Keyless High Torque Timing Pulleys - S5M

Compatible with S5M type from Mitsuboshi 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: Belt Width: 10mm A:11 W:16 S5M100	Belt Width: 15mm A:17 W:22 S5M150	Belt Width 25mm A:27 W:32 S5M250	M Material *1: Pulley	Flange	Bushing	S Surface Treatment: Pulley	Flange	Bushing
HTLA	●	●	●	EN AW-7075 Equiv.	Aluminum Alloy 5000 series	EN 1.1191 Equiv.	Clear Anodize		-
HTLK	●	●	●				Hard Clear Anodize *2		-
HTLN	●	●	●				Electroless Nickel Plating		-
HTPL	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	Black Oxide		
HTLG	●	●	●				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 ~

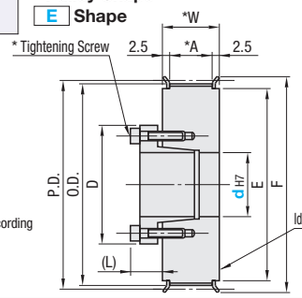
Table 1: Select Shaft Bore Dia.

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

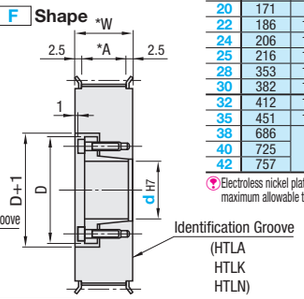
Electroless nickel plated bushing (Alterations BMC, BMR) decreases maximum allowable torque and allowable thrust load by 20 ~ 30%.

• Pulley Shape

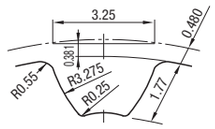
E Shape



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.	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.

Part Number: Type	Number of Teeth	Type, Nominal Width	Pulley Shape	dH7 Range (~): Specify in 1mm Increment, (,): Select the former or latter — Shape E: S5M100 ST Bushing	Shape E: S5M150 ST Bushing	Shape E: S5M250 ST Bushing	Shape F: S5M100 SH Bushing	Shape F: S5M150 SH Bushing	Shape F: S5M250 SH Bushing
HTLA HTLK HTLN HTPL HTLG	22	S5M100 *A:11 *W:16	E	8	-	-	-	-	-
	24			8, 10	10	10	8	8	8
	25								
	26			8, 10~12	10~12	10~12	8	8, 10~12	8, 10~12
	28								
	30	S5M150 *A:17 *W:22		10~12, 14, 15	10~12, 14, 15	10~12, 14, 15	-	10~12	10~12
	32			10~12, 14~17	10~12, 14~17	10~12, 14~17	-	10~12	10~12
	34		F	10~12, 14~17	10~12, 14~17	10~12, 14~17	-	10~12	10~12, 14~17
	36								
	40	S5M250 *A:27 *W:32		12, 14~20, 22, 24, 25			-	12	12, 14~20, 22, 24, 25
	44								
	48			12, 14~20, 22, 24, 25, 28			-	12	12, 14~20, 22, 24, 25, 28
	50			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, 35, 38, 40			-	12	12, 14~20, 22, 24, 25, 28, 30, 32, 35
	72			12, 14~20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42					

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

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

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

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. Dacrotized Treatment) BMR: RoHS Compliant (Screw: EN 1.7220 Equiv. GeoMet Coating)

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

Keyless High Torque Timing Pulleys - S5M

MechaLock Standard Type Incorporated (with Centering Function)

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

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: Belt Width: 10mm A:11 W:16 S5M100	Belt Width: 15mm A:17 W:22 Y:14 S5M150	Belt Width 25mm A:27W:32 Y:14(22, 23.5) S5M250	M Material *1: Pulley	Flange	MechaLock	S Surface Treatment: 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	●	●	●				Hard Clear Anodize *2		-
HHTN	●	●	●				Electroless Nickel Plating		-
HHTT	●	●	●	EN 1.1191 Equiv.	EN 1.0330 Equiv.	EN 1.1191 Equiv.	-		
HHTM	●	●	●				Black Oxide		
HHTP	●	●	●				Electroless Nickel Plating		

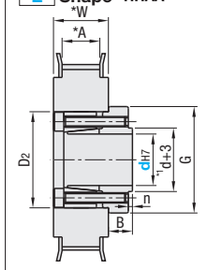
*1. The above material and accessory might be changed to the ones equivalent to the originals.
*2. Hard Clear Anodize: Film Hardness 300HV ~

Table 1: Select Shaft Bore Dia.

dH7	HHAA Max. Allowable Torque (N・m)	D2	B	G	n	HHTA HHTK HHTN HHTT HHTM HHTP Max. Allowable Torque (N・m)	HHTP	D1	(L)
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	8
22						255	201	44	
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

