

Keyless Timing Pulleys

T10 Type

For Timing Belts, refer to P.1443, Long Timing Belts, refer to P.1444.

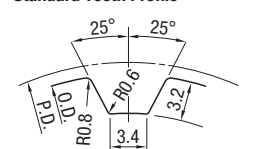
Keyless Timing Pulleys – T10 Type



Part Number						Material			Surface Treatment							
Belt Width 15 mm	Belt Width 20mm	Belt Width 25 mm	Belt Width 30 mm	Belt Width 40 mm	Belt Width 50 mm	Pulley	Flange	Bushing	Pulley	Flange	Bushing					
A: 17 W: 22	A: 22 W: 27	A: 27 W: 32	A: 32 W: 37	A: 43 W: 48	A: 53 W: 58											
TTLA_T10150	TTLA_T10200	TTLA_T10250	TTLA_T10300	TTLA_T10400	TTLA_T10500	Ultra Duralumin-Based Aluminum Alloy	Aluminum Alloy	1045 Carbon Steel or Equivalent	Clear Anodize	—	—					
TTLK_T10150	TTLK_T10200	TTLK_T10250	TTLK_T10300	—	—							1045 Carbon Steel or Equivalent	Low Carbon Steel	Hard Clear Anodize*	—	—
TTLN_T10150	TTLN_T10200	TTLN_T10250	TTLN_T10300	—	—											
TTPL_T10150	TTPL_T10200	TTPL_T10250	TTPL_T10300	TTPL_T10400	TTPL_T10500	1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Black Oxide	—	—					
TTLG_T10150	TTLG_T10200	TTLG_T10250	TTLG_T10300	TTLG_T10400	TTLG_T10500	1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Electroless Nickel Plating	—	—					

*Hard Anodize Treatment: Film Hardness 300 HV min.

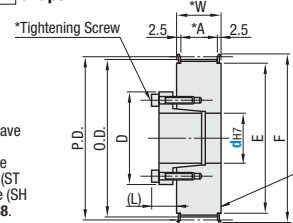
Standard Tooth Profile



Tooth groove dimensions slightly change according to No. of teeth. (Pitch: 10.0 mm)

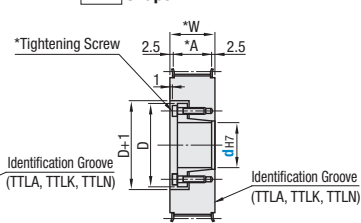
Pulley Shape

E Shape



The shaft bore may not have surface treatment. Two types of bushings are available: Standard Type (ST Bushings) and Short Type (SH Bushings). Refer to P.1388. Machined Flange for 34, 50 and 60 toothed pulleys.

