StarQuick™ CAD

Semi-custom orders possible

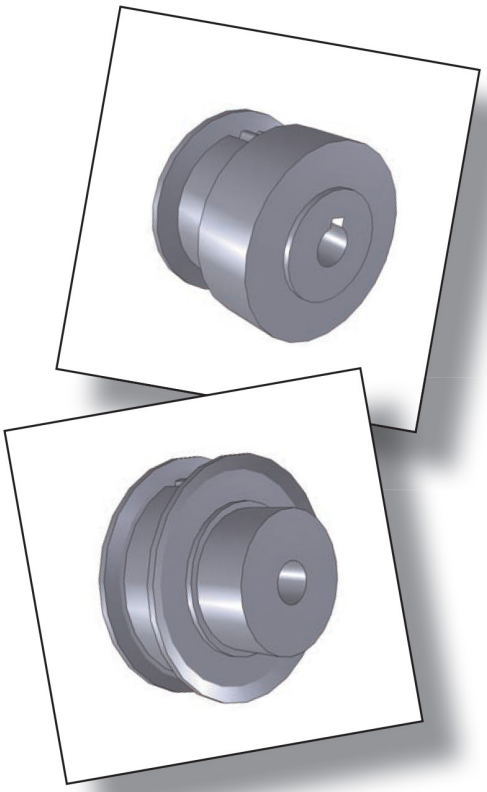
No additional processing

CAD Design Service

StarQuick supports 3D CAD data

We have re-branded our finished pulley StarQuick™ as StarQuick™ CAD and introduced a new service providing 3D CAD data.

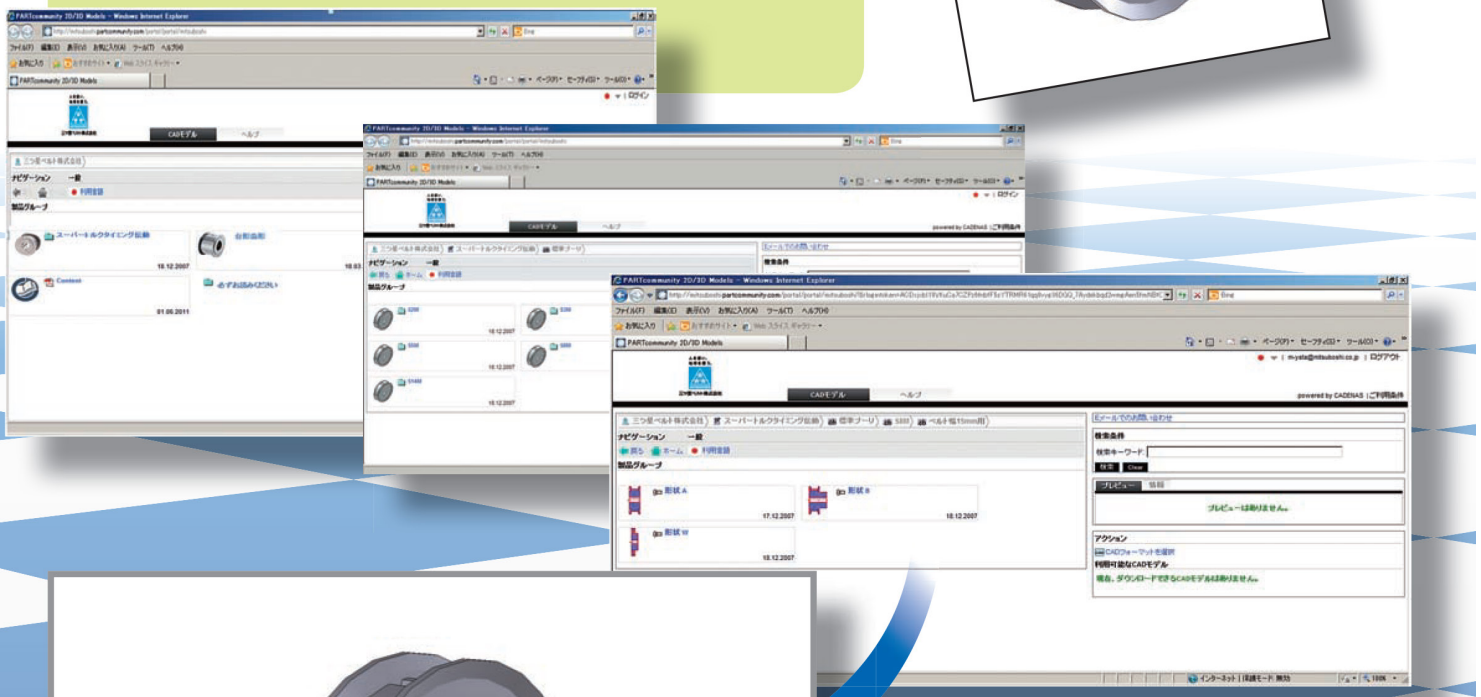
You can now download 2D and 3D CAD data from our website by selecting the desired specifications.

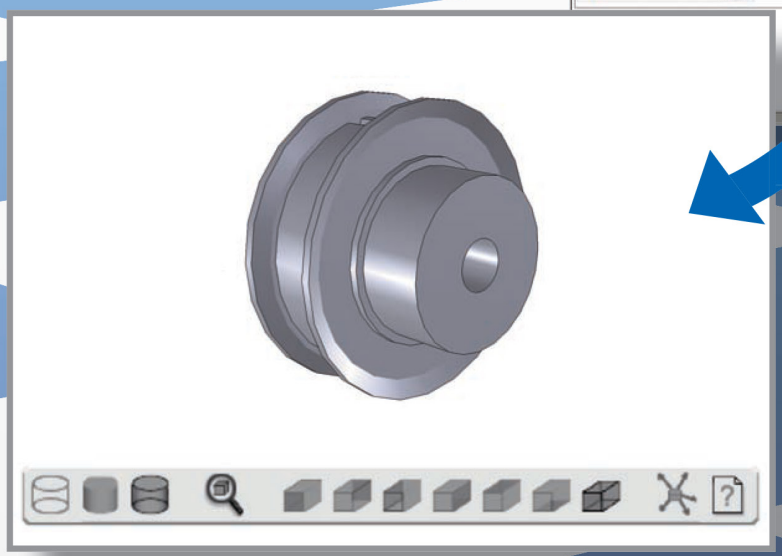


How to Download CAD Data

1. Download CAD from CADENAS WEB2CAD Inc. on our website. Access the data download service “PART Community” and register as a user. **https://mitsuboshi.partcommunity.com**
2. Select **Super Torque** or **Trapezoidal Tooth** profile

   Please review the "Please Read" section for important notes before downloading the CAD data.
3. Select your specifications in the following order: tooth profile → belt width → shape → number of teeth, etc.





In addition to StarQuick, the timing transmission design documents (V832-E) are also available. Please take advantage of these resources.

FEATURES

Short delivery time, shipped in as little as 14 days!

Air freight available for quick overseas delivery.
When ordering 10 or more pieces of the same size, please contact us to discuss delivery date.

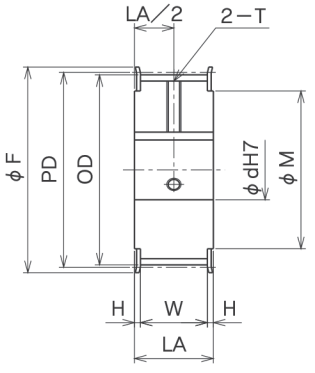
Sample:

THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED
Order Date	1			2	3	4	5	6			7	8	9	10	11			12	13	14
	Production			Production							Production							Production		SHIP DATE

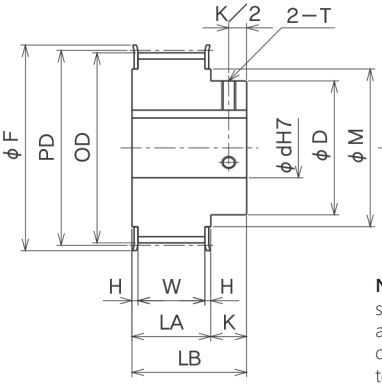
• Product Line-up

	Tooth Profile	Material	Surface Treat	Pulley Shape	Belt Width Designation (Belt Width)			
TRAPEZOIDAL TOOTH	L	Steel	Untreated	A B	050 (12.7mm)	075 (19.1mm)	100 (25.4mm)	—
			Black Oxide	A B	050 (12.7mm)	075 (19.1mm)	100 (25.4mm)	—
			Electroless Nickel Plating	A B	050 (12.7mm)	075 (19.1mm)	100 (25.4mm)	—
	H	Steel	Untreated	A B	100 (25.4mm)	150 (38.1mm)	200 (50.8mm)	—
			Black Oxide	A B	100 (25.4mm)	150 (38.1mm)	200 (50.8mm)	—
			Electroless Nickel Plating	A B	100 (25.4mm)	150 (38.1mm)	200 (50.8mm)	—
METRIC TRAPEZOIDAL TOOTH	T10	Steel	Untreated	A B	15 (15mm)	25 (25mm)	—	—
			Black Oxide	A B	15 (15mm)	25 (25mm)	—	—
			Electroless Nickel Plating	A B	15 (15mm)	25 (25mm)	—	—
STPD TOOTH (SUPER TORQUE)	S3M	A2017	Untreated	A B C	0100 (10mm)	0150 (15mm)	—	—
			White Anodized	A B C	0100 (10mm)	0150 (15mm)	—	—
	S5M	A2017	Untreated	A B	0100 (10mm)	0150 (15mm)	—	—
			White Anodized	A B	0100 (10mm)	0150 (15mm)	—	—
		Steel	Untreated	A B	—	0150 (15mm)	0250 (25mm)	—
			Black Oxide	A B	—	0150 (15mm)	0250 (25mm)	—
			Electroless Nickel Plating	A B	—	0150 (15mm)	0250 (25mm)	—
	S8M	Steel	Untreated	A B	0150 (15mm)	0250 (25mm)	0300 (30mm)	0400 (40mm)
			Black Oxide	A B	0150 (15mm)	0250 (25mm)	0300 (30mm)	0400 (40mm)
			Electroless Nickel Plating	A B	0150 (15mm)	0250 (25mm)	0300 (30mm)	0400 (40mm)

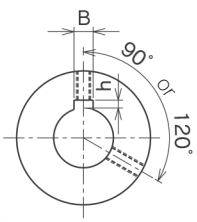
• Pulley Shapes For dimensions, please refer to the dimension chart.



