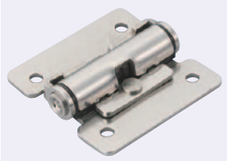
Torque Hinges
-Torque Fixed Type / Torque Adjustable Type-

Stock | Reduced Production Time

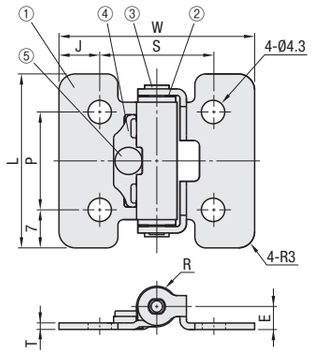
CAD Data Folder Name: 43_Levers_and_Pulls

Ordering Example — Part Number (Type·No.): HHPT7

■Torque Fixed Type



HHPT



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

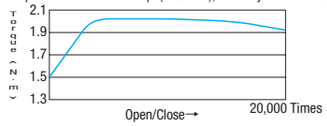
■Cautions for Use
- Use 2 pcs. per door (flap).
- Place the axes of 2 hinges on a common line.
- Do not use in places where oil or grease contacts, or in the outdoors.
- Do not use for locations requiring frequent open/close.
- Since the product is not designed for vertical use in mind, figure the allowable load and torque based on actual application.

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

Part Number Type	No.	Rated Torque* N·m	kgf·cm	Mass (g)	L	W	P	J	S	T	E	R	Days to Ship
HHPT	3	0.35	3.4	15	32	36	18	7.5	21	1.2	4.25	7.5	Stock
	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	

* The Torque Rating may have tolerance ranges about +40% ~ -20%. * Rated torque value is for a single hinge.
Stock lineup may vary by country.
Stock: Same day shipping available upon request. Order by THA: 16:00, SGP: 12:00, MYS: 15:00 P.75

Example — Ref.: Torque Variation Room Temp. (20±15°C), Humidity 90% RH or Less

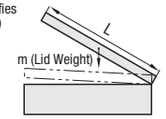


Reference value with HHPT15, not a guaranteed value.
Open/Close at 5 times/min. (1 opening 0° ⇔160°)
* The actual torque at the time of shipping is set higher than the rated torque, considering for torque degradation by aging, changes in temperature and humidity.

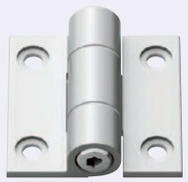
■How to Select Torque Hinges
When operated as a lid as shown on right, calculate the necessary torque according to the following formula before selecting a torque hinge that satisfies the specifications. (Assume that the lid's center of gravity lies in the middle.)

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

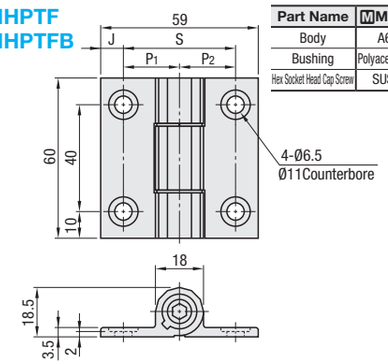
(Ex.) When L=0.3m and m=2kg,
Max. Torque T =0.3/2x2x9.8=2.94N·m.
→ Select 2 pieces of **HHPT15**.



■Torque Adjustable Type

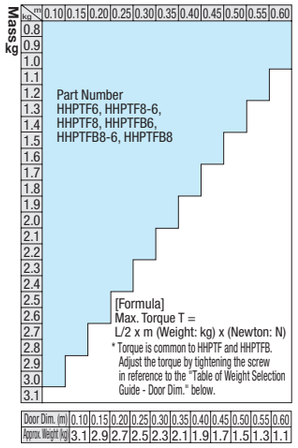


HHPTF
HHPTFB



Part Name	Material	Surface Treatment
Body	A6063	Anodize
Bushing	Polyacetal (White)	-
Hex Socket Head Cap Screw	SUSXM7	-

■Table of Weight Selection Guide (per Hinge)



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

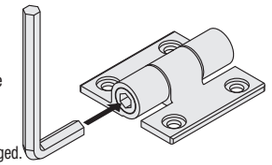
Part Number Type	No.	* Allowable Load kg	N	** Rated Torque N·m	kgf·cm	Mass (g)	S	P1	P2	J	HHPTF	HHPTFB
HHPTF HHPTFB (Black Anodize)	6	10	98	0 ~ 4.9	0 ~ 50	54	32	16	16	13.5	Stock	3 Days
	8-6						37	16	21	13.5	3 Days	
	8						42	21	21	8.5	Stock	

* The allowable load is the value when 2 pieces are used. ** Rated torque value is for a single hinge.
Stock lineup may vary by country.
Stock: Same day shipping available upon request. Order by THA: 16:00, SGP: 12:00, MYS: 15:00 P.75

Order Quantity	Standard Service Regular Quantity	Non-Standard Service Large Quantity
Quantity	1~50	51~
Days to ship	Standard	To be quoted

Example

The torque value is adjustable using a Hex Wrench.
If tightened with a force of 1.5N·m or more, a hex wrench might be damaged.



