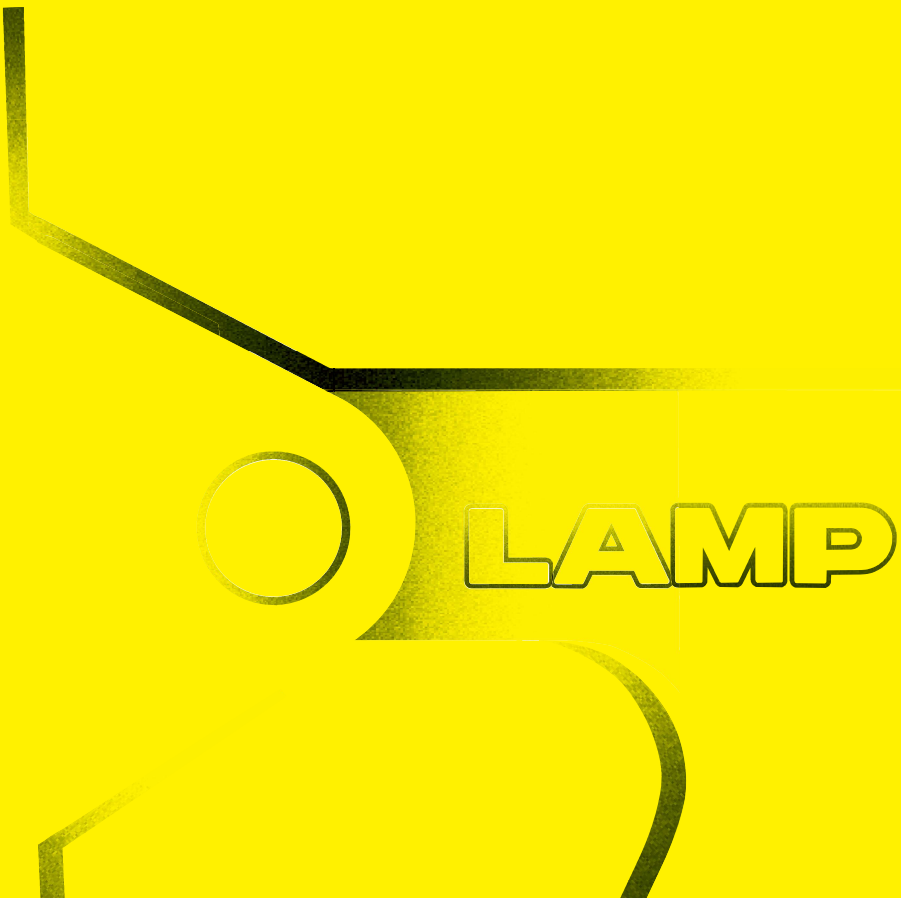
SUGATSUNE

Industrial Component Hardware



June 2022

No.400

INDEX

HINGES
LID SUPPORTS
CATCHES, LATCHES & FASTENERS
DRAWER SLIDES
HANDLES, PULLS & KNOBS
HOOKS & BRACKETS
MONITOR MOUNTS
CABINET DOOR HARDWARE & SHUTTER DOORS
LOCKS
CASTERS
LEVELLING GLIDES & BASE
MISCELLANEOUS

Motion Design Tec

LAMP®

LID SUPPORTS

Stays are used for restricting the opening range of doors or lids, or holding them at a certain angle.
A typical stay has two connected arms. In recent years, various kinds of stays are developed for stopping, slowly closing or softly opening doors and lids by use of friction, resistance, spring tension and so on.

SUGATSUNE

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INDEX by Type

Lift Assist Stays P.294~P.311



Assists in opening and closing heavy door or lid by use of spring tension.

◂ HEAVY DUTY SPRING LOADED LID STAY S-AT (P.296)

Soft Closing Stays P.312~P.385



Slowly opens and closes door or lid with LAPCON mechanism.

Lapcon

◂ SELF-OPENING STAY HDS-20S (P.318)

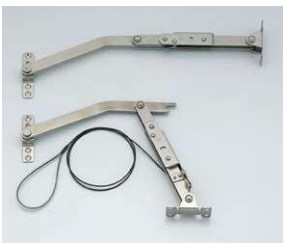
Torque Stays P.386~P.391



Stops door or lid in any position.

