

Vane Damper

FYT/FYN-D1(D2) Series



Specifications

Model	Max. torque	Reverse torque	Damping direction
FYT-D1 (2)-104	10 N·m (100 kgf·cm)	—	Both directions
FYN-D1 (2)-R104	10 N·m (100 kgf·cm)	0.5 N·m or lower (5 kgf·cm or lower)	Clockwise
FYN-D1 (2)-L104	10 N·m (100 kgf·cm)	0.5 N·m or lower (5 kgf·cm or lower)	Counter-clockwise

Note) Measured at 23°C±2°C

The FYT/N-D2 series has a shorter shaft length.

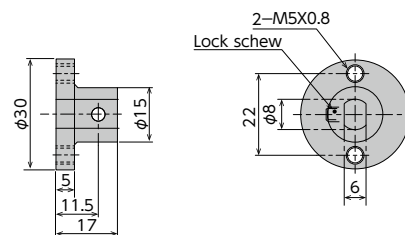
- * Max. angle 105°
- * Operating temperature -5~50°C
- * Weight D1 : 215±10g, D2 : 210±10g
- * Body and cap material Zinc die-cast (ZDC)

- * Rotating shaft material S25C
- * Oil type Silicone oil

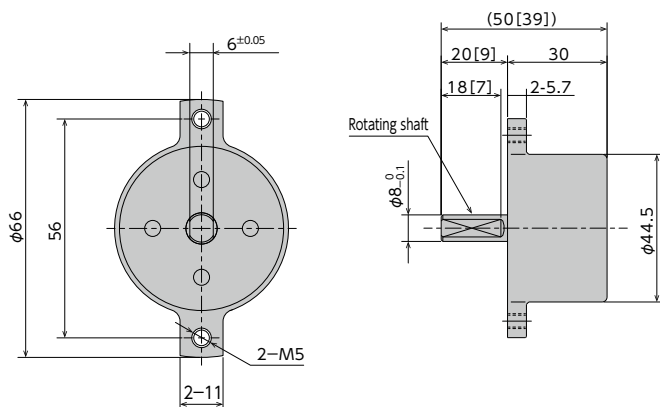
Optional Parts

Rotating shaft flange ROP-010H1

Model
ROP-010H1



Rotating shaft flange
ROP-010H1



Dimensions of D2 series are in []

How to Use the Damper

- The uni-directional FYN-D1 is designed to generate a large torque just before a lid closing from a vertical position, as shown in Diagram A, comes to a full closure. When a lid is closed from a horizontal position, as shown in Diagram B, a strong torque is generated just before the lid is fully closed, causing the lid to not close properly. Torque is generated in both clockwise and counterclockwise directions in the FYT-D1 series. Unlike the FYN-D1 series, it does not have a fixed orifice for adjusting torque. Therefore, torque remains constant at any angle.

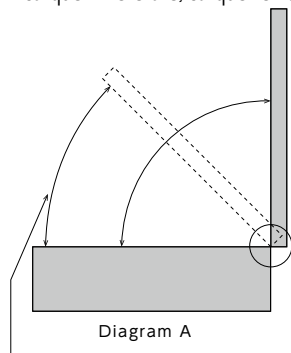


Diagram A
The damper torque becomes larger, preventing the lid from slowing down.

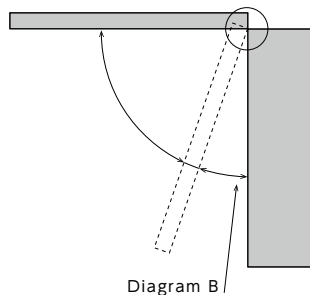


Diagram B
The damper torque becomes larger, preventing the lid from closing completely.

The angle in which the damper torque becomes large can be customized by modifying the inside orifice.

- When using a damper on a lid, such as the one shown in the diagram, use the following selection calculation to determine the damper torque. Example)

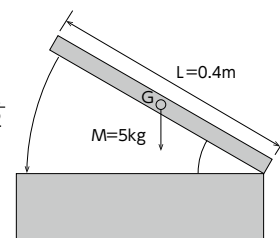
Lid mass M : 5kg

Lid dimensions L : 0.4m

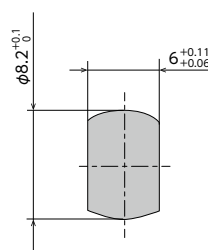
Gravity Center Position : Assumed as $\frac{L}{2}$

Load torque : $T = 5 \times 9.8 \times 0.4 \div 2$
 $= 9.8 \text{ N·m}$

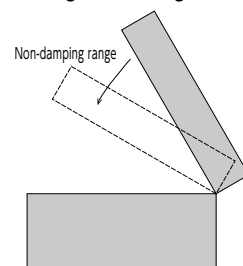
Based on the above calculation,
FYN-D1-*104 is selected.



