Soft Silent Safety

FFD-25FS/FW/SS/SW Series

RoHS Compliant

Friction Damper [Uni-Directional] Fixed

<Specifications>

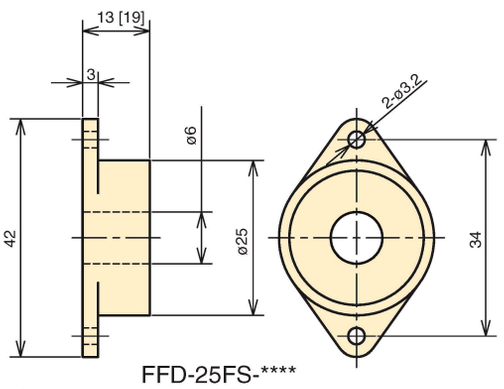
Model	Max. torque	Damping direction
FFD-25FS-R102	0.1±0.01[N·m]	Clockwise
FFD-25FS-L102	(1±0.1kgf·cm)	Counter-clockwise
FFD-25FS-R502	0.5±0.05[N·m]	Clockwise
FFD-25FS-L502	(5±0.5kgf·cm)	Counter-clockwise
FFD-25FS-R103	1±0.1[N·m]	Clockwise
FFD-25FS-L103	(10±1kgf·cm)	Counter-clockwise
FFD-25FW-R103	1±0.1[N·m]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

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

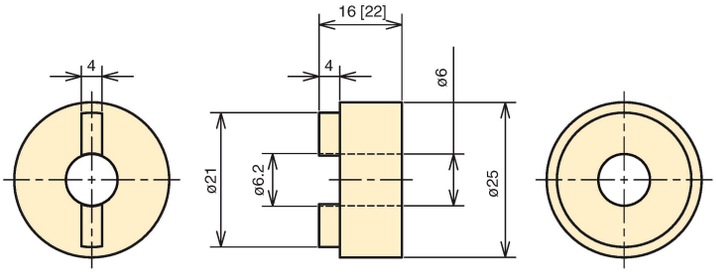
*) Rated torque is measured at a rotation speed of 20rpm at 20~25°C

∗Max. rotation speed 30rpm
∗Max. cycle rate 13 cycle/min
∗Operating temperature –10~60°C(90%RH)

∗Weight FFD-25FS 13±2g
FFD-25FW 24±2g
FFD-25SS 12±2g
FFD-25SW 23±2g
∗Body and cap material POM
∗Cap colour R: Black L: White



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



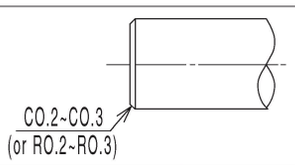
FFD-25SS-****
(Dimension of FFD-25SW-**** are in [ ])

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.

Shaft's external dimensions	ø6 $^{0}_{-0.03}$
Surface hardness	HRC55 or higher
Quenching depth	0.5mm or higher
Surface roughness	1.0Z or lower
Chamfer end (Damper insertion side)	

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 one-way clutch.)

Soft Silent Safety

FFD-28FS/FW/SS/SW Series

RoHS Compliant

Friction Damper [Uni-Directional] Fixed

<Specifications>

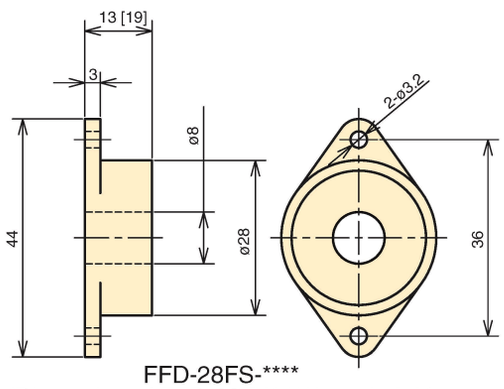
Model	Max. torque	Damping direction
FFD-28FS-R102	0.1±0.01[N·m]	Clockwise
FFD-28FS-L102	(1±0.1kgf·cm)	Counter-clockwise
FFD-28FS-R502	0.5±0.05[N·m]	Clockwise
FFD-28FS-L502	(5±0.5kgf·cm)	Counter-clockwise
FFD-28FS-R103	1±0.1[N·m]	Clockwise
FFD-28FS-L103	(10±1kgf·cm)	Counter-clockwise
FFD-28FW-R103	1±0.1[N·m]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