◂ FREE-STOP STAY S-100T30 (P.390)

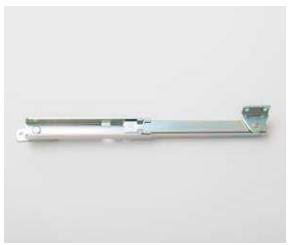
Heavy Duty Locking Stays P.392~P.395



Automatically locks door when fully opened.

◂ DOOR HOLDER YA-2020, YA-2020W (P.392)

Foot Stays P.396~P.398



Automatically locks door when opened and releases by simply lifting the stay with foot.

◂ FOOT STAYS YFN-300W (P.396)

Lid Stays P.399~P.415



Holds lid open fully or halfway.

◂ LID STAY LB-200A, LB-350A, LB-500A (P.401)

A tool for easily selecting soft-close, free stop and lift assist stays now available online!

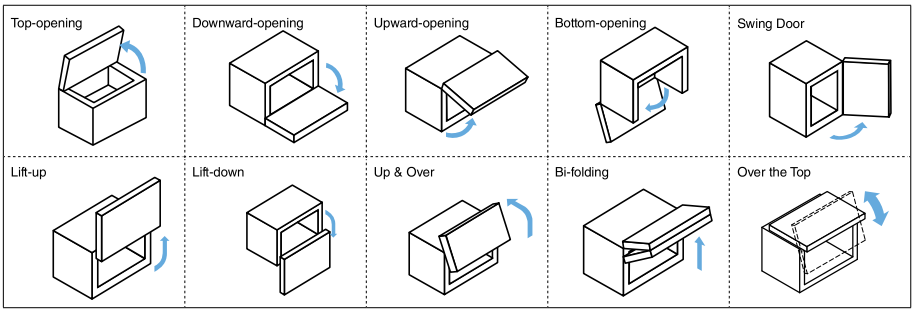
Motion Design Tech
Selection Tool "Sasuga-kun"

Simply by inputting the movement, size, weight and centre of gravity of the door or lid to be used, the torque required can be automatically calculated and suitable stay can be selected.



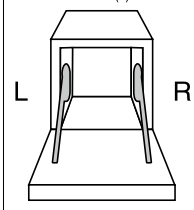
INDEX by Opening Direction

Opening Directions

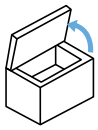


Left and Right-handed

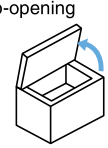
When viewing from door opening side, located on the right side is right-handed (R) and on the left side is left-handed (L).

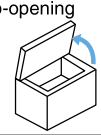


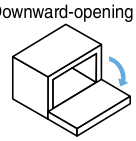
Products by Opening Direction

Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Top-opening 	Lift Assist Stays		S-AT	Side Mount	○	6.1~11.8 N·m/pc (62~120 kgf·cm/pc)	P.296
				Back Panel Mount		6.1~11.8 N·m/pc (62~120 kgf·cm/pc)	
			S-ATJ	Side Mount (damper option available)	○	6.1~11.8 N·m/pc (62~120 kgf·cm/pc)	P.298, P.300, P.302
			S-ATJD S-ATJS	Back Panel Mount (damper option available)		6.1~11.8 N·m/pc (62~120 kgf·cm/pc)	
			S-AT02W	Side Mount	○	17.6~21.0 N·m/pc (180~214 kgf·cm/pc)	P.306
				Back Panel Mount		15.0~16.5 N·m/pc (153~168 kgf·cm/pc)	
			S-ATH-60S	Back Panel Mount	○	60 N·m/pc (611.6 kgf·cm/pc)	P.308
			S-ATH-70S			70 N·m/pc (713.6 kgf·cm/pc)	
			S-YT01	Side Mount	–	Max. 2.94 N·m/pc (Max. 30 kgf·cm/pc)	P.310
			S-YT02			Max. 3.92 N·m/pc (Max. 40 kgf·cm/pc)	
			S-YT01S	Back Panel Mount	○	Max. 2.94 N·m/pc (Max. 30 kgf·cm/pc)	
			S-YT02S			Max. 3.92 N·m/pc (Max. 40 kgf·cm/pc)	
	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
	Soft Closing Stays		ARN-2	Lift-assist Soft-close Free-stop	○	4.0~8.0 N·m/pc (40.8~81.6 kgf·cm/pc)	P.316
			HDS-20S	With self-opening For Use in Pairs	–	6.9~14.7 N·m/2 pcs (70~150 kgf·cm/2 pcs)	P.318
			HDS-20	With Catch For Use in Pairs	–	13.7~41 N·m/2 pcs (140~418 kgf·cm/2 pcs)	P.320
			NSD-20	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.323
			NSDX-20 (R/L)	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.324

