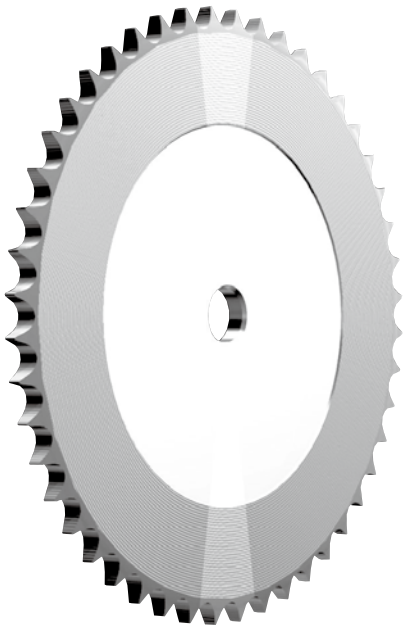
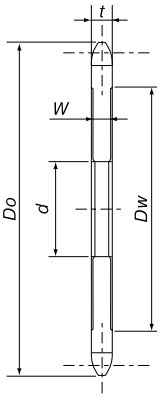
Sprockets Torque Limiter Sprockets



Made-to-order

Torque limiters are typical mechanical devices for overload protection, and as such it is essential that the friction surface of the center member be finished properly to ensure the precise, accurate overload detection of the torque limiter.
Dedicated sprockets for torque limiters are provided with special surface processing to realize the ideal surface finish.



Model numbering example

RS40 - 1A 20T - CM 30

- RS40: Size
- 1: Number of strands
- A: Hub type
- 20T: Number of teeth
- CM: Torque limiter sprocket
- 30: Finished bore dia. *d*

Size	RS40	RS50	RS60	RS80	RS100
W	6.5	8.0	10.5	13.5	16.0
t	7.3	8.9	11.9	15.0	18.0

- Operating conditions: Sprocket width > Torque limiter bush width (The sprocket width must be larger than the bush width.)
- All other dimensions are the same as those for standard 1A Type sprockets.
- Refer to the following table for the *d* and *Dw* ranges.
- Uses an H7 finished bore diameter (*d*).

Note: Be sure to check with the torque limiter manufacturer's catalog for the dimensions of each part. Specify the model number of the torque limiter when placing your order.

Torque limiter lompatibility table (Ref.)

Applicable sprocket range *d* × *Dw*

Number of teeth		16	17	18	19	20	21	22	23	24	25	26	27	28	30	32	34	35	36	38	40	42	45	48	50
RS40	TL200	30×53																							
	TL250					41×68																			
	TL350											49×92													
RS50	TL250		41×68																						
	TL350						49×92																		
	TL500														74×132										
RS60	TL350			49×92																					
	TL500										74×132														
	TL700																	105×184							
RS80	TL500			74×132																					
	TL700											105×184													
RS100	TL700						105×184																		

Sprockets compatible with torque limiters from every major manufacturer are available. We also offer made-to-order sprockets. Contact a Tsubaki representative for more information.
Note: Check the bush width if TL250 or TL350 are used with RS40 sprockets.

Pin Gear Drives Chain-type Pin Gears

For linear drive and large radius rotary drives, a chain gear drive is used by a drive source (motor, etc.) through a reducer. Chains require a large space, and gears need precision machining, which can lead to high costs and other issues. Pin gears are perfect in these situations.
An attachment chain is wound around the outside of a drum in place of a gear drive wheel, and a specially machined sprocket is used for the pinion gear. For linear drives, the attachment chain is attached linearly and used in place of a rack.

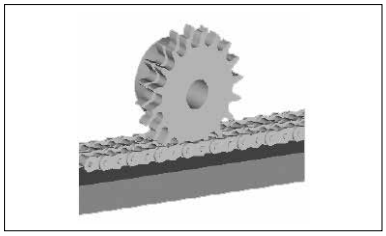
The following is a rough comparison of pin gears and gear racks.

	Freedom of layout	Precision	Cost	Durability
Pin gears	Excellent	OK	Good	Good
Gear racks	Poor	Good	OK	OK

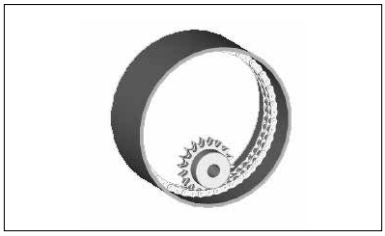
◆ Pin gear drive types

There are linear, inner rotary, and outer rotary pin gear drives.