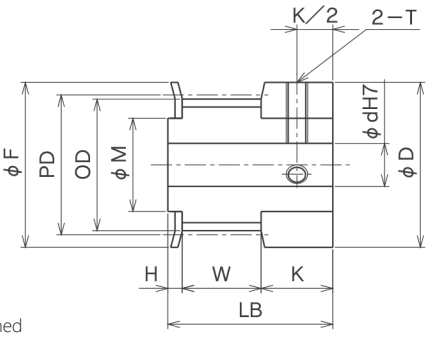
Pulley Shape A



Pulley Shape B



Note: In the case of pulley shape A, tapping is performed at the tooth bottom position, so depending on the number of teeth, it will be near the 90° or 120° (or more) position.



Pulley Shape C

• Product Code Example

Standard Pulley Designation

S1	-	24	S5M	0150	B	F	-	15	T3	K
Material and Surface Treatment (Table 1)		Pulley Tooth Number	Pulley Tooth Profile	Pulley Nominal Width Belt width used (mm) x 10	Pulley Shape	Flanges (Table 2)		Shaft Hole Diameter (mm)	Tapping (Table 3)	Keyway (Table 3)

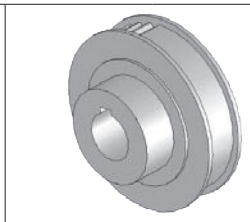
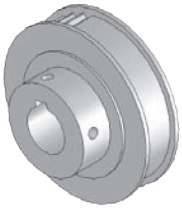
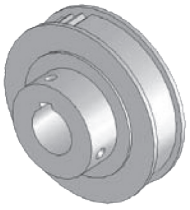
Table 1: Pulley material and surface treatment code

Symbol	Material	Surface Treatment
S1	Steel	Untreated
S2		Black Oxide
S3		Electroless Nickel Plating
A1	A2017	Untreated
A4		White Anodized

Table 2: Flange code

Symbol	Flange
F	Flange Crimp
X	Flange Attached

Table 3: Keyway and tap dimension code

Image								
Symbol	**T0K**	**T0X**	**T1K**	**T1X**	**T2K**	**T2X**	**T3K**	**T3X**
Machining Content	Keyway Machining	Keyway Machining	Keyway Machining	Keyway Machining	Keyway Machining	Keyway Machining	Keyway Machining	Keyway Machining
	Yes	None	Yes	None	Yes	None	Yes	None
	No tapping required		1 tap (on the key)		2 taps (90° above the key)		2 taps (120° degrees above the key)	

• Key Groove and Tap Dimensions

The included set screws are only available in the blue-colored areas of the dimension table because the tap length is insufficient, they will be made to the semi-standard size shown in ( ).

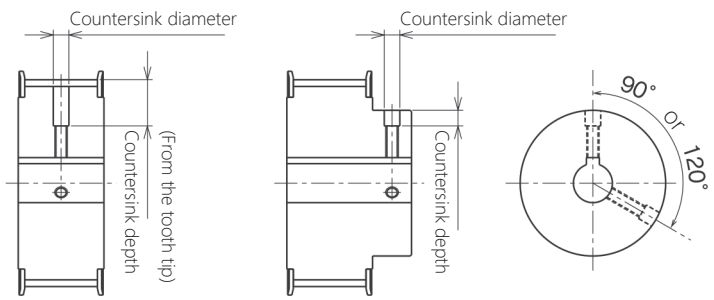
Applicable shaft hole diameter (mm)	Keyway width B	Tolerance JS9	Keyway height h	Tolerance	Tap size T	Set screw ( ) is semi standard
4 or more and 6.35 or less*	—	—	—	—	M3	M3x4
7 to 9*	—	—	—	—	M4	M4x5(M4x4)
Between 10 and 12	4	±0.015	1.8	+0.1 0	M4	M4x5(M4x4)
Over 12 and up to 17	5		2.3		M5	M5x5
Over 17 and up to 22	6		2.8		M6	M5x8(M6x6)
Over 22 and up to 30	8	±0.018	3.3	+0.2 0		
Over 30 and up to 38	10				M8	M8x10(M8x8)
Over 38 and up to 44	12	±0.0215				
Over 44 and up to 50	14		3.8			
Over 50 and up to 58	16		4.3		M10	M10x12
Over 58 and up to 65	18		4.4			

**Key machining is not possible for shaft hole diameters from Φ4 to Φ9.*

• About Tapping

(1) In the case of pulley shape A, tapping is performed at the tooth root position, so it will be near the 90° or 120° (or more) position depending on the number of teeth.

(2) Depending on the number of teeth and the size of the shaft hole, the tap length will be long, so a counterbore will be provided. Please check the counterbore diameter in the table on the right. (Please contact us for counterbore depth.) The standard counterbore depth is the depth from the tooth tip for type A and from the boss outer shape for type B.



Pulley Shape A Pulley Shape B

Tap Size (mm)	Counterbore diameter
M4	Φ5
M5	Φ6
M6	Φ7
M8	Φ9
M10	Φ9

S3M DIMENSIONS

S3M0100A Available materials: Aluminum

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	W	H	F	M																							
24	22.92	22.16	15	11	2	26	16	4	5	6	6.35	7	8	9																
25	23.87	23.11				28	18			6	6.35	7	8	9																
26	24.83	24.07				28	18			6	6.35	7	8	9																
28	26.74	25.98				31	20			6	6.35	7	8	9	10	11														
30	28.65	27.89				33	22			6	6.35	7	8	9	10	11	12													
32	30.56	29.80				35	22			6	6.35	7	8	9	10	11	12													
36	34.38	33.62				40	28			6	6.35	7	8	9	10	11	12	14	15	16										
40	38.20	37.44				44	32						8	9	10	11	12	14	15	16	17									
44	42.02	41.25				47	34						8	9	10	11	12	14	15	16	17	18	19	20						
48	45.84	45.07				48	36						8	9	10	11	12	14	15	16	17	18	19	20	22					
50	47.75	46.98				51	36						8	9	10	11	12	14	15	16	17	18	19	20	22	24	25			
60	57.30	56.53				61	41						8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	

S3M0100B Available materials: Aluminum

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																		
	PD	OD	LA	LB	W	H	K	D	F	M																			
24	22.92	22.16	15	23	11	2	8	14	26	16	4	5	6																
25	23.87	23.11						16	28	18			6	6.35	7	8														
26	24.83	24.07						16	28	18			6	6.35	7	8														
28	26.74	25.98						18	31	20			6	6.35	7	8	9													
30	28.65	27.89						20	33	22			6	6.35	7	8	9													
32	30.56	29.80						20	35	22			6	6.35	7	8	9													
36	34.38	33.62						26	40	28			6	6.35	7	8	9	10	11	12									
40	38.20	37.44						30	44	32						8	9	10	11	12	14	15							
44	42.02	41.25						32	47	34						8	9	10	11	12	14	15	16	17					
48	45.84	45.07						34	48	36						8	9	10	11	12	14	15	16	17					
50	47.75	46.98						34	51	36						8	9	10	11	12	14	15	16	17					
60	57.30	56.53						39	61	41						8	9	10	11	12	14	15	16	17	18	19	20		

S3M0100C Available materials: Aluminum

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)						
	PD	OD	LA	LB	W	H	K	D	F	M							
14	13.37	12.61	15	23	11	2	10	16	16	10	4	5	6	6.35	7	8	
15	14.32	13.56						18	18	11	4	5	6	6.35	7	8	
16	15.28	14.52						20	20	12	4	5	6	6.35	7	8	
18	17.19	16.43						23	23	12	4	5	6	6.35	7	8	
20	19.10	18.34						23	23	13	4	5	6	6.35	7	8	9
22	21.01	20.25						25	25	14	4	5	6	6.35	7	8	9

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

S3M DIMENSIONS

S3M0150A Available materials: Aluminum

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																							
	PD	OD	LA	W	H	F	M																							
24	22.92	22.16	21	17	2	26	16	4	5	6	6.35	7	8	9																
25	23.87	23.11				28	18			6	6.35	7	8	9																
26	24.83	24.07				28	18			6	6.35	7	8	9																
28	26.74	25.98				31	20			6	6.35	7	8	9	10	11														
30	28.65	27.89				33	22			6	6.35	7	8	9	10	11	12													
32	30.56	29.80				35	22			6	6.35	7	8	9	10	11	12													
36	34.38	33.62				40	28			6	6.35	7	8	9	10	11	12	14	15	16										
40	38.20	37.44				44	32						8	9	10	11	12	14	15	16	17									
44	42.02	41.25				47	34						8	9	10	11	12	14	15	16	17	18	19	20						
48	45.84	45.07				48	36						8	9	10	11	12	14	15	16	17	18	19	20	22					
50	47.75	46.98				51	36						8	9	10	11	12	14	15	16	17	18	19	20	22	24	25			
60	57.30	56.53				61	41						8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	

S3M0150B Available materials: Aluminum

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																	
	PD	OD	LA	LB	W	H	K	D	F	M																		
24	22.92	22.16	21	29	17	2	8	14	26	16	4	5	6															
25	23.87	23.11						16	28	18			6	6.35	7	8												
26	24.83	24.07						16	28	18			6	6.35	7	8												
28	26.74	25.98						18	31	20			6	6.35	7	8	9											
30	28.65	27.89						20	33	22			6	6.35	7	8	9											
32	30.56	29.80						20	35	22			6	6.35	7	8	9											
36	34.38	33.62						26	40	28			6	6.35	7	8	9	10	11	12								
40	38.20	37.44						30	44	32						8	9	10	11	12	14	15						
44	42.02	41.25						32	47	34						8	9	10	11	12	14	15	16	17				
48	45.84	45.07						34	48	36						8	9	10	11	12	14	15	16	17				
50	47.75	46.98						34	51	36						8	9	10	11	12	14	15	16	17				
60	57.30	56.53						39	61	41						8	9	10	11	12	14	15	16	17	18	19	20	

