

# Disk Damper

## FDT-63A/FDN-63A Series

Bi-Directional  
Uni-Directional  
Fixed Type  
Adjustable type  
Self-adjusting

RoHS Compliant



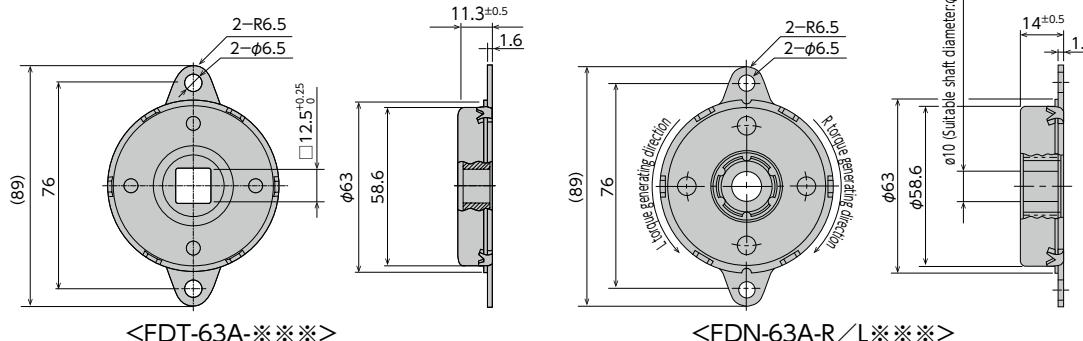
* Max. rotation speed	50rpm
* Max. cycle rate	12cycle /min
* Operating temperature	-10~50°C
* Weight	FDT-63A : 92g FDN-63A : 115g
* Main body material	Iron (SPFC)
* Rotating (shaft) material	Nylon (with glass)
* Oil type	Silicone oil

●Products specification might be changed without notice.

## Specifications

Model	Rated torque	Damping direction
FDT-63A-403	4±0.5 N·m (40±5 kgf·cm)	Both directions
	5.3±0.6 N·m (53±6 kgf·cm)	
FDT-63A-703	6.7±0.7 N·m (67±7 kgf·cm)	Both directions
	4.5±0.5 N·m (45±5 kgf·cm)	
FDN-63A-R453	4.5±0.5 N·m (45±5 kgf·cm)	Clockwise direction
	6±0.6 N·m (60±6 kgf·cm)	Counter-clockwise direction
FDN-63A-L603	6±0.6 N·m (60±6 kgf·cm)	Clockwise direction
	8.5±0.8 N·m (85±8 kgf·cm)	Counter-clockwise direction
FDN-63A-R903	8.5±0.8 N·m (85±8 kgf·cm)	Clockwise direction
	14±0.5	Counter-clockwise direction
FDN-63A-L903	14±0.5	
	1.6	

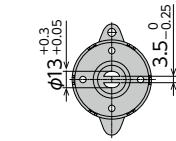
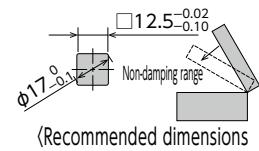
Note) Rated torque is measured at a rotation speed of 20rpm at 23°C±3°C  
63B has a slotted rotating shaft opening



## How to Use the Damper

1. Dampers may generate torque in both directions, clockwise, or counter-clockwise.
  2. Please make sure that a shaft attached to a damper has a bearing, as the damper itself is not fitted with one.
  3. Please refer to the recommended dimensions below when creating a shaft for FDN-63A. Not using the recommended shaft dimensions may cause the shaft to slip out.
  4. To insert a shaft into FDN-63A, insert the shaft while spinning it in the idling direction of the one-way clutch.  
(Do not force the shaft in)
- |  |  |
|--|--|
| Shaft's external dimensions            | φ 10 <sup>+0.03</sup> <sub>-0.03</sub> |
| Surface hardness                       | HRC55 or higher                        |
| Quenching depth                        | 0.5mm or higher                        |
| Surface roughness                      | 1.0Z or lower                          |
| Chamfer end<br>(Damper insertion side) |  |
|  | C0.2~C0.3<br>(or R0.2~R0.3)            |

- from the regular direction. This may damage the one-way clutch.)
5. When using FDT-63A, please ensure that a shaft with specified angular dimensions is inserted in the damper's shaft opening. A wobbling shaft and damper shaft may not allow the lid to slow down properly when closing. Please see the diagrams to the right for the recommended shaft dimensions for a damper.
  6. A damper shaft connecting to a part with slotted groove is also available. The slotted groove type is excellent for usage with spiral springs
  7. Please contact us when a continuous rotation is planned.

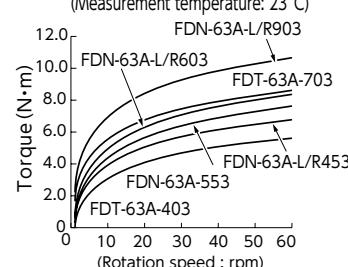


## Damper Characteristics

### 1. Speed characteristics

A disk damper's torque varies according to the rotation speed. In general, as shown in the graph to the right, the torque increases as the rotation speed increases, and the torque decreases as the rotation speed decreases. Torque at 20rpm is shown in this catalogue. In a closing lid, the rotation speed is slow when the lid begins to close, resulting in the generation of torque that is smaller than the rated torque.

Speed characteristics of FDN/T-63A series  
(Measurement temperature: 23°C)



### 2. Temperature characteristics

Damper torque (rated torque in this catalogue) varies according to the ambient temperature. As the temperature increases, the torque decreases, and as the temperature decreases, the torque increases. This is because the viscosity of the silicone oil inside the damper varies according to the temperature. The graph to the right illustrates the temperature characteristics

Temperature characteristics of FDN/T-63A series  
(Rotation speed : 20rpm)

