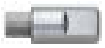
TORQUE DAMPERS

ROTARY
DISK
VANE

Torque Dampers

Picture	Item No.	Dampening Direction	Torque	Page
	UDH	Clockwise/Counter Clockwise	13 - 34 (lbs·in)	90
	UDH-14	Clockwise/Counter Clockwise	7 - 22 (lbs·in)	90
	UDH-16	Clockwise/Counter Clockwise	8.8 - 22 (lbs·in)	90
	UDH-16N	Clockwise/Counter Clockwise	15 - 26.5 (lbs·in)	90
	UDD	Clockwise/Counter Clockwise	4.4 - 26.6 (lbs·in)	92
	UDD-BKT	-	-	92
	MPH	-	-	95

Disk Dampers

Picture	Item No.	Dampening Direction	Torque	Page
	SDT-47A, 57A	TWO WAY	17.36 - 40.8 (lbs·in)	93
	SDT-63A, 70A	TWO WAY	58.16 - 75.52 (lbs·in)	93
	SDN-57A, 70A	ONE WAY	47.7 - 95.5 (lbs·in)	94
	SDN-47A, 63A	ONE WAY	17.4 - 73.8 (lbs·in)	94

Rotary Dampers

Picture	Item No.	Dampening Direction	Torque	Page
	URD8-3	-	3.13 - 12.52 (lbs·in)	95
	SRT-E2	TWO WAY	0.14 - 0.58 (in.oz)	96
	SRT-G2	TWO WAY	0.28 - 1.39 (in.oz)	96
	SRT-C2, SRN-C2	ONE/TWO WAY	2.78 - 4.17 (in.oz)	97
	SRT-D2, SRN-D2	ONE/TWO WAY	6.94 - 20.83 (in.oz)	97

Adjustable Vane Dampers

Picture	Item No.	Dampening Direction	Torque	Page
	SYT, SYN	ONE/TWO WAY	86.9 (lbs·in)	98

Sugatsune Rotary Damper

Sugatsune offers a wide range of dampening products for a variety of applications to create a smooth soft movement and function for everyday products. These types of products are found commonly in the household and workplace. Though unnoticed in most applications, dampers are a vital part of many of today's products to bring quality, safety, and durability to both simple and sophisticated products.

Quality and durability are the key criteria for the success of products being designed today. By incorporating the Sugatsune's rotary dampers, the smooth motion created by the dampening products will provide the quality movement enhancing the feel of a product. In addition, the same smooth motion will help to protect and prolong the sensitive components and moving parts. Finally, with the soft controlled motion will help to make products safer from preventing sudden motion causing injuries.

The Sugatsune dampers are available in various shape, size and functions for many of today's products. If you cannot find an item to fit your application, our engineers are capable of designing a product to suit your requirements.

Basic Structure

Rotary Damper

Rotary dampers utilizes the principle of fluid resistance to reduce the speed of moving parts. The oil viscosity is utilized to provide the "braking force" of the damper. The torque or the "braking force" can be adjusted by changing the viscosity of the oil. The advantages to the rotary type dampers are the small compact size of the units.

Applications

Loading trays for CD, DVD, VCR, MD players
Arm rests, Ashtrays, center consoles, glove boxes, handles and storage compartments in passenger vehicles
Camcorders, cellular phones and small personal devices.

Vane Damper

Oil viscosity is utilized to provide the "braking force" of the damper. The vane damper creates resistance by passing oil thru vanes in the housing creating pressure. The torque or "braking force" of the unit can be controlled by the size of the vane in the damper body. The vane size will control the amount of fluid passing from one chamber to the next in the damper body. The vane type is often much larger than the rotary type. Due to the size, the vane type is able to create much larger pressure which makes it able to handle larger dampening applications.

Applications

Furniture
Cabinets, Kitchen cabinets, office furniture, toy boxes, tool boxes, and storage access.
Toilet seats
Printers and copiers covers

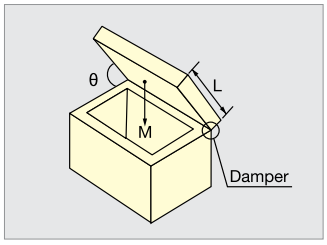
Sugatsune Dampers are available in single direction dampening (one-way) or dampening in both direction (two-way).
The dampers are available with or without the gear. There are also multiple gear options available on certain models.
If the available models are not compatible to your application, please contact Sugatsune to assist with your custom applications.

Torque Calculation

To calculate the torque for your application, the following measurements listed below are necessary.

T (torque) = L/2 x 9.8 x M (N·m)
= L/2 x M (Kgf·cm)

L= Length from pivot point to end of lid
M= Weight of the lid (kg)



General Specification (For SR/SD/SY Dampers)

Series	Max. Speed	Max. Cycle Rate	Nominal Torque Rating	Operating Temperature	Storage Temperature
SR	50 rpm	10 cycles/min	At 20rpm, 23°C (73°F)	0~50°C (32~122°F)	-20~60°C (-4~140°F)
SD	50 rpm	12 cycles/min	At 20rpm, 23°C (73°F)	-10~50°C (14~122°F)	-20~60°C (-4~140°F)
SY	-	-	At 23°C (73°F)	-5~50°C (23~122°F)	-20~60°C (-4~140°F)

Ordering Information (for SR/SD/SY Dampers)

