Keyless Timing Pulleys - L

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

Type	Part Number: Belt Width 12.7mm (1/2inch) A:14 W:19 L050	Belt Width 19.1mm (3/4inch) A:21 W:26 L075	Belt Width 25.4mm (1inch) A:27 W:32 L100	Belt Width 38.1mm (1.5inch) A:40 W:45 L150	M Material *1: Pulley	Flange	Bushing	S Surface Treatment: Pulley	Flange	Bushing
MTPLA	●	●	●	●	A7075	Aluminum Alloy	S45C	Clear Anodize		-
MTPLK	●	●	●	●				Hard Clear Anodize *2		-
MTPLN	●	●	●	●				Electroless Nickel Plating		-
MTPL	●	●	●	●	S45C Equivalent	SPCC	S45C	Black Oxide		
MTPLP	●	●	●	●				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 ~

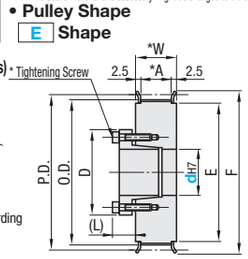
Table 1: Select Shaft Bore Dia.

dH7	Max. Allowable Torque N・m ST Bushing	SH Bushing	D ST Bushing	SH Bushing	(L)
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	
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	
22	186	110	48	47	
24	206	121	50	49	
25	216	124	52	51	
28	353	141	54	53	15.5
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
45	1490		84		24.5
48	1600		87		
50	1660		89		

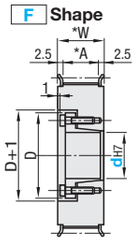
Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

• Pulley Shape

E Shape

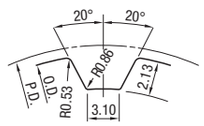


F Shape



* 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.

Tooth Profile (ISO Standard Rack Dimensions)



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:9.525mm)

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	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	67	75	80	84	90	102	105	110	115	120	130	140	170	200

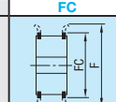
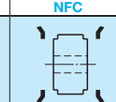
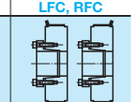
Part Number: Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dH7 Range (~): Specify in 1mm Increment, (,): Select the former or latter — Shape E L050 ST Bushing	Shape E L075 ST Bushing	Shape E L100 ST Bushing	Shape E L150 ST Bushing	Shape F L050 SH Bushing	Shape F L075 SH Bushing	Shape F L100 ST Bushing: 10~25 SH Bushing: 28~35	Shape F L150 ST Bushing
MTPLA, MTPLK, MTPLN, MTPL, MTPLP	14	L050 *A:14 *W:19	E, F	8, 10~12	10~12	10~12	11, 12	8, 10	8, 10	-	-
	15			8, 10~12	10~12	10~12	11, 12	8, 10	8, 10	10, 11	11, 12
	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										
	18			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
	19			12, 14~17	12, 14~17	12, 14~17	12, 14~17	12	12, 14~17	12, 14~17	12, 14~17
	20										
	21										
	22			12, 14~20, 22, 24, 25		12, 14~20, 22, 24, 25		12	12, 14~20, 22, 24, 25		
	24	L075 *A:21 *W:26		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		
	25			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										
	28			12, 14~20, 22, 24, 25, 28, 30, 32		12, 14~20, 22, 24, 25, 28, 30, 32, 35		12	12, 14~20, 22, 24, 25, 28, 30, 32	12, 14~20, 22, 24, 25, 28, 30, 32, 35	
	30	L100 *A:27 *W:32		12, 14~20, 22, 24, 25, 28, 30, 32	12, 14~20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42			12	12, 14~20, 22, 24, 25, 28, 30, 32	12, 14~20, 22, 24, 25, 28, 30, 32, 35	
	32										
	34										
	36			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		-	15~20, 22, 24, 25, 28, 30, 32	15~20, 22, 24, 25, 28, 30, 32, 35	
	38										
	40										
	42	L150 *A:40 *W:45		16~20, 22, 24, 25, 28, 30, 32, 35, 38	16~20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50			-	-	16~20, 22, 24, 25, 28, 30, 32	16~20, 22, 24, 25, 28, 30, 32, 35	-
	44										
	48										
	50										
	60										
	72										

