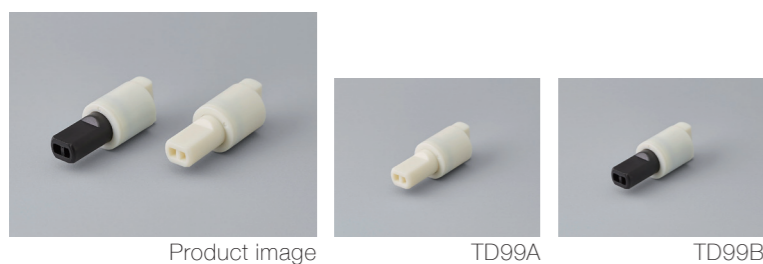


### Product lineup



#### Features

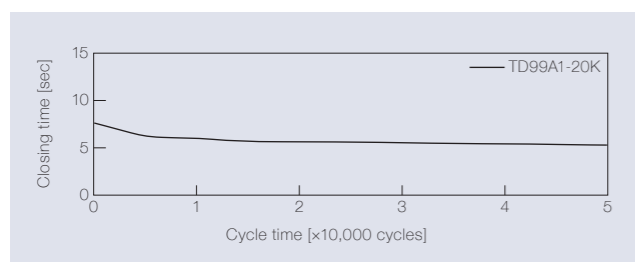
- Made with chemical-resistant PBT plastic is used
- Best-selling products
- The most popular damper design
- TD99 series is identifiable by the shaft color

Product name	Torque [N·m] (lbf·in)	Damping direction	Shaft color
TD99A1-10K	0.98 (8.67)	CW	Natural
TD99A1-15K	1.47 (13.01)		
TD99A1-20K	1.96 (17.35)		

Product name	Torque [N·m] (lbf·in)	Damping direction	Shaft color
TD99B1-10K	0.98 (8.67)	CCW	Black
TD99B1-15K	1.47 (13.01)		
TD99B1-20K	1.96 (17.35)		

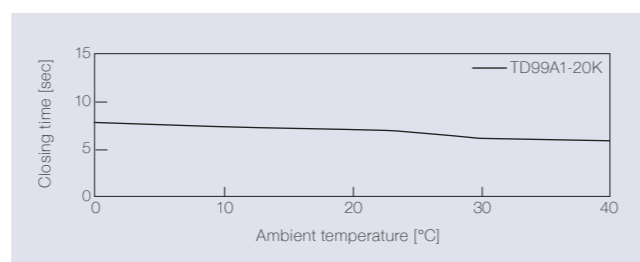
### Product specifications

#### Durability



Torque	1.96 N·m (17.35 lbf·in)
Radial load	N/A
Angle range of closing time	70 to 0 deg.
Temperature	23 ± 2°C (73.4 ± 35.6°F)
Durability	50,000 cycles

#### Temperature characteristics



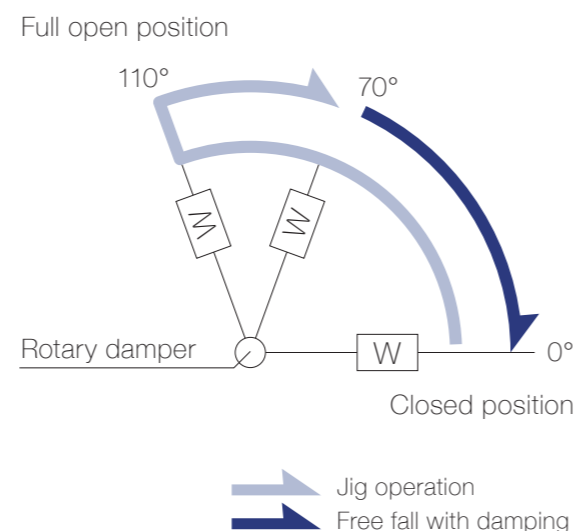
Measured according to the performance management testing method shown below after leaving in each designated ambient temperature for over one hour.

#### Performance management testing method

As the torque of partial rotation angle dampers is not consistent, the closing time measurement jig is used for the performance tests.

[Operation during measurement]  
 (Secures the housing of a rotary damper and moves its shaft)  
 All rotary dampers are managed by the following closing time test.