SRT-D2-R 501 G1

TYPE
N=One way
T=Two way

SERIES

DIRECTION
R=Clockwise
L=Counter clockwise
Blank=Two way

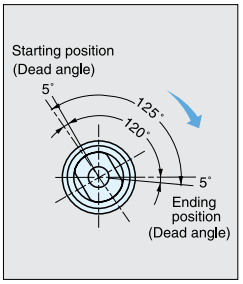
TORQUE

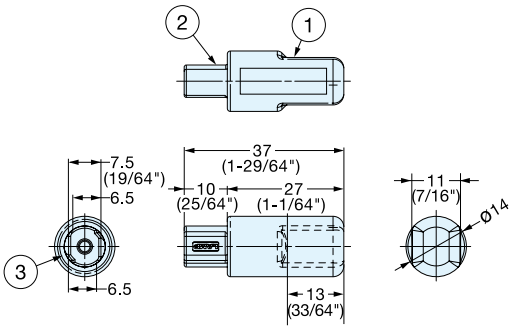
GEAR
G1= With gear
Blank= Without gear

TORQUE DAMPER

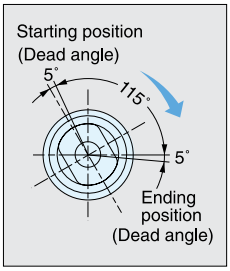
UDH

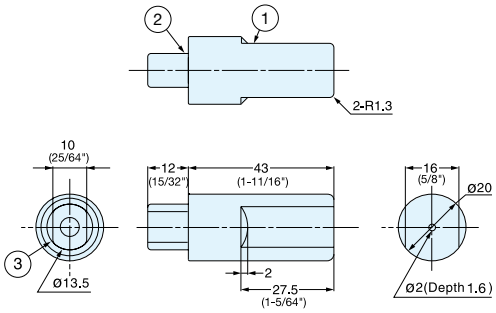
UDH-14 Type



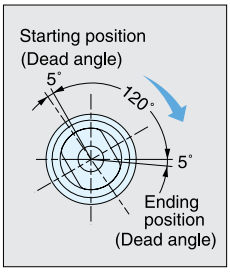


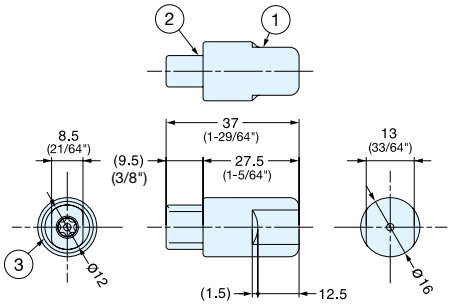
UDH Type



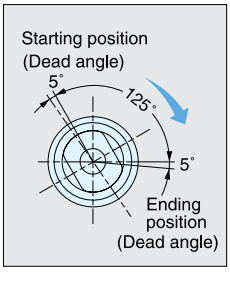


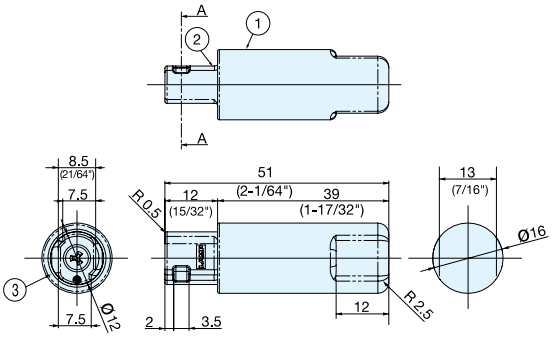
UDH-16 Type





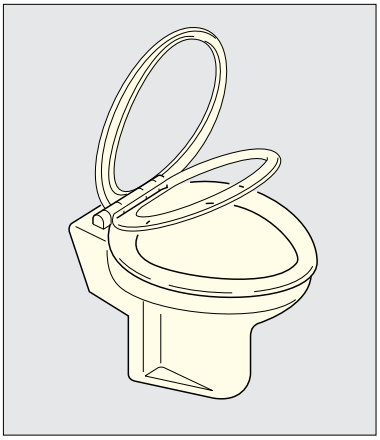
UDH-16N Type

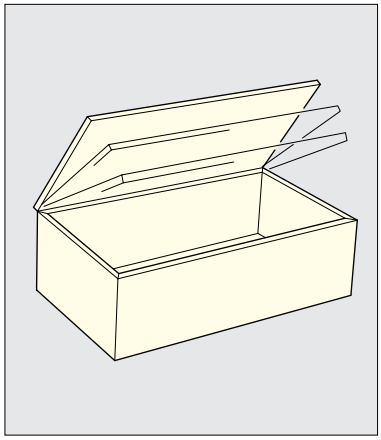




TORQUE DAMPER

NSF COMPONENT Lapcon **UDH**





Application

- Keeps lids/doors from slamming shut.
- Patented technology that allows a small design to produce high torque and wider dampening angles.
- Stainless steel body keeps dampening torque stable and consistent.
- Ensures high durability and ideal for corrosive environments.
- Cycle tested at 70,000 for natural closing and 13,000 forced closing.

HINGED VARIANTS

HG-JH14
(See page 222 for details)

HG-JH25/35
(See page 222 for details)

HG-JHW/JHWG
(See page 223 for details)

UDH-14 Type

No.	Part Name	Material	Finish/Color
①	Body	304 Stainless Steel	Plain
②	Shaft	PBT Plastic	A-White, B-Grey
③	Cover Ring		-

UDH Type

No.	Part Name	Material	Finish/Color
①	Body	304 Stainless Steel	Plain
②	Shaft	PBT Plastic	A-White, B-Grey
③	Cover Ring	304 Stainless Steel	-

UDH-16 Type

No.	Part Name	Material	Finish/Color
①	Body	304 Stainless Steel	Plain
②	Shaft	PBT Plastic	A-White B-Grey
③	Cover Ring		-

