

# Friction Damper

## FFD-25FS/FW/SS/SW Series

Fixed Type

Bi-Directional

Adjustable type

Uni-Directional

Self-adjusting

RoHS Compliant

●Products specification might be changed without notice.



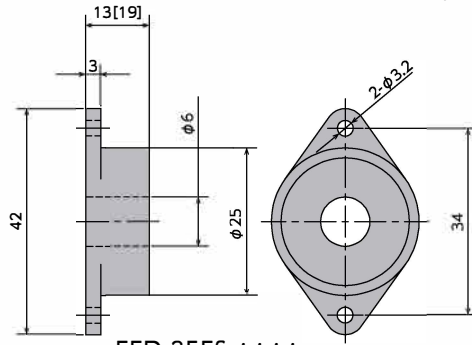
### Specifications

Model	Max. torque	Max. reverse torque	Model	Max. torque	Max. reverse torque
FFD-25FS-R102	0.1±0.01 (N·m)	Clockwise	FFD-25SS-R102	0.1±0.01 (N·m)	Clockwise
FFD-25FS-L102	(1±0.1 kgf·cm)	Counter-clockwise	FFD-25SS-L102	(1±0.1 kgf·cm)	Counter-clockwise
FFD-25FS-R502	0.5±0.05 (N·m)	Clockwise	FFD-25SS-R502	0.5±0.05 (N·m)	Clockwise
FFD-25FS-L502	(5±0.5 kgf·cm)	Counter-clockwise	FFD-25SS-L502	(5±0.5 kgf·cm)	Counter-clockwise
FFD-25FS-R103	1±0.1 (N·m)	Clockwise	FFD-25SS-R103	1±0.1 (N·m)	Clockwise
FFD-25FS-L103	(10±1 kgf·cm)	Counter-clockwise	FFD-25SS-L103	(10±1 kgf·cm)	Counter-clockwise
FFD-25FW-R103	1±0.1 (N·m)	Clockwise	FFD-25SW-R103	1±0.1 (N·m)	Clockwise
FFD-25FW-L103	(10±1 kgf·cm)	Counter-clockwise	FFD-25SW-L103	(10±1 kgf·cm)	Counter-clockwise
FFD-25FW-R153	1.5±0.15 (N·m)	Clockwise	FFD-25SW-R153	1.5±0.15 (N·m)	Clockwise
FFD-25FW-L153	(15±1.5 kgf·cm)	Counter-clockwise	FFD-25SW-L153	(15±1.5 kgf·cm)	Counter-clockwise
FFD-25FW-R203	2±0.2 (N·m)	Clockwise	FFD-25SW-R203	2±0.2 (N·m)	Clockwise
FFD-25FW-L203	(20±2 kgf·cm)	Counter-clockwise	FFD-25SW-L203	(20±2 kgf·cm)	Counter-clockwise

\*) Rated torque is measured at a rotation speed of 20rpm at 20°25°C

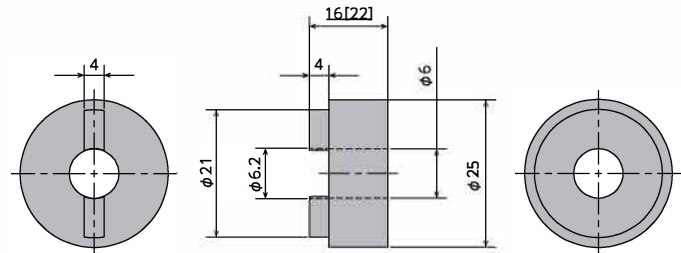
\*Max. rotation speed 30rpm  
\*Max. cycle rate 13cycle/min  
\*Operating temperature -10~60°C (90%RH)  
\*Body and cap material POM

\*Cap colour R:Black L:White  
\*Weight FFD-25FS 13±2g  
FFD-25FW 24±2g  
FFD-25SS 12±2g  
FFD-25SW 23±2g



FFD-25FS-\*\*\*\*

(Dimension of FFD-25FW-\*\*\*\* are in [ ])