S3M0150C Available materials: Aluminum

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)						
	PD	OD	LA	LB	W	H	K	D	F	M							
14	13.37	12.61	21	29	17	2	10	16	16	10	4	5	6	6.35	7	8	
15	14.32	13.56						18	18	11	4	5	6	6.35	7	8	
16	15.28	14.52						20	20	12	4	5	6	6.35	7	8	
18	17.19	16.43						23	23	12	4	5	6	6.35	7	8	
20	19.10	18.34						23	23	13	4	5	6	6.35	7	8	9
22	21.01	20.25						25	25	14	4	5	6	6.35	7	8	9

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

S5M DIMENSIONS

S5M0100A   Available materials: Aluminum

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																									
	PD	OD	LA	W	H	F	M																										
14	22.28	21.32				26	16	**7**	**8**																								
15	23.87	22.91				28	18	7	8																								
16	25.46	24.5				31	20	7	8	9																							
18	28.65	27.69				33	22	7	8	9	**10**	**11**																					
20	31.83	30.87				35	22	7	8	9	10	11	12																				
22	35.01	34.05				40	28	7	8	9	10	11	12	14	15																		
24	38.2	37.24				44	32	7	8	9	10	11	12	14	15	16	17																
25	39.79	38.83				44	32	7	8	9	10	11	12	14	15	16	17																
26	41.38	40.42	16	11	2.5	47	34		8	9	10	11	12	14	15	16	17	**18**															
28	44.56	43.6				48	36		8	9	10	11	12	14	15	16	17	**18**	**19**	**20**													
30	47.75	46.79				51	36				10	11	12	14	15	16	17	18	19	20	**22**												
32	50.93	49.97				54	41				10	11	12	14	15	16	17	18	19	20	22	**24**	**25**										
36	57.3	56.34				61	41				10	11	12	14	15	16	17	18	19	20	22	24	25	28									
40	63.66	62.7				69	50				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	**32**							
44	70.03	69.07				74	53						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38					
48	76.39	75.43				83	63						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42			
50	79.58	78.62				86	66						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45		
60	95.49	94.53				99	78						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50

S5M0100B   Available materials: Aluminum

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																									
	PD	OD	LA	LB	W	H	K	D	F	M																										
15	23.87	22.91						15	28	18	**7**																									
16	25.46	24.5						17	31	20	7	8	9																							
18	28.65	27.69						19	33	22	7	8	9																							
20	31.83	30.87						19	35	22	7	8	9																							
22	35.01	34.05						25	40	28	7	8	9	10	11	12																				
24	38.2	37.24						29	44	32	7	8	9	10	11	12	14	15																		
25	39.79	38.83						29	44	32	7	8	9	10	11	12	14	15																		
26	41.38	40.42						31	47	34		8	9	10	11	12	14	15	16	17																
28	44.56	43.6	16	28	11	2.5	12	33	48	36		8	9	10	11	12	14	15	16	17																
30	47.75	46.79						33	51	36				10	11	12	14	15	16	17																
32	50.93	49.97						38	54	41				10	11	12	14	15	16	17	18	**19**	**20**													
36	57.3	56.34						38	61	41				10	11	12	14	15	16	17	18	**19**	**20**													
40	63.66	62.7						47	69	50				10	11	12	14	15	16	17	18	19	20	22	24	25	**28**									
44	70.03	69.07						50	74	53						12	14	15	16	17	18	19	20	22	24	25	28	**30**								
48	76.39	75.43						60	83	63						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	**38**					
50	79.58	78.62						63	86	66						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	**40**				
60	95.49	94.53						75	99	78						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	**50**

S5M0150A   Available materials: Aluminum, Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																									
	PD	OD	LA	W	H	F	M																										
14	22.28	21.32				26	16	**7**	**8**																								
15	23.87	22.91				28	18	7	8																								
16	25.46	24.5				31	20	7	8	9																							
18	28.65	27.69				33	22	7	8	9	**10**	**11**																					
20	31.83	30.87				35	22	7	8	9	10	11	12																				
22	35.01	34.05				40	28	7	8	9	10	11	12	14	15																		
24	38.2	37.24				44	32	7	8	9	10	11	12	14	15	16	17																
25	39.79	38.83				44	32	7	8	9	10	11	12	14	15	16	17																
26	41.38	40.42	22	17	2.5	47	34		8	9	10	11	12	14	15	16	17	**18**															
28	44.56	43.6				48	36		8	9	10	11	12	14	15	16	17	**18**	**19**	**20**													
30	47.75	46.79				51	36				10	11	12	14	15	16	17	18	19	20	**22**												
32	50.93	49.97				54	41				10	11	12	14	15	16	17	18	19	20	22	**24**	**25**										
36	57.3	56.34				61	41				10	11	12	14	15	16	17	18	19	20	22	24	25	28									
40	63.66	62.7				69	50				10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	**32**							
44	70.03	69.07				74	53						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38					
48	76.39	75.43				83	63						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42			
50	79.58	78.62				86	66						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45		
60	95.49	94.53				99	78						12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

S5M DIMENSIONS

S5M0150B Available materials: Aluminum, Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)
	PD	OD	LA	LB	W	H	K	D	F	M	
15	23.87	22.91	22	34	17	2.5	12	15	28	18	7
16	25.46	24.5						17	31	20	7 8 9
18	28.65	27.69						19	33	22	7 8 9
20	31.83	30.87						19	35	22	7 8 9
22	35.01	34.05						25	40	28	7 8 9 10 11 12
24	38.2	37.24						29	44	32	7 8 9 10 11 12 14 15
25	39.79	38.83						29	44	32	7 8 9 10 11 12 14 15
26	41.38	40.42						31	47	34	8 9 10 11 12 14 15 16 17
28	44.56	43.6						33	48	36	8 9 10 11 12 14 15 16 17
30	47.75	46.79						33	51	36	10 11 12 14 15 16 17
32	50.93	49.97						38	54	41	10 11 12 14 15 16 17 18 19 20
36	57.3	56.34						38	61	41	10 11 12 14 15 16 17 18 19 20
40	63.66	62.7						47	69	50	10 11 12 14 15 16 17 18 19 20 22 24 25 28
44	70.03	69.07						50	74	53	12 14 15 16 17 18 19 20 22 24 25 28 30
48	76.39	75.43						60	83	63	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38
50	79.58	78.62						63	86	66	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40
60	95.49	94.53						75	99	78	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50

S5M0250A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)
	PD	OD	LA	W	H	F	M	
14	22.28	21.32	32	27	2.5	26	16	7 8
15	23.87	22.91				28	18	7 8
16	25.46	24.5				31	20	7 8 9
18	28.65	27.69				33	22	7 8 9 10 11
20	31.83	30.87				35	22	7 8 9 10 11 12
22	35.01	34.05				40	28	7 8 9 10 11 12 14 15
24	38.2	37.24				44	32	7 8 9 10 11 12 14 15 16 17
25	39.79	38.83				44	32	7 8 9 10 11 12 14 15 16 17
26	41.38	40.42				47	34	8 9 10 11 12 14 15 16 17 18
28	44.56	43.6				48	36	8 9 10 11 12 14 15 16 17 18 19 20
30	47.75	46.79				51	36	10 11 12 14 15 16 17 18 19 20 22
32	50.93	49.97				54	41	10 11 12 14 15 16 17 18 19 20 22 24 25
36	57.3	56.34				61	41	10 11 12 14 15 16 17 18 19 20 22 24 25 28
40	63.66	62.7				69	50	10 11 12 14 15 16 17 18 19 20 22 24 25 28 30 32
44	70.03	69.07				74	53	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38
48	76.39	75.43				83	63	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40 42
50	79.58	78.62				86	66	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40 42 45
60	95.49	94.53				99	78	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50

S5M0250B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)
	PD	OD	LA	LB	W	H	K	D	F	M	
15	23.87	22.91	32	44	27	2.5	12	15	28	18	7
16	25.46	24.5						17	31	20	7 8 9
18	28.65	27.69						19	33	22	7 8 9
20	31.83	30.87						19	35	22	7 8 9
22	35.01	34.05						25	40	28	7 8 9 10 11 12
24	38.2	37.24						29	44	32	7 8 9 10 11 12 14 15
25	39.79	38.83						29	44	32	7 8 9 10 11 12 14 15
26	41.38	40.42						31	47	34	8 9 10 11 12 14 15 16 17
28	44.56	43.6						33	48	36	8 9 10 11 12 14 15 16 17
30	47.75	46.79						33	51	36	10 11 12 14 15 16 17
32	50.93	49.97						38	54	41	10 11 12 14 15 16 17 18 19 20
36	57.3	56.34						38	61	41	10 11 12 14 15 16 17 18 19 20
40	63.66	62.7						47	69	50	10 11 12 14 15 16 17 18 19 20 22 24 25 28
44	70.03	69.07						50	74	53	12 14 15 16 17 18 19 20 22 24 25 28 30
48	76.39	75.43						60	83	63	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38
50	79.58	78.62						63	86	66	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40
60	95.49	94.53						75	99	78	12 14 15 16 17 18 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