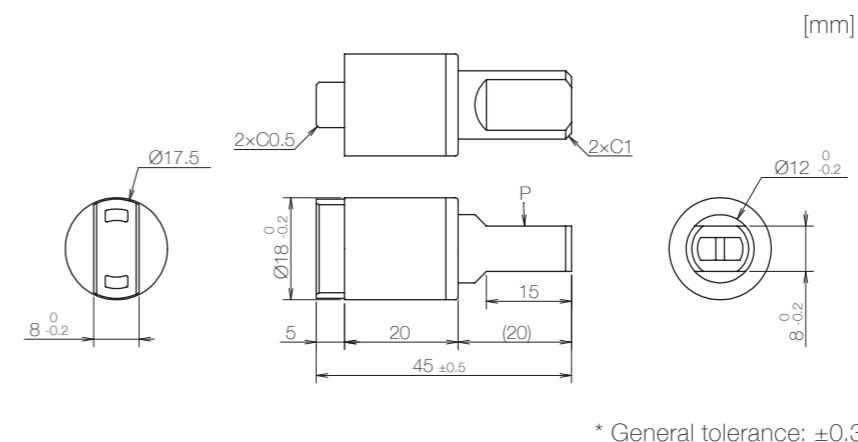
Test mode [110° → 70° (Pause) → (Free fall with damping) → 0°]  
 \* Horizontal plane: 0°



#### Inspection specification before shipping

Type	Preset torque [N·m] (lbf·in)	Closing time
10K	0.98 (8.67)	5 to 15 sec
15K	1.47 (13.01)	
20K	1.96 (17.35)	3 to 12 sec

### Product information



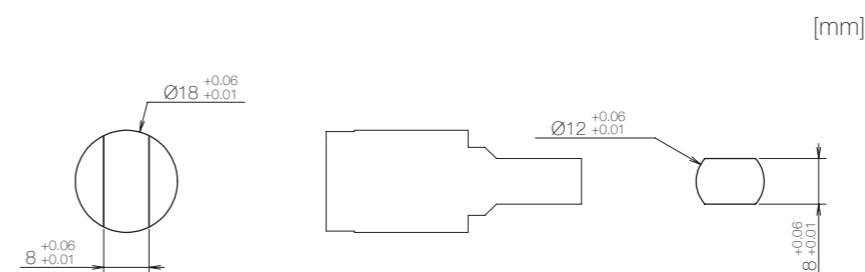
- Opening angle: 110°
- Product weight: Approx. 10 g
- Allowable radial load (P): 29.4 N

#### Main materials

Housing	Plastic (PBT)
Cap	Plastic (PBT)
Shaft	Plastic (PBT)

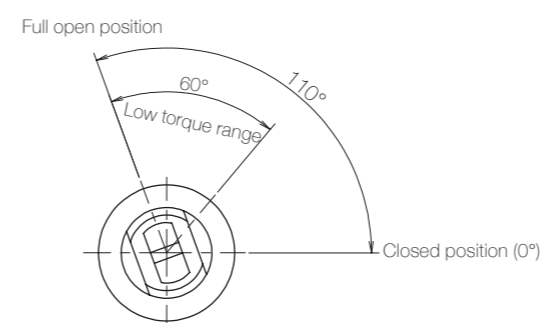
\* General tolerance: ±0.3

### Dimensions related to mounting

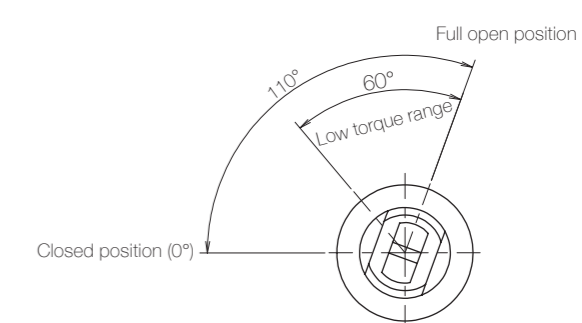


### Opening angle

#### TD99A



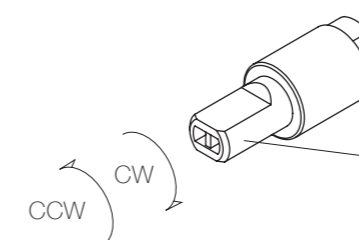
#### TD99B



\* Shaft position at the time of shipping: Closed position

### Damping directions

#### Rotation directions of the shaft to which torque is applied



\* Housing secured / Shaft rotatable

Damping direction	Shaft color
CW	Natural
CCW	Black