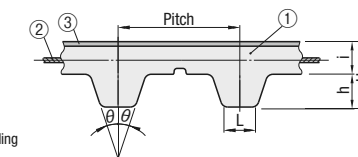


L
H
T5
T10
AT5
AT10

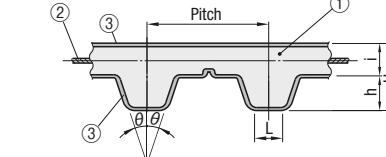
S5M S8M



LTBN (Backside Cloth Lined)



LTBR (Both Sides Cloth Lined)



Jointing Process
Open ended belts are made endless by thermal bonding process.
Core wires of the joint part are not connected.

Features of Cloth Lined Belts
Backside Cloth Lined: Reduces friction coefficient of conveyed items and is suitable for accumulation conveyance.
Both Sides Cloth Lined: Reduces friction coefficient between conveyed materials and pulleys and cuts noise.

Type	Type	Material		
		① Main Body	② Core Wire	③ Cloth
LTBJ	Standard	Polyurethane (for Joint Process)	T5, T10, L, H, S5M, S8M: Aramid Core Wire AT5, AT10: Steel Cord	-
LTBN	Backside Cloth Lined			Nylon Cloth
LTBR	Both Sides Cloth Lined			Nylon Cloth

Belt Type	Pitch	2θ(°)	H	h	i	L	Unit Mass g/m (Width: 10mm)		
							Standard	Backside Cloth Lined	Both Sides Cloth Lined
L	9.525	40°	3.6	1.91	1.69	3.25	29.1	28.8	-
H	12.7	40°	4.36	2.29	2.07	4.4	36.2	33.8	-
T5	5	40°	2.2	1.2	1.0	1.8	19.0	-	20.0
T10	10	40°	4.5	2.5	2.0	3.5	37.7	34.5	32.5
AT5	5	50°	2.7	1.2	1.5	2.5	32.0	-	-
AT10	10	50°	4.5	2.5	2.0	5.0	58.6	-	-

Belt Type	Pitch	Ra	Lr	H	h	i	Unit Mass g/m (Width: 10mm)	
							Standard	
S5M	5	3.25	3.25	3.31	1.81	1.5	29.0	
S8M	8	5.2	5.2	5.3	2.95	2.35	45.2	

⚠ Operating Temp: -20~70°C (Reference Value)

⚠ For the belt design data, see [P.2253](#). For material properties, see [P.1478](#).

■ **Comparison of Friction Coefficient (Reference Value)**

Matching Material	Tooth Surface		Back Surface	
	Cloth Lined	Standard	Cloth Lined	Standard
Steel	0.34	0.65	0.29	0.75
Stainless Steel	0.22	0.68	0.17	0.69
Aluminum	0.19	0.42	0.15	0.50
UHMWPE	0.18	0.31	0.17	0.32
Teflon	0.12	0.21	0.12	0.28

* Figures in the table are examples of actual measurement, not standard values.


Part Number	Number of Teeth	Belt Width (mm)	Allowable Tension (N)	Body Price 1~5 pc(s).			Joint Process Charge (Body Price +)	
				LTBJ	LTBN	LTBR	Standard	Cloth Lined
LTBJ (Standard)	L	050	12.7	92	-	-	-	-
		075	19.1	138	-	-	-	-
		100	25.4	184	-	-	-	-
	H	150	38.1	276	-	-	-	-
		075	19.1	163	-	-	-	-
		100	25.4	216	-	-	-	-
	S5M	150	38.1	324	-	-	-	-
		200	50.8	432	-	-	-	-
		100	10	60	-	-	-	-
	S8M	150	15	90	-	-	-	-
		250	25	150	-	-	-	-
		150	15	117	-	-	-	-
LTBN (Backside Cloth Lined)	250	25	196	-	-	-	-	
	300	30	235	-	-	-	-	
	400	40	313	-	-	-	-	
LTBR (Both Sides Cloth Lined)	T5	100	10	29	-	-	-	-
		150	15	43	-	-	-	-
		200	20	58	-	-	-	-
	T10	250	25	72	-	-	-	-
		150	15	90	-	-	-	-
		200	20	120	-	-	-	-
	AT5	250	25	150	-	-	-	-
		300	30	180	-	-	-	-
		400	40	240	-	-	-	-
	AT10	500	50	300	-	-	-	-
		100	10	37	-	-	-	-
		150	15	55	-	-	-	-
AT10	150	15	117	-	-	-	-	
	200	20	156	-	-	-	-	
	250	25	195	-	-	-	-	

⚠ Overall Length: Number of Teeth x Pitch. ⚠ Kgf=Nx0.101972 ⚠ For orders larger than indicated quantity, please request a quotation.

Ordering Example

Type	Belt Type	Belt Nominal Width	Number of Teeth
LTBJ	AT5	150	800
LTBR	H	200	300

Example



LTBJ (P.1474)
BTG (P.1477)

⚠ For other app. examples, see [P.1478](#)

Open End Belts - Polyurethane / Chloroprene Rubber

■ For Application examples, see [P.1478](#).
 ■ For Connection Fittings, refer to [P.1483](#).

Type	Material	
	Main Body	Core Wire
TBOG, HTBOG, PTBOG	Chloroprene Rubber (Black)	Glass Cord
TBO, HTBO, TTBO	Polyurethane (White)	Steel Cord

Belt Type	Pitch	2θ(°)	H	h	i	L	Unit Mass g/m (Width: 10mm)	
							Chloroprene Rubber	Polyurethane
XL	5.08	50°	2.25	1.25	1.0	1.35	26.77	22.17
L	9.525	40°	3.5	1.9	1.6	3.2	37.8	36.22
H	12.7	40°	4.3	2.3	2.0	4.4	52.36	41.22
T5	5	40°	2.2	1.2	1.0	1.8	-	22.1
T10	10	40°	4.5	2.5	2.0	3.5	-	47.6
AT5	5	50°	2.7	1.2	1.5	2.5	-	32.0
AT10	10	50°	4.5	2.5	2.0	5	-	58.6

Belt Type	Pitch	Ra	Lr	H	h	i	PLD	Unit Mass g/m (Width: 10mm)	
								Chloroprene Rubber	Polyurethane
S3M	3	1.95	1.95	2.10(2.00)	1.14	0.96(0.86)	0.381	-	24.3
S5M	5	3.25	3.25	3.61(3.20)	1.91(1.77)	1.70(1.43)	0.480	38.8	34.6
S8M	8	5.20	5.20	5.30(5.00)	3.05(2.85)	2.25(2.15)	0.686	55.2	57.6

Ⓢ Dimensions in () are for Polyurethane.