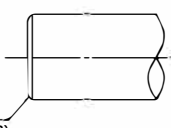


FFD-25SS-\*\*\*\*

(Dimension of FFD-25SW-\*\*\*\* are in [ ])

### How to Use the Damper

1. The damper generates torque in both the clockwise and counter-clockwise directions. (A one-way clutch is built in inside the damper.)
2. Please make sure that the shaft attached to a damper has a bearing, as the damper itself is not fitted with one.
3. It can be used as a free-stop for a load that is smaller than the rated torque.
4. Please refer to the recommended dimensions below when creating a shaft for attachment to the damper. Using a shaft outside of the recommended dimensions may cause the shaft to slip out.

Shaft's external dimensions	6.φ <sub>0.03</sub>
Surface hardness	HRC55 or higher
Quenching depth	0.5mm or higher
Surface roughness	1.0Z or lower
Chamfer end (Damper insertion side)	 C0.2~C0.3 (or R0.2~R0.3)

5. To insert a shaft into the damper, insert the shaft while spinning it in the opposite direction of the damper's direction of torque generation. (Do not force the shaft in from a regular direction. This may damage the built-in oneway clutch.)

# Friction Damper

## FFD-28FS/FW/SS/SW Series

Fixed Type

Bi-Directional

Uni-Directional

Adjustable type

Self-adjusting

RoHS Compliant

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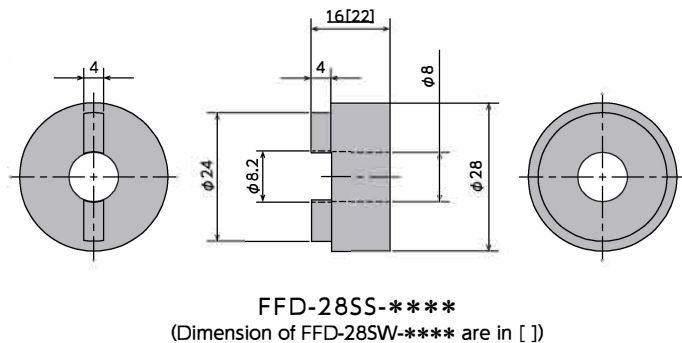
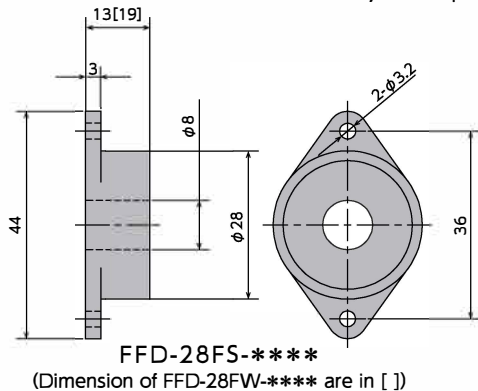
## Specifications

Model	Max. torque	Max. reverse torque	Model	Max. torque	Max. reverse torque
FFD-28FS-R102	0.1±0.01 (N·m)	Clockwise	FFD-28SS-R102	0.1±0.01 (N·m)	Clockwise
FFD-28FS-L102	(1±0.1 kgf·cm)	Counter-clockwise	FFD-28SS-L102	(1±0.1 kgf·cm)	Counter-clockwise
FFD-28FS-R502	0.5±0.05 (N·m)	Clockwise	FFD-28SS-R502	0.5±0.05 (N·m)	Clockwise
FFD-28FS-L502	(5±0.5 kgf·cm)	Counter-clockwise	FFD-28SS-L502	(5±0.5 kgf·cm)	Counter-clockwise
FFD-28FS-R103	1±0.1 (N·m)	Clockwise	FFD-28SS-R103	1±0.1 (N·m)	Clockwise
FFD-28FS-L103	(10±1 kgf·cm)	Counter-clockwise	FFD-28SS-L103	(10±1 kgf·cm)	Counter-clockwise
FFD-28FW-R103	1±0.1 (N·m)	Clockwise	FFD-28SW-R103	1±0.1 (N·m)	Clockwise
FFD-28FW-L103	(10±1 kgf·cm)	Counter-clockwise	FFD-28SW-L103	(10±1 kgf·cm)	Counter-clockwise
FFD-28FW-R153	1.5±0.15 (N·m)	Clockwise	FFD-28SW-R153	1.5±0.15 (N·m)	Clockwise
FFD-28FW-L153	(15±1.5 kgf·cm)	Counter-clockwise	FFD-28SW-L153	(15±1.5 kgf·cm)	Counter-clockwise
FFD-28FW-R203	2±0.2 (N·m)	Clockwise	FFD-28SW-R203	2±0.2 (N·m)	Clockwise
FFD-28FW-L203	(20±2 kgf·cm)	Counter-clockwise	FFD-28SW-L203	(20±2 kgf·cm)	Counter-clockwise