UDH-16N Type

No.	Part Name	Material	Finish/Color
①	Body	304 Stainless Steel	Plain
②	Shaft	PBT Plastic	A-White B-Grey
③	Cover Ring	PPS Plastic	-

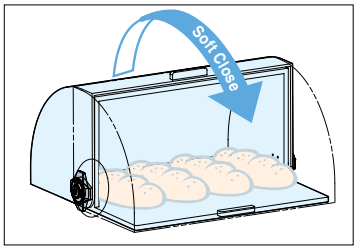
*ROHS Compliant versions available upon request.
*Not NSF

Item No.	Torque per piece (kgf·cm)	Dampening Direction	Color Mark	Weight (g)	Carton(pcs)
UDH-14ALS	5.1~8.2 (4.4~7.1 lbs·in)	Counter Clockwise	Purple	10	400
UDH-14BLS		Clockwise			
UDH-14AMS	8.2~15.3 (7.0~13.0 lbs·in)	Counter Clockwise	Blue		
UDH-14BMS		Clockwise			
UDH-14AHS	15.3~25.5 (13.0~22.0 lbs·in)	Counter Clockwise	Red		
UDH-14BHS		Clockwise			
UDH-AMS	15.0~25.0 (13.0~21.0 lbs·in)	Counter Clockwise	Blue	38	200
UDH-BMS		Clockwise			
UDH-AHS	25.0~35.0 (21.0~30.0 lbs·in)	Counter Clockwise	Red		
UDH-BHS		Clockwise			
UDH-AGS	35.0~40.0 (30.0~34.0 lbs·in)	Counter Clockwise	Yellow		
UDH-BGS		Clockwise			
UDH-16AMS	10.2~17.3 (8.8~15.0 lbs·in)	Counter Clockwise	Green	16	200
UDH-16BMS		Clockwise			
UDH-16AHS	17.3~25.5 (15.0~22.0 lbs·in)	Counter Clockwise	Black		
UDH-16BHS		Clockwise			
UDH-16N AMS	17.3~24.5 (15.0~21.2 lbs·in)	Counter Clockwise	Blue	20	200
UDH-16N BMS		Clockwise			
UDH-16N AHS	22.4~30.6 (19.4~26.6 lbs·in)	Counter Clockwise	Red		
UDH-16N BHS		Clockwise			

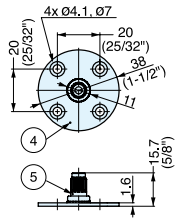
DISK DAMPER

UDD

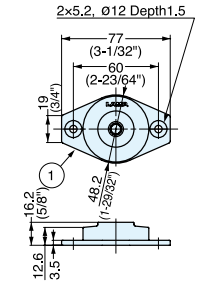
- Disc-shaped damper gently closes lid without slamming shut.
- Narrow profile for unobtrusive installation.
- Suitable for food service environments.
- Successfully passed 30,000 open/close proprietary cycle test.
- Operating temperature: 5~35 ˚C (41~95˚F)
- Spacer and installation screws are not included, and vary with application. Please contact customer service for more information.



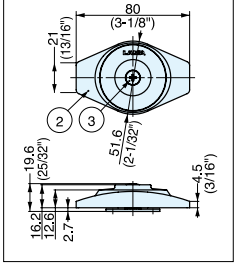
MOUNTING PLATE



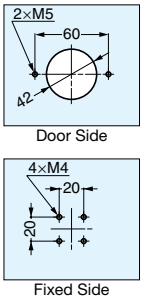
DAMPER



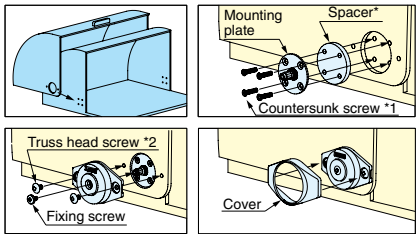
ASSEMBLY



Cut-Out Dimension

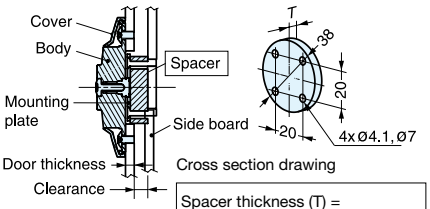


How to Install



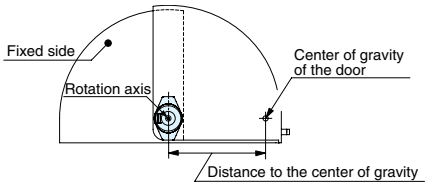
*1, *2 screws and Spacer are not included.

Spacer



Spacer thickness (T) = Clearance mm + Door thickness mm - 2.7mm

Damper Selection



*Torque = Distance to the center of gravity x 1/2 x Door weight

Item No.	Handing	Torque (kgf·cm)	Weight (g)	Box Qty (pcs)
UDD-S-L	Left	5.1~10.2 (4.4-8.9 lbs·in)	90	20
UDD-S-R	Right			
UDD-M-L	Left	10.2~20.4 (8.9~17.7 lbs·in)		
UDD-M-R	Right			
UDD-H-L	Left	20.4~30.6 (17.7~26.6 lbs·in)		
UDD-H-R	Right			

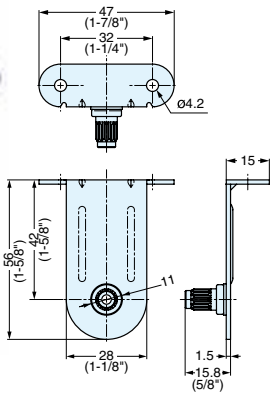
No	Part Name	Material	Finish
①	Main Body	ABS Plastic	Light Grey
②	Cover		
③	Screws	Steel	Nickel
④	Mounting Plate		
⑤	Axis		Zinc

