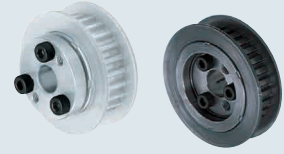


# Keyless High Torque Timing Pulleys

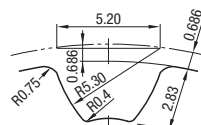
## S8M Type

For High Torque Timing Belts, refer to P.1436, Open End Belts, refer to P.1445.

### Keyless Timing Pulleys – S8M Type



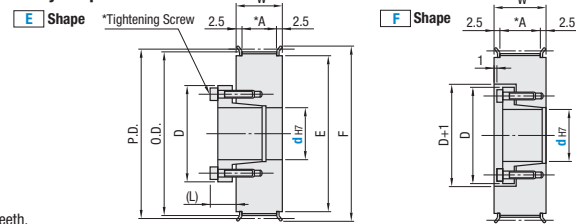
### Standard Tooth Profile



Tooth groove dimensions slightly change according to No. of teeth. (Pitch: 8.0 mm)

Part Number				Material			Surface Treatment		
Belt Width 15mm	Belt Width 25mm	Belt Width 30mm	Belt Width 40mm	Pulley	Flange	Bushing	Pulley	Flange	Bushing
A: 17 W: 22	A: 28 W: 33	A: 33 W: 38	A: 44 W: 49	Ultra Duralumin-Based Aluminum Alloy	Aluminum Alloy	1045 Carbon Steel or Equivalent	Clear Anodize	Hard Clear Anodize*	—
HTLA_S8M150	HTLA_S8M250	HTLA_S8M300	HTLA_S8M400						
HTLK_S8M150	HTLK_S8M250	HTLK_S8M300	HTLK_S8M400	1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Black Oxide	Electroless Nickel Plating	—
HTPL_S8M150	HTPL_S8M250	HTPL_S8M300	HTPL_S8M400						
HTLG_S8M150	HTLG_S8M250	HTLG_S8M300	HTLG_S8M400						

### Pulley Shape



\*Hard Anodize Treatment: Film Hardness 300 HV min.

\*For quantity and size of tightening screws with Flange attached, refer to P.1388.

- ① The shaft bore may not have surface treatment.
- ② Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). Refer to P.1388.
- ③ Cut Flange for 72 toothed pulleys.

Part Number	Teeth	Type, Nom. Width	Pulley Shape	d <sub>17</sub> Range (Select Shaft Bore Dia. from Table 1)									P.D.	O.D.	F	E
				E Shape				F Shape								
HTLA HTLK HTPL HTLG	18	S8M150 *A: 17 *W: 22	E	ST Bushing	ST Bushing	ST Bushing	ST Bushing	SH Bushing	ST Bushing 12-30 SH Bushing 32 35	ST Bushing 15-32 SH Bushing 35	ST Bushing	45.84	44.46	52	36	
	19			12 14 15	12 14 15	15	12	12 14 15	15	48.38	47.01	55	40			
	20			12 14-17	12 14-17	15-17	12	12 14 15	15	50.93	49.56	58	40			
	21			12 14-17	12 14-17	15-17	12	12 14-17	15-17	53.48	52.10	61	45			
	22			12 14-17	12 14-17	15-17	12	12 14-17	15-17	56.02	54.65	61	45			
	24			12 14-20	12 14-20	15-20	12	12 14-20	15-20	61.12	59.74	67	50			
	25			12 14-20	12 14-20	15-20	12	12 14-20	15-20	63.66	62.29	70	56			
	26			14-20	14-20	15-20	12	14-20	15-20	66.21	64.84	74	58			
	28			14-20	14-20	15-20	12	14-20	15-20	71.30	69.93	80	60			
	30			14-20	14-20	15-20	12	14-20	15-20	76.39	75.02	87	67			
	32			14-20	14-20	15-20	12	14-20	15-20	81.49	80.12	94	74			
	34			16-20	16-20	17-20	12	16-20	17-20	86.58	85.21	95	75			
36	16-20	16-20	17-20	12	16-20	17-20	91.67	90.30	99	80						
38	16-20	16-20	17-20	12	16-20	17-20	96.77	95.39	104	84						
40	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	12	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	101.86	100.49	111	90						
44	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	12	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	112.05	110.67	119	100						
48	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	12	20 22 24 25 28 30 32 35 38 40 42	20 22 24 25 28 30 32 35 38 40 42	122.23	120.86	127	105						
50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	12	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	127.32	125.95	135	115						
60	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	12	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	152.79	151.42	160	140						
72	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	12	20 22 24 25 28 30 32 35 38 40 42 45 48 50	20 22 24 25 28 30 32 35 38 40 42 45 48 50	183.35	181.97	190	170						