Damper Hinges

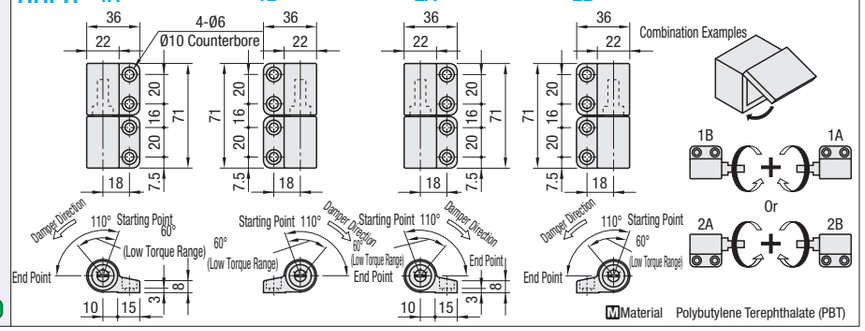
Stock | Reduced Production Time

CAD Data Folder Name: 43_Levers_and_Pulls

When ordering, select Part Number and Values from Selection Steps ❶~❸.
Ordering Example — Part Number (❶Type·❷No. or Max. Operating Torque) - ❸Shaft Rotating Direction
HHPR1A
MSDH3 - R

■Damper Hinges

HHPR 1A 1B 2A 2B



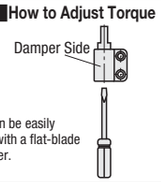
Material: Polybutylene Terephthalate (PBT)

Part Number ❶Type	❷No.	Reverse Torque (N·m)*	Max.	Operating Temp. Range (°C)	Mass (g)	Days to Ship
HHPR	1A	0.49~1.27	110	0~40	46	3 Days
	1B					
	2A					
	2B					Stock

* Reverse torque value is for a single damper hinge. Stock lineup may vary by country.
Stock: Same day shipping available upon request. Order by THA: 16:00, SGP: 12:00, MYS: 15:00 P.75

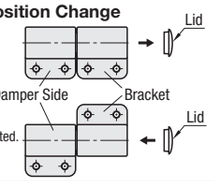
Example

■How to Adjust Torque



Torque can be easily adjusted with a flat-blade screwdriver.

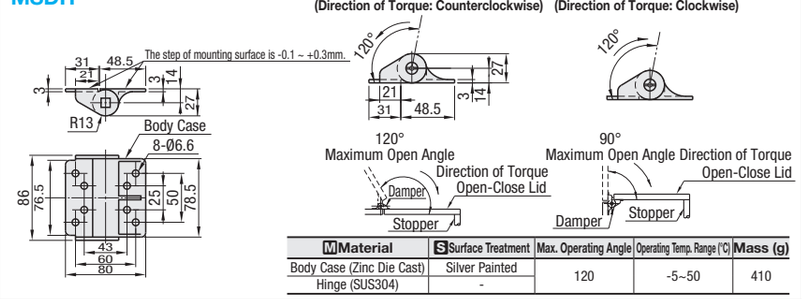
■Bracket Position Change



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

■Damper Hinges

MSDH



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

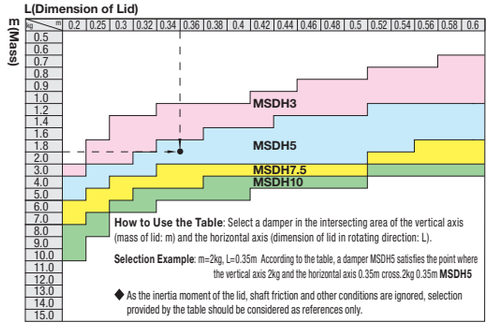
Part Number ❶Type	❷Max. Operating Torque (N·m)	❸Shaft Rotating Direction Selection	Max. Reverse Torque (N·m)	Days to Ship L	Days to Ship R
MSDH	3	L(Counterclockwise) R(Clockwise)	0.4 or Less	3 Days*	3 Days*
	5		0.6 or Less		
	7.5		0.8 or Less		
	10		1.0 or Less	Stock	Stock

Stock lineup may vary by country. Stock: Same day shipping available upon request. Order by THA: 16:00, SGP: 12:00, MYS: 15:00 P.75
* for orders placed by THA: 12:30, SGP&MYS: 13:30 P.75

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

■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.2kg 0.35m **MSDH5**
◆ 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.

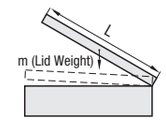
Order Quantity	Standard Service Regular Quantity	Non-Standard Service Large Quantity
Quantity	1~50	51~
Days to ship	Standard	To be quoted

■Selection of 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.