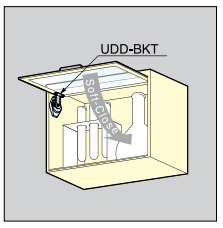
UDD DISK DAMPER BRACKET

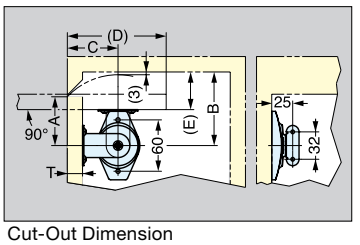
STAINLESS 304 STEEL

UDD-BKT

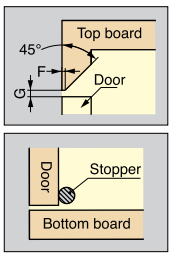
- Brackets for disk damper UDD for upward-opening door.
- Catch is needed for holding door in opened position (not included).
- Use SDS-50G face plate for glass/acrylic door.
- Stop required to prevent over rotation (not included).







Cut-Out Dimension



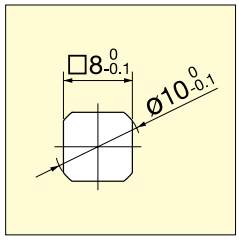
Item No.	Weight (g)	Box Qty (pcs)	Material
UDD-BKT	40	60	304 Stainless Steel

T: Door Thickness	A	B	C	D	E
5	46	70	49	95	26
15	54	82	57	111	40
18	57	86	60	117	44

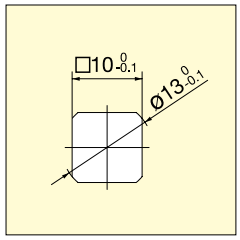
F	G
1	3
2	4
3	5

DISK DAMPER (TWO WAY) SDT-47A, 57A

Special Order

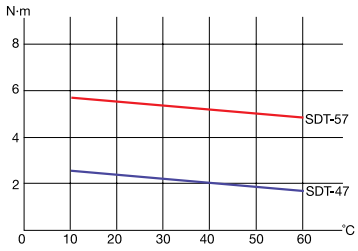


SDT-47A-203
Recommended Shaft Dimension

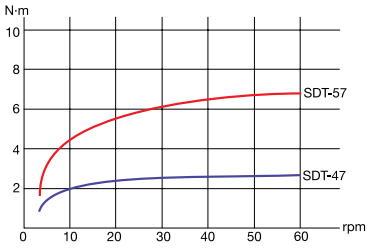


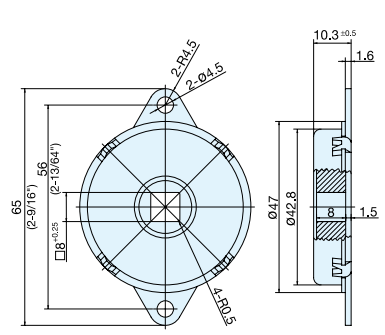
SDT-57A-503
Recommended Shaft Dimension

Torque at Different Temperature (20rpm)

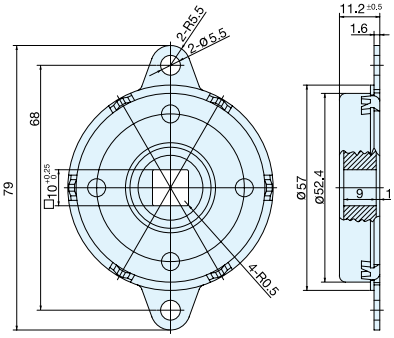


Torque at Different Speed (23°C/73°F)





SDT-47A-203



SDT-57A-503

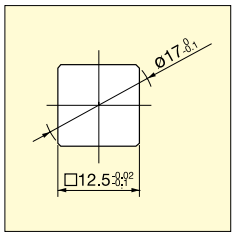
*Shaft must be supported by stationary part.
Damper can only take torque load.

Item No.	Torque (kgf·cm)	Weight (g)	Carton (pcs)
SDT-47A-203	20 (17.36 lbs·in)	49	100
SDT-57A-503	47 (40.80 lbs·in)	75	

Part Name	Material
Body	Steel
Socket	Nylon with Glass Fiber

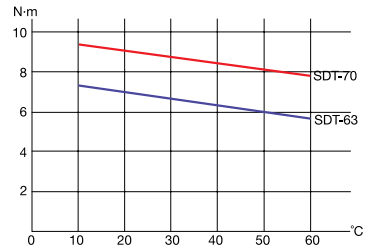
DISK DAMPER (TWO WAY) SDT-63A, 70A

Special Order

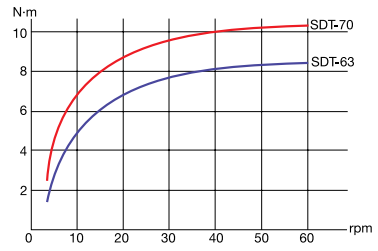


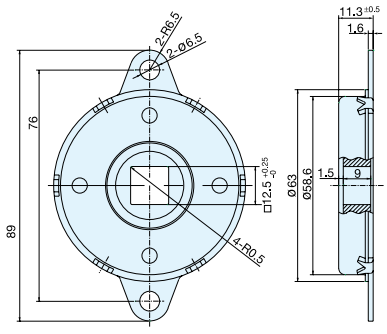
Recommended Shaft Dimension

Torque at Different Temperature (20rpm)

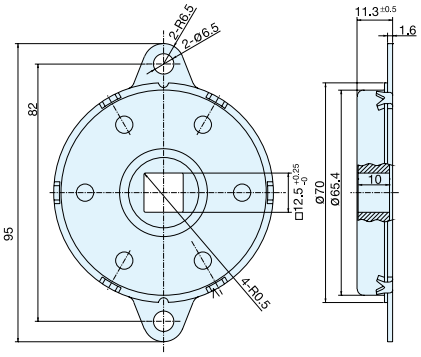


Torque at Different Speed (23°C/73°F)





SDT-63A-703



SDT-70A-903

*Shaft must be supported by stationary part.
Damper can only take torque load.