Ⓢ Operating Temp: -20~80°C (Reference Value)
 Ⓢ For the belt design data, see [P.2253](#).

Belt Type	Pitch	ℓ	H	h	PLD	r	Unit Mass g/m (Width: 10mm)	
							Chloroprene Rubber	Polyurethane
P5M	5	3.25	3.6	1.81	0.571	0.5	-	41.0
P8M	8	5.2	5.5	2.9	0.686	0.8	-	56.0

Type	Belt Type	Belt Nominal Width	Number of Teeth Lower Limit - Upper Limit	Belt Width (mm)		Allowable Tension (N)		Applicable Metal Joint	Unit Price 1-30pc(s).	
				Chloroprene Rubber	Polyurethane	Chloroprene Rubber	Polyurethane			
TBOG (Chloroprene Rubber) TBO (Polyurethane)	XL	025	30-3937	6.4	-	66	-	TBCK-XL025	-	-
		037		9.5	47	102	-	TBCK-XL037	-	-
		050		12.7	70	142	-	TBCK-XL050	-	-
	L	050	30-2099	12.7	95	259	-	TBCK-L050	-	-
		075		19.1	165	387	-	TBCK-L075	-	-
		100		25.4	-	519	-	TBCK-L100	-	-
	H	075	45-1574	19.1	-	397	-	TBCK-H075	-	-
		100		25.4	-	529	-	TBCK-H100	-	-
		150		38.1	-	799	-	TBCK-H150	-	-
	200		50.8	-	1093	-	TBCK-H200	-	-	
HTBOG (Chloroprene Rubber) HTBO (Polyurethane)	S3M	060	40-6666	6	-	127	-	TBCK-S3M060	-	-
		100		10	-	106	-	TBCK-S3M100	-	-
		150		15	-	159	-	TBCK-S3M150	-	-
	S5M	100	50-4000	10	310	215	-	TBCK-S5M100	-	-
		150		15	490	323	-	TBCK-S5M150	-	-
		250		25	-	539	-	TBCK-S5M250	-	-
	S8M	150	60-2500	15	-	647	-	TBCK-S8M150	-	-
		250		25	950	1176	-	TBCK-S8M250	-	-
		300		30	-	1412	-	TBCK-S8M300	-	-
	400		40	-	1882	-	TBCK-S8M400	-	-	
PTBOG (Chloroprene Rubber)	P5M	100	50-4000	10	287	-	-	TBCK-S5M100	-	-
		150		15	456	-	-	TBCK-S5M150	-	-
		250		25	817	-	-	TBCK-S5M250	-	-
	P8M	150	60-2500	15	606	-	-	TBCK-S8M150	-	-
		250		25	1060	-	-	TBCK-S8M250	-	-
TTBO (Polyurethane)	T5	100	40-4000	10	-	112	-	TBCK-T5100	-	-
		150		15	-	166	-	TBCK-T5150	-	-
		200		20	-	225	-	TBCK-T5200	-	-
		250		25	-	284	-	TBCK-T5250	-	-
		150		15	-	299	-	TBCK-T10150	-	-
		200		20	-	397	-	TBCK-T10200	-	-
	T10	250	40-2000	25	-	529	-	TBCK-T10250	-	-
		300		30	-	627	-	TBCK-T10300	-	-
		400		40	-	862	-	TBCK-T10400	-	-
		500		50	-	1064	-	TBCK-T10500	-	-
		100		10	-	147	-	TBCK-AT5100	-	-
		150		15	-	221	-	TBCK-AT5150	-	-
	AT5	150	40-4000	15	-	469	-	TBCK-AT10150	-	-
		200		20	-	625	-	TBCK-AT10200	-	-
		250		25	-	781	-	TBCK-AT10250	-	-
		100		10	-	147	-	TBCK-AT5100	-	-
		150		15	-	221	-	TBCK-AT5150	-	-
		200		20	-	469	-	TBCK-AT10150	-	-
AT10	200	40-2000	20	-	625	-	TBCK-AT10200	-	-	
	250		25	-	781	-	TBCK-AT10250	-	-	

Ⓢ Overall Length: Number of Teeth x Pitch. Ⓢ kgf=Nx0.101972

Ⓢ For orders larger than indicated quantity, please request a quotation.

Ordering Example		Part Number			Number of Teeth
Type	Belt Type	Belt Nominal Width			
TBO	- H	100	-	1100	
HTBOG	- S5M	100	-	500	
TTBO	- AT5	150	-	1200	

Timing Belt Guide

Material Properties and Application Examples of Long Timing Belts

■ **Features:** A guide to prevent belts from flexure and wandering during conveying.

BTG (No Hole)

BTGZ (1 Row of Counterbored Holes)

Details of Hole Dimensions

Counterbored Hole

Screw Nominal Dia.	4	5	6
d	4.5	5.5	6.5
d1	8	9.5	11
h	5	6	7

Accuracy Standards

Dimension	Tolerance
A, B, C, D, E	±0.2
L	±1.0

Ⓜ Material UHMWPE

Part Number Type	Nominal	L 10mm Increment	P (Hole Pitch) 5mm Increment	H Number of Holes	K Hole Machining Nominal Dia. Selection	Applicable Belt Type	A	B	C	D	E
							BTG (No Hole)	100 150 150A 200 200A	200~1800	50~500	2~10
BTGZ (1 Row of Counterbored Holes)	250 250B 300 400 500	T10150, AT10150	17	9	23	12	3				
						T5200	22	8.6	30	10	1.4
						T10200, AT10200	27	9	35	12	3
						T10250, AT10250	27	8.6	35	10	1.4
						T5250	32	9	42	12	3
						T10300	43	9	53	12	3
						T10400	53	9	63	12	3
						T10500					

⚠ Applicable to belts not listed in "Applicable Belt Type". Make sure of the width and the height of teeth before use.
⚠ Belt Nominal Width 100 is not available for BTGZ.