- ① For "F" shape of S8M250, ST bushing is applicable to shaft bore diameter of 12-30 and SH bushing is applicable to 32 and 35.
- ② For "F" shape of S8M300, ST bushing is applicable to shaft bore diameter of 15-32 and SH bushing is applicable to 35.

Table 1: Select Shaft Bore Diameter

Teeth	Available Types				D	(L)
	S8M150	S8M250	S8M300	S8M400		
12	•	•	•	•	32	10.5
14	•	•	•	•	35	12
15	•	•	•	•	36	12
16	•	•	•	•	37	13
17	•	•	•	•	38	13
18	•	•	•	•	43	14
19	•	•	•	•	45	14
20	•	•	•	•	46	14
22	•	•	•	•	48	14
24	•	•	•	•	50	14
25	•	•	•	•	52	15.5
28	•	•	•	•	54	15.5
30	•	•	•	•	57	15.5
32	•	•	•	•	59	16.5
35	•	•	•	•	63	16.5
38	•	•	•	•	70	19
40	•	•	•	•	71	19
42	•	•	•	•	74	20
45	•	•	•	•	84	24.5
48	•	•	•	•	87	24.5
50	•	•	•	•	89	24.5

- ③ Electroless nickel plated bushing decreases maximum allowable torque and allowable thrust load by 20-30%

Part Number Example: HTPL60S8M300 - E - 40

Part Number Alterations: HTLA25S8M250 - F - 25 - FC65

① If alterations for HTLA / HTPL ("E" shape) are specified, 5th Day Shipping will be applied for this product.

Alterations	Flange Cut	Flange Not Swaged	Flange Swaged on One Side	Surface Treatment
Code	FC	NFC	RFC / LFC	BMC / BMR
Spec.	<p>Lowers flange by cutting. FC: 0.5 mm Increment</p> <p>① No surface treatment applied on flange circumference.</p> <p>FC<sub>≥</sub>(O.D.)+2 FC<sub>≤</sub>F-2 Ordering Code: FC35</p>	<p>Flange is not installed. (Flange included)</p>	<p>Flange installed on the hub side (LFC) or the opposite side (RFC) only prior to shipping.</p>	<p>Applies electroless nickel plating on a bushing. (Anti-rusting treatment applied to screws).</p> <p>① Electroless nickel plated bushing decreases allowable torque by 20-30%.</p> <p>BMC: Non-RoHS-compliant (Screw: Dacrotized treatment applied 4137 Alloy Steel)</p> <p>BMR: RoHS-compliant (Screw: GeoMet coating applied 4137 Alloy Steel)</p>

# Keyless High Torque Timing Pulleys

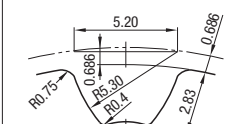
## S8M Type – Keyless Bushing with Centering Function

Feature: Bushing Standard Type (P.1456) 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.

### Keyless Timing Pulleys – S8M Type – Keyless Bushing with Centering Function



### Standard Tooth Profile

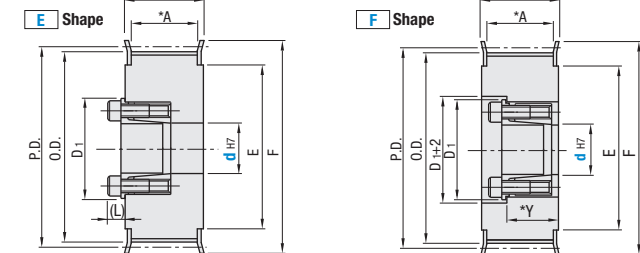


Tooth groove dimensions slightly change according to No. of teeth. (Pitch: 8.0 mm)