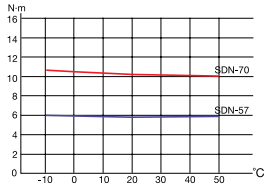
Item No.	Torque (kgf·cm)	Weight (g)	Carton (pcs)
SDT-63A-703	67 (58.16 lbs·in)	92	100
SDT-70A-903	87 (75.52 lbs·in)	112	

Part Name	Material
Body	Steel
Socket	Nylon with Glass Fiber

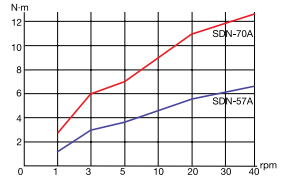
DISK DAMPER (ONE WAY) SDN-57A, 70A

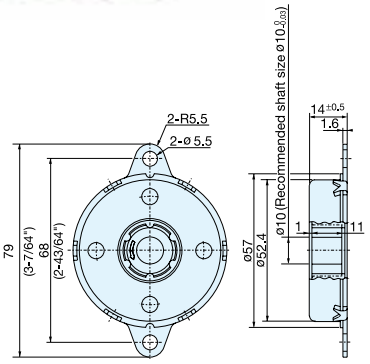
Special Order

Torque at Different Temperature (20rpm)

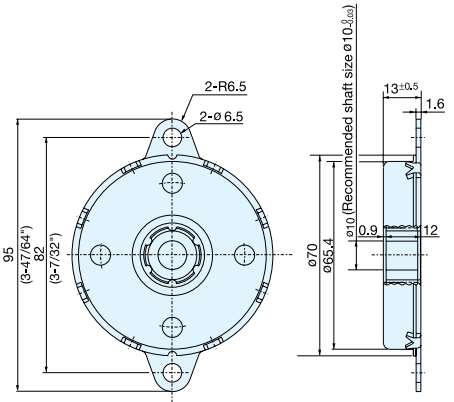


Torque at Different Speed (23°C/73°F)

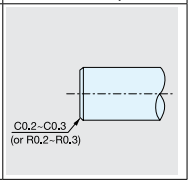




SDN-57A



SDN-70A

Recommended Shaft Spec.	
Shaft size	ø10 0 -0.03mm
Hardness	Min. HRC 55
Hardening Depth	Min 0.5mm
Surface Roughness	Max. 1.0μm
End Chamfering	

When inserting shaft, insert by rotating shaft in the opposite direction of the dampening direction. Shaft must be supported by stationary part. Damper can only take torque load.

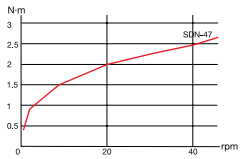
Item No.	Torque (kgf·cm)	Dampening Direction	Weight (g)	Carton (pcs)
SDN-57A-R553	55 (47.7 lbs·in)	Clockwise	94	100
SDN-57A-L553		Counter Clockwise		
SDN-70A-R114	110 (95.5 lbs·in)	Clockwise	136	
SDN-70A-L114		Counter Clockwise		

Part Name	Material
Body	Steel
Socket	Nylon with Glass Fiber

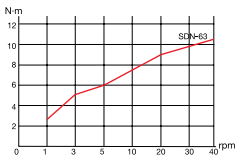
DISK DAMPER (ONE WAY) SDN-47A, 63A

Special Order

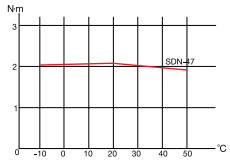
SDN-47A/Torque at Different Speed (23°C/73°F)



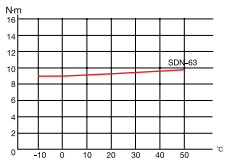
SDN-63A/Torque at Different Speed (23°C/73°F)

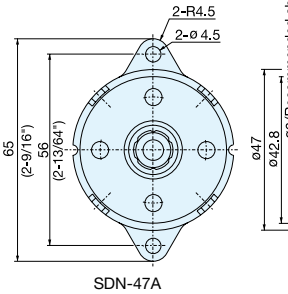


SDN-47A/Torque at Different Temperature (20rpm)

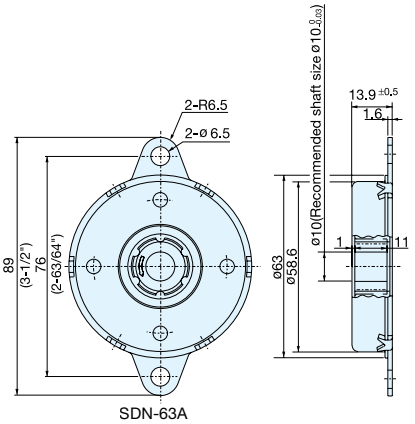


SDN-63A/Torque at Different Temperature (20rpm)

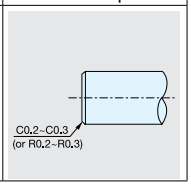




SDN-47A



SDN-63A

Recommended Shaft Spec.		
Shaft size	47A	63A
	ø6 0 -0.03mm	ø10 0 -0.03mm
Hardness	Min. HRC 55	
Hardening Depth	Min 0.5mm	
Surface Roughness	Max. 1.0μm	
End Chamfering		

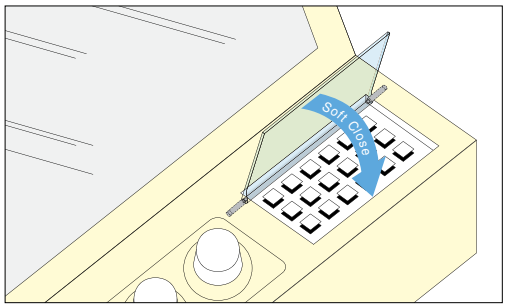
When inserting shaft, insert by rotating shaft in the opposite direction of the dampening direction. Shaft must be supported by stationary part. Damper can only take torque load.