- When connecting the rotating shaft to other parts, please ensure a tight fit between them. Without a tight fit, the lid will not slow down properly when closing. The corresponding dimensions for fixing the rotating shaft and the main body are as follows.

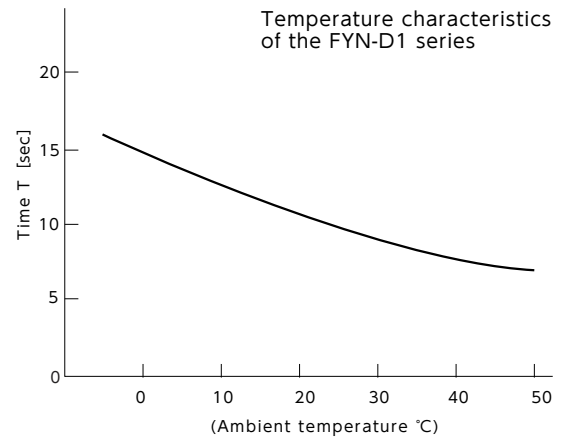


<Recommended dimensions
for mounting a rotating shaft>

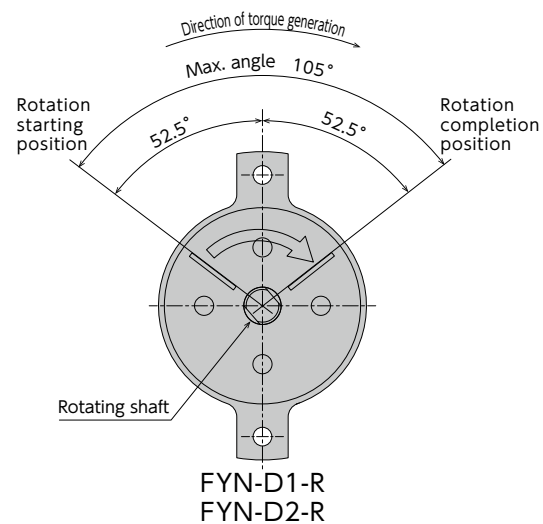
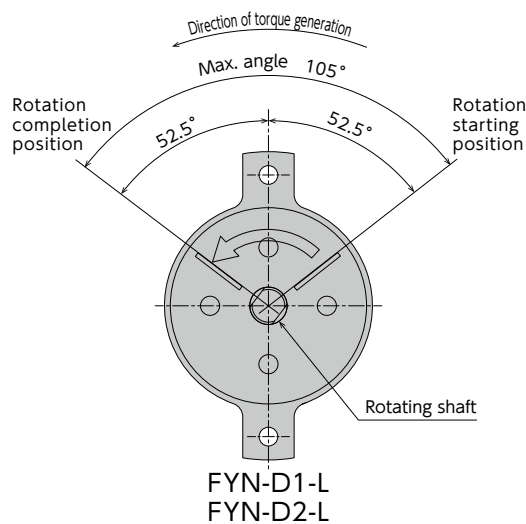


●Products specification might be changed without notice.

4. Damper characteristics vary according to the ambient temperature. In general, the damper characteristics become weaker as the temperature increases, and become stronger as the temperature decreases. This is because the viscosity of the oil inside the damper varies according to the temperature. When the temperature returns to normal, the damper characteristics will return to normal as well. The changes in the time it takes for the lid to close are shown in the graph to the right.



5. The damper's working angle is 110°, as shown below. Rotating the damper beyond this angle will cause damage to the damper. Please ensure that an external stopper is in place. The working angle is based on the width across flat for fixing, located towards the rear end of the main body. The position where the rotation is complete is at 90° with respect to the width across flat.



6. The FYN-D1 series is a fixed type; its torque is non-adjustable. However, a customized order for a torque between the range of 2 ~20N·m is possible by changing the oil viscosity.

7. The direction in which torque is generated varies according to the model. Please select the appropriate model for your purpose.