

Features

Accommodates small-diameter sprockets and wide pulleys.

Easy torque adjustment

Trip torque can be freely adjusted by simply turning the adjustment nut.

One-position design

The balls and pockets, which transfer the torque, are arranged in a unique way in which they engage in only one position.

Automatic reset

After removing the cause of overload, the TGE Series automatically re-engages by rotating the drive side.

TGE

Type 1	Accommodates small-diameter sprockets and wide pulleys.
Type 3	A general-purpose type on which Type A sprockets and pulleys can be directly mounted.

Type 1 with sprocket



Type 3



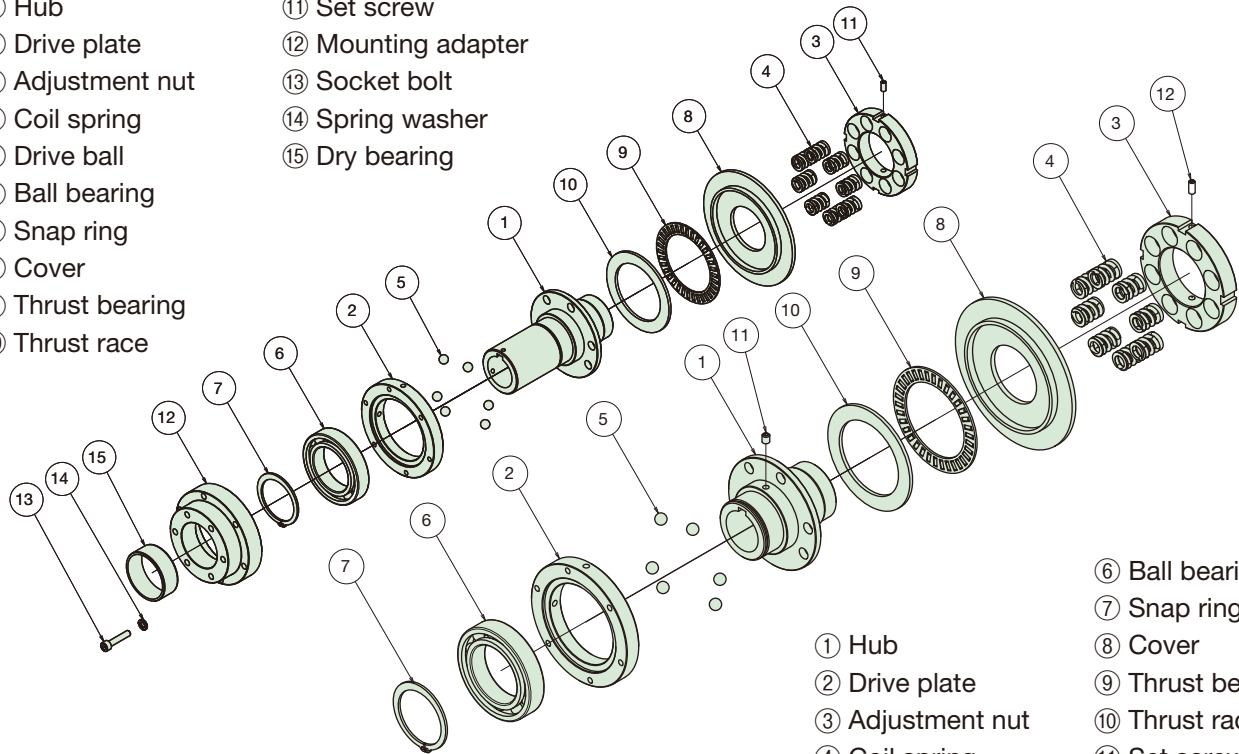
Type 3 with sprocket



Structure and Operating Principles

TGE17-1 to TGE50-1 (Type 1)