S8M DIMENSIONS

S8M0150A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																											
	PD	OD	LA	W	H	F	M																											
18	45.84	44.46				54	36	12	14	15	16	17	18	19	20																		
19	48.38	47.01				57	39	12	14	15	16	17	18	19	20	22																	
20	50.93	49.56				60	40	12	14	15	16	17	18	19	20	22																	
21	53.48	52.1				62	44	12	14	15	16	17	18	19	20	22	24																
22	56.02	54.65				65	45	12	14	15	16	17	18	19	20	22	24	25															
24	61.12	59.74				70	50	12	14	15	16	17	18	19	20	22	24	25	28														
25	63.66	62.29				72	52				16	17	18	19	20	22	24	25	28														
26	66.21	64.84				75	55				16	17	18	19	20	22	24	25	28	30													
28	71.3	69.93				80	60				16	17	18	19	20	22	24	25	28	30	32												
30	76.39	75.02	24	17	3.5	85	65				16	17	18	19	20	22	24	25	28	30	32	35											
32	81.49	80.12				90	70				16	17	18	19	20	22	24	25	28	30	32	35	38										
34	86.58	85.21				95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42								
36	91.67	90.3				100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45							
38	96.77	95.39				105	85								20	22	24	25	28	30	32	35	38	40	42	45	48						
40	101.86	100.49				110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50					
44	112.05	110.67				121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55				
48	122.23	120.86				131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			
50	127.32	125.95				136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			
60	152.79	151.42				161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			

S8M0150B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																							
	PD	OD	LA	LB	W	H	K	D	F	M																							
18	45.84	44.46						32	54	36	12	14	15	16	17																		
19	48.38	47.01						35	57	39	12	14	15	16	17	18																	
20	50.93	49.56						36	60	40	12	14	15	16	17	18	19																
21	53.48	52.1						40	62	44	12	14	15	16	17	18	19	20	22														
22	56.02	54.65						41	65	45	12	14	15	16	17	18	19	20	22														
24	61.12	59.74						46	70	50	12	14	15	16	17	18	19	20	22	24	25	28											
25	63.66	62.29						48	72	52				16	17	18	19	20	22	24	25	28											
26	66.21	64.84		39			15	51	75	55				16	17	18	19	20	22	24	25	28	30										
28	71.3	69.93						55	80	60				16	17	18	19	20	22	24	25	28	30	32									
30	76.39	75.02	24		17	3.5		60	85	65				16	17	18	19	20	22	24	25	28	30	32	35								
32	81.49	80.12						65	90	70				16	17	18	19	20	22	24	25	28	30	32	35	38							
34	86.58	85.21						70	95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42					
36	91.67	90.3						75	100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45				
38	96.77	95.39						80	105	85								20	22	24	25	28	30	32	35	38	40	42	45	48			
40	101.86	100.49						85	110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50		
44	112.05	110.67						90	121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	
48	122.23	120.86		44			20	100	131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60
50	127.32	125.95						100	136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60
60	152.79	151.42						100	161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60

S8M0250A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																											
	PD	OD	LA	W	H	F	M																										
18	45.84	44.46				54	36	12	14	15	16	17	18	19	20																		
19	48.38	47.01				57	39	12	14	15	16	17	18	19	20	22																	
20	50.93	49.56				60	40	12	14	15	16	17	18	19	20	22																	
21	53.48	52.1				62	44	12	14	15	16	17	18	19	20	22	24																
22	56.02	54.65				65	45	12	14	15	16	17	18	19	20	22	24	25															
24	61.12	59.74				70	50	12	14	15	16	17	18	19	20	22	24	25	28														
25	63.66	62.29				72	52				16	17	18	19	20	22	24	25	28														
26	66.21	64.84				75	55				16	17	18	19	20	22	24	25	28	30													
28	71.3	69.93				80	60				16	17	18	19	20	22	24	25	28	30	32												
30	76.39	75.02	35	28	3.5	85	65				16	17	18	19	20	22	24	25	28	30	32	35											
32	81.49	80.12				90	70				16	17	18	19	20	22	24	25	28	30	32	35	38										
34	86.58	85.21				95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42								
36	91.67	90.3				100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45							
38	96.77	95.39				105	85								20	22	24	25	28	30	32	35	38	40	42	45	48						
40	101.86	100.49				110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50					
44	112.05	110.67				121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55				
48	122.23	120.86				131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			
50	127.32	125.95				136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			
60	152.79	151.42				161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60			

The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)

S8M DIMENSIONS

S8M0250B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																										
	PD	OD	LA	LB	W	H	K	D	F	M																											
18	45.84	44.46						32	54	36	12	14	15	16	17																						
19	48.38	47.01						35	57	39	12	14	15	16	17	18																					
20	50.93	49.56						36	60	40	12	14	15	16	17	18	19																				
21	53.48	52.1						40	62	44	12	14	15	16	17	18	19	20	22																		
22	56.02	54.65						41	65	45	12	14	15	16	17	18	19	20	22																		
24	61.12	59.74						46	70	50	12	14	15	16	17	18	19	20	22	24	25	28															
25	63.66	62.29						48	72	52				16	17	18	19	20	22	24	25	28															
26	66.21	64.84		50			15	51	75	55				16	17	18	19	20	22	24	25	28	30														
28	71.3	69.93						55	80	60				16	17	18	19	20	22	24	25	28	30	32													
30	76.39	75.02	35		28	3.5		60	85	65				16	17	18	19	20	22	24	25	28	30	32	35												
32	81.49	80.12						65	90	70				16	17	18	19	20	22	24	25	28	30	32	35	38											
34	86.58	85.21						70	95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42									
36	91.67	90.3						75	100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45								
38	96.77	95.39						80	105	85								20	22	24	25	28	30	32	35	38	40	42	45	48							
40	101.86	100.49						85	110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50						
44	112.05	110.67		55			20	90	121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55					
48	122.23	120.86						100	131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				
50	127.32	125.95						100	136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				
60	152.79	151.42						100	161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				

S8M0300A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																													
	PD	OD	LA	W	H	F	M																														
18	45.84	44.46				54	36	12	14	15	16	17	18	19	20																						
19	48.38	47.01				57	39	12	14	15	16	17	18	19	20	22																					
20	50.93	49.56				60	40	12	14	15	16	17	18	19	20	22																					
21	53.48	52.1				62	44	12	14	15	16	17	18	19	20	22	24																				
22	56.02	54.65				65	45	12	14	15	16	17	18	19	20	22	24	25																			
24	61.12	59.74				70	50	12	14	15	16	17	18	19	20	22	24	25	28																		
25	63.66	62.29				72	52				16	17	18	19	20	22	24	25	28																		
26	66.21	64.84				75	55				16	17	18	19	20	22	24	25	28	30																	
28	71.3	69.93				80	60				16	17	18	19	20	22	24	25	28	30	32																
30	76.39	75.02	40	33	3.5	85	65				16	17	18	19	20	22	24	25	28	30	32	35															
32	81.49	80.12				90	70				16	17	18	19	20	22	24	25	28	30	32	35	38													
34	86.58	85.21				95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42											
36	91.67	90.3				100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45										
38	96.77	95.39				105	85								20	22	24	25	28	30	32	35	38	40	42	45	48									
40	101.86	100.49				110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50								
44	112.05	110.67				121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55							
48	122.23	120.86				131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60						
50	127.32	125.95				136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60						
60	152.79	151.42				161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60						

S5M0300B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																										
	PD	OD	LA	LB	W	H	K	D	F	M																											
18	45.84	44.46						32	54	36	12	14	15	16	17																						
19	48.38	47.01						35	57	39	12	14	15	16	17	18																					
20	50.93	49.56						36	60	40	12	14	15	16	17	18	19																				
21	53.48	52.1						40	62	44	12	14	15	16	17	18	19	20	22																		
22	56.02	54.65						41	65	45	12	14	15	16	17	18	19	20	22																		
24	61.12	59.74						46	70	50	12	14	15	16	17	18	19	20	22	24	25	28															
25	63.66	62.29						48	72	52				16	17	18	19	20	22	24	25	28															
26	66.21	64.84		55			15	51	75	55				16	17	18	19	20	22	24	25	28	30														
28	71.3	69.93						55	80	60				16	17	18	19	20	22	24	25	28	30	32													
30	76.39	75.02	40		33	3.5		60	85	65				16	17	18	19	20	22	24	25	28	30	32	35												
32	81.49	80.12						65	90	70				16	17	18	19	20	22	24	25	28	30	32	35	38											
34	86.58	85.21						70	95	75				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42									
36	91.67	90.3						75	100	80				16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45								
38	96.77	95.39						80	105	85								20	22	24	25	28	30	32	35	38	40	42	45	48							
40	101.86	100.49						85	110	90								20	22	24	25	28	30	32	35	38	40	42	45	48	50						
44	112.05	110.67		60			20	90	121	101								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55					
48	122.23	120.86						100	131	111								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				
50	127.32	125.95						100	136	116								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				
60	152.79	151.42						100	161	141								20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60				

The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)

S8M DIMENSIONS

S8M0400B Available materials: 0Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																										
	PD	OD	LA	W	H	F	M																									
18	45.84	44.46				54	36	12	14	15	16	17	18	19	20																	
19	48.38	47.01				57	39	12	14	15	16	17	18	19	20	22																
20	50.93	49.56				60	40	12	14	15	16	17	18	19	20	22																
21	53.48	52.1				62	44	12	14	15	16	17	18	19	20	22	24															
22	56.02	54.65				65	45	12	14	15	16	17	18	19	20	22	24	25														
24	61.12	59.74				70	50	12	14	15	16	17	18	19	20	22	24	25	28													
25	63.66	62.29				72	52				16	17	18	19	20	22	24	25	28													
26	66.21	64.84				75	55				16	17	18	19	20	22	24	25	28	30												
28	71.3	69.93				80	60				16	17	18	19	20	22	24	25	28	30	32											
30	76.39	75.02	51	44	3.5	85	65				16	17	18	19	20	22	24	25	28	30	32	35										
32	81.49	80.12				90	70								20	22	24	25	28	30	32	35	38									
34	86.58	85.21				95	75								20	22	24	25	28	30	32	35	38	40	42							
36	91.67	90.3				100	80								20	22	24	25	28	30	32	35	38	40	42	45						
38	96.77	95.39				105	85								20	22	24	25	28	30	32	35	38	40	42	45	48					
40	101.86	100.49				110	90											25	28	30	32	35	38	40	42	45	48	50				
44	112.05	110.67				121	101											25	28	30	32	35	38	40	42	45	48	50	55			
48	122.23	120.86				131	111											25	28	30	32	35	38	40	42	45	48	50	55	60		
50	127.32	125.95				136	116											25	28	30	32	35	38	40	42	45	48	50	55	60		
60	152.79	151.42				161	141											25	28	30	32	35	38	40	42	45	48	50	55	60		