Ordering Example

Part Number: **BTG** - **150** - **300**
BTGZ - **200A** - **1200** - **P160** - **H8** - **K5**

ex LTBN-T10400 (P.1474)

TPPA30T10400 (P.1419)

■ **Body Price**

Part Number Type	Nominal	Body Price				
		L200~400	L410~600	L610~900	L910~1200	L1210~1500
BTG	100					
	150					
	150A					
	200					
	200A					
BTGZ (+ Hole Machining Charge)	250					
	250B					
	300					
	400					
	500					

■ **Hole Machining Charge**

Number of Holes	BTGZ (1 Row of Counterbored Holes)
2	
3	
4	
5	
6	
7	
8	
9	
10	

Material Properties of Long Timing Belts (P.1473, P.1474)

Chemical Resistance (Long Timing Belts Iron Rubber® P.1473)

○: With Resistibility
△: With Limited Resistibility
×: Non-resistant

Chemical	Resistibility	Chemical	Resistibility	Chemical	Resistibility
Acetic Acid 5%	×	Aqueous Sodium Hydroxide Solution 5%	×	n-Hexane	△
Glacial Acetic Acid (38°C)	×	Aqueous Sodium Hydroxide Solution 10%	×	Hydrazine	×
Non-Glacial Acetic Acid	×	Aqueous Potassium Hydroxide Solution 5%	×	N-Methylpyrrolidone	×
Hydrochloric Acid 5%	×	Sodium Dichromate 20%	△	Isocetane	△
Nitric Acid 10%	×	Seawater	△	Isopropyl Alcohol	△
Sulfuric Acid 20%	×	Acetone	×	Kerosene	△
Fuming Sulfuric Acid 20%	×	Methyl Ethyl Ketone	×	Gasoline	△
Sulfurous Acid	×	Ethyl Alcohol	×	Jet Fuel	△
Formic Acid	×	Methyl Alcohol	×	Linseed Oil	○
Hydro Cyanic Acid	×	Ethyl Acetate	×	Ricin	△
Hydrofluoric Acid 10%	×	Carbon Tetrachloride	×	Naphthalene	△
Hydrogen Sulfide	×	Benzene	×	Soybean Oil	○
Chlorine Gas	×	Carbon Bisulfide	×	Beer	○
Aqueous Trisodium Phosphate Solution	○	Diethyl Phthalate	○	Phenol	×
Aqueous Citric Acid Solution	○	Chloroethane	×	Ethylene Tetrachloride	×
Anhydrous Bromine (Solution)	×	Ethylene Glycol	△	Xylene	×
Aqueous Acetic Boric Acid Solution	○	Ethylene Oxide	△	Fuel Oil A	△
Aqueous Ammonium Chloride Solution	△	Fluosiolic Acid	△	Fuel Oil B	×
Aqueous Calcium Chloride Solution	○	Formaldehyde 40%	×	Fuel Oil C	×
Aqueous Calcium Hypochlorite Solution	○	Chlorobenzene	×	Dimethylformamide	×
Aqueous Sodium Chloride Solution	○	Cyclohexane	△	Tetrahydrofuran	×
Aqueous Ammonium Sulphate Solution	△	Dibutyl Phthalate	○	Toluene	×
Aqueous Ammonium Hydroxide Solution	×	Glycerin	○	Hydrogen Peroxide Solution	×

⚠ The effects are just for reference and tests are required before use. Check compatibility before using as belts.

Chemical Resistance (Long Timing Belts Polyurethane P.1474)

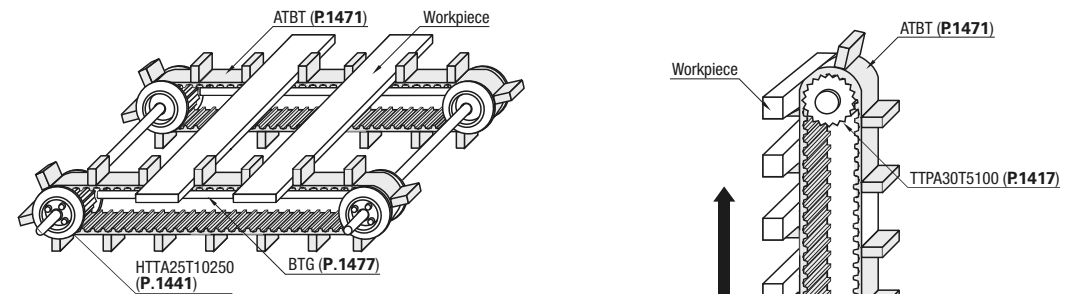
○: With Resistibility
△: With Limited Resistibility
×: Non-resistant

Chemical	Resistibility	Chemical	Resistibility
Acetic Acid	△	Kerosene	○
Acetone	△	Grease	○
Aluminum Chloride (5% Moisture)	○	Methanol	△
Ammonia Water (10%)	○	Methanol / Gasoline (15 / 85)	△
Aniline	×	Methyl Ethyl Ketone	△
ASTM No.1 Oil	○	Chloromethane	△
ASTM No.2 Oil	○	Mineral Oil	○
ASTM No.3 Oil	△	Nitric Acid 20%	×
Benzene	△	Regular Gasoline	△
Butyl Alcohol	△	Super Gasoline	△
Butyl Acetate	×	Saline Solution	○
Carbon Tetrachloride	×	Seawater	○
Cyclohexanol	△	Aqueous Sodium Chloride Solution	○
Diesel Oil	○	Sodium Hydroxide	△
Dimethylformamide	×	Tetrahydrofuran	×
Ethanol	×	Toluene	×
Ethyl Acetate	×	Trichloroethylene	×
n-Heptane	○	Water	○
20% Hydrochloric Acid	△		
Iron Chloride (Moisture 5%)	△		
Isopropanol	△		

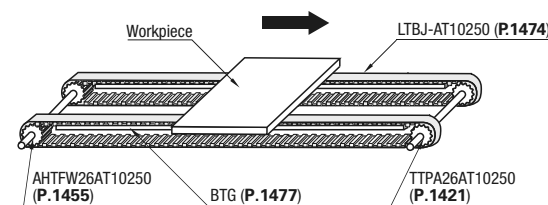
⚠ Not applicable when temperature is above 40°C or belts are immersed in solution or liquid.