- | | |
|------------------|--------------------|
| ① Hub | ⑪ Set screw |
| ② Drive plate | ⑫ Mounting adapter |
| ③ Adjustment nut | ⑬ Socket bolt |
| ④ Coil spring | ⑭ Spring washer |
| ⑤ Drive ball | ⑮ Dry bearing |
| ⑥ Ball bearing | |
| ⑦ Snap ring | |
| ⑧ Cover | |
| ⑨ Thrust bearing | |
| ⑩ Thrust race | |

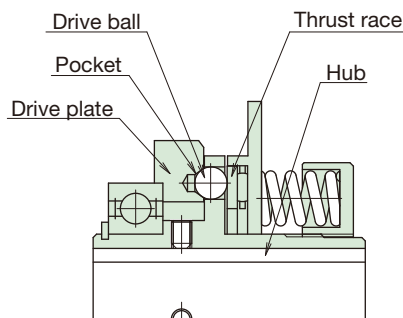


- | | |
|------------------|------------------|
| ① Hub | ⑥ Ball bearing |
| ② Drive plate | ⑦ Snap ring |
| ③ Adjustment nut | ⑧ Cover |
| ④ Coil spring | ⑨ Thrust bearing |
| ⑤ Drive ball | ⑩ Thrust race |
| | ⑪ Set screw |
| | ⑫ Set screw |

TGE17-3 to TGE50-3 (Type 3)

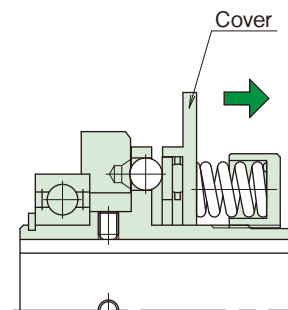
TGE17 to TGE50

During normal operation (engagement)



Torque is transmitted from the hub → drive balls → drive plate (or vice versa). Sprockets and timing pulleys are bolted directly to this drive plate. The hub flange has several holes to hold the drive balls. There are pockets on the drive plate where the drive balls are pressured by coil springs via the thrust race to transmit the torque.

During overload (tripping)



When an overload occurs, the drive balls push the thrust race toward the coil springs. The drive balls, while rotating, pop out of the pockets of the drive plate to release the driving force.

At this time, the cover moves toward the coil springs. The amount of the cover's travel is detected by a TG Sensor or a similar device. This makes it easy to automatically stop the drive source after an overload.

○ How to reset

Restarting operation after an overload allows the drive balls to automatically return to their positions within one revolution.

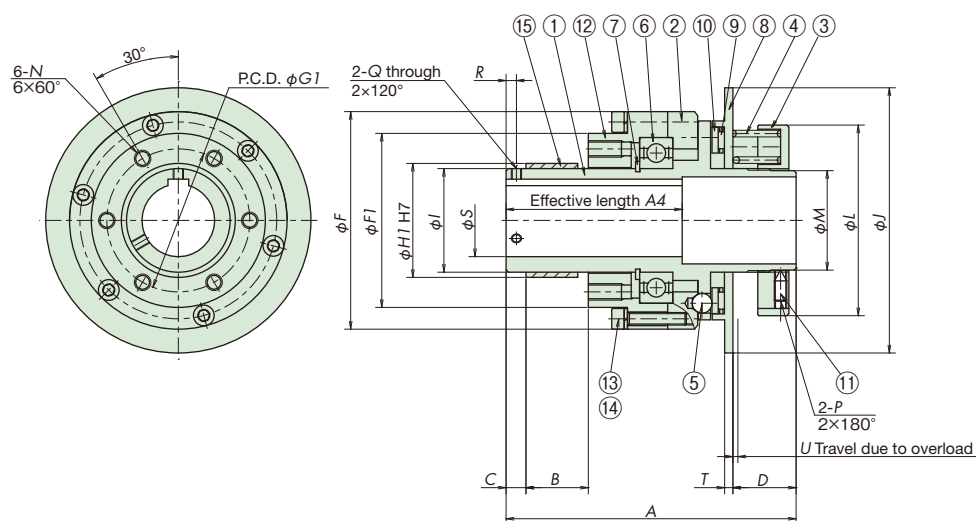
The TGE Series repeatedly resets if it is continuously rotated after an overload. Therefore, detect overloads using a TG Sensor or a similar device and shutdown the drive source immediately.