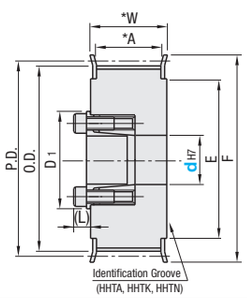
• Pulley Shape

E Shape HHAA

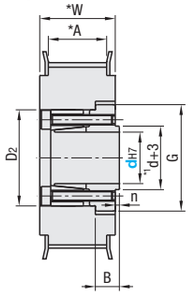


*1. When d=6, d+2.5; and when d=15, 16, d+3.5

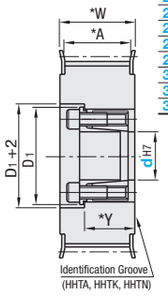
HHT□



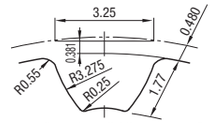
F Shape HHAA



HHT□



Standard Tooth Profile



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

Number of Teeth	20	22	24	25	26	28	30	32	34	36	40	44	48	50	60	72
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 Shape E: S5M100	HHAA Shape F: S5M150	HHTA, HHTK, HHTN, HHTT, HHTM, HHTP Shape E: S5M100	Shape E: S5M150	Shape E: S5M250	Shape F: S5M150	Shape F: S5M250
HHAA HHTA HHTK HHTN HHTT HHTM HHTP	20	S5M100 *A:11 *W:16	E	6	-	-	-	-	-	-
	22			8	-	-	-	-	-	-
	24			8, 10	-	8	8	8	8	8
	25									
	26			8, 10	8, 10	8, 10	8, 10	8, 10	8, 10	8, 10
	28									
	30	S5M150 *A:17 *W:22 *Y:14		10, 12	10, 12	10	10	10	10	10
	32			10, 12, 14, 15	10, 12, 14, 15	10, 12, 14	10, 12, 14	10, 12, 14	10	10, 12, 14
	34			10, 12, 14~16	10, 12, 14~16	10, 12, 14	10, 12, 14~16	10, 12, 14~16	10	10, 12, 14~16
	36									
	40		F	10, 12, 14~16	10, 12, 14~16	10, 12, 14	10, 12, 14~19	10, 12, 14~19	10	10, 12, 14~19
	44	S5M250 *A:27 *W:32 *Y:14 (d12~22:Y=22) (d24~:Y=23.5)		-	-	12, 14	12, 14~20, 22	12, 14~20, 22	-	12, 14~20, 22
	48			-	-	12, 14	12, 14~20, 22	12, 14~20, 22, 24	-	12, 14~20, 22, 24
	50			-	-	12, 14	12, 14~20, 22	12, 14~20, 22, 24, 25, 28	-	12, 14~20, 22, 24, 25, 28
	60			-	-	12, 14	12, 14~20, 22	12, 14~20, 22, 24, 25, 28, 30	-	12, 14~20, 22, 24, 25, 28, 30
	72			-	-	12, 14	12, 14~20, 22	12, 14~20, 22, 24, 25, 28, 30, 32, 35	-	

For Aluminum MechaLock Performance, see P.1432. For details of EN 1.1191 Equiv. MechaLock, see P.1491.

Ordering Example: Part Number - Pulley Shape - Shaft Bore Dia.
HHTA 60S5M250 - F - 30

Alterations: Part Number - Pulley Shape - Shaft Bore Dia. - (BMC, BMR, FC, NFC, LFC, RFC)
HHTA 60S5M250 - E - 25 - BMC

Number of Teeth	Body Price 1 ~ 10 pc(s).: HHAA (x1.0) S5M100	HHAA (x1.0) S5M150	HHTA (x1.0) S5M100	HHTK (x1.1) S5M150	HHTN (x1.2) S5M250	HHTT (x1.0) S5M100	HHTM (x1.05) S5M150	HHTP (x1.15) S5M250
20		-	-	-	-	-	-	-
22			-	-	-	-	-	-
24								
25								
26								
28								
30								
32								
34								
36								
40								
44								
48								
50	-	-						
60								
72								

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

dH7	MechaLock Incorporation Charge (+ Body Price): Aluminum (HHAA)	EN 1.1191 Equiv. (HHT□)
6		-
8		
10		
12		
14		
15		
16		
17	-	
18	-	
19	-	
20	-	
22	-	
24	-	
25	-	
28	-	
30	-	
32	-	
35	-	

Alterations	Surface Treatment	Flange Cut
Code	BMC•BMR	FC
Spec.	Applies electroless nickel plating on a MechaLock. (Antirusting treatment is applied to screws.) Electroless nickel plating decreases bushing's 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)	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) (LFC) (RFC)