\*) Rated torque is measured at a rotation speed of 20rpm at 20°25°C


\* Max. rotation speed 30rpm  
\* Max. cycle rate 13cycle/min  
\* Operating temperature - 10 ~60°C (90%RH)  
\* Body and cap material POM

\*Cap colour R:Black L:White  
\* Weight FFD-28FS 14 ± 2g  
FFD-28FW 27 ± 2g  
FFD-28SS 14 ± 2g  
FFD-28SW 25 ± 2g



## How to Use the Damper

- The damper generates torque in both the clockwise and counter-clockwise directions. (A one-way clutch is built in inside the damper.)
- Please make sure that the shaft attached to a damper has a bearing, as the damper itself is not fitted with one.
- It can be used as a free-stop for a load that is smaller than the rated torque.
- Please refer to the recommended dimensions below when creating a shaft for attachment to the damper. Using a shaft outside of the recommended dimensions may cause the shaft to slip out.
- To insert a shaft into the damper, insert the shaft while spinning it in the opposite direction of the damper's direction of torque generation. (Do not force the shaft in from a regular direction. This may damage the built-in oneway clutch.)

Shaft's external dimensions	8-φ <sub>03</sub>
Surface hardness	HRC55 or higher
Quenching depth	0.5mm or higher
Surface roughness	1.0Z or lower
Chamfer end (Damper insertion side)	 C0.2~C0.3 (or R0.2~R0.3)

# Friction Damper

## FFD-30FS/FW/SS/SW Series

Fixed Type

Bi-Directional

Uni-Directional

Adjustable type

Self-adjusting

RoHS Compliant

●Products specification might be changed without notice.



### Specifications

Model	Max. torque	Max. reverse torque	Model	Max. torque	Max. reverse torque
FFD-30FS-R102	0.1±0.01 (N·m)	Clockwise	FFD-30SS-R102	0.1±0.01 (N·m)	Clockwise
FFD-30FS-L102	(1±0.1 kgf·cm)	Counter-clockwise	FFD-30SS-L102	(1±0.1 kgf·cm)	Counter-clockwise
FFD-30FS-R502	0.5±0.05 (N·m)	Clockwise	FFD-30SS-R502	0.5±0.05 (N·m)	Clockwise
FFD-30FS-L502	(5±0.5 kgf·cm)	Counter-clockwise	FFD-30SS-L502	(5±0.5 kgf·cm)	Counter-clockwise
FFD-30FS-R103	1±0.1 (N·m)	Clockwise	FFD-30SS-R103	1±0.1 (N·m)	Clockwise
FFD-30FS-L103	(10±1 kgf·cm)	Counter-clockwise	FFD-30SS-L103	(10±1 kgf·cm)	Counter-clockwise
FFD-30FS-R153	1.5±0.15 (N·m)	Clockwise	FFD-30SS-R153	1.5±0.15 (N·m)	Clockwise
FFD-30FS-L153	(15±1.5 kgf·cm)	Counter-clockwise	FFD-30SS-L153	(15±1.5 kgf·cm)	Counter-clockwise
FFD-30FW-R153	1.5±0.15 (N·m)	Clockwise	FFD-30SW-R153	1.5±0.15 (N·m)	Clockwise
FFD-30FW-L153	(15±1.5 kgf·cm)	Counter-clockwise	FFD-30SW-L153	(15±1.5 kgf·cm)	Counter-clockwise
FFD-30FW-R203	2±0.2 (N·m)	Clockwise	FFD-30SW-R203	2±0.2 (N·m)	Clockwise
FFD-30FW-L203	(20±2 kgf·cm)	Counter-clockwise	FFD-30SW-L203	(20±2 kgf·cm)	Counter-clockwise
FFD-30FW-R253	2.5±0.25 (N·m)	Clockwise	FFD-30SW-R253	2.5±0.25 (N·m)	Clockwise
FFD-30FW-L253	(25±2.5 kgf·cm)	Counter-clockwise	FFD-30SW-L253	(25±2.5 kgf·cm)	Counter-clockwise
FFD-30FW-R303	3±0.3 (N·m)	Clockwise	FFD-30SW-R303	3±0.3 (N·m)	Clockwise
FFD-30FW-L303	(30±3 kgf·cm)	Counter-clockwise	FFD-30SW-L303	(30±3 kgf·cm)	Counter-clockwise