Shock Guard TGE Series

Transmission Capacity and Dimensions

■ TGE17- □ 1 to TGE50- □ 1

Type 1



Unit: mm

Model no.	Torque range N·m	Max. rpm ^{*1}	Number of coil springs	S				A	A4 ^{*4}	B	C	D	F	F1	G1 P.C.D.	H1 ^{*5}
				Pilot bore dia. ^{*2}	Min. bore dia.	Max. bore dia.	Half keyway for max. bore dia. ^{*3}									
TGE17-L1	1.0 to 5.0	870	2	—	12	15	17	87	30	22.6	7.9	16.9	57	42	35	28
TGE17-M1	2.0 to 10		4													
TGE17-H1	4.0 to 20		8													
TGE25-L1	5.0 to 25	540	2	—	12	22	25	110	50	30.1	9.6	21	84	65.5	53	44
TGE25-M1	10 to 50		4													
TGE25-H1	20 to 100		8													
TGE35-L1	20 to 100	430	2	—	17	32	35	140	85	30.1	9.6	30.5	105	84	69	55
TGE35-M1	40 to 200		4													
TGE35-H1	80 to 400		8													
TGE50-L1	30 to 200	310	3	—	27	48	50	165	115	48	9.6	30.5	145	116	94	75
TGE50-M1	60 to 400		6													
TGE50-H1	120 to 700		12													

Model no.	I	J	L	M	N Screw dia. x depth	P Screw dia. x length	Q Screw dia. ^{*6}	R ^{*6}	T	U	Mass kg ^{*7}	Moment of inertia kg·m ^{2*7}	Allowable radial load N	Dry bearing
TGE17-L1	25	70	56	26	M4x8	M4x10	M4	4	2.5	1.6	0.84	0.0011	6100	#70B2520
TGE17-M1														
TGE17-H1														
TGE25-L1	40	98	70	36	M5x9	M4x10	M5	5	3	2.0	1.9	0.0021	12200	#70B4025
TGE25-M1														
TGE25-H1														
TGE35-L1	50	128	92	48	M8x16	M6x10	M5	5	4	2.4	3.5	0.0054	12200	#70B5020
TGE35-M1														
TGE35-H1														
TGE50-L1	70	168	115	68	M8x12	M6x15	M5	5	5	3.2	7.5	0.0215	34300	#70B7040
TGE50-M1														
TGE50-H1														

*1. Contact a Tsubaki representative when using at speeds higher than the maximum rpm.

*2. Only center bore processing is available.

*3. The half keyway dimension is the maximum bore diameter when the keyway depth is limited. (Refer to the table on the right.)

*4. Contact a Tsubaki representative if you need an effective keyway length longer than the A4 dimension.

*5. The H1 dimension is the machining dimension of the inner diameter of pulleys and sprockets. (Inner diameter finished to H7 tolerances.)

*6. Pilot-bore models do not have tapped holes for set screws. Dimensions are for reference only.

*7. Mass and moment of inertia are based on the maximum bore diameter.

Note: Contact a Tsubaki representative if you want to use the Shock Guard at a torque range lower than listed in this catalog.

When installing a pulley or sprocket, use high-tensile bolts (G10.9 or higher) and determine the length carefully so that the bolts are not buried deeper than the mounting tapped hole depth N.