App. Example of Long Timing Belt / Open End Belt (P.1473~1476)

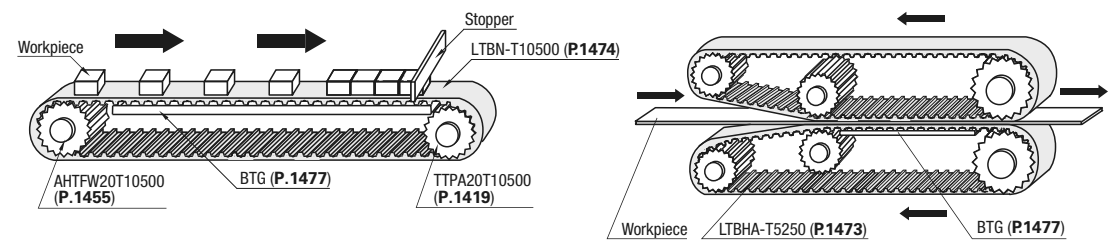
- Simultaneous Conveyance (Conveying workpieces at regular intervals using attachments)
- Vertical Conveyance (Conveying light workpieces using attachments)



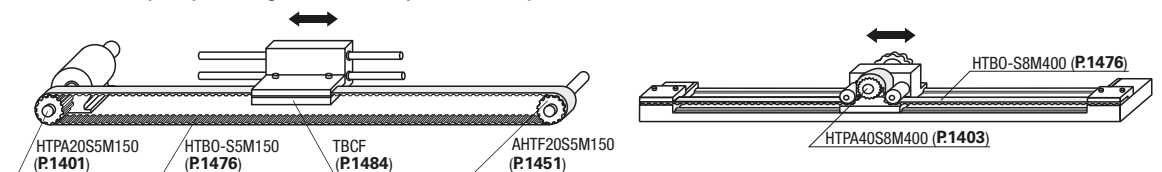
- Circuit Board Conveyance (Conveying boards on two timing belts)



- Accumulation Conveyance (Using the Cloth Lined Type to reduce friction coefficient)
- Tractor Conveyance (Sandwiching workpieces between belts)



- Linear Drive (Reciprocating motion with open end belts)



Timing Belt Clamp Plates

Press Formed Multi Fitting

Features: Can be attached to belts, guides, etc. in a flexible manner. Are press-formed and thus, are priced up to 50% lower than conventional products. Furthermore, are space-saving and are suitable for use with many quantity of desktop devices. Can be adopted also for the 3D printer mechanism.

Specifications	Type	M Material	A Accessory
Fitting Plate	TBC	EN 1.4301 Equiv.	Hex Socket Head Cap Screw x 4 pcs. (Stainless Steel)
Fitting Plate + L-shaped Plate	TBCL		

Fitting Plate Only (Through Hole)
TBC

Mounting Example

Has a groove provided to prevent overpressure and thus, is excellent in assembly performance.

Fitting Plate (Tapped Hole) and L-shaped Plate in Set
TBCL

Mounting Example

A groove for overpressure prevention is provided in the same manner as above.

⚠ On the fitting plate, since the slit part is punched, this part generates dullness to some extent but does not encounter any problem when being clamped to belts.
⚠ When this plate is clamped to a belt, the belt is deformed. Therefore, once the said clamping operation is completed, the belt cannot be re-mounted for new usage any further.
* Matching is added to 4 places on the fitting plate and is added to 3 places on the L-shaped plate.

Part Number	Belt Pitch (mm)	Belt Nominal Width	Fitting Plate *1										L-shaped Plate					Included Screw	Applicable Belt
			A	B	C	W	P	P1	S	N (Only)	M (Set)	H	P2	N1	G	M			
TBC (Only)	2	4	13			5	9	9		2.5	M2	15.5						SCB2-5 4 pcs.	S2M, P2M, 2GT
		6	16	13	1	7	11.5		0.5	3	M2.5	19	6				3	SCB2.5-5 4pcs.	
		10	20			11	15.5			8			23						
TBCL (Set)	3	6	16			7	11.5	11.5		3	M2.5	19			2.25			SCB2.5-5 4pcs.	S3M, P3M, MA3, 3GT*2
		10	20	16.5	1.5	11	15.5		0.7	3	M2.5	23	10	3			4		
		15	25			16	20.5			10			28						

*1: This plate is spec-designed to clamp a belt with 6 teeth when the belt pitch is 2mm and to clamp a belt with 5 teeth when the belt pitch is 3mm.
*2: When the mating belt is 3GT Type, the plate is allowed to clamp the belt but cannot fulfill the overpressure protection function, because this type of belt is thicker than other types. Avoid excessive clamping of belt.



Part Number		Belt Nominal Width	
Type	Belt Pitch		
TBCL	3	-	10

Part Number	Belt Pitch	Belt Nominal Width	Unit Price 1~3 pc(s).	Volume Discount Rate				
				4~9 pcs.	10~99 pcs.	100~199 pcs.	200~500 pcs.	
TBC	2	4 6 10						
	3	6 10 15						
TBCL	2	4 6 10						
	3	6 10 15						

For orders larger than indicated quantity, please check with WOS.



The following application example indicates that two fitting plates are used for open end belts. In this example, clearance is provided between two plates to retain belt relief.

Open End Belt: HTBO-S3M060 (P.1465)

The clamp plate can be used also in combination with a close end belt.

Timing Belt: HTBN-S2M-060 (P.1465)

The following example indicates that an L-shaped plate set is combined with a linear guide. The clamp plate is small-sized and thus, allows space-saving designing on the whole.

Timing Belt: PTBN-P2M-060 (P.1467)

The following application example indicates that an L-shaped plate set and linear bushing are combined for use. TBCL2-4 / TBCL3-6 has the same vertical / horizontal thread pitch as the fitting plate has and thus, can be mounted as shown on the figure below as well on the figure on the left.

Linear Bushing: LHFSD (P.311)

Timing Belt Clamp Plates

Linear Guide Mounting Plate Set

This clamp plate facilitates a belt drive unit to be mounted on a linear guide easily.

RoHS

Type	Material	Surface Treatment	Number of Workpiece Mounting Holes	Accessory	Material	Qty.	Catalog Page
TBLG	EN AW-5052 Equiv.	Clear Anodize	6	Timing Belt Clamp Plates	EN AC-51400-T5 Equiv.	1	Bottom on this page
				Extra Low Head Cap Screw (for Belt Mounting): CBSTS	EN 1.4301 Equiv.	4	P. -195

① Mounting Plate

② Timing Belt Clamp Plate

* See Specification Table for Timing Belt Clamp Plates (on the bottom of this page).

■ Accuracy Standards

- Flatness: 0.4 or Less per 1000mm
- Plate Thickness Tolerance Thickness 6: ±0.04 Thickness 8: ±0.05

⚠ Marks may be left around counterbored holes when adding those holes. This phenomenon does not affect actual use.

⚠ A groove for overpressure prevention is provided to prevent a belt from being excessively clamped.