- ① The shaft bore may not have surface treatment.
- ② Cut Flange for 72 toothed pulleys

Part Number				Material			Surface Treatment		
Belt Width 15 mm	Belt Width 25 mm	Belt Width 30 mm	Belt Width 40 mm	Pulley	Flange	Bushing	Pulley	Flange	Bushing
A: 17 W: 22	A: 28 W: 33 Y: 22 (24 / 24.5)	A: 33 W: 38 Y: 24 (25 / 28)	A: 44 W: 49 Y: 30 (31 / 34)	Ultra Duralumin-Based Aluminum Alloy	Aluminum Alloy	1045 Carbon Steel or Equivalent	Clear Anodize	Hard Clear Anodize*	—
HHTA_S8M150	HHTA_S8M250	HHTA_S8M300	HHTA_S8M400						
HHTK_S8M150	HHTK_S8M250	HHTK_S8M300	HHTK_S8M400	1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Black Oxide	Electroless Nickel Plating	—
HHTN_S8M150	HHTN_S8M250	HHTN_S8M300	HHTN_S8M400						
HHTT_S8M150	HHTT_S8M250	HHTT_S8M300	HHTT_S8M400	1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Black Oxide	Electroless Nickel Plating	—
HHTM_S8M150	HHTM_S8M250	HHTM_S8M300	HHTM_S8M400						
HHTP_S8M150	HHTP_S8M250	HHTP_S8M300	HHTP_S8M400						

### Pulley Shape



\*Hard Anodize Treatment: Film Hardness 300 HV min.

- ① Flange attached
- ② For installation, refer to P.1452, for details of Keyless Bushing refer to P.1456.
- ③ Y dimensions in ( ) require the shaft bore diameter of 24 and above.

Part Number	Teeth	Type, Nom. Width	Pulley Shape	d <sub>17</sub> Range (Select Shaft Bore Dia. from Table 1)						P.D.	O.D.	F	E	
				E Shape			F Shape							
HHTA HHTK HHTN HHTT HHTM HHTP	19	S8M150 *A: 17 *W: 22	E	S8M150	S8M250	S8M300	S8M400	S8M250	S8M300	S8M400	48.38	47.01	55	40
	20			12 14	12 14	12 14	12 14	12 14	12 14	50.93	49.56	58	40	
	21			12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	53.48	52.10	61	45	
	22			12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	56.02	54.65	61	45	
	24			12 14-20	12 14-20	12 14-20	12 14-20	12 14-20	12 14-20	61.12	59.74	67	50	
	25			12 14-20	12 14-20	12 14-20	12 14-20	12 14-20	12 14-20	63.66	62.29	70	56	
	26			14-20	14-20	14-20	14-20	14-20	14-20	66.21	64.84	74	58	
	28			14-20	14-20	14-20	14-20	14-20	14-20	71.30	69.93	80	60	
	30			14-20	14-20	14-20	14-20	14-20	14-20	76.39	75.02	87	67	
	32			16-20	16-20	16-20	16-20	16-20	16-20	81.49	80.12	94	74	
	34			16-20	16-20	16-20	16-20	16-20	16-20	86.58	85.21	95	75	
	36			16-20	16-20	16-20	16-20	16-20	16-20	91.67	90.30	99	80	
38	20 22	20 22	20 22	20 22	20 22	20 22	96.77	95.39	104	84				
40	20 22	20 22	20 22	20 22	20 22	20 22	101.86	100.49	111	90				
44	20 22	20 22	20 22	20 22	20 22	20 22	112.05	110.67	119	100				
48	20 22	20 22	20 22	20 22	20 22	20 22	122.23	120.86	127	105				
50	20 22	20 22	20 22	20 22	20 22	20 22	127.32	125.95	135	115				
60	20 22	20 22	20 22	20 22	20 22	20 22	152.79	151.42	160	140				
72	20 22	20 22	20 22	20 22	20 22	20 22	183.35	181.97	190	170				

Table 1: Select Shaft Bore Diameter

d <sub>17</sub>	Max. Allowable Torque (Nm)		D1 (L)
	HHTA / HHTK / HHTN / HHTT / HHTM	HHTP	
12	44.1	36.2	28.5
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
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