S8M0400B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	LB	W	H	K	D	F	M																						
18	45.84	44.46						32	54	36	12	14	15	16	17																	
19	48.38	47.01						35	57	39	12	14	15	16	17	18																
20	50.93	49.56						36	60	40	12	14	15	16	17	18	19															
21	53.48	52.1						40	62	44	12	14	15	16	17	18	19	20	22													
22	56.02	54.65						41	65	45	12	14	15	16	17	18	19	20	22													
24	61.12	59.74						46	70	50	12	14	15	16	17	18	19	20	22	24	25	28										
25	63.66	62.29		66			15	48	72	52				16	17	18	19	20	22	24	25	28										
26	66.21	64.84						51	75	55				16	17	18	19	20	22	24	25	28	30									
28	71.3	69.93	51		44	3.5		55	80	60				16	17	18	19	20	22	24	25	28	30	32								
30	76.39	75.02						60	85	65				16	17	18	19	20	22	24	25	28	30	32	35							
32	81.49	80.12						65	90	70								20	22	24	25	28	30	32	35	38						
34	86.58	85.21						70	95	75								20	22	24	25	28	30	32	35	38	40	42				
36	91.67	90.3						75	100	80								20	22	24	25	28	30	32	35	38	40	42	45			
38	96.77	95.39						80	105	85								20	22	24	25	28	30	32	35	38	40	42	45	48		
40	101.86	100.49						85	110	90											25	28	30	32	35	38	40	42	45	48	50	
44	112.05	110.67						90	121	101											25	28	30	32	35	38	40	42	45	48	50	55
48	122.23	120.86		71			20	100	131	111											25	28	30	32	35	38	40	42	45	48	50	55	60
50	127.32	125.95						100	136	116											25	28	30	32	35	38	40	42	45	48	50	55	60
60	152.79	151.42						100	161	141											25	28	30	32	35	38	40	42	45	48	50	55	60

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

L DIMENSIONS

L050A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																											
	PD	OD	LA	W	H	F	M																											
10	30.32	29.56	19	14	2.5	35	22	6	7	8	9	10	11	12																			
12	36.38	35.62				43	28			8	9	10	11	12	14	15	16																
14	42.45	41.68				47	34					10	11	12	14	15	16	17	18														
15	45.48	44.72				51	36					10	11	12	14	15	16	17	18	19	20												
16	48.51	47.75				55	39							12	14	15	16	17	18	19	20	22											
17	51.54	50.78				57	41							12	14	15	16	17	18	19	20	22											
18	54.57	53.81				61	41							12	14	15	16	17	18	19	20	22	24										
19	57.61	56.84				65	50							12	14	15	16	17	18	19	20	22	24										
20	60.64	59.88				65	50							12	14	15	16	17	18	19	20	22	24	25									
21	63.67	62.91				69	50							12	14	15	16	17	18	19	20	22	24	25									
22	66.70	65.94				74	53							12	14	15	16	17	18	19	20	22	24	25	28								
24	72.77	72.00				78	58							12	14	15	16	17	18	19	20	22	24	25									
25	75.80	75.04				83	63							12	14	15	16	17	18	19	20	22	24	25	28								
26	78.83	78.07				86	66							12	14	15	16	17	18	19	20	22	24	25	28								
28	84.89	84.13				93	75							12	14	15	16	17	18	19	20	22	24	25	28	30							
30	90.96	90.20				99	78							12	14	15	16	17	18	19	20	22	24	25	28	30							
32	97.02	96.26				105	84										16	17	18	19	20	22	24	25	28	30							
34	103.08	102.32				112	90										16	17	18	19	20	22	24	25	28	30	32						
36	109.15	108.39				115	90										16	17	18	19	20	22	24	25	28	30	32						
38	115.21	114.45				126	100										16	17	18	19	20	22	24	25	28	30	32						
40	121.28	120.51				126	100										16	17	18	19	20	22	24	25	28	30	32						
44	133.40	132.64				138	125										16	17	18	19	20	22	24	25	28	30	32	35	38				

L050B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																							
	PD	OD	LA	LB	W	H	K	D	F	M																							
10	30.32	29.56	19	31	14	2.5	12	20	35	22	6	7	8	9																			
12	36.38	35.62						25	43	28			8	9	10	11	12																
14	42.45	41.68						30	47	34					10	11	12	14	15														
15	45.48	44.72						32	51	36					10	11	12	14	15	16	17												
16	48.51	47.75						34	55	39							12	14	15	16	17												
17	51.54	50.78						35	57	41							12	14	15	16	17												
18	54.57	53.81						36	61	41							12	14	15	16	17	18											
19	57.61	56.84						38	65	50							12	14	15	16	17	18	19										
20	60.64	59.88						40	65	50							12	14	15	16	17	18	19	20									
21	63.67	62.91						42	69	50							12	14	15	16	17	18	19	20	22								
22	66.70	65.94						44	74	53							12	14	15	16	17	18	19	20	22	24	25						
24	72.77	72.00						44	78	58							12	14	15	16	17	18	19	20	22	24	25						
25	75.80	75.04						44	83	63							12	14	15	16	17	18	19	20	22	24	25						
26	78.83	78.07						44	86	66							12	14	15	16	17	18	19	20	22	24	25						
28	84.89	84.13						50	93	75							12	14	15	16	17	18	19	20	22	24	25	28	30				
30	90.96	90.20						50	99	78							12	14	15	16	17	18	19	20	22	24	25	28	30				
32	97.02	96.26						50	105	84										16	17	18	19	20	22	24	25	28	30				
34	103.08	102.32						56	112	90										16	17	18	19	20	22	24	25	28	30				
36	109.15	108.39		34			15	56	115	90										16	17	18	19	20	22	24	25	28	30	32			
38	115.21	114.45						60	126	100										16	17	18	19	20	22	24	25	28	30	32			
40	121.28	120.51						60	126	100										16	17	18	19	20	22	24	25	28	30	32			
44	133.40	132.64		39			20	65	138	125										16	17	18	19	20	22	24	25	28	30	32	35	38	

L075A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																											
	PD	OD	LA	W	H	F	M																										
12	36.38	35.62	26	21	2.5	43	28	8	9	10	11	12	14	15	16																		
14	42.45	41.68				47	34			10	11	12	14	15	16	17	18																
15	45.48	44.72				51	36			10	11	12	14	15	16	17	18	19	20														
16	48.51	47.75				55	39					12	14	15	16	17	18	19	20	22													
17	51.54	50.78				57	41					12	14	15	16	17	18	19	20	22													
18	54.57	53.81				61	41					12	14	15	16	17	18	19	20	22	24												
19	57.61	56.84				65	50					12	14	15	16	17	18	19	20	22	24												
20	60.64	59.88				65	50					12	14	15	16	17	18	19	20	22	24	25											
21	63.67	62.91				69	50					12	14	15	16	17	18	19	20	22	24	25											
22	66.70	65.94				74	53					12	14	15	16	17	18	19	20	22	24	25	28										
24	72.77	72.00				78	58					12	14	15	16	17	18	19	20	22	24	25											
25	75.80	75.04				83	63					12	14	15	16	17	18	19	20	22	24	25	28										
26	78.83	78.07				86	66					12	14	15	16	17	18	19	20	22	24	25	28										
28	84.89	84.13				93	75					12	14	15	16	17	18	19	20	22	24	25	28	30									
30	90.96	90.20				99	78					12	14	15	16	17	18	19	20	22	24	25	28	30									
32	97.02	96.26				105	84								16	17	18	19	20	22	24	25	28	30									
34	103.08	102.32				112	90								16	17	18	19	20	22	24	25	28	30	32								
36	109.15	108.39				115	90								16	17	18	19	20	22	24	25	28	30	32								
38	115.21	114.45				126	100								16	17	18	19	20	22	24	25	28	30	32								
40	121.28	120.51				126	100								16	17	18	19	20	22	24	25	28	30	32								
44	133.40	132.64				138	125								16	17	18	19	20	22	24	25	28	30	32	35	38						

The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)

L DIMENSIONS

L075B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																					
	PD	OD	LA	LB	W	H	K	D	F	M																					
12	36.38	35.62						25	43	28	8	9	10	11	12																
14	42.45	41.68						30	47	34			10	11	12	14	15														
15	45.48	44.72						32	51	36			10	11	12	14	15	16	17												
16	48.51	47.75						34	55	39					12	14	15	16	17												
17	51.54	50.78						35	57	41					12	14	15	16	17												
18	54.57	53.81						36	61	41					12	14	15	16	17	18											
19	57.61	56.84						38	65	50					12	14	15	16	17	18	19										
20	60.64	59.88		38			12	40	65	50					12	14	15	16	17	18	19	20									
21	63.67	62.91						42	69	50					12	14	15	16	17	18	19	20	22								
22	66.70	65.94						44	74	53					12	14	15	16	17	18	19	20	22	24	25						
24	72.77	72.00	26		21	2.5		44	78	58					12	14	15	16	17	18	19	20	22	24	25						
25	75.80	75.04						44	83	63					12	14	15	16	17	18	19	20	22	24	25						
26	78.83	78.07						44	86	66					12	14	15	16	17	18	19	20	22	24	25						
28	84.89	84.13						50	93	75					12	14	15	16	17	18	19	20	22	24	25	28	30				
30	90.96	90.20						50	99	78					12	14	15	16	17	18	19	20	22	24	25	28	30				
32	97.02	96.26						50	105	84								16	17	18	19	20	22	24	25	28	30				
34	103.08	102.32						56	112	90								16	17	18	19	20	22	24	25	28	30				
36	109.15	108.39		41			15	56	115	90								16	17	18	19	20	22	24	25	28	30	32			
38	115.21	114.45						60	126	100								16	17	18	19	20	22	24	25	28	30	32			
40	121.28	120.51						60	126	100								16	17	18	19	20	22	24	25	28	30	32			
44	133.40	132.64		46			20	65	138	125								16	17	18	19	20	22	24	25	28	30	32	35	38	

