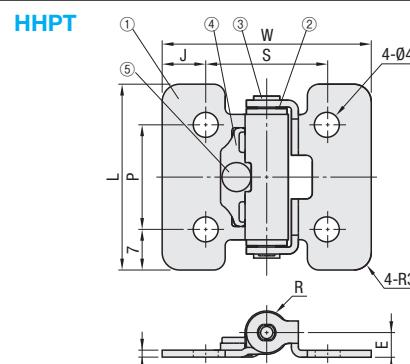


Torque Hinges

Fixed Torque, Adjustable Torque



Fixed Torque



Part Name	Material
① Hinge Plate	EN 1.4301 Equiv.
② Plastic Barrel	Polyacetal
③ Shaft	EN 1.4305 Equiv.
④ Plate	EN 1.4301 Equiv.
⑤ Swage Pin	EN 1.4567 Equiv.

Caution

- Use two hinges for one door/lid.
- Align the axes of the two hinges.
- Do not use the hinges outdoors or in any places where oil or grease adheres to the hinges.
- Do not use the hinges in any places requiring continuous open-close movements.
- Given the product characteristics, vertical usage is not assumed. For vertical use, adjust allowable load and torque value to the actual operating conditions.

Operating Temp. Range: -10°C ~ 50°C

Operating Humidity Range: 90%RH or lower

Part Number	Rated Torque*	Mass (g)	L	W	P	J	S	T	E	R	Unit Price	Volume Discount Rate
Type	No.	N·m	kgf·cm								1~19 pc (s.)	20~50
HHPT	3	0.35	3.4	15	32	36	18	7.5	21	1.2	4.25	7.5
	7	0.7	6.9	28	40	48	26	8	32	1.2	4.75	8.5
	15	1.5	14.7	64	50	48	36	8	32	2	6.5	12

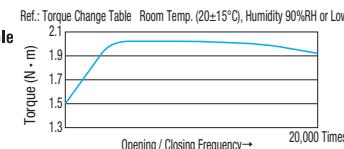
* Rated torque has a margin of error between +40% and -20%.

** Rated torque value is for a single hinge.

Ordering Example Part Number **HHPT7**



Example



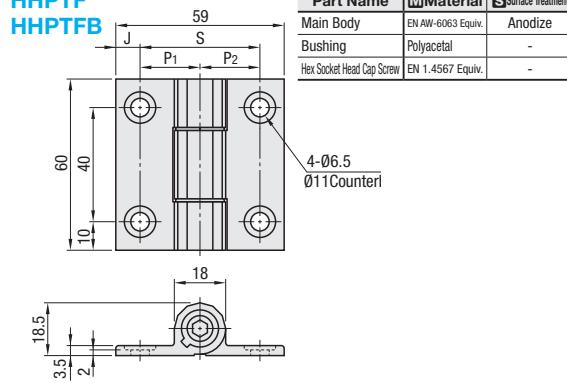
Values are measured by using HHPT15 for reference, and not guaranteed.
Opening/closing frequency 5 times per minute (0° ~ 180° per opening/closing)
* The torque is set to a value higher than the rated torque before shipping considering the torque degradation due to aging and temperature/humidity change.

Adjustable Torque



HHPTF

HHPTFB



Example

Example

Use a hex wrench to adjust torque value.
If tightened with a force of 1.5N·m or more, a hex wrench might be damaged.

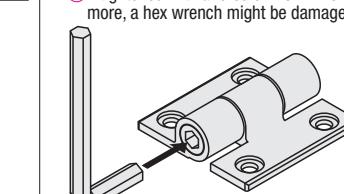


Table of Weight Selection Guide (per Hinge)

Mass (kg)	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60
1.1											
1.2											
1.3											
1.4											
1.5											
1.6											
1.7											
1.8											
1.9											
2.0											
2.1											
2.2											
2.3											
2.4											
2.5											
2.6											
2.7											
2.8											
2.9											
3.0											
3.1											

[Formula] Max. torque $T = L/2 \times m$ (Weight: kg) x (Newton: N)

* Torque is common to HHPTF and HHPTFB. Adjust the torque by tightening the screw in reference to the "Table of Weight Selection Guide - Door Dim." below.

Door Dim. (m) 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60

Aprox. Weight (kg) 3.1 2.9 2.7 2.5 2.3 2.1 1.9 1.7 1.5 1.3 1.1

Part Number	* Allowable Load	** Rated Torque	Mass (g)	S	P1	P2	J	Clear Anodize	Black Anodize	
Type	No.	kg	N·m	kgf·cm				Unit Price	Volume Discount Rate	
HHPTF	6	10	98	0	0	54	32	16	16	13.5
HHPTFB	8-6		4.9	50			37	16	21	13.5
(Black Anodize)	8						42	21	21	8.5

* The allowable load is the value when 2 pieces are used.