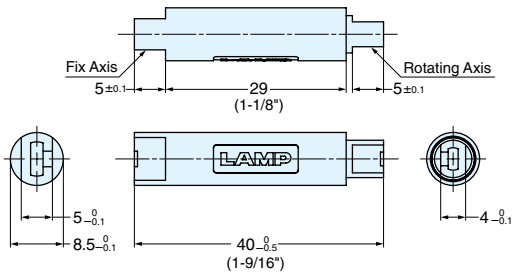
Item No.	Torque (kgf·cm)	Dampening Direction	Weight (g)	Carton (pcs)
SDN-47A-R203	20 (17.4 lbs·in)	Clockwise	55	100
SDN-47A-L203		Counter Clockwise		
SDN-63A-R903	85 (73.8 lbs·in)	Clockwise	115	
SDN-63A-L903		Counter Clockwise		

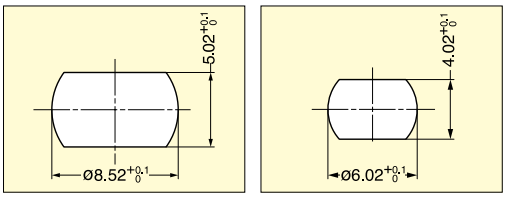
Part Name	Material
Body	Steel
Socket	Nylon with Glass Fiber

ROTARY DAMPER URD8-3

- 360 degree rotary damper.
- Tube design for concealed application.
- For inset applications.





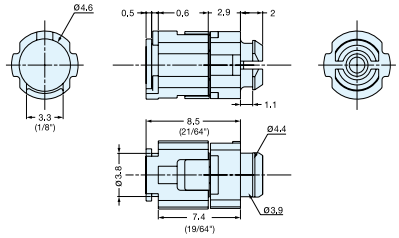


Cut-Out Dimension

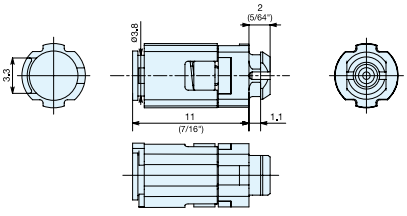
Item No.	Torque per piece (kgf·cm)	Weight (g)
URD8-3	0.22~0.39 (0.19~0.26 lbs·in)	2.5

Material	Finish
Right hand	Plain

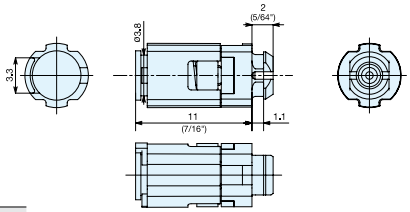
MICRO DETENT HINGE MPH



MPH-20-5



MPH-22



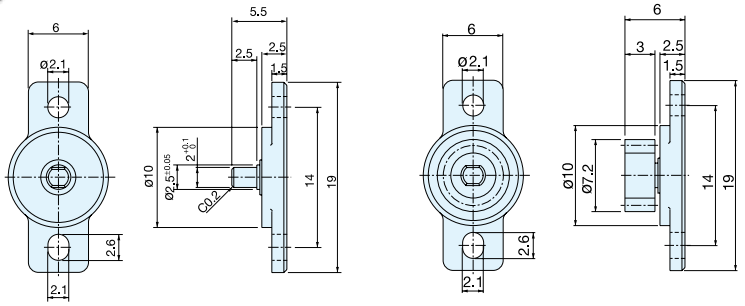
MPH-30

Item No.	Weight (g)	Carton (pcs)
MPH-20-5	0.46 (0.02 oz)	4000
MPH-22	0.62 (0.02 oz)	
MPH-30	1.01 (0.04 oz)	

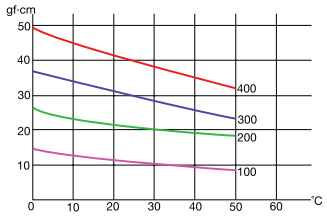
Part Name	Material	Finish
Body	Polyacetal	Grey/White
Spindle	Steel	Chromate

ROTARY DAMPER (TWO WAY) SRT-E2

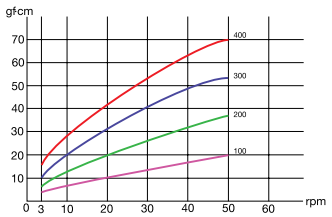
Special Order



Torque at Different Temperature (20rpm)



Torque at Different Speed (23°C/73°F)