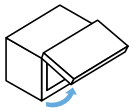
Products by Opening Direction

Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Top-opening 	Soft Closing Stays		SDS-200 SDS-201	With Catch	○	3.43~4.9 N·m/pc (35~50 kgf·cm/pc)	P.326
			SDS-210	–			
			LAD-ST	Lift-assist Soft-close	○	8.0~16.0 N・m/pc (81.6~163.2 kgf・cm/pc)	P.328
			LAD	Lift-assist Soft-close	○	8.0~16.0 N・m/pc (81.6~163.2 kgf・cm/pc)	P.330
			LADH-35 LADH-50	Lift-assist Soft-close	○	25~50 N・m/pc (254.9~509.9 kgf・cm/pc)	P.334
	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
	Torque Stays		S-TAR	Free Stop	–	0~7 N・m (0~71 kgf・cm)	P.386
			S-100T30	Free Stop	–	$3^{\pm 20\%}$ N・m/pc ($30.6^{\pm 20\%}$ kgf・cm/pc)	P.390
			S-52T15	Free Stop	–	$1.5^{\pm 20\%}$ N・m/pc ($15.3^{\pm 20\%}$ kgf・cm/pc)	P.391
	Type	Picture	Item Name	Description	Non-handed	Tension Force / Compression Load	Page
	Heavy Duty Locking Stays		YA-2020 (R/L)	Locks When Fully Opened Keeps Unlocked	–	1470 N/pc (150 kgf/pc) / 588 N/pc (60 kgf/pc)	P.392
			YA-2020W (R/L)				
			YA-0812 YA-1216	Locks When Fully Opened Keeps Unlocked	–	– / –	P.394
	Type	Picture	Item Name	Description	Non-handed	Compression Load	Page
	Lid Stays		LK-222 LK-335 LK-380	Holds When Fully Opened	○	–	P.404
			L-FS350A	Multi-angle Lock	○	294 N/pc (30 kgf/pc)	P.405
			LSP-195B LSP-270B	Locks When Fully Opened	○	294 N/pc (30 kgf/pc)	P.407
			L-FS140	Multi-angle Lock	○	58.8 N/pc (6 kgf/pc)	P.412
			L-SL140	Locks When Fully Opened	○	147 N/pc (15 kgf/pc)	P.413
	Type	Picture	Item Name	Description	Non-handed	Compression Load	Page
	Other Stays		S-91 S-92 S-93	–	–	–	P.415
			F-300	–	○	–	P.416
			F-150 F-200 F-250	–	–	–	P.416
			F-100	–	–	–	P.416
			S-20	With Catch	–	–	P.417
			S-19	–	–	–	P.417
			S-6 S-16	–	–	–	P.418

Opening Direction	Type	Picture	Item Name	Description	Non-handed	Compression Load	Page
Top-opening 	Other Stays		S-21	With Catch	–	–	P.418
			S-23	With Catch	–	–	P.419

Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Downward-opening 	Soft Closing Stays		HDS-10S	Self-close With Catch For Use in Pairs	–	5.9~17.6 N·m/2 pcs (60~180 kgf·cm/2 pcs)	P.336
			HDS-10	With Catch For Use in Pairs	–	13.7~29.4 N·m/2 pcs (140~300 kgf·cm/2 pcs)	P.338
			NSD-10	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.341
			NSDX-10 (R/L)	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.342
			SDS-100	–	○	3.43~4.9 N·m/pc (35~50 kgf·cm/pc)	P.344
			SDS-C100	With Catch			
			CSD-10-TV	–	○	1.0~4.0 N·m/pc (10.2~40.8 kgf·cm/pc)	P.346
			NSDX-10 (R/L) K-TV	With Catch	–	0.98~1.96 N·m/pc (10~20 kgf·cm/pc)	P.347
			SDS-100W(B)-TV	–	○	0.49~1.18 N·m/pc (5~12 kgf·cm/pc)	P.348
			SDS-100W(B)-TVZ			1.62~3.68 N·m/pc (16.5~37.6 kgf·cm/pc)	
			SDS-C100W(B)-TV	With Catch		0.49~1.18 N·m/pc (5~12 kgf·cm/pc)	
			SDS-C100W(B)-TVZ			1.62~3.68 N·m/pc (16.5~37.6 kgf·cm/pc)	
Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page	
	Torque Stays		S-TAR	Free Stop	–	0~7 N·m (0~71kgf·cm)	P.386
			S-52T15	Free Stop	–	$1.5^{\pm 20\%}$ N·m/pc ($15.3^{\pm 20\%}$ kgf·cm/pc)	P.391
Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page	
	Other Stays		HS	–	○	–	P.419
			S-35	–	○	–	P.420
			S-34	–	○	–	P.420
			S-24 S-27 S-25	–	–	–	P.421

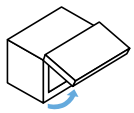
Products by Opening Direction

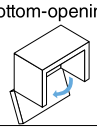
Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Upward-opening 	Soft Closing Stays		ARN-3	Lift-assist Soft-close Free-stop	○	4.0~8.0 N·m/pc (40.8~81.6 kgf·cm/pc)	P.350
			SLS-ELAN	Lift-assist Free Stop Soft-down	–	4.90~9.80 N·m/pc (50~100 kgf·cm/pc)	P.352
			SLS-ELAN-TV	Lift-assist Free Stop Soft-down	–	4.60~6.17 N·m/pc (47~63 kgf·cm/pc)	P.354
			HDS-30	With Catch For Use in Pairs	–	13.7~29.4 N·m/2 pcs (140~300 kgf·cm/2 pcs)	P.356
			HDSN-30	With Catch For Use in Pairs	–	13.7~34.3 N·m/2 pcs (140~350 kgf·cm/2 pcs)	P.358
			NSD-35	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.361
			NSDX-35 (R/L)	With Catch	–	1.96~6.86 N·m/pc (20~70 kgf·cm/pc)	P.362
			NSDX-35 (R/L) 2S	With Catch	–	1.96~4.9 N·m/pc (20~50 kgf·cm/pc)	P.364
			SDS-C301N	With Catch	○	3.92~6.86 N·m/pc (40~70 kgf·cm/pc)	P.365

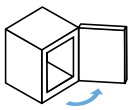
Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Torque Stays		S-TAR	Free Stop (Adjustable)	–	0~7 N·m (0~71kgf·cm)	P.386
		S-100T30	Free Stop	–	$3^{\pm 20\%}$ N·m/pc ($30.6^{\pm 20\%}$ kgf·cm/pc)	P.390
		S-52T15	Free Stop	–	$1.5^{\pm 20\%}$ N·m/pc ($15.3^{\pm 20\%}$ kgf·cm/pc)	P.391

Type	Picture	Item Name	Description	Non-handed	Tension Force	Compression Load	Page
Heavy Duty Locking Stays		YA-2020 (R/L) YA-2020W (R/L)	Locks When Fully Opened Keeps Unlocked	–	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	P.392
		YA-0812 YA-1216	Locks When Fully Opened Keeps Unlocked	–	–	–	P.394

Type	Picture	Item Name	Description	Non-handed	Compression Load	Page
Lid Stays		LB-200A	Holds When Fully Opened	○	294 N/pc (30 kgf/pc)	P.401
		LB-350A			245 N/pc (25 kgf/pc)	
		LB-500A			196 N/pc (20 kgf/pc)	

