

Torque Hinges

Fixed Torque, Adjustable Torque

Damper Hinges

Fixed Torque

HHPT

Part Name	Material
① Hinge Plate	SUS304
② Plastic Barrel	Polyacetal
③ Shaft	SUS303
④ Plate	SUS304
⑤ Swage Pin	SUSXM7

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.

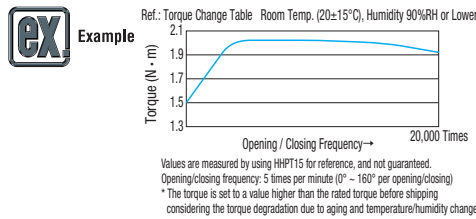
Operating Temp. Range: -10°C ~ 50°C
Operating Humidity Range: 90%RH or lower

RoHS 10

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

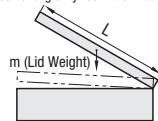


How to Select Torque Hinges
When operated as a lid as shown on right, calculate the necessary torque according to the following formula before selecting a torque hinge that satisfies the specifications. (Assume that the lid's center of gravity lies in the middle.)

[Formula]
Max. Torque T = L / 2 x m (Weight: kg) x 9.8 (Newton: N)

(Ex.) When L=0.3m and m=2kg,
Max. Torque T = 0.3/2x2x9.8=2.94N·m.

⇒ Select 2 pcs. of HHPT15.



Adjustable Torque

HHPTF HHPTFB

Part Name	Material	Surface Treatment
Main Body	AG6G3	Anodize
Bushing	Polyacetal	-
Hex Socket Head Cap Screw	SUSXM7	-

Part Number	* Allowable Load	** Rated Torque		Mass (g)	S	P1	P2	J	Clear Anodize		Black Anodize	
		kg	N						N·m	kgf·cm	Unit Price	Volume Discount Rate
HHPTF HHPTFB (Black Anodize)	6			0	4.9	50		32	16	16	13.5	
	8-6	10	98	0	4.9	50		37	16	21	13.5	
	8			4.9	50		42	21	21	8.5		

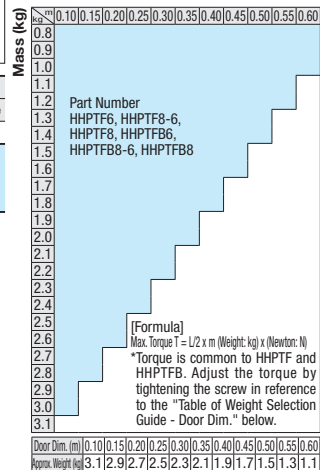
* The allowable load is the value when 2 pieces are used.
** Rated torque value is for a single hinge.

Ordering Example **Part Number**
HHPTF8

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)



Damper Hinges

HHPR

RoHS 10

Part Number	Reverse Torque (N·m)*	Max. Operating Angle	Operating Temp. Range (°C)	Mass (g)	Unit Price	Volume Discount Rate
Type	No.				1 - 19 pc (s).	20-50
HHPR	1A	0.49~1.27	110	0~40	46	
	1B					
	2A					
	2B					

* Reverse torque value is for a single damper hinge.

Ordering Example **Part Number**
HHPR1B

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

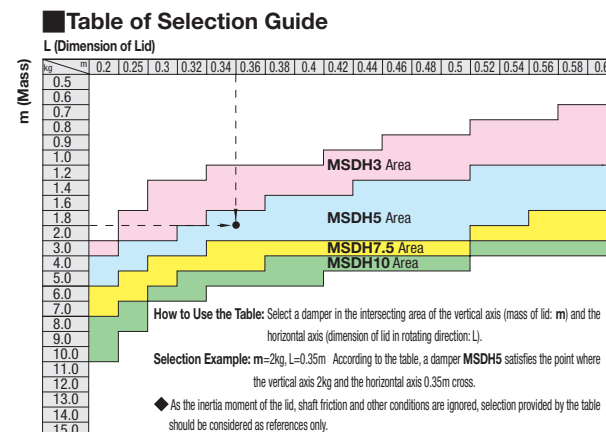
MSDH

RoHS 10

Material	Surface Treatment	Max. Operating Angle	Operating Temp. Range (°C)	Mass (g)
Body Case (Zinc Die Cast)	Silver Paint	120	-5~50	410
Hinge (SUS304)	-			

Basic Principle
The rotation of the vanes compresses the oil and generates control (brake) force to act against work force.

Part Number	Max. Usable Torque (N·m)	Shaft Rotating Direction	Max. Reverse Torque (N·m)	Unit Price
MSDH	3		0.4 or Less	
	5	L (Counterclockwise)	0.6 or Less	
	7.5	R (Clockwise)	0.8 or Less	
	10		1.0 or Less	



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 x m (Weight: kg) x 9.8 (Newton: N)

(Ex.) When L=0.4m and m=5kg,
Max. Torque T = 0.4/2x5x9.8=9.8N·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.