Dimension Conformance Table

Type	Belt Type	Recommended Combinations	
		Applicable Linear Guide	Counterbored Hole
TBLG	S3M	Miniature Linear Guide	Z, Z1
	S5M	Miniature Linear Guide, Linear Guide for Medium Load	Z, Z1
	T5	Linear Guide for Medium Load, Linear Guide for Heavy Load	Z, Z1
	XL	Linear Guide for Medium Load, Linear Guide for Heavy Load	Z, Z1
	L	Linear Guide for Medium Load, Linear Guide for Heavy Load	Z, Z1
	S8M	Linear Guide for Medium Load, Linear Guide for Heavy Load	Z, Z1

Counterbored Hole

Z: Counterbore Dimension on Belt Mounting Side

Dimension	Screw Nominal Dia. Z1	Dimension	Screw Nominal Dia. Z
Z1h	2 2 2	Zh	3.5 4.5 5.5 6.5
Z1d	3.5 4.5 5.5	Zd	3.5 4.5 5.5 6.5
Z1d1	6.5 8.5 9.5	Zd1	6.5 8.0 9.5 11.0

Z: Counterbore Dimension on Guide Pushing Side

Dimension	Screw Nominal Dia. Z
Zh	3.5 4.5 5.5 6.5
Zd	3.5 4.5 5.5 6.5
Zd1	6.5 8.0 9.5 11.0

Selection Method

- Specify the type and width of belt.
- Specify the A dimension (plate width), L dimension (center distance between Linear Guide and Timing Belt) and S dimension (Depth of Clamp Plate toward the Linear Guide Center).
- Specify the B / C dimension (mounting hole pitch for Linear Guide) and the Z dimension (counterbore nominal dia. for Linear Guide-mounting screw). Specify the hex socket head cap screw to fit the mounting hole (counterbored hole) of Linear Guide.

⚠ Linear Guide-mounting screws are not included with.

Ordering Example Part Number - A - L - S - B - C - Z

TBLGXL050 - 50 - 100 - 24 - 35 - 35 - 6

① Mounting Plate

Type	Applicable belts	Dimension Configurable (1mm Increment)						Fixed Dimension									
		Belt Type	Nominal Width	Plate		Linear Guide-mounting Hole		Guide Side		Belt Side						(Referential Info) Belt Width	
		A	L	S	B	C	Z (Counterbored Hole)	T	M (Tapped Hole)	P	G	K	Z1 (Counterbored Hole) Screw Nominal	T1			
TBLG	XL	025							M=Z		25	13	12	4	2.1	6.4	
		031	36-90	50-250	11-45	12-60	12-50	3, 4, 5, 6								7.9	
		037														9.5	
		050														12.7	
		050														12.7	
		075														19.1	
	L	075	66-125	55-250	15-45	17-60	17-50	5, 6								3.3	25.4
		100														25.4	
		150														38.1	
		150														6	
		150														10	
		150														10	
	S3M	060	25-90	30-150	11-45	12-28	12-35	3, 4, 5, 6								1.9	15
		100														15	
		150														10	
		150														10	
		150														15	
		150														15	
	S5M	100	37-100	50-250	15-45	17-60	17-50	5, 6								3.1	25
		150														25	
		150														25	
		150														15	
		150														10	
		150														10	
S8M	250	56-150	60-250	15-45	17-60	17-50	5, 6	4.7	25								
	300							30									
	400							40									
	400							10									
	100							10									
	150							15									
T5	100	35-100	50-250	11-45	12-60	12-50	3, 4, 5, 6	2.2	20								
	150							20									
	200							20									
	250							25									
	250							25									
	250							25									

⚠ W=L+K+S ⚠ B(C)-Zd1-M≥2 ⚠ A-C-Zd1≥2 ⚠ S-B/2-Zd1/2≥1 ⚠ L-B-P/2-Zd1/2-M/2≥1 ⚠ L≥A

② Timing Belt Clamp Plate

Belt Type	Nominal Width	Belt Width	Timing Belt Clamp Plates						Extra Low Head Cap Screw	
			BT	TT	h	G	M	For T6	For T8	
XL	025	6.4	24	6	1.30	25	M4	CBSTS4-10	CBSTS4-12	
	031	7.9	25							
	037	9.5	26							
	050	12.7	30							
	050	12.7	32							
L	075	19.1	38	8	2.05	50	M5	-	CBSTS5-12	
	100	25.4	46							
	150	38.1	58							
	150	38.1	58							
	150	38.1	58							
S3M	060	6	18	4	1.25	15	M3	CBSTS3-8	CBSTS3-10	
	100	10	22							
	150	15	28							
	150	15	28							
	150	15	28							
S5M	150	15	32	6	2.00	25	M4	-	CBSTS4-12	
	250	25	42							
	150	15	34							
	250	25	44							
	300	30	50							
S8M	300	30	50	8	3.00	40	M5	-	CBSTS5-14	
	400	40	60							
	400	40	60							
	100	10	26							
	150	15	32							
T5	100	10	26	6	1.40	25	M4	CBSTS4-10	CBSTS4-12	
	150	15	32							
	200	20	38							
	250	25	43							
	250	25	43							

Ordering Example Part Number - A - L - S - B - C - Z

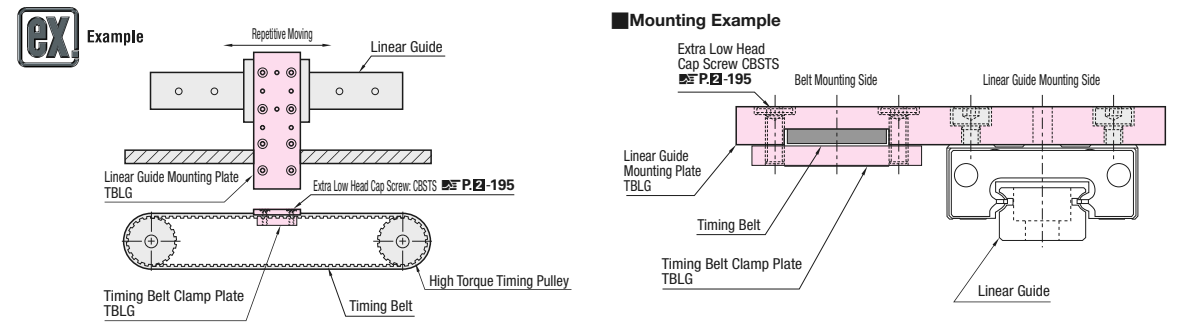
TBLGXL050 - 50 - 100 - 24 - 35 - 35 - 6

Type	Belt Type	Nominal Width	Z (T)	Unit Price										
				A				L						
				-50		51-100		101-150		151-200				
TBLG	XL	025	3, 4 (T=6)											
		031												
		037												
		050												
		060												
		100												
	S3M	150		5, 6 (T=8)										
		100												
		150												
		200												
		250												
		250												
XL	025	5, 6 (T=8)												
	031													
	037													
	050													
	050													
	075													
L	075		5, 6 (T=8)											
	100													
	150													
	150													
	150													
	150													
S3M	060	5, 6 (T=8)												
	100													
	150													
	100													
	150													
	250													
S5M	150		5, 6 (T=8)											
	250													
	150													
	250													
	150													
	250													
S8M	250	5, 6 (T=8)												
	300													
	400													
	100													
	150													
	200													
T5	100		5, 6 (T=8)											
	150													
	200													
	250													
	250													
	250													