L100A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																		
	PD	OD	LA	W	H	F	M																			
14	42.45	41.68				47	34	10	11	12	14	15	16	17	18											
15	45.48	44.72				51	36	10	11	12	14	15	16	17	18	19	20									
16	48.51	47.75				55	39			12	14	15	16	17	18	19	20	22								
17	51.54	50.78				57	41			12	14	15	16	17	18	19	20	22								
18	54.57	53.81				61	41			12	14	15	16	17	18	19	20	22	24							
19	57.61	56.84				65	50			12	14	15	16	17	18	19	20	22	24							
20	60.64	59.88				65	50			12	14	15	16	17	18	19	20	22	24	25						
21	63.67	62.91				69	50			12	14	15	16	17	18	19	20	22	24	25						
22	66.70	65.94				74	53			12	14	15	16	17	18	19	20	22	24	25	28					
24	72.77	72.00				78	58			12	14	15	16	17	18	19	20	22	24	25						
25	75.80	75.04	33	28	2.5	83	63			12	14	15	16	17	18	19	20	22	24	25	28					
26	78.83	78.07				86	66			12	14	15	16	17	18	19	20	22	24	25	28					
28	84.89	84.13				93	75			12	14	15	16	17	18	19	20	22	24	25	28	30				
30	90.96	90.20				99	78			12	14	15	16	17	18	19	20	22	24	25	28	30				
32	97.02	96.26				105	84						16	17	18	19	20	22	24	25	28	30				
34	103.08	102.32				112	90						16	17	18	19	20	22	24	25	28	30	32			
36	109.15	108.39				115	90						16	17	18	19	20	22	24	25	28	30	32			
38	115.21	114.45				126	100						16	17	18	19	20	22	24	25	28	30	32			
40	121.28	120.51				126	100						16	17	18	19	20	22	24	25	28	30	32			
44	133.40	132.64				138	125						16	17	18	19	20	22	24	25	28	30	32	35	38	

L100B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																					
	PD	OD	LA	LB	W	H	K	D	F	M																					
14	42.45	41.68						30	47	34	10	11	12	14	15																
15	45.48	44.72						32	51	36	10	11	12	14	15	16	17														
16	48.51	47.75						34	55	39			12	14	15	16	17														
17	51.54	50.78						35	57	41			12	14	15	16	17														
18	54.57	53.81						36	61	41			12	14	15	16	17	18													
19	57.61	56.84						38	65	50			12	14	15	16	17	18	19												
20	60.64	59.88		45			12	40	65	50			12	14	15	16	17	18	19	20											
21	63.67	62.91						42	69	50			12	14	15	16	17	18	19	20	22										
22	66.70	65.94						44	74	53			12	14	15	16	17	18	19	20	22	24	25								
24	72.77	72.00	33		28	2.5		44	78	58			12	14	15	16	17	18	19	20	22	24	25								
25	75.80	75.04						44	83	63			12	14	15	16	17	18	19	20	22	24	25								
26	78.83	78.07						44	86	66			12	14	15	16	17	18	19	20	22	24	25								
28	84.89	84.13						50	93	75			12	14	15	16	17	18	19	20	22	24	25	28	30						
30	90.96	90.20						50	99	78			12	14	15	16	17	18	19	20	22	24	25	28	30						
32	97.02	96.26						50	105	84						16	17	18	19	20	22	24	25	28	30						
34	103.08	102.32						56	112	90						16	17	18	19	20	22	24	25	28	30						
36	109.15	108.39		48			15	56	115	90						16	17	18	19	20	22	24	25	28	30	32					
38	115.21	114.45						60	126	100						16	17	18	19	20	22	24	25	28	30	32					
40	121.28	120.51						60	126	100						16	17	18	19	20	22	24	25	28	30	32					
44	133.40	132.64		53			20	65	138	125						16	17	18	19	20	22	24	25	28	30	32	35	38			

The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)

H DIMENSIONS

H100A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	W	H	F	M																							
14	56.60	55.22				61	41	14	15	16	17	18	19	20	22	24	25													
15	60.64	59.27				65	50			16	17	18	19	20	22	24	25	28	30											
16	64.68	63.31				69	50			16	17	18	19	20	22	24	25	28	30	32										
18	72.77	71.39				78	58			16	17	18	19	20	22	24	25	28	30	32	35									
19	76.81	75.44				83	63			16	17	18	19	20	22	24	25	28	30	32	35									
20	80.85	79.48				86	66			16	17	18	19	20	22	24	25	28	30	32	35	38								
21	84.89	83.52				90	73			16	17	18	19	20	22	24	25	28	30	32	35	38								
22	88.94	87.56				93	75							20	22	24	25	28	30	32	35	38								
24	97.02	95.65	33	28	2.5	105	84							20	22	24	25	28	30	32	35	38	40							
25	101.06	99.69				108	84							20	22	24	25	28	30	32	35	38	40							
26	105.11	103.73				112	90							20	22	24	25	28	30	32	35	38	40	42						
28	113.19	111.82				118	90							20	22	24	25	28	30	32	35	38	40	42						
30	121.28	119.90				126	100							20	22	24	25	28	30	32	35	38	40	42						
32	129.36	127.99				136	118							20	22	24	25	28	30	32	35	38	40	42	45					
34	137.45	136.07				146	128							20	22	24	25	28	30	32	35	38	40	42	45					
36	145.53	144.16				152	134							20	22	24	25	28	30	32	35	38	40	42	45	48				
40	161.70	160.33				168	150							20	22	24	25	28	30	32	35	38	40	42	45	48	50			

H100B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																				
	PD	OD	LA	LB	W	H	K	D	F	M																				
14	56.60	55.22						38	61	41	14	15	16	17	18	19	20													
15	60.64	59.27						46	65	50			16	17	18	19	20	22	24	25										
16	64.68	63.31						46	69	50			16	17	18	19	20	22	24	25										
18	72.77	71.39						54	78	58			16	17	18	19	20	22	24	25	28	30								
19	76.81	75.44						55	83	63			16	17	18	19	20	22	24	25	28	30								
20	80.85	79.48						56	86	66			16	17	18	19	20	22	24	25	28	30	32							
21	84.89	83.52		48			15	58	90	73			16	17	18	19	20	22	24	25	28	30	32							
22	88.94	87.56						58	93	75							20	22	24	25	28	30	32							
24	97.02	95.65	33		28	2.5		62	105	84							20	22	24	25	28	30	32	35	38					
25	101.06	99.69						66	108	84							20	22	24	25	28	30	32	35	38	40				
26	105.11	103.73						70	112	90							20	22	24	25	28	30	32	35	38	40	42			
28	113.19	111.82						74	118	90							20	22	24	25	28	30	32	35	38	40	42			
30	121.28	119.90						74	126	100							20	22	24	25	28	30	32	35	38	40	42			
32	129.36	127.99						78	136	118							20	22	24	25	28	30	32	35	38	40	42	45		
34	137.45	136.07		53			20	82	146	128							20	22	24	25	28	30	32	35	38	40	42	45		
36	145.53	144.16						82	152	134							20	22	24	25	28	30	32	35	38	40	42	45	48	
40	161.70	160.33						88	168	150							20	22	24	25	28	30	32	35	38	40	42	45	48	50

H150A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	W	H	F	M																							
14	56.60	55.22				61	41	14	15	16	17	18	19	20	22	24	25													
15	60.64	59.27				65	50			16	17	18	19	20	22	24	25	28	30											
16	64.68	63.31				69	50			16	17	18	19	20	22	24	25	28	30	32										
18	72.77	71.39				78	58			16	17	18	19	20	22	24	25	28	30	32	35									
19	76.81	75.44				83	63			16	17	18	19	20	22	24	25	28	30	32	35									
20	80.85	79.48				86	66			16	17	18	19	20	22	24	25	28	30	32	35	38								
21	84.89	83.52				90	73			16	17	18	19	20	22	24	25	28	30	32	35	38								
22	88.94	87.56				93	75							20	22	24	25	28	30	32	35	38								
24	97.02	95.65	45	40	2.5	105	84							20	22	24	25	28	30	32	35	38	40							
25	101.06	99.69				108	84							20	22	24	25	28	30	32	35	38	40							
26	105.11	103.73				112	90							20	22	24	25	28	30	32	35	38	40	42						
28	113.19	111.82				118	90							20	22	24	25	28	30	32	35	38	40	42						
30	121.28	119.90				126	100							20	22	24	25	28	30	32	35	38	40	42						
32	129.36	127.99				136	118							20	22	24	25	28	30	32	35	38	40	42	45					
34	137.45	136.07				146	128							20	22	24	25	28	30	32	35	38	40	42	45					
36	145.53	144.16				152	134							20	22	24	25	28	30	32	35	38	40	42	45	48				
40	161.70	160.33				168	150							20	22	24	25	28	30	32	35	38	40	42	45	48	50			

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

H DIMENSIONS

H150B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	LB	W	H	K	D	F	M																					
14	56.60	55.22						38	61	41	14	15	16	17	18	19	20														
15	60.64	59.27						46	65	50			16	17	18	19	20	22	24	25											
16	64.68	63.31						46	69	50			16	17	18	19	20	22	24	25											
18	72.77	71.39						54	78	58			16	17	18	19	20	22	24	25	28	30									
19	76.81	75.44						55	83	63			16	17	18	19	20	22	24	25	28	30									
20	80.85	79.48						56	86	66			16	17	18	19	20	22	24	25	28	30	32								
21	84.89	83.52		60			15	58	90	73			16	17	18	19	20	22	24	25	28	30	32								
22	88.94	87.56						58	93	75							20	22	24	25	28	30	32								
24	97.02	95.65	45		40	2.5		62	105	84							20	22	24	25	28	30	32	35	38						
25	101.06	99.69						66	108	84							20	22	24	25	28	30	32	35	38	40					
26	105.11	103.73						70	112	90							20	22	24	25	28	30	32	35	38	40	42				
28	113.19	111.82						74	118	90							20	22	24	25	28	30	32	35	38	40	42				
30	121.28	119.90						74	126	100							20	22	24	25	28	30	32	35	38	40	42				
32	129.36	127.99						78	136	118							20	22	24	25	28	30	32	35	38	40	42	45			
34	137.45	136.07		65			20	82	146	128							20	22	24	25	28	30	32	35	38	40	42	45			
36	145.53	144.16						82	152	134							20	22	24	25	28	30	32	35	38	40	42	45	48		
40	161.70	160.33						88	168	150							20	22	24	25	28	30	32	35	38	40	42	45	48	50	