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
MTPL20L075 - E - 17

Number of Teeth	Unit Price MTPLA (x1.0) MTPLK (x1.1) MTPLN (x1.2) L050 Shape E	L050 Shape F	L075 Shape E	L075 Shape F	L100 Shape E	L100 Shape F	L150 Shape E	L150 Shape F	MTPL (x1.0) MTPLP (x1.1) L050 Shape E	L050 Shape F	L075 Shape E	L075 Shape F	L100 Shape E	L100 Shape F	L150 Shape E	L150 Shape F
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										-					-	-

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (BMC…etc.)
MTPLA20L075 - E - 17 - FC63

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: SCM435 Dacrotized Treatment) BMR: RoHS Compliant (Screw: SCM435 GeoMet Coating)

Alterations	Flange Cut	Flange Not Swaged	Flange Swaged on One Side
Code	FC	NFC	LFC, RFC
Spec.			

For details of specs., refer to the right-hand page.

Keyless Timing Pulleys - L

MechaLock Standard Type Incorporated (With Centering Function)

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: Belt Width 12.7mm (1/2inch) A:14 W:19 L050	Belt Width 19.1mm (3/4inch) A:21 W:26 L075	Belt Width 25.4mm (1inch) A:27 W:32 L100	Belt Width 38.1mm (1.5inch) A:40 W:45 L150	M Material *1: Pulley	Flange	MechaLock	S Surface Treatment: Pulley	Flange	MechaLock
HPLA	●	●	●	●	Extra super Duralumin series aluminum alloy A7075	A5052	S45C	Clear Anodize		-
HPLK	●	●	●	●				Hard Clear Anodize *2		-
HPLN	●	●	●	●				Electroless Nickel Plating		-
HPLT	●	●	●	●	S45C Equivalent	SPCC	S45C	-		
HPLM	●	●	●	●				Black Oxide		
HPLP	●	●	●	●				Electroless Nickel Plating		

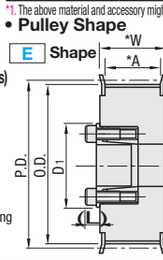
*1. The above material and accessory might be changed to the ones equivalent to the originals. *2. Hard Anodize Treatment: Film Hardness 300HV ~

Table 1: Select Shaft Bore Dia.

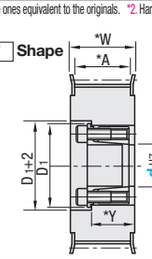
dH7	Max. Allowable Torque (N・m) HPLA, HPLK HPLN, HPLT, HPLM	HPLP	D1	(L)
8	19.6	16.6	23.5	6
10	27.5	19.6	25.5	
12	44.1	36.2	28.5	6.5
14	63.7	50.9	30.5	
15	80.4	54.8	31.5	
16	83.3	58.8	33.0	
17	92.2	76.4	33.5	
18	95.1	80.3	34.5	
19	98.1	85.2	35.5	
20	216.0	183.0	42.0	8
22	255.0	201.0	44.0	
24	363.0	252.0	46.0	
25	392.0	264.0	47.0	
28	441.0	295.0	50.0	8.5
30	500.0	396.0	52.0	
32	530.0	423.0	54.0	
35	883.0	548.0	62.0	10
40	1079.0	779.0	67.0	
45	1285.0	882.0	72.0	
50	1706.0	1362.0	77.0	10.5

• Pulley Shape

E Shape

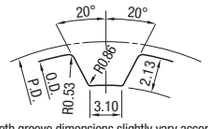


F Shape



Surface treatment may not be applied to shaft bores.
Flange is installed.
For installation, see P.1489. For details of MechaLock, see P.1491.
Cut Flange for 60 and 72 Toothed Pulleys.
Y dimensions in ( ) require the shaft bore diameter of 12 or more.

Tooth Profile (ISO Standard Rack Dimensions)



Tooth groove dimensions slightly vary according to the number of teeth.
(Pitch:9.525mm)

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	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	67	75	80	84	90	102	105	110	115	120	130	140	170	200