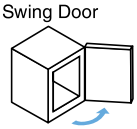
Opening Direction	Type	Picture	Item Name	Description	Non-handed	Compression Load	Page
Upward-opening 	Lid Stays		LBTS-350 LBTS-450	Holds at Multiple Angles	–	686 N/pc (70 kgf/pc)	P.402
			LB-S350	Holds When Fully Opened	○	1307 N/pc (133 kgf/pc)	P.403
			LB-S450			953 N/pc (97 kgf/pc)	
			LK-222 LK-335 LK-380	Holds When Fully Opened	○	–	P.404
			L-FS350A	Multi-angle Lock	○	294 N/pc (30 kgf/pc)	P.405
			LB-215 LB-290	Holds When Fully Opened	○	147 N/pc (15 kgf/pc)	P.406
			LSP-195B LSP-270B	Locks When Fully Opened	○	294 N/pc (30 kgf/pc)	P.407
			L-195 L-270	Holds When Fully Opened	○	147 N/pc (15 kgf/pc)	P.408
			LB-CV215A	Holds When Fully Opened	○	147 N/pc (15 kgf/pc)	P.409
			L-200P	Holds When Fully Opened	○	147 N/pc (15 kgf/pc)	P.410
			L-195-JC	Holds When Fully Opened	○	147 N/pc (15 kgf/pc)	P.411
			L-FS140	Multi-angle Lock	○	58.8 N/pc (6 kgf/pc)	P.412
			L-SL140	Locks When Fully Opened	○	147 N/pc (15 kgf/pc)	P.413
			L-100S L-140S	Holds When Fully Opened	○	58.8 N/pc (6 kgf/pc)	P.414
			KLS	Stops When Fully Opened, Right-handed Only	–	–	P.415

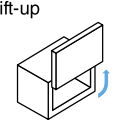
Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Bottom-opening 	Soft Closing Stays		SDS-400-W	–	○	3.43~4.9 N・m/pc (35~50 kgf・cm/pc)	P.366

Opening Direction	Type	Picture	Item Name	Description	Non-handed	Maximum Door Moment	Page
Swing Door 	Torque Stays		S-100T30	Free Stop	–	$3^{\pm 20\%}$ N・m/pc ($30.6^{\pm 20\%}$ kgf・cm/pc)	P.390
			S-52T15	Free Stop	–	$1.5^{\pm 20\%}$ N・m/pc ($15.3^{\pm 20\%}$ kgf・cm/pc)	P.391

Type	Picture	Item Name	Description	Non-handed	Tension Force	Compression Load	Page
Heavy Duty Locking Stays		YA-2020 (R/L) YA-2020W (R/L)	Locks When Fully Opened Keeps Unlocked	–	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	P.392
		YA-0812 YA-1216	Locks When Fully Opened Keeps Unlocked	–	–	–	P.394

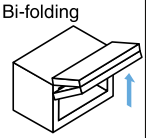
Products by Opening Direction

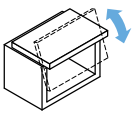
Opening Direction	Type	Picture	Item Name	Description	Non-handed	Tension Force	Compression Load	Page
Swing Door 	Foot Stays		YFN-300W	Two-angle Lock	○	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	P.396
			YFN-200	Locks When Fully Opened	○	882 N/pc (90 kgf/pc)	490 N/pc (50 kgf/pc)	P.397
			YFN-300 YFN-300-T50			1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	
			YFNS-300W	Two-angle Lock	○	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	P.398
			YFNS-300 YFNS-300-T50	Locks When Fully Opened	○	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)	P.398
Type	Picture	Item Name	Description	Non-handed	Tension Force	Compression Load	Page	
Lid Stays		L-FS350A	Multi-angle Lock	○	294 N/pc(30 kgf/pc)		P.405	
		LSP-195B LSP-270B	Locks When Fully Opened	○	294 N/pc(30 kgf/pc)		P.407	
		L-FS140	Multi-angle Lock	○	58.8 N/pc(6 kgf/pc)		P.412	
Type	Picture	Item Name	Description	Non-handed	Compression Load		Page	
Other Stay		U-3031HL	Multi-angle Lock	○	–		P.421	