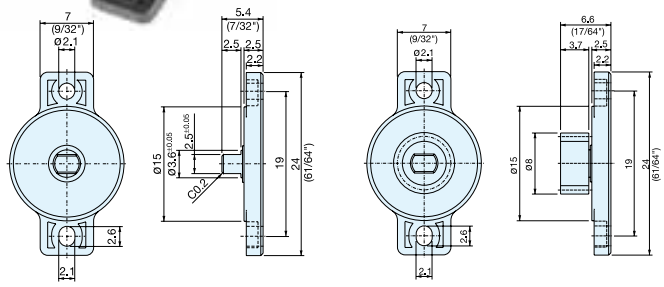
Item No.	Gear	Torque (gf·cm)	Weight (g)	Box (pcs)	Carton (pcs)
SRT-E2-100	Without	10 (0.14 in·oz)	0.32	2000	10000
SRT-E2-100G1	With		0.41		
SRT-E2-200	Without	20 (0.28 in·oz)	0.32		
SRT-E2-200G1	With		0.41		
SRT-E2-300	Without	30 (0.42 in·oz)	0.32		
SRT-E2-300G1	With		0.41		
SRT-E2-400	Without	40 (0.56 in·oz)	0.32		
SRT-E2-400G1	With		0.41		

Part Name	Material
Body	Polycarbonate
Shaft	Polyacetal
Gear	

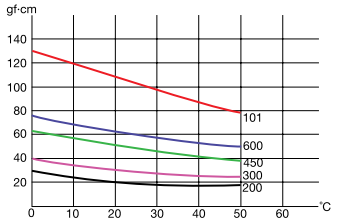
Gear Specification	
Type	Standard Spur Gear
Tooth	Involute (Full)
Module	0.6 mm
Pressure Angle	20°
Number of Teeth	10
Pitch Circle Diameter	6 mm

ROTARY DAMPER (TWO WAY) SRT-G2

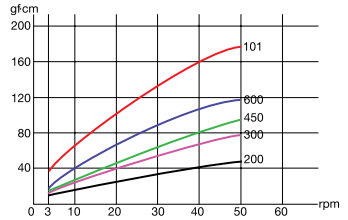
Special Order



Torque at Different Temperature (20rpm)



Torque at Different Speed (23°C/73°F)



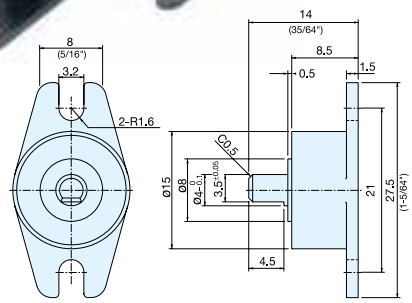
Item No.	Gear	Torque (gf·cm)	Weight (g)	Box (pcs)	Carton (pcs)
SRT-G2-200	Without	20 (0.28 in·oz)	0.6	1000	5000
SRT-G2-200G1	With		0.8		
SRT-G2-300	Without	30 (0.42 in·oz)	0.6		
SRT-G2-300G1	With		0.8		
SRT-G2-450	Without	45 (0.63 in·oz)	0.6		
SRT-G2-450G1	With		0.8		
SRT-G2-600	Without	60 (0.83 in·oz)	0.6		
SRT-G2-600G1	With		0.8		
SRT-G2-101	Without	100 (1.39 in·oz)	0.6		
SRT-G2-101G1	With		0.8		

Part Name	Material
Body	Polycarbonate
Shaft	Polyacetal
Gear	

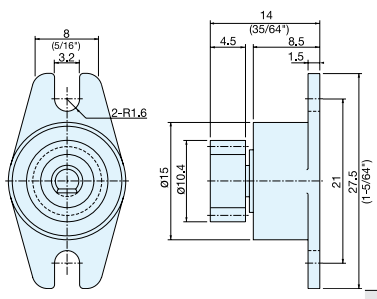
Gear Specification	
Type	Standard Spur Gear
Tooth	Involute (Full)
Module	0.5 mm
Pressure Angle	20°
Number of Teeth	14
Pitch Circle Diameter	7 mm

ROTARY DAMPER (ONE/TWO WAY) SRT-C2, SRN-C2

Special Order

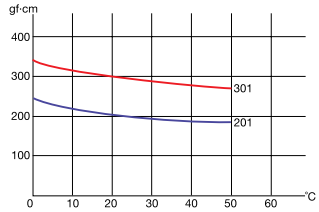


Without Gear

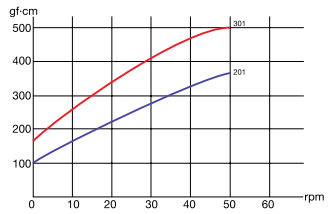


With Gear

Torque at Different Temperature (20rpm)



Torque at Different Speed (23°C/73°F)



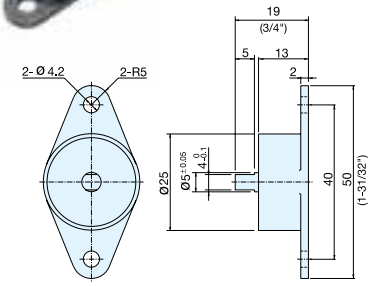
Item No.	Gear	Torque (gf·cm)	Dampening Direction	Weight (g)	Box (pcs)	Carton (pcs)
SRT-C2-201	Without	200 (2.78 in·oz)	Two Way	2.1	500	1000
SRT-C2-201G1	With			2.4		
SRT-C2-301	Without	300 (4.17 in·oz)		2.1		
SRT-C2-301G1	With			2.4		
SRN-C2-R301	Without		Clockwise	3.2		
SRN-C2-R301G1	With			3.5		
SRN-C2-L301	Without		Counter Clockwise	3.2		
SRN-C2-L301G1	With			3.5		

Part Name	Material	
	SRT-C2	SRN-C2
Body	Polycarbonate	
Shaft	Polyacetal	303 Stainless Steel
Gear	Polyacetal	