F Shape



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

Part Number	Teeth	Type, Nom. Width	Pulley Shape	d _{H7} Range (Select Shaft Bore Dia. from Table 1)												P.D.	O.D.	F	E
				E Shape						F Shape									
				T10150	T10200	T10250	T10300	T10400	T10500	T10150	T10200	T10250	T10300	T10400	T10500				
				ST Bushing	ST Bushing	ST Bushing	ST Bushing	ST Bushing	SH Bushing	SH Bushing	ST Bushing: 12-30 SH Bushing: 32-35	ST Bushing: 15-30 SH Bushing: 35	ST Bushing	ST Bushing					
15	16	T10150	E	12	12	12	—	12 14	12 14	12	12	—	12	12	47.75	45.90	52	36	
18	20	T10200	E	12 14-15	12 14-15	12 14-15	15	12 14-17	12 14-17	12	12	12 14-15	15	12 14-15	50.93	49.05	58	40	
22	24	T10250	E	12 14-17	12 14-17	12 14-17	15-17	12 14-17	12 14-17	12	12	12 14-17	15-17	12 14-17	57.30	55.45	61	45	
26	28	T10300	E	12 14-17	12 14-17	12 14-17	15-17	12 14-20	12 14-17	12	12	12 14-17	15-17	12 14-18	63.66	61.80	67	50	
32	34	T10400	F	14-20	14-20	14-20	15-20	14-20	14-20	14-20	14-20	14-20	14-20	14-20	70.03	68.15	80	60	
36	40	T10500	F	22 24 25	22 24 25	22 24 25	22 24 25	14-20 22 24 25	—	14-20 22 24 25	—	14-20 22 24 25	22 24 25	22 24 25	76.39	74.55	87	67	
44	48	T10500	F	14-20	14-20	14-20	15-20	14-20 22 24 25	—	14-20 22 24 25	—	14-20 22 24 25	15-20	14-20 22 24 25	79.58	77.70	87	67	
50	60	T10500	F	22 24 25	22 24 25	22 24 25	22 24 25	14-20 22 24 25 28 30 32 35	—	14-20 22 24 25	—	14-20 22 24 25 28 30 32 35	22 24 25	22 24 25	82.76	80.90	95	75	
				16-20 22 24 25 28 30 32 35	16-20 22 24 25 28 30 32 35	16-20 22 24 25 28 30 32 35	16-20 22 24 25 28 30 32 35	16-20 22 24 25 28 30 32 35	—	16-20 22 24 25 28 30 32 35	—	16-20 22 24 25 28 30 32 35	28 30 32 35	89.13	87.25	95	75		
				20 22 24 25 28	20 22 24 25 28	20 22 24 25 28	20 22 24 25 28	20 22 24 25 28 30 32 35	—	20 22 24 25 28 30 32 35	—	20 22 24 25 28 30 32 35	20 22 24 25 28	101.86	100.00	111	90		
				30 32 35 38 40 42	30 32 35 38 40 42	30 32 35 38 40 42	30 32 35 38 40 42	—	20 22 24 25 28 30 32 35	—	20 22 24 25 28 30 32 35	20 22 24 25 28	108.23	106.40	115	95			
				—	—	—	—	—	20 22 24 25 28 30 32 35	—	20 22 24 25 28 30 32 35	20 22 24 25 28	114.59	112.75	123	102			
				—	—	—	—	—	—	—	—	20 22 24 25 28	127.32	125.45	135	115			
				—	—	—	—	—	—	—	—	30 32 35 38 40	140.06	138.20	152	130			
				—	—	—	—	—	—	—	—	42 45 48 50	152.79	150.95	160	140			
				—	—	—	—	—	—	—	—	—	159.15	157.30	170	150			
				—	—	—	—	—	—	—	—	—	190.99	189.10	200	175			

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. TTLK and TTLN are not available for T10400 and T10500. For "F" shape of S8M300, ST bushing is applicable to shaft bore diameter of 15-32 and SH bushing is applicable to 35.

Part Number Example: TTLA40T10250 - E - 20

Part Number Alterations: TTLA40T10250 - F - 30 - FC132

Alterations	Flange Cut	Flange Not Swaged	Flange Swaged on One Side	Surface Treatment
Code	FC	NFC	RFC / LFC	BMC / BMR
Spec.	Lowers flange by cutting. FC: 0.5 mm Increment No surface treatment applied on flange circumference.	Flange is not installed. (Flange included)	Flange installed on the hub side (LFC) or the opposite side (RFC) only prior to shipping.	Applies electroless nickel plating on a bushing. (Anti-rusting treatment applied to screws). Electroless nickel plated bushing decreases allowable torque by 20-30%. BMC: Non-RoHS-compliant (Screw: Dacrotized treatment applied 4137 Alloy Steel) BMR: RoHS-compliant (Screw: GeoMet coating applied 4137 Alloy Steel)
	$FC \geq (O.D.) + 2$ $FC \leq F - 2$ Ordering Code: FC43			