Alterations Part Number - A - L - S - B - C - Z - (MH, MT)

TBLGXL050 - 50 - 100 - 24 - 35 - 35 - 6 - MT2

Alteration	Changes the Tapped Hole Dia. on the Linear Guide Mounting Side	Changes the dia. of each of two tapped holes on the Plate Center																				
Code	MH	MT																				
Spec.	<p>Change the Tapped Hole Dia. from Z (Counterbore Nominal Dia.) = M to the other.</p> <p>⚠ When MH and MT are combined, MT is applied to 2 places on the plate center.</p> <p>MH is applied to 4 places on portions other than Plate Center. MH (Tapped, Coarse)</p> <p>⚠ B(C)-Zd1-MH≥2</p> <table border="1"> <thead> <tr> <th>M (Z dim.)</th> <th>MH</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>2, 4, 5</td> </tr> <tr> <td>4</td> <td>3, 5, 6</td> </tr> <tr> <td>5</td> <td>3, 4, 6</td> </tr> <tr> <td>6</td> <td>4, 5</td> </tr> </tbody> </table> <p>Ordering Code MH3</p>	M (Z dim.)	MH	3	2, 4, 5	4	3, 5, 6	5	3, 4, 6	6	4, 5	<p>Out of 6 tapped holes on Linear Guide Mounting Side, 2 tapped holes located on Plate Center are changed to the other hole dia.</p> <p>⚠ When MH and MT are combined, MT is applied to 2 places on the plate center.</p> <p>MH is applied to 4 places on portions other than Plate Center. MT (Tapped, Coarse)</p> <p>⚠ B(C)-Zd1-MT≥2</p> <table border="1"> <thead> <tr> <th>M (Z dim.)</th> <th>MT</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>2, 4</td> </tr> <tr> <td>4</td> <td>2, 3</td> </tr> <tr> <td>5</td> <td>2, 3, 4</td> </tr> <tr> <td>6</td> <td>2, 3, 4</td> </tr> </tbody> </table> <p>Ordering Code MT2</p>	M (Z dim.)	MT	3	2, 4	4	2, 3	5	2, 3, 4	6	2, 3, 4
M (Z dim.)	MH																					
3	2, 4, 5																					
4	3, 5, 6																					
5	3, 4, 6																					
6	4, 5																					
M (Z dim.)	MT																					
3	2, 4																					
4	2, 3																					
5	2, 3, 4																					
6	2, 3, 4																					