** Rated torque value is for a single hinge.

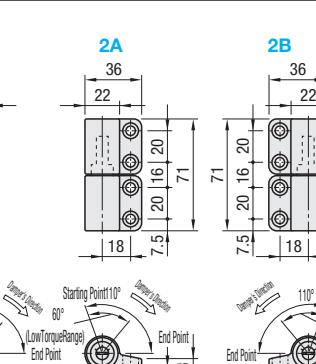
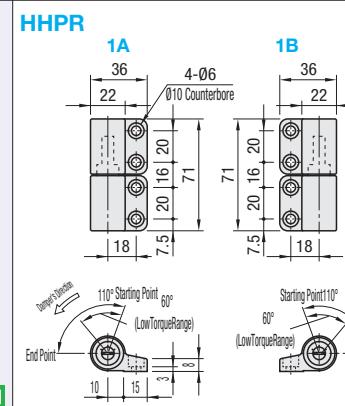
Ordering Example Part Number **HHPTF8**

Damper Hinges

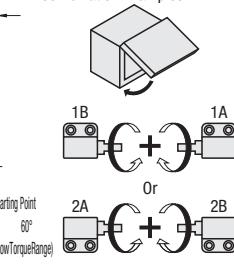
Damper Hinges



HHPR



Combination Examples



M Material: PBT

HHPR

Example

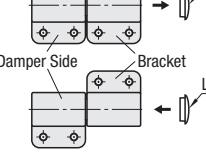
Example

How to Adjust Torque

Torque can be easily adjusted with a flathead screwdriver.

Bracket Position Change

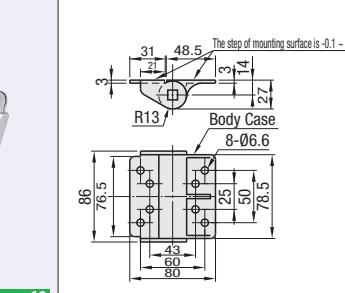
Bracket mounting position can be adjusted. The lid is removable.



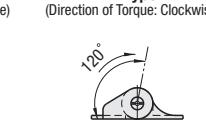
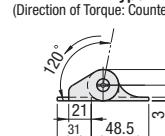
Damper Hinges



MSDH



L Type



M Material	S Surface Treatment	Max. Operating Angle	Operating Temp. Range (°C)	Mass (g)
Body Case (Zinc Die Cast)	Silver Paint	120	-5~50	410

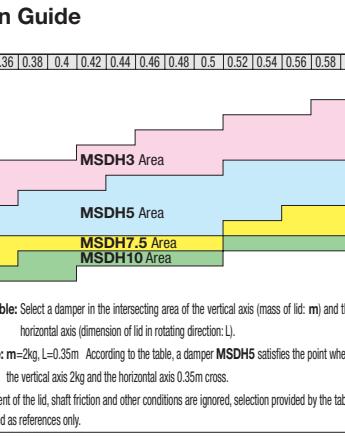
MSDH

Example

Part Number	Shaft Rotating Direction	Max. Reverse Torque (N·m)	Unit Price
MSDH3	-	0.4 or Less	
MSDH5	L (Counterclockwise)	0.6 or Less	
MSDH7.5	R (Clockwise)	0.8 or Less	
MSDH10		1.0 or Less	

Table of Selection Guide

L (Dimension of Lid)



How to Use the Table: Select a damper in the intersecting area of the vertical axis (mass of lid: m) and the horizontal axis (dimension of lid in rotating direction: L).

Selection Example: m=2kg, L=0.35m According to the table, a damper MSDH5 satisfies the point where the vertical axis 2kg and the horizontal axis 0.35m cross.

◆ As the inertia moment of the lid, shaft friction and other conditions are ignored, selection provided by the table should be considered as references only.

How to Select a Damper Hinge

The lid in a horizontal position generates maximum torque as shown on the left. Calculate maximum torque according to the following formula before selecting a damper that satisfies the specifications.

[Formula]

Max. Torque $T = L/2 \times m$ (Weight: kg) x (Newton: N)

Ex.) When L=0.4m and m=5kg,

Max. Torque $T = 0.4/2 \times 5 \times 9.8 = 9.8 \text{ N} \cdot \text{m}$

⇒ **MSDH10** is selected.

Note) The selection made by the calculation above is for reference only.

The friction resistance and the effect of inertia moment at the hinge were not taken into consideration in the example above.

The viscosity of the oil in the damper changes depending on the temperature of the operating environment. Generally, the damping characteristic decreases with rising temperature, whereas it increases with lowering temperature.