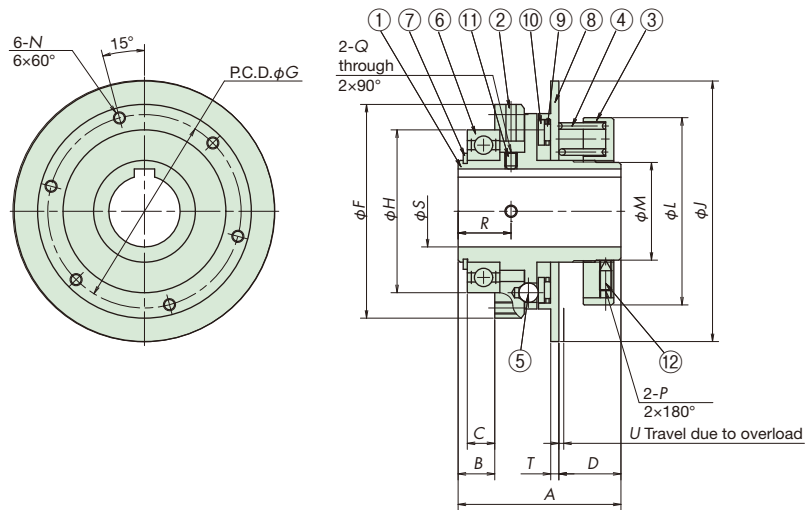
Keyway Depth Limits

Model no.	S bore dia.	Keyway width	Keyway depth
TGE17	16 – 17	5	1.8
TGE25	24 – 25	7, 8	2
TGE35	34 – 35	10	2.4
TGE50	49 – 50	12, 14	2.2

Transmission Capacity and Dimensions

■ TGE17- □ 3 to TGE50- □ 3

Type 3



- ① Hub
- ② Drive plate
- ③ Adjustment nut
- ④ Coil spring
- ⑤ Drive ball
- ⑥ Ball bearing
- ⑦ Snap ring
- ⑧ Cover
- ⑨ Thrust bearing
- ⑩ Thrust race
- ⑪ Set screw
- ⑫ Set screw

Unit: mm

Model no.	Torque range N·m	Max. rpm*1	Number of coil springs	S						A	B	C	D	F	G P.C.D.
				Pilot bore dia.*2	Min. bore dia.	Max. bore dia.	Standard bore dia. (tolerance: H7)*3								
TGE17-L3	1.0 to 5.0	900	2	—	12	17	12	15	17	47	9	6	16.9	57	50
TGE17-M3	2.0 to 10		4												
TGE17-H3	4.0 to 20		8												
TGE25-L3	5.0 to 25	900	2	10	12	25	20	22	25	60	13	9	21	84	75
TGE25-M3	10 to 50		4												
TGE25-H3	20 to 100		8												
TGE35-L3	20 to 100	750	2	15	17	35	25	30	35	80	18	13.5	30.5	105	95
TGE35-M3	40 to 200		4												
TGE35-H3	80 to 400		8												
TGE50-L3	30 to 200	570	3	25	27	50	40	45	50	95	20	15	30.5	145	130
TGE50-M3	60 to 400		6												
TGE50-H3	120 to 700		12												

Model no.	H	J	L	M	N Screw dia. × depth	P Screw dia. × length	Q Screw dia. ^{*4}	R ^{*4}	T	U	Mass kg ^{*5}	Moment of inertia kg·m ^{2*5}	Allowable radial load N	Ball bearing
TGE17-L3	42	70	56	26	M4×8	M4×10	M4	15	2.5	1.6	0.56	0.0010	3400	#6905ZZ
TGE17-M3														
TGE17-H3														
TGE25-L3	62	98	70	36	M5×10	M4×10	M5	20	3	2.0	1.3	0.0016	7500	#6908ZZ
TGE25-M3														
TGE25-H3														
TGE35-L3	80	128	92	48	M6×14	M6×10	M6	26	4	2.4	2.6	0.0037	12400	#6010ZZ
TGE35-M3														
TGE35-H3														
TGE50-L3	110	168	115	68	M8×17	M6×15	M8	31.5	5	3.2	5.1	0.0142	23200	#6014ZZ
TGE50-M3														
TGE50-H3														

*1. Contact a Tsubaki representative when using at speeds higher than the maximum rpm.

*2. Only center bore processing is available for TGE17.

*3. The keyway dimension of a product with a standard bore complies with JIS B1301, and the keyway width tolerance is Js9.

*4. Pilot-bore models do not have tapped holes for set screws. Dimensions are for reference only.