H200A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																			
	PD	OD	LA	W	H	F	M																				
14	56.60	55.22				61	41	16	17	18	19	20	22	24	25												
15	60.64	59.27				65	50	16	17	18	19	20	22	24	25	28	30										
16	64.68	63.31				69	50	16	17	18	19	20	22	24	25	28	30	32									
18	72.77	71.39				78	58	16	17	18	19	20	22	24	25	28	30	32	35								
19	76.81	75.44				83	63	16	17	18	19	20	22	24	25	28	30	32	35								
20	80.85	79.48				86	66	16	17	18	19	20	22	24	25	28	30	32	35	38							
21	84.89	83.52				90	73	16	17	18	19	20	22	24	25	28	30	32	35	38							
22	88.94	87.56				93	75					20	22	24	25	28	30	32	35	38							
24	97.02	95.65	59	54	2.5	105	84					20	22	24	25	28	30	32	35	38	40						
25	101.06	99.69				108	84					20	22	24	25	28	30	32	35	38	40						
26	105.11	103.73				112	90					20	22	24	25	28	30	32	35	38	40	42					
28	113.19	111.82				118	90					20	22	24	25	28	30	32	35	38	40	42					
30	121.28	119.90				126	100					20	22	24	25	28	30	32	35	38	40	42					
32	129.36	127.99				136	118					20	22	24	25	28	30	32	35	38	40	42	45				
34	137.45	136.07				146	128					20	22	24	25	28	30	32	35	38	40	42	45				
36	145.53	144.16				152	134					20	22	24	25	28	30	32	35	38	40	42	45	48			
40	161.70	160.33				168	150					20	22	24	25	28	30	32	35	38	40	42	45	48	50		

H200B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																						
	PD	OD	LA	LB	W	H	K	D	F	M																					
14	56.60	55.22						38	61	41	16	17	18	19	20																
15	60.64	59.27						46	65	50	16	17	18	19	20	22	24	25													
16	64.68	63.31						46	69	50	16	17	18	19	20	22	24	25													
18	72.77	71.39						54	78	58	16	17	18	19	20	22	24	25	28	30											
19	76.81	75.44						55	83	63	16	17	18	19	20	22	24	25	28	30											
20	80.85	79.48						60	86	66					20	22	24	25	28	30	32	35									
21	84.89	83.52		74			15	65	90	73					20	22	24	25	28	30	32	35	38	40							
22	88.94	87.56						70	93	75					20	22	24	25	28	30	32	35	38	40	42	45					
24	97.02	95.65	59		54	2.5		74	105	84					20	22	24	25	28	30	32	35	38	40	42	45	48				
25	101.06	99.69						74	108	84								25	28	30	32	35	38	40	42	45	48	50			
26	105.11	103.73						78	112	90								25	28	30	32	35	38	40	42	45	48	50			
28	113.19	111.82						78	118	90								25	28	30	32	35	38	40	42	45	48	50			
30	121.28	119.90						86	126	100								25	28	30	32	35	38	40	42	45	48	50			
32	129.36	127.99		79			20	92	136	118								25	28	30	32	35	38	40	42	45	48	50			
34	137.45	136.07						98	146	128								25	28	30	32	35	38	40	42	45	48	50	55		
36	145.53	144.16						98	152	134								25	28	30	32	35	38	40	42	45	48	50	55		
40	161.70	160.33						104	168	150											32	35	38	40	42	45	48	50	55	60	

**The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)*

T10 DIMENSIONS

T10-15-A Available materials: Steel

No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																			
	PD	OD	LA	W	H	F	M																				
12	38.20	36.35				43	28	8	9	10	11	12	14														
14	44.56	42.70				47	34			10	11	12	14	15	16	17	18										
15	47.75	45.90				51	36			10	11	12	14	15	16	17	18	19	20								
16	50.93	49.05				57	41			10	11	12	14	15	16	17	18	19	20	22							
18	57.30	55.45				61	41					12	14	15	16	17	18	19	20	22	24	25					
20	63.66	61.80				69	50					12	14	15	16	17	18	19	20	22	24	25	28				
22	70.03	68.15				74	53					12	14	15	16	17	18	19	20	22	24	25	28				
24	76.39	74.55	22	17	2.5	83	63					12	14	15	16	17	18	19	20	22	24	25	28				
25	79.58	77.70				86	66					12	14	15	16	17	18	19	20	22	24	25	28				
26	82.76	80.90				86	66					12	14	15	16	17	18	19	20	22	24	25	28	30			
28	89.13	87.25				93	75					12	14	15	16	17	18	19	20	22	24	25	28	30			
30	95.49	93.65				99	78					12	14	15	16	17	18	19	20	22	24	25	28	30			
32	101.86	100.00				105	84						14	15	16	17	18	19	20	22	24	25	28	30	32		
36	114.59	112.75				118	90						14	15	16	17	18	19	20	22	24	25	28	30	32		
40	127.32	125.45				131	101						14	15	16	17	18	19	20	22	24	25	28	30	32		

T10-15-B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																
	PD	OD	LA	LB	W	H	K	D	F	M																	
12	38.20	36.35						25	43	28	8	9	10	11	12												
14	44.56	42.70						30	47	34			10	11	12	14	15										
15	47.75	45.90						33	51	36			10	11	12	14	15	16	17								
16	50.93	49.05						35	57	41			10	11	12	14	15	16	17								
18	57.30	55.45						37	61	41					12	14	15	16	17	18	19						
20	63.66	61.80			32		10	40	69	50					12	14	15	16	17	18	19	20	22				
22	70.03	68.15						40	74	53					12	14	15	16	17	18	19	20	22				
24	76.39	74.55	22			17	2.5	40	83	63					12	14	15	16	17	18	19	20	22				
25	79.58	77.70						40	86	66					12	14	15	16	17	18	19	20	22				
26	82.76	80.90						45	86	66					12	14	15	16	17	18	19	20	22	24	25		
28	89.13	87.25						45	93	75					12	14	15	16	17	18	19	20	22	24	25		
30	95.49	93.65						45	99	78					12	14	15	16	17	18	19	20	22	24	25		
32	101.86	100.00						50	105	84						14	15	16	17	18	19	20	22	24	25	28	30
36	114.59	112.75			35		13	50	118	90						14	15	16	17	18	19	20	22	24	25	28	30
40	127.32	125.45						50	131	101						14	15	16	17	18	19	20	22	24	25	28	30

T10-25-A Available materials: Steel

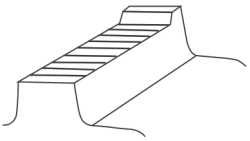
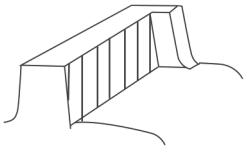
No. of Teeth	Dimensions (mm)							Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																			
	PD	OD	LA	W	H	F	M																				
14	44.56	42.70				47	34	10	11	12	14	15	16	17	18												
15	47.75	45.90				51	36	10	11	12	14	15	16	17	18	19	20										
16	50.93	49.05				57	41	10	11	12	14	15	16	17	18	19	20	22									
18	57.30	55.45				61	41			12	14	15	16	17	18	19	20	22	24	25							
20	63.66	61.80				69	50			12	14	15	16	17	18	19	20	22	24	25	28						
22	70.03	68.15				74	53			12	14	15	16	17	18	19	20	22	24	25	28						
24	76.39	74.55	32	27	2.5	83	63			12	14	15	16	17	18	19	20	22	24	25	28						
25	79.58	77.70				86	66			12	14	15	16	17	18	19	20	22	24	25	28						
26	82.76	80.90				86	66			12	14	15	16	17	18	19	20	22	24	25	28	30					
28	89.13	87.25				93	75			12	14	15	16	17	18	19	20	22	24	25	28	30					
30	95.49	93.65				99	78			12	14	15	16	17	18	19	20	22	24	25	28	30					
32	101.86	100.00				105	84				14	15	16	17	18	19	20	22	24	25	28	30	32				
36	114.59	112.75				118	90				14	15	16	17	18	19	20	22	24	25	28	30	32				
40	127.32	125.45				131	101				14	15	16	17	18	19	20	22	24	25	28	30	32				

T10-25-B Available materials: Steel

No. of Teeth	Dimensions (mm)										Applicable shaft hole diameter (mm) (*Shaft hole tolerance H7)																
	PD	OD	LA	LB	W	H	K	D	F	M																	
14	44.56	42.70						30	47	34	10	11	12	14	15												
15	47.75	45.90						33	51	36	10	11	12	14	15	16	17										
16	50.93	49.05						35	57	41	10	11	12	14	15	16	17										
18	57.30	55.45						37	61	41			12	14	15	16	17	18									
20	63.66	61.80						40	69	50			12	14	15	16	17	18	19	20							
22	70.03	68.15						40	74	53			12	14	15	16	17	18	19	20							
24	76.39	74.55						40	83	63			12	14	15	16	17	18	19	20							
25	79.58	77.70	32	45	27	2.5	13	40	86	66			12	14	15	16	17	18	19	20							
26	82.76	80.90						45	86	66			12	14	15	16	17	18	19	20	22	24	25				
28	89.13	87.25						45	93	75			12	14	15	16	17	18	19	20	22	24	25				
30	95.49	93.65						45	99	78			12	14	15	16	17	18	19	20	22	24	25				
32	101.86	100.00						50	105	84				14	15	16	17	18	19	20	22	24	25	28	30		
36	114.59	112.75						50	118	90				14	15	16	17	18	19	20	22	24	25	28	30		
40	127.32	125.45						50	131	101				14	15	16	17	18	19	20	22	24	25	28	30		