Table 1: Select Shaft Bore Diameter

d _{H7}	Max. Allowable Torque Nm		D		(L)
	ST Bushing	SH Bushing	ST Bushing	SH Bushing	
12	48	23	32	31	10.5
14	73	37	35	36	12
15	78	39	36	37	13
16	83	42	37	38	13
17	88	45	38	39	14
18	154	48	43	40	14
19	163	49	45	42	14
20	171	97	46	46	15.5
22	186	110	48	47	16.5
24	206	121	50	49	16.5
25	216	124	52	51	19
28	353	141	54	53	19
30	382	149	57	56	20
32	412	163	59	58	24.5
35	451	173	63	61	24.5
38	686	—	70	—	24.5
40	725	—	71	—	24.5
42	757	—	74	—	24.5
45	1490	—	84	—	24.5
48	1600	—	87	—	24.5
50	1660	—	89	—	24.5

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

Keyless Timing Pulleys

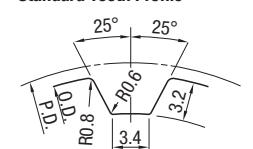
T10 Type – Keyless Bushing with Centering Function

Feature: MechaLock Standard Type, refer to 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 – T10 Type – Keyless Bushing with Centering Function



Standard Tooth Profile



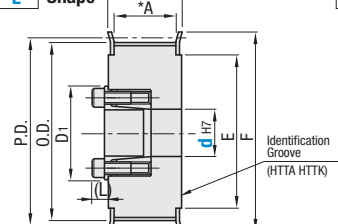
Tooth groove dimensions slightly change according to No. of teeth. (Pitch: 10.0 mm)

Part Number						Material			Surface Treatment							
Belt Width 15 mm	Belt Width 20 mm	Belt Width 25 mm	Belt Width 30 mm	Belt Width 40 mm	Belt Width 50 mm	Pulley	Flange	Bushing	Pulley	Flange	Bushing					
A: 17 W: 22	A: 22 W: 26 Y: 18	A: 27 W: 32 Y: 22 (23.5)	A: 32 W: 37 Y: 24 (25, 27)	A: 43 W: 48 Y: 30 (31, 34)	A: 53 W: 58 Y: 35 (36, 39) 35(36, 39)											
HTTA_T10150	HTTA_T10200	HTTA_T10250	HTTA_T10300	HTTA_T10400	HTTA_T10500	Ultra Duralumin-Based Aluminum Alloy	Alum. Alloy	1045 Carbon Steel or Equivalent	Clear Anodize	—	—					
HHTK_T10150	HHTK_T10200	HHTK_T10250	HHTK_T10300	—	—							1045 Carbon Steel or Equivalent	Low Carbon Steel	1045 Carbon Steel or Equivalent	Hard Clear Anodize*	—
HHTT_T10150	HHTT_T10200	HHTT_T10250	HHTT_T10300	HHTT_T10400	HHTT_T10500											

*Hard Anodize Treatment: Film Hardness 300 HV min.

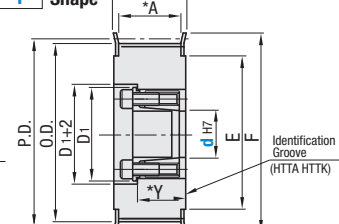
Pulley Shape

E Shape



The shaft bore may not have surface treatment. Machined Flange for 34, 50 and 60 toothed pulleys.

F Shape



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

Part Number	Teeth	Type, Nom. Width	Pulley Shape	d _{H7} Range (Select Shaft Bore Dia. from Table 1)										P.D.	O.D.	F	E				
				E Shape					F Shape												
				T10150	T10200	T10250	T10300	T10400	T10500	T10200	T10250	T10300	T10400					T10500			
16	18	T10150	E	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	12 14	50.93	49.05	58	40
20	22	T10200	E	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	12 14-16	57.3	55.45	61	45
24	26	T10250	E	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	12 14-19	63.66	61.8	67	50
28	30	T10300	E	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	70.03	68.15	80	60
32	34	T10400	F	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	76.39	74.55	87	67
36	40	T10500	F	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	79.58	77.7	87	67
44	48	T10500	F	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	14-20 22	82.76	80.9	95	75
50	60	T10500	F	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	16-20 22	89.13	87.25	95	75
				16-20 22	16-20 22	16-20 22	16-20 22	16-20 2													