*5. Mass and moment of inertia are based on the maximum bore diameter.

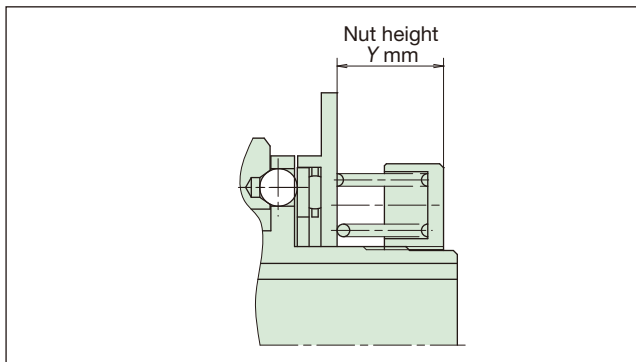
Note: Contact a Tsubaki representative if you want to use the Shock Guard at a torque range lower than listed in this catalog.

When installing a pulley or sprocket, use high-tensile bolts (G10.9 or higher) and determine the length carefully so that the bolts are not buried deeper than the mounting tapped hole depth *N*.

Products with a standard bore are delivered with a shaft-securing set screw inserted. If you will not use the set screw to secure the shaft, be sure to remove the set screw from the hub. (Screw the set screw to make it penetrate and come out of the hole).

Torque Adjustments

1. Read the nut height that corresponds to the required torque from the torque correlation charts and tighten the torque adjustment nut to that height. (Refer to the figure below.) To tighten the adjusting nut, loosen the set screws in two places. Then, use a hook spanner (sold separately, refer to the table at right) on the notched portion of the adjusting nut to turn it.
Torque Correlation Charts should be used as a rough guide only, as the trip torque may not correspond with the chart values.

