

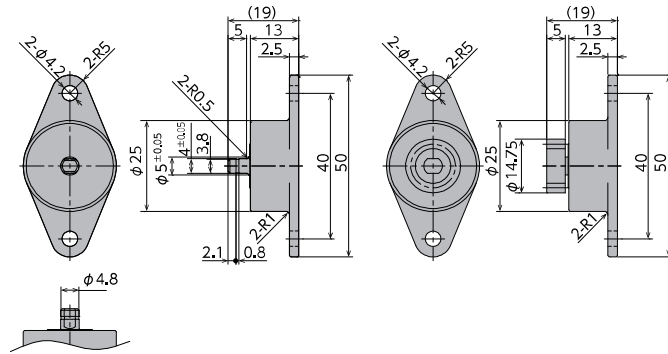
Rotary Damper

FRT/FRN-D3 Series

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

RoHS Compliant

●Products specification might be changed without notice.



Specifications

Model	Rated torque	Damping direction
FRT-D3-501 (G1)	$(50 \pm 10) \times 10^{-3} \text{N} \cdot \text{m}$ 500±100 gf·cm	Both directions
FRT-D3-102 (G1)	$(100 \pm 20) \times 10^{-3} \text{N} \cdot \text{m}$ 1,000±200 gf·cm	Both directions
FRT-D3-152 (G1)	$(150 \pm 30) \times 10^{-3} \text{N} \cdot \text{m}$ 1,500±300 gf·cm	Both directions
FRT-D3-202 (G1)	$(200 \pm 40) \times 10^{-3} \text{N} \cdot \text{m}$ 2,000±400 gf·cm	Both directions
FRT-D3-252 (G1)	$(250 \pm 50) \times 10^{-3} \text{N} \cdot \text{m}$ 2,500±500 gf·cm	Both directions
FRN-D3-R501 (G1)	$(50 \pm 10) \times 10^{-3} \text{N} \cdot \text{m}$ 500±100 gf·cm	Clockwise
FRN-D3-L501 (G1)		Counter-clockwise
FRN-D3-R102 (G1)	$(100 \pm 20) \times 10^{-3} \text{N} \cdot \text{m}$ 1,000±200 gf·cm	Clockwise
FRN-D3-L102 (G1)		Counter-clockwise
FRN-D3-R152 (G1)	$(150 \pm 30) \times 10^{-3} \text{N} \cdot \text{m}$ 1,500±300 gf·cm	Clockwise
FRN-D3-L152 (G1)		Counter-clockwise
FRN-D3-R202 (G1)	$(200 \pm 40) \times 10^{-3} \text{N} \cdot \text{m}$ 2,000±400 gf·cm	Clockwise
FRN-D3-L202 (G1)		Counter-clockwise
FRN-D3-R252 (G1)	$(250 \pm 50) \times 10^{-3} \text{N} \cdot \text{m}$ 2,500±500 gf·cm	Clockwise
FRN-D3-L252 (G1)		Counter-clockwise

- * Max. rotation speed 50rpm
- * Max. cycle rate 10cycle/min
- * Operating temperature 0~50°C
- * Weight FRT-D3 : 8.3g(with gear : 9g)
FRN-D3 : 12.3g(with gear : 13g)
- * Body and cap material * Oil type
- * Rotating shaft material Polyacetal (POM)
metal (FRN : SUS)
- * Gear material Polyacetal (POM)
- * Oil type Silicone oil
- * Cap color FRT : Gray
FRN(R) : Black
FRN(L) : White

Gear Specifications

Type	Profile shifted spur gear
Tooth profile	Involute
Module	1.0
Pressure angle	20°
Number of teeth	12
Pitch circle diameter	φ12
Rack shift coefficient	+0.375

Note 1) Rated torque measured at a rotation speed of 20rpm at 23°C
Note 2) Gear model number has G1 at the end

Note 3) Torque can be customized by changing the oil viscosity (see Customizable Torque Chart on page 178)
● There are dampers that generate torque in both directions and one-way torque in the CW direction or CCW direction when the rotating axle is viewed from the top.

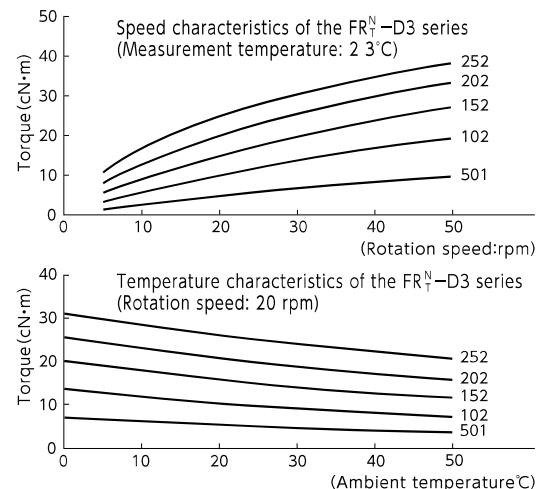
Damper Characteristics

1. Speed characteristics

A rotary 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. In addition, please note that the starting torque slightly differs from the rated torque.

2. Temperature characteristics

A rotary damper's torque varies according to the ambient temperature. In addition, as shown in the graph to the right, the torque decreases as the ambient temperature increases, and the torque increases as the ambient temperature decreases. This is because the viscosity of the silicone oil inside the damper varies according to the temperature. When the temperature returns to normal, the torque will return to normal as well.



New products

1 Soft Absorber

2 Rotary Damper

3 Magnum Series

4 Speed Controller

5 Helical Isolator

6 Model Selection Form