Single Part Number: Type	Number of Teeth	Type, Nominal Width Nominal Width	Pulley Shape	dH7 Range (,): Select the former or latter, (~): Specify in 1mm Increment — Shape E L050	Shape E L075	Shape E L100	Shape E L150	Shape F L050	Shape F L075	Shape F L100	Shape F L150
HPLA, HPLK, HPLN, HPLT, HPLM, HPLP	14	L050 *A:14 *W:19 *Y:13 (d12~:Y=18) L100 *A:27 *W:32 *Y:14 (d12~22:Y=22) (d24~:Y=23.5) L150 *A:40 *W:45 *Y:19 (d12~32:Y=28) (d35~:Y=32)	E, F	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10
	15										
	16			10, 12, 14	10, 12, 14	10, 12, 14	10, 12, 14	10	10, 12, 14	10, 12, 14	10, 12, 14
	17										
	18			10, 12, 14~16	10, 12, 14~16	10, 12, 14~16	10, 12, 14~16	10	10, 12, 14~16	10, 12, 14~16	10, 12, 14~16
	19			12, 14~19	12, 14~19	12, 14~19	12, 14~19	-	12, 14~19	12, 14~19	12, 14~19
	20										
	21			12, 14~19	12, 14~20	12, 14~20	12, 14~20	-	12, 14~19	12, 14~20	12, 14~20
	22			12, 14~19	12, 14~20, 22	12, 14~20, 22	12, 14~20, 22	-	12, 14~19	12, 14~20, 22	12, 14~20, 22
	24			12, 14~19	12, 14~20, 22, 24, 25, 28	12, 14~20, 22, 24, 25, 28	12, 14~20, 22, 24, 25, 28	-	12, 14~19	12, 14~20, 22, 24, 25, 28	12, 14~20, 22, 24, 25, 28
	25										
	26										
	28			12, 14~19	12, 14~20, 22, 24, 25, 28, 30, 32	12, 14~20, 22, 24, 25, 28, 30, 32		-	12, 14~19	12, 14~20, 22, 24, 25, 28, 30	12, 14~20, 22, 24, 25, 28, 30, 32
	30										
	32										
	34			12, 14~19	12, 14~20, 22, 24, 25, 28, 30, 32	12, 14~20, 22, 24, 25, 28, 30, 32, 35		-	12, 14~19	12, 14~20, 22, 24, 25, 28, 30	12, 14~20, 22, 24, 25, 28, 30, 32, 35
	36			15~19	15~20, 22, 24, 25, 28, 30, 32	15~20, 22, 24, 25, 28, 30, 32, 35, 40		-	15~19	15~20, 22, 24, 25, 28, 30	15~20, 22, 24, 25, 28, 30, 32, 35, 40
	38			15~19	15~20, 22, 24, 25, 28, 30, 32	15~20, 22, 24, 25, 28, 30, 32, 35, 40, 45		-	15~19	15~20, 22, 24, 25, 28, 30	15-20, 22, 24, 25, 28, 30, 32, 35, 40, 45
	40										
	42			16~19	16~20, 22, 24, 25, 28, 30, 32	16~20, 22, 24, 25, 28, 30, 32, 35, 40, 45, 50		-	16~19	16~20, 22, 24, 25, 28, 30	16~20, 22, 24, 25, 28, 30, 32, 35, 40, 45
	44										
	48										
	50										
	60										
	72										

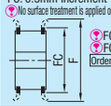
Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HPLA20L075 - F - 15

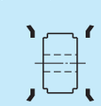
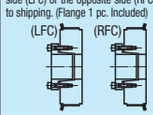
Number of Teeth	Body Price 1 ~ 10 pc(s). HPLA (x1.0) HPLK (x1.1) HPLN (x1.2) L050	L075	L100	L150	HPLT (x1.0) HPLM (x1.05) HPLP (x1.15) L050	L075	L100	L150
14								
15								
16								
17								
18								
19								
20								
21								
22								
24								
25								
26								
28								
30								
32								
34								
36								
38								
40								
42								
44								
48	-	-	-	-				-
50								
60								
72								

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

dH7	MechaLock Incorporation Charge (+ Body Price)
8	
10	
12	
14	
15	
16	
17	
18	
19	
20	
22	
24	
25	
28	
30	
32	
35	
40	
45	
50	

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (BMC…etc.)
HPLA20L075 - F - 15 - BMC

Alteration	Surface Treatment	Flange Cut
Code	BMC, BMR	FC
Spec.	Applies electroless nickel plating on a MechaLock. (Antirusting treatment is applied to screws.) Electroless nickel plated bushing decreases allowable torque by 20 ~ 30%. BMC:Not RoHS Compliant (Screw: SCM435 Dacrotized Treatment) BMR:RoHS Compliant (Screw: SCM435 GeoMet Coating)	Lowers flange by cutting. FC: 0.5mm Increment. No surface treatment is applied on flange circumference.  FC≥(O. D.)+1 FC≤F-2 Ordering Code FC35

Alterations	Flange Not Swaged	Flange Swaged on One Side
Code	NFC	LFC, RFC
Spec.	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)