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

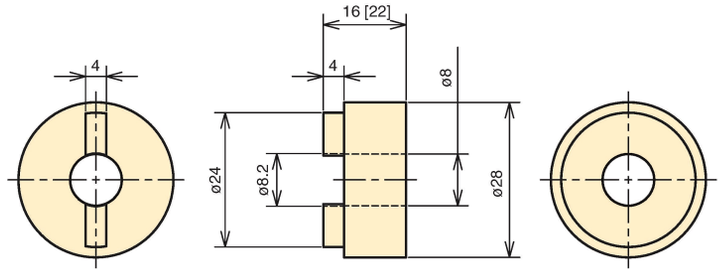
*) Rated torque is measured at a rotation speed of 20rpm at 20~25°C

*Max. rotation speed 30rpm
*Max. cycle rate 13 cycle/min
*Operating temperature –10~60°C(90%RH)

*Weight FFD-28FS 14±2g
FFD-28FW 27±2g
FFD-28SS 14±2g
FFD-28SW 25±2g
*Body and cap material POM
*Cap colour R: Black L: White



FFD-28FS-****
(Dimension of FFD-28FW-**** are in [ ])



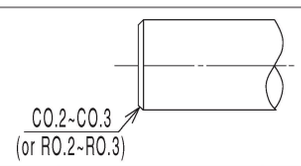
FFD-28SS-****
(Dimension of FFD-28SW-**** are in [ ])

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.

Shaft's external dimensions	ø8 $^{0}_{-0.03}$
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)

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 one-way clutch.)

Soft Silent Safety

FFD-30FS/FW/SS/SW Series

RoHS Compliant

Friction Damper [Uni-Directional] Fixed

<Specifications>

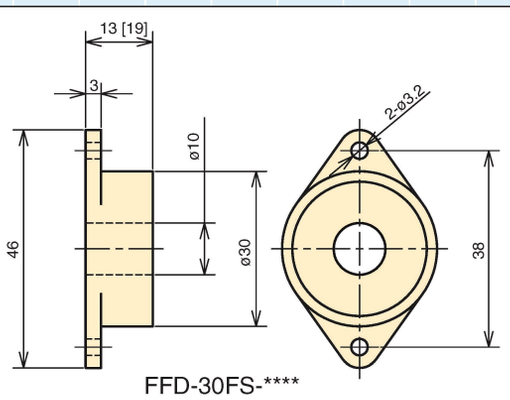
Model	Max. torque	Damping direction
FFD-30FS-R102	0.1±0.01[N·m]	Clockwise
FFD-30FS-L102	(1±0.1kgf·cm)	Counter-clockwise
FFD-30FS-R502	0.5±0.05[N·m]	Clockwise
FFD-30FS-L502	(5±0.5kgf·cm)	Counter-clockwise
FFD-30FS-R103	1±0.1[N·m]	Clockwise
FFD-30FS-L103	(10±1kgf·cm)	Counter-clockwise
FFD-30FS-R153	1.5±0.15[N·m]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

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

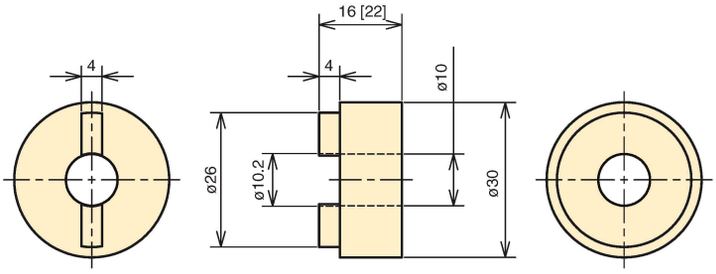
*) Rated torque is measured at a rotation speed of 20rpm at 20~25°C

∗Max. rotation speed 30rpm
∗Max. cycle rate 13 cycle/min
∗Operating temperature –10~60°C(90%RH)

∗Weight FFD-30FS 17±2g
FFD-30FW 31±2g
FFD-30SS 16±2g
FFD-30SW 30±2g
∗Body and cap material POM
∗Cap colour R: Black L: White



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



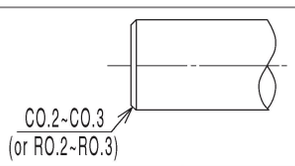
FFD-30SS-****
(Dimension of FFD-30SW-**** are in [ ])

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.

Shaft's external dimensions	ø10 $^{0}_{-0.03}$
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)

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 one-way clutch.)