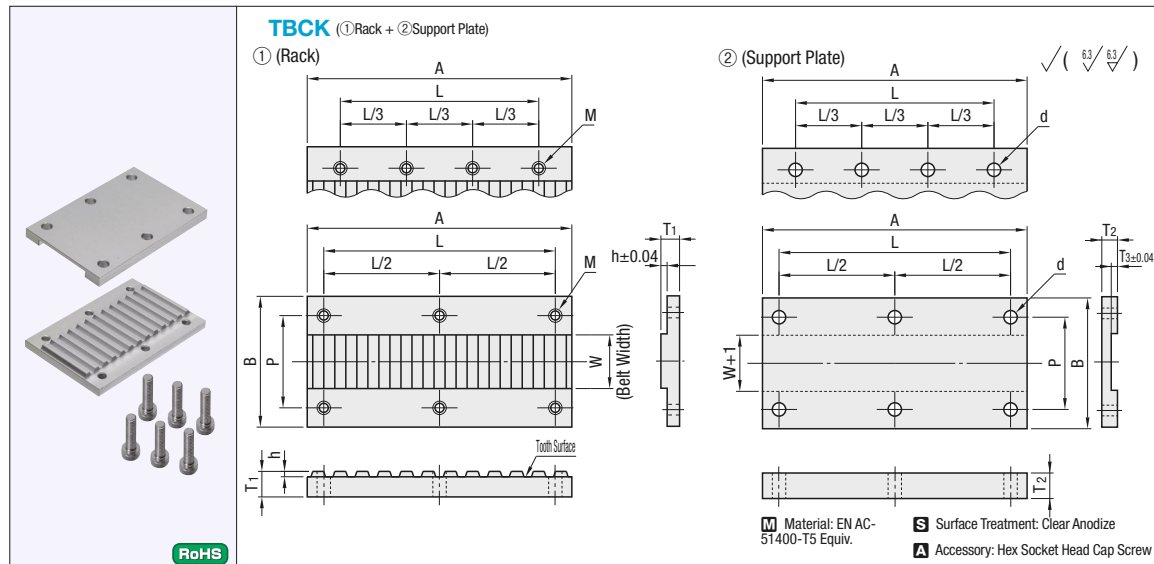


Timing Belt Clamp Plates

Overpressure Prevention Type

Timing Belt Clamp Plates

Metal Clamps for Timing Belts - Anti-overtightening, Hole Position Configurable



Part Number Type	Belt Type	Belt Nominal Width	W	A	B	T ₁	T ₂	T ₃	h	L	P	M	d	Included Screw	Number of Mounting Holes	Unit Price
TBCK (1+2)	XL	025	6.4	66	24	6	4.5	2.10	1.30	56	13	M4	4.5	M4-10	6	
		037	9.5		26						16					
		050	12.7		30						20					
	L	050	12.7	124	32	8	5.5	3.33	2.05	111	21	M5	5.5	M5-12	8	
		075	19.1		38						27					
		100	25.4		46						34					
	H	075	19.1	165	38	10	6.5	4.15	2.55	147	27	M5	5.5	M5-14	8	
		100	25.4		46						34					
		150	38.1		58						46					
	S3M	060	6	39	18	4	3.5	1.94	1.25	31	11	M3	3.4	M3-6	6	
		100	10		26						17					
		150	15		32						22					
	S5M	250	25	65	42	6	5.5	3.14	2.00	51	32	M4	4.5	M4-10	6	
		150	15		34						23					
		250	25		44						33					
	S8M	300	30	104	50	8	6.5	4.72	3.00	84	38	M5	5.5	M5-12	8	
		400	40		60						48					
		070	7		20						13					
	MA3	100	10	39	24	4	3.5	1.8	1.1	31	17	M3	3.4	M3-6	6	
		150	15		29						21					
100		10		26						17						
MA5	150	15	65	32	6	5.5	2.9	1.7	51	22	M4	4.5	M4-10	6		
	250	25		42						32						
	150	15		34						23						
MA8	200	20	104	39	8	6.5	4.3	2.8	84	28	M5	5.5	M5-12	8		
	250	25		44						33						
	400	40		60						48						
T5	100	10	65	26	6	4.5	2.20	1.40	51	17	M4	4.5	M4-10	6		
	150	15		32						22						
	200	20		38						27						
T10	250	25		43						32						
	150	15		34						23						
	200	20		40						28						
AT5	250	25	130	44	8	6.5	4.30	2.70	111	33	M5	5.5	M5-12	8		
	300	30		50						38						
	400	40		60						48						
AT10	500	50		70						58						
	150	15	65	32	6	4.5	2.6	1.40	51	22	M4	4.5	M4-10	6		
	200	20		40						28						
	250	25	130	44	8	6.5	4.30	2.70	111	33	M5	5.5	M5-12	8		

⚠ This product is designed to be compatible with the Open End Belts (Urethane Type). When using this product for other types of belts, check the back thickness of the belts and dimensions of this product before use. ⚠ The tooth profile complies with the Timing Belts and the Open End Belts. ⚠ The A Dimension is set for engaging 6 teeth (fitting).

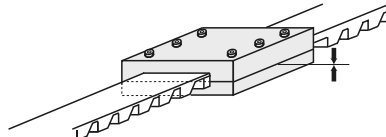
Ordering Example

Part Number

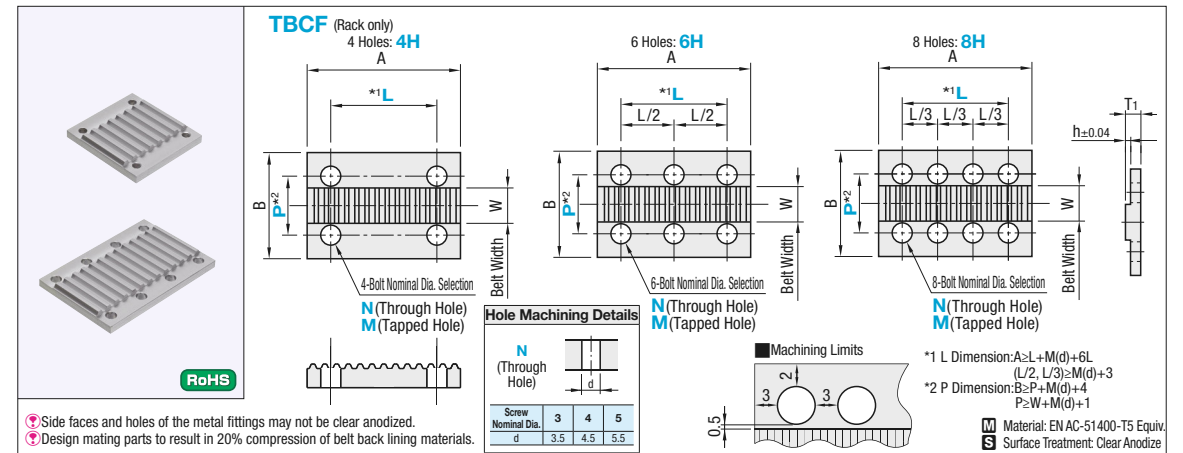
Type | Belt Type | Belt Nominal Width

TBCK - XL 025

Features: Prevents excessive belt clamping by face-to-face contacting the upper and lower plates.



Features: Timing Belt Clamp Plates with specifiable mounting hole positions.



Part Number Type	Belt Type	Belt Nominal Width	Number of Holes	Selection Hole Specifications	Nominal Dia.	L (1mm Increment)	P (0.5mm Increment)	W	A	B	T ₁	h	Body Price	Hole Machining Charge (Body Price +)		
														4H	6H	8H
TBCF	MXL	025	3	N	3	6-17	11	6.4	26	18	4	0.60				
		037	3					9.5		22						
		050	3,4					12.7		26						
	XL	025	3	4H	N	3	6-57	11	6.4	66	24	6	1.30			
		037	3					9.5		25						
		050	3					12.7		30						
	L	050	3	4H	N	3	6-115	11	6.4	124	38	8	2.05			
		075	3					9.5		46						
		100	3					12.7		58						
	H	075	3	4H	N	3	6-156	11	6.4	165	58	10	2.55			
		100	3					9.5		70						
		150	3					12.7		84						
	S2M	040	3	6H	N	3	6-17	11	6.4	26	18	4	0.90			
		060	3					9.5		24						
		100	3,4					12.7		28						
	S3M	060	3	6H	N	3	6-30	11	6.4	39	22	4	1.25			
		100	3					9.5		18						
		150	3,4					12.7		28						
	S5M	100	3	6H	N	3	6-56	11	6.4	65	32	6	2.00			
		150	3					9.5		26						
250		3,4					12.7		42							
S8M	150	3	6H	N	3	6-95	11	6.4	104	50	8	3.00				
	250	3					9.5		60							
	400	3,4					12.7		84							
MA3	070	3	8H	M	3	6-30	11	6.4	39	24	4	1.1				
	100	3					9.5		29							
	150	3					12.7		26							
MA5	150	3	8H	M	3	6-56	11	6.4	65	32	6	1.7				
	250	3					9.5		42							
	150	3					12.7		42							
MA8	200	3	8H	M	3	6-95	11	6.4	104	39	8	2.8				
	250	3					9.5		45							
	400	3					12.7		60							
T5	100	3	8H	M	3	6-56	11	6.4	65	32	6	1.40				
	150	3					9.5		34							
	200	3					12.7		43							
T10	250	3	8H	M	3	6-121	11	6.4	130	50	8	2.70				
	300	3					9.5		60							
	400	3					12.7		70							
AT5	100	3	8H	M	3	6-56	11	6.4	65	26	6	1.40				
	150	3					9.5		34							
	200	3					12.7		40							
AT10	200	3	8H	M	3	6-121	11	6.4	130	40	8	2.70				
	250	3					9.5		44							
									44							

⚠ Metal fitting of S□M type can be used with a P□M type belt. ⚠ The tooth profile complies with the Timing Belts and the Open End Belts. ⚠ When selecting Number of Holes 8H, specify L dimension in multiples of 3. ⚠ When selecting L, P dimensions, make sure that they satisfy the conditions mentioned on *1 or *2 positioned on the right bottom of Drawing.