The highlighted blue sizes have insufficient tap length, so semi-standard set screws are included. (See page 2)

• Timing Pulley Inspection Items and Replacement Times

Inspection Items	Malfunctions and Inspection Methods	Processing after Inspection
Outer Diameter Wear	MALFUNCTION: Outer diameter wear of pulley INSPECTION METHOD: Measure the outer diameter of the belt running part with a micrometer. 	If the pulley is worn down by more than 0.05 mm from the standard outside diameter (specified in the catalog), replace the pulley.
Tooth Surface Wear	MALFUNCTION: Pulley tooth surface wear INSPECTION METHOD: Measure the step with a dial gauge or measure the tooth thickness with a dial caliper. 	If there is a difference of 0.05 mm or more between the pulley and the belt, replace the pulley.
Tooth Surface Condition	MALFUNCTION 1: Rust formation INSPECTION METHOD: Visual inspection	Remove any rust before using. If the rust is severe, replace the pulley.
	MALFUNCTION 2: The outer diameter and side of the teeth are significantly worn down and resemble file marks. INSPECTION METHOD: Visual inspection	It is very difficult to judge by visual inspection, but as a guideline, if the surface roughness is 25S or higher, replace the pulley.
Flange Condition	MALFUNCTION 1: The flange is bent INSPECTION METHOD: Visual inspection	Repair the flange or replace it with a new one.
	MALFUNCTION 2: The flange comming off the pulley or there is a wobble. INSPECTION METHOD: Visual inspection	Reinstall the flange securely.

• Causes of Early Failure of Timing Belts and Pulleys and their Countermeasures

Failure	Cause	Treatment
Belt side abnormal wear	• Poor pulley alignment • Insufficient parallelism of the pulley shaft • Bent pulley flange	• Re-adjust the alignment • Correct the parallelism of the pulley shafts • Correct any bent flanges
Abnormal wear on the pressure acting surfaces of teeth	• Overload • Belt is too tight or too loose	• Change the design and widen the belt or change to a belt with a larger tooth pitch • Adjust the initial belt tension
Abnormal wear on the part that comes into contact with the outer periphery of the pulley	• Improper pulley tooth profile • Excessive belt tension	• Adjust the pulley tooth profile to the correct dimensions • Pay particular attention to the radius of the pulley teeth when replacing • Adjust the initial tension of the belt.
Missing teeth	• Pulley diameter is too small • Small pulley meshing is 6 teeth or less • Shock load is applied	• Change the design • Increase the number of meshing teeth on the small pulley or change the design • Widen the belt width
Cord breakage	• Overload • Loss of elasticity or corrosion of the core wire • Foreign matter getting caught • Use at temperatures above 176°F	• Make design changes • Check the storage and transportation conditions of the belt • Install a cover around the belt • Improve the environmental temperature, or change to cold-resistant (heat-resistant) specifications.
Cracks on the back (back rubber)	• Use in an environment below -22°F • Pulley diameter is too small	• Improve the environmental temperature or change to cold-resistant (heat-resistant) specifications. • Increase the pulley diameter
Thermal degradation of the rubber	• Heat aging rubber due to environmental temperatures above 176°F	• Improve the environmental temperature or change to cold-resistant (heat-resistant) specifications.
Rubber swelling	• Oil adheres • Water adheres	• Avoid oil adhesion • Prevent water adhesion
Abnormal wear of pulley teeth	• Overload • Belt too tight • Pulley material is not suitable (too soft)	• Change the design • Adjust the initial tension of the belt • Apply surface treatment or change the material
Pulley circumference wear	• Pulley life • Belt is too tight (the core wire is visible on the back of the belt)	• Replace with a new pulley • Replace with a new pulley and belt, and at the same time loosen the belt tension
Abnormal operating noise	• Poor alignment • Excessive belt tension • Overload • Insufficient pulley diameter • Poor pulley tooth profile	• Readjust the alignment • Adjust the initial belt tension • Change the design • Increase the pulley diameter • Adjust the pulley tooth profile to the standard dimensions
Apparent belt stretch	• Short center distance • Loose foundation	• Adjust to the correct axis distance • Strengthen the foundation fixation

Safety Precautions for Timing Belts and Pulleys

Please read all the warnings!

Please take all necessary precautions when using our products. Also, Please review relevant product catalog and design documents, etc.

Significances of safety precautions are categorized as follows:

Symbol	Classification	Meaning
⚠	**DANGER**	Imminently causing death or severe injury to the user who misuses products.
⚠	**WARNING**	Possibly causing death or severe injury to the user who misuses products.
⚠	**CAUTION**	Possibly causing personal injury or property damage if misused.

Power Transmission Products

Application	
⚠ **Danger**	• If you expect that the system will run idle, run free, or stop due to break of the belt, please provide an extra safety device. Otherwise, you will be at high risk for death or serious injuries. ⃠ Do not use a belt as a lifting or towing tool. Otherwise, you will be at high risk for death or serious injuries by fall or collision of lifted objects due to break of the belt.
⚠ **Warning**	• If you expect that static electricity will come from the power transmission belt system, set a neutralization apparatus in the system. Otherwise, you might die or suffer serious injuries by fire or malfunction of the controller due to such static electricity.
⚠ **Caution**	• Do not use a belt as an insulator. Otherwise, you might suffer injuries by an electric shock, etc. Contact us for information on insulation properties, which vary by belt type. • For a belt that touches food directly, use one that complies with the applicable food hygiene law of your country. Use of belt which does not comply with the law, might cause health hazard due to transfer of toxic substances such as oil from the belt to foods, to the end customers who have had the foods. • Do not modify a belt, or its quality and performance can deteriorate and you might suffer injuries.
Function & Performance	
⚠ **Caution**	• Do not use a belt beyond "its capacity" or outside "the scope of application" specified by the catalog and design documents, etc.Such use can cause premature failure of the belt, and you might suffer injuries. • If water, oil, chemical, paint, dust, etc. sticks to a belt or pulley, its power transmission could deteriorate and the belt may fail earlier, and you might suffer injuries. • A synchronous (toothed) belt may make louder noise during high-speed rotation. If this occurs, use a sound proof cover.
Storage & Transportation	
⚠ **Warning**	• To store a heavy belt, use a suitable jig or stopper to prevent accidents such as belt toppling or tumbling. If a heavy belt toppled or tumbled, you might die or suffer serious injuries by being caught between the belt and the floor.
⚠ **Caution**	• Use suitable equipment to carry/handle a heavy belt or pulley. Otherwise, you may suffer back injury. • Do not put weight on or bend a belt forcibly to carry or store it. Otherwise, it will produce defects or scratches to the belt, resulting in damage, and you might suffer injuries. • Store the belt in low humidity and within a temperature range of -10 to 40 . Do not expose belts to direct sunlight. Otherwise, you might have a difficulty in incorporating the belt appropriately into the intended portion due to its contraction or loosening.
Mounting & Operation	
⚠ **Danger**	• Install a safety cover over any rotating components including belt or pulley. Otherwise, your hair, gloves and clothing can become entangled in the belt or pulley and you will be at high risk for death or serious injuries. If a belt or pulley breaks, you will be at high risk for injuries by fragments.
⚠ **Caution**	• Make proper adjustment to system in accordance with the parallelism tolerance and degree of eccentricity specified in the relevant catalog etc. Misalignment of the pulleys can damage the belt and result in flange failure, and you might suffer injuries. • Do not cut a belt while tension is applied, otherwise the belt may burst out and cause personal injury. • Make sure the belt is properly set into the pulley groove before use. Improper application of a belt may cause its premature failure or personal injury. • The belt and the pulley may be extremely hot after the operation. Allow them to cool down sufficiently before touch. Otherwise, you may get burned. • Apply the appropriate belt tension as specified in the relevant catalog and design documents, etc. Inappropriate tension could result in damage of the belt and shaft. • Take the following precautions to modify the pulley in use: 1) Remove burrs and maintain proper pulley angle; 2) Secure accurate dimensions after modification; 3) Maintain the pulley strength after modification. Otherwise, such non-fulfillment could cause damage of the belt or pulley or you might suffer damages. • Before assembling the flange with the pulley, make sure there is no foreign material between the pulley and the flange. Fasten the flange with a caulking tool. The flange may come off when it is not correctly installed.
Maintenance, Checking, & Replacement	
⚠ **Danger**	• Take the following precautions to maintain, inspect and/or replace a belt or pulleys. Otherwise, you will be at high risk for death or serious injuries by being entangled in the belt and/or pulley. 1) Turn off power and wait until the belt and pulley have stopped completely. 2) Secure machinery so that it may not move during belt removal. 3) Make sure that the machine will not unintentionally be turned on during work.
⚠ **Caution**	• Use the same type of belts or pulleys as those originally used. Use of a different type may cause premature failure, and you might suffer injuries. • Loosen the belt tension when changing belts. Do not force or stretch a belt over the flange. Do not use a screw driver or other sharp objects when replacing the belt as this might result in damage. • For the multiple belt drive, always change all belts at the same time. Failure to do so may shorten the service lives of the belts or cause personal injury.
Handling of Used Items	
⚠ **Warning**	• Do not burn belt within a closed space, or hazardous gas can be produced, and you might die or suffer serious injuries by toxicosis.
⚠ **Caution**	• Do not burn belt even in an airy place, or hazardous gas can be produced and you might suffer injuries by toxicosis.

MBL (USA) CORPORATION

Plant & Warehouse
601 Dayton Road
Ottawa, IL 61350
www.mblusa.com

Sales & Engineering
1600 Golf Road, Suite 1251
Rolling Meadows, IL 60008
mblusa.sales@mitsuboshi.com

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