\*) Rated torque is measured at a rotation speed of 20rpm at 20°25°C

\* Max. rotation speed  
\* Max. cycle rate  
\* Operating temperature

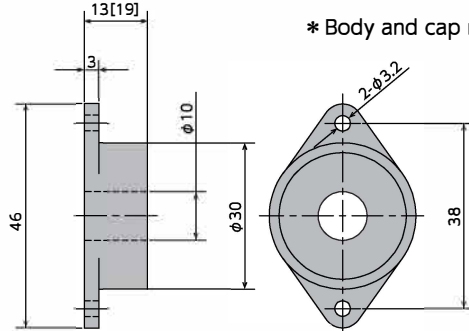
30rpm  
13cycle/min  
- 10 ~ 60°C  
(90%RH)

\*Cap colour  
\* Weight

R:Black L:White  
FFD-30FS 17 ± 2g  
FFD-30FW 31 ± 2g  
FFD-30SS 16 ± 2g  
FFD-30SW 30 ± 2g

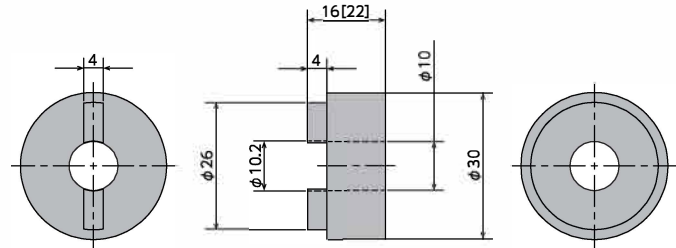
\* Body and cap material

POM



FFD-30FS-\*\*\*\*

(Dimension of FFD-30FW-\*\*\*\* are in [mm])




FFD-30SS-\*\*\*\*

(Dimension of FFD-30SW-\*\*\*\* are in [mm])

### How to Use the Damper

1. The damper generates torque in both the clockwise and counter-clockwise directions. (A one-way clutch is built inside the damper.)
2. Please make sure that the shaft attached to a damper has a bearing, as the damper itself is not fitted with one.

Shaft's external dimensions	$\phi 10_{-0.03}^0$
Surface hardness	HRC55 or higher
Quenching depth	0.5mm or higher
Surface roughness	1.0Z or lower
Chamfer end (Damper insertion side)	 C0.2~C0.3 (or R0.2~R0.3)

3. It can be used as a free-stop for a load that is smaller than the rated torque.
4. Please refer to the recommended dimensions below when creating a shaft for attachment to the damper. Using a shaft outside of the recommended dimensions may cause the shaft to slip out.
5. To insert a shaft into the damper, insert the shaft while spinning it in the opposite direction of the damper's direction of torque generation. (Do not force the shaft in from a regular direction. This may damage the built-in oneway clutch.)