Ordering Example

Part Number

Type | Belt Type | Belt Nominal Width | Number of Holes | Hole Specifications | L | P

TBCF - S5M 250 - 4H - M4 - L48 - P31.5

Alterations

Part Number

TBCF-S5M150 - 6H - M4 - L30 - P22 - AC45


Alterations Code	A Dimension Cut	B Dimension Cut
Spec.	Cuts A dimension in 1 mm increment. AC AC ≥ L + M(d) + 6	Cuts B dimension in 1 mm increment. BC BC ≥ P + M(d) + 4

Timing Belt Clamp Plates

Nut Tightening Type

Timing Belt Clamp Plates

Bottom Metal Short



TBCS (①Rack + ②Support Plate)

① Rack

② Support Plate

Material: EN AC-51400-T5 Equiv. Surface Treatment: Clear Anodize. Accessory: Hex Socket Head Cap Screws, Nuts.

The tooth profile complies with Open End Belts and Timing Belts. Belt width complies with Timing Belts.

RoHS

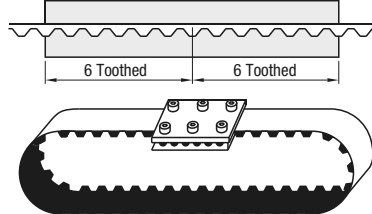
Part Number	Type	Belt Type	Belt Nominal Width	W	A	B	T ₁	T ₂	h	L	P	Included Screw	d	Number of Mounting Holes	Unit Price	
TBCS (①+②)	MXL	025	6.4	26	18	4	4	0.51	19	11	M3-12	3.4	6			
		037	9.5													22
		050	12.7													26
		025	6.4													24
		031	7.9													25
		037	9.5													26
	XL	050	12.7	30	66	25	6	1.25	56	12	M4-15	4.5	8			
		075	19.1	26												
		100	25.4	32												
		075	19.1	38												
		100	25.4	46												
		150	38.1	58												
	L	200	50.8	70	124	32	8	1.90	111	20	M5-20	5.5	8			
		075	19.1	26												
		100	25.4	33												
		150	38.1	45												
		200	50.8	58												
		075	19.1	70												
	H	100	25.4	84	165	38	10	2.30	147	26	M5-20	5.5	8			
		150	38.1	45												
		200	50.8	58												
		040	4	16												
		060	6	18												
		100	10	24												
S2M	060	6	18	26	18	4	0.76	18	10	M3-12	3.4	6				
	100	10	15													
	060	6	18													
	100	10	22													
	150	15	28													
	100	10	20													
S3M	150	15	20	39	22	6	1.14	31	16	M4-15	4.5	8				
	250	25	31													
	100	10	26													
	150	15	32													
	250	25	42													
	150	15	34													
S5M	300	30	44	65	44	8	1.81	51	22	M5-20	5.5	8				
	400	40	50													
	100	10	26													
	150	15	32													
	200	20	38													
	250	25	43													
S8M	150	15	34	104	44	8	2.85	84	22	M5-20	5.5	8				
	200	20	40													
	250	25	47													
	300	30	50													
	400	40	60													
	100	10	26													
T5	150	15	32	65	32	6	1.2	51	21	M4-15	4.5	6				
	200	20	26													
	250	25	31													
	100	10	16													
	150	15	21													
	200	20	26													
T10	250	25	31	130	44	8	2.5	111	22	M5-20	5.5	8				
	300	30	50													
	100	10	16													
	150	15	21													
	200	20	27													
	250	25	32													

⚠ Metal fitting of S□M type can be used with a P□M type belt.
 ⚠ * MXL025 is available for belt of MXL019.
 ⚠ Do not machine mounting holes in a belt.
 ⚠ The A Dimension is set for engaging 6 teeth (fitting).

Ordering Example

Part Number		
Type	Belt Type	Belt Nominal Width
TBCS	XL	025

Example



Also can be used as metal fittings for the Open End Belts.

Features: Timing Belt Clamp Plates with specifiable mounting hole positions.

TBCR (6 Mounting Holes)

(4 Mounting Holes)

Installation Example

The tooth profile complies with Open End Belts and Timing Belts. Belt width complies with Timing Belts.

Material: EN AC-51400-T5 Equiv. Surface Treatment: Clear Anodize.

RoHS

Part Number	Type	Belt Type	Belt Nominal Width	W	A	B	T	h	L	P	d	Number of Mounting Holes	Unit Price	
TBCR	XL	025	6.4	36	24	6	1.25	25	12	M3-12	3.4	6		
		031	7.9											14
		037	9.5											16
		050	12.7											20
		050	12.7											30
		075	19.1											38
	L	100	25.4	46	66	32	8	1.9	50	26	M4-15	4.5	8	
		150	38.1	46										
		075	19.1	58										
		100	25.4	38										
		150	38.1	46										
		200	50.8	58										
	H	075	19.1	38	89	46	10	2.3	70	26	M5-20	5.5	6	
		100	25.4	46										
		150	38.1	58										
		200	50.8	70										
		060	6	20										
		100	10	25										
	S3M	150	15	30	21	25	4	1.14	15	15	M3-12	3.4	4	
		200	20	20										
		100	10	16										
		150	15	22										
		250	25	31										
		100	10	26										
S5M	150	15	32	35	42	6	1.81	25	21	M4-15	4.5	4		
	250	25	42											
	150	15	34											
	250	25	44											
	300	30	50											
	400	40	60											
S8M	150	15	34	56	44	8	2.85	40	32	M5-20	5.5	4		
	250	25	44											
	300	30	50											
	400	40	60											
	100	10	26											
	150	15	32											
T5	200	20	38	35	38	6	1.2	25	21	M4-15	4.5	4		
	250	25	43											
	100	10	16											
	150	15	21											
	200	20	26											
	250	25	31											
T10	150	15	34	70	44	8	2.5	50	22	M5-20	5.5	6		
	200	20	40											
	250	25	44											
	300	30	50											
	100	10	16											
	150	15	21											

⚠ Metal fitting of S□M type can be used with a P□M type belt.

Ordering Example

Part Number		
Type	Belt Type	Belt Nominal Width
TBCR	XL	025

Example