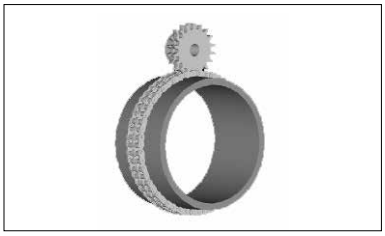
Linear



Inner rotary



Outer rotary



Pin Gear Drives Sprockets for Chain-type Pin Gears

Unlike sprockets where the chain wraps around them, sprockets for pin gears engage the chain, which requires them to have special teeth profiles. Using a unique principle, Tsubaki's special tooth profiles are designed for the lowest possible backlash and enable smooth engagement. Especially, the tooth profile changes to match the mounting diameter of the pin gear chain in inner/outer rotary applications for the optimal pin gear drive. Teeth have been hardened to increase their strength and wear resistance. Note: These products are made-to-order. Contact a Tsubaki representative for details.

◆ Reference dimensions

■ Pin gear sprockets by number of teeth

(The table below shows reference dimensions. They will vary depending on the drive system and number of chain links.) (Unit : mm)

Size	RS40		RS50		RS60		RS80		RS100		RS120		RS140		RS160	
Tooth width	7.3		8.9		11.9		15.0		18.0		24.0		24.0		30.0	
No. of teeth	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O
15	62.29	70.9	77.77	88.1	93.32	106.3	124.17	141.8	155.09	177.9	186.11	212.8	216.94	247.7	247.94	282.2
16	66.33	75.1	82.82	93.3	99.38	112.6	132.26	150.1	165.19	188.1	198.23	224.9	231.09	261.6	264.11	298.4
17	70.37	79.3	87.87	98.6	105.45	119.0	140.34	158.6	175.30	198.2	210.36	237.0	245.24	275.7	280.28	314.6
18	74.42	83.5	92.93	103.9	111.51	125.3	148.43	167.1	185.41	208.3	222.49	249.2	259.39	289.9	296.45	330.7
19	78.46	87.8	97.98	109.1	117.57	131.5	156.51	175.4	195.51	218.4	234.62	261.3	273.54	304.0	312.62	346.9
20	82.50	92.0	103.03	114.3	123.64	137.9	164.60	183.7	205.62	228.5	246.74	273.4	287.69	318.2	328.79	363.1
21	86.54	96.0	108.09	119.6	129.70	144.0	172.68	191.7	215.73	238.6	258.87	285.5	301.84	332.3	344.96	379.3
22	90.56	100.1	113.14	124.9	135.77	150.1	180.77	199.8	225.83	248.7	271.00	297.7	315.99	346.5	361.13	395.4
23	94.63	104.1	118.19	130.2	141.83	156.1	188.85	207.9	235.94	258.8	283.13	309.8	330.14	360.6	377.30	411.6
24	98.67	108.2	123.24	135.4	147.89	162.2	196.94	216.0	246.04	268.9	295.25	321.9	344.28	374.8	393.47	427.8
25	102.71	112.2	128.30	140.5	153.96	168.2	205.02	224.1	256.15	279.0	307.38	334.1	358.43	388.9	409.64	443.9

Model numbering example RS80 - 1B 18T Q - G - TK

- RS80: Size
- 1B: Number of strands / Hub type
- 18T: Number of teeth
- Q: Hardened teeth
- G: Chain-type pin gear
- TK: Made-to-order

Selection

See page 207 for selection.

Pin Gear Drives Sprocket & Shaft Sets

We manufacture the sprocket together with the shaft and deliver them as a set.
There is no need for the customer to assemble them together, leading to higher cost effectiveness.

Features

- No need to assemble the shaft into the sprocket.
- No need to inspect the shaft upon receipt.
  We can also provide an inspection report with the inspection results. (Separate fee required.)
- Can be attached as-is to your equipment after receipt.
  (Bearings and the like can also be included in the assembly upon request.)
- Sprocket and shaft are sourced from the same supplier, which can reduce management man-hours compared to ordering from separate suppliers.

Comparison of time needed to install in equipment

There is no need to assemble the shaft into the sprocket, saving 30 to 35% in mounting time.

Specifications

Shaft pre-assembled	Shaft integrated
Shaft and sprocket are manufactured together and delivered assembled	Shaft is machined as part of the sprocket

- Available for Lock Sprockets as well.
- Phasing and other assembly conditions available.

Indicate the Following on Your Request for Quotation

- Sprocket specifications
- Phasing or other assembly instructions
- Shaft drawing or other material that indicates dimensions
- Parts included in assembly (shaft, keys, bearings, etc.)
  (Contact a Tsubaki representative regarding bearings.)
- Coatings, plating, etc.
- Documents needed from Tsubaki: Delivery drawings, inspection results, etc.

Innovation in Motion

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