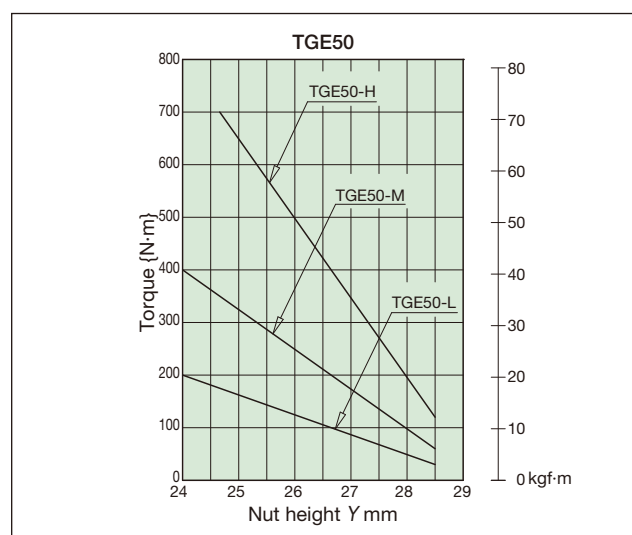
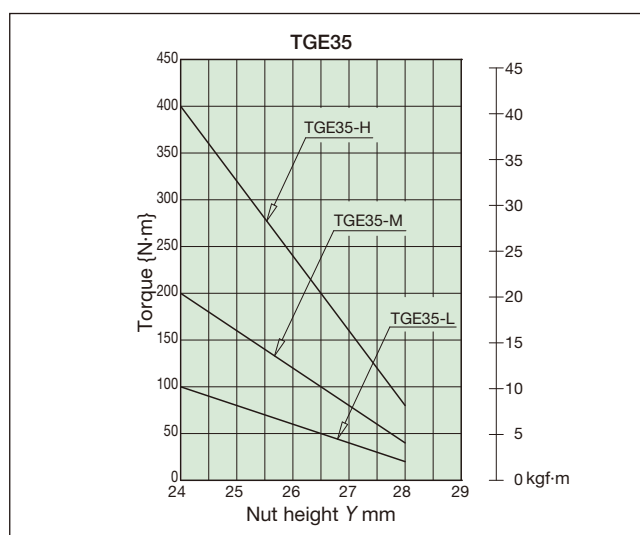
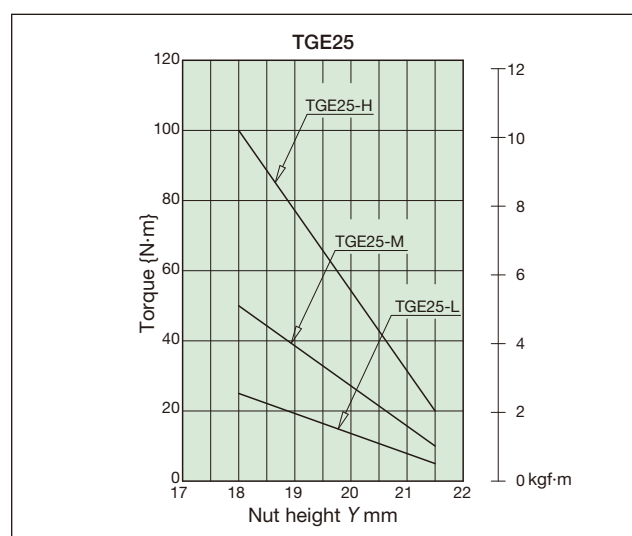
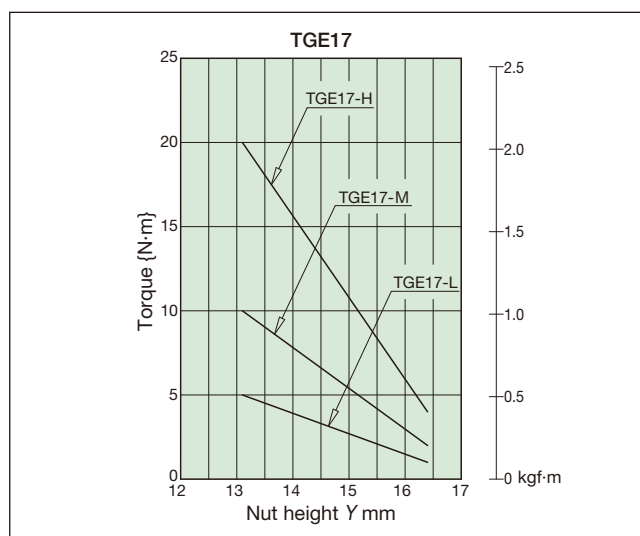


Hook Spanner

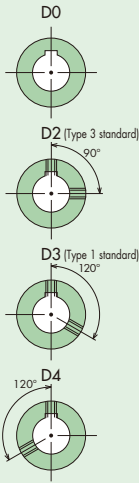
Size	TGE25	TGE35	TGE50
Wrench no.	FK-0070	FK-0092	FK-0105

2. After determining the torque value, it is recommended to write it down on the nameplate to ensure that the same torque value can be set during future overhauls. A more accurate torque adjustment can be achieved by marking matchmarks on the nut and hub edge.

Torque Correlation Charts



TGE50-M3-TH40JD2-N245

Series	Size	Spring strength	Type	Shock Guard side	Bore tolerance	Bore dia.	Keyway tolerance	Set screw position (seen from adjustment nut side)	Torque range
TGE	17 25 35 50	L: Weak M: Medium H: Strong	1: Type 1 3: Type 3	T	F: F7 G: G7 H: H7	Bore diameters are in 1 mm increments.	J: New JIS Js9 P: New JIS P9 F: Old JIS F7	 <p>D0 D2 (Type 3 standard) D3 (Type 1 standard) D4</p> <p>• D3 and D4 are available only for Type 1.</p>	<p>Shown in N·m units.</p> <ul style="list-style-type: none"> • Torque less than 10 N·m is shown to one decimal place. • Specify torque range only if required.

Pilot-bore Model

TGE50-M3

Series	Size	Spring strength	Type
TGE	17 25 35 50	L: Weak M: Medium H: Strong	1: Type 1 3: Type 3



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