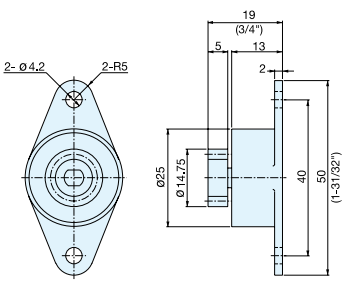
Gear Specification	
Type	Standard Spur Gear
Tooth	Involute (Full)
Module	0.8 mm
Pressure Angle	20°
Number of Teeth	11
Pitch Circle Diameter	8.8 mm

ROTARY DAMPER (ONE/TWO WAY) SRT-D2, SRN-D2

Special Order

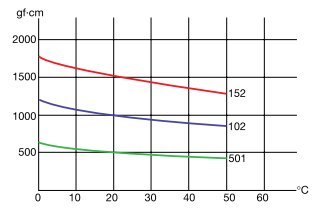


Without Gear

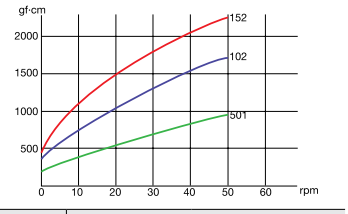


With Gear

Torque at Different Temperature (20rpm)



Torque at Different Speed (23°C/73°F)



*Add "G2" after item number to order damper with gear.

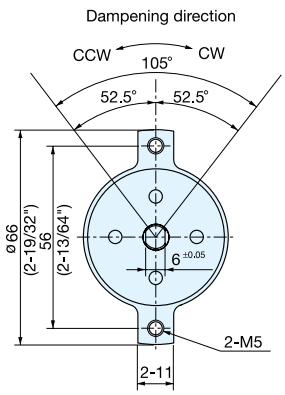
Item No.	Torque (gf·cm)	Dampening Direction	Weight (g)	Box (pcs)	Carton (pcs)
SRT-D2-501	500 (6.94 in·oz)	Two Way	8.3 (With Gear:8.9)	100	500
SRT-D2-102	1000 (13.89 in·oz)				
SRT-D2-152	1500 (20.83 in·oz)				
SRN-D2-R501	500 (6.94 in·oz)	Clockwise	11.8 (With Gear:12.4)		
SRN-D2-L501		Counter Clockwise			
SRN-D2-R102	1000 (13.89 in·oz)	Clockwise			
SRN-D2-L102		Counter Clockwise			
SRN-D2-R152	1500 (20.83 in·oz)	Clockwise			
SRN-D2-L152		Counter Clockwise			

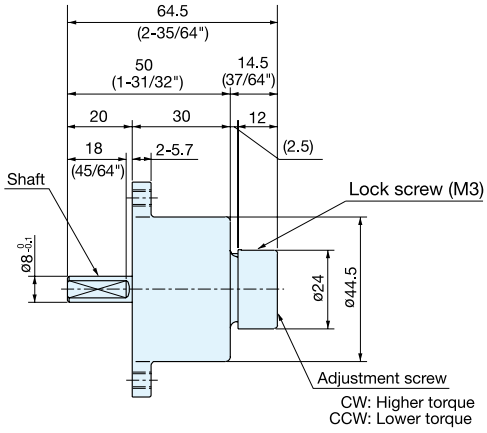
Part Name	Material	
	SRT-D2	SRN-D2
Body	Polycarbonate	
Shaft	Polyacetal	420 Stainless Steel
Gear	Polyacetal	

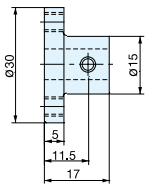
Gear Specification	
Type	Modified Spur Gear
Tooth	Involute (Full)
Module	1 mm
Pressure Angle	20°
Number of Teeth	12
Pitch Circle Diameter	12 mm

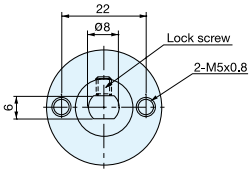
ADJUSTABLE VANE DAMPER (ONE/TWO WAY) SYT, SYN

Special Order

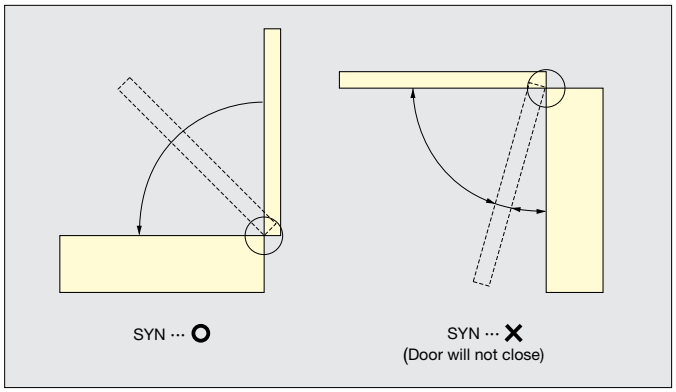




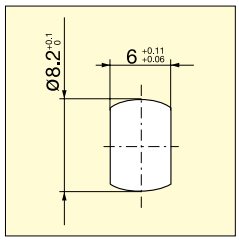




Shaft Bracket ROP-010H1
(Option)



SYN is designed to provide maximum torque before lid is closed, as shown in picture. SYT provides even torque in all angles.



Cut Out Dimension

Part Name	Material
Body	Zinc Alloy
Shaft	Steel

* To adjust torque, loosen lock screw and turn the adjustment screw. Lock screw should be tightened after adjustment. Do not turn adjustment screw over 360°.
* Separate stopper at the open/closed position is needed to avoid continuous/excessive load on the damper.

Item No.	Torque (kgf·cm)	Dampening Direction	Weight (g)	Box (pcs)	Carton (pcs)
SYT-H1-104	100 (86.9 lbs·in)	Two Way	240	10	20
SYN-H1-R104		Clockwise			
SYN-H1-L104		Counter Clockwise			