Opening Direction	Type	Picture	Item Name	Description	Door Width	Door Height	Door Weight	Page
Lift-up 	Soft Closing Stay		SLU-ELAN	Lift-assist Free Stop Soft-close	Max.1800	390~500	5~11 kg	P.370
			SLUN-N	Lift-assist Soft-close	600~900	390~450	2.8~5.8 kg	P.372

Opening Direction	Type	Picture	Item Name	Description	Door Width	Door Height	Door Weight	Page
Lift-down 	Soft Closing Stay		SLD	Lift-assist Soft-close	600~900	360~400	3~6 kg	P.373

Opening Direction	Type	Picture	Item Name	Description	Door Width	Door Height	Door Weight	Page
Up & Over 	Soft Closing Stay		EZS-ELAN	Lift-assist Free Stop Soft-close	Max.1200	500~750	5~12.5 kg	P.374

Opening Direction	Type	Picture	Item Name	Description	Door Width	Door Height	Door Weight	Page
Bi-folding 	Soft Closing Stay		HBF-ELAN	Lift-assist Free Stop Soft-close	Max.1200	320~370	2.5~6.5 kg	P.376
			HBFN	Soft-close	450~900	320~370	2.5~5.5 kg	P.378

Opening Direction	Type	Picture	Item Name	Description	Door Width	Door Height	Door Thickness	Door Weight	Page
Over the Top 	Soft Closing Stay		OV-1	Soft-close	700~1400	350~450	Min.20	3~5 kg	P.380
			IF-360S (L/R)	Soft-close	Max. 1200	–	15~20	1.96~6.86 N・m/2 pcs (20~70 kgf・cm/2 pcs)	P.381
			IF-360W					3.92~13.72 N・m/2 pcs (40~140 kgf・cm/2 pcs)	
			IF-H360S (L/R)				18~30	1.96~6.86 N・m/2 pcs (20~70 kgf・cm/2 pcs)	
			IF-H360W					3.92~13.72 N・m/2 pcs (40~140 kgf・cm/2 pcs)	

[Concept of Moment]

When selecting soft-close, free stop and lift assist stays, the criterion is the moment of the door or lid.
Moment refers to the action of the force tending to make the object rotate around a point. If the moment matches the corresponding torque of the stay, it means that the stay is applicable.

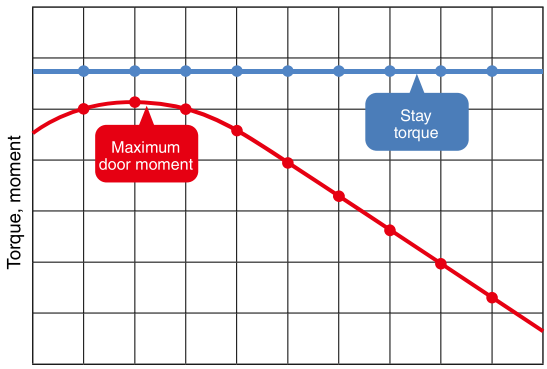
Formula for Calculating Moment

Door moment = Horizontal distance from rotation centre to centre of gravity × Door weight
Maximum door moment = Maximum horizontal distance from rotation centre to centre of gravity × Door weight

Relationship Between Applicable Stay and Door Moment

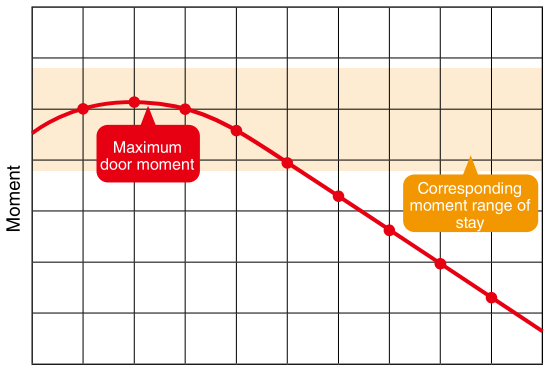
●In case of torque stay

If the stay torque is larger than the maximum door moment, then the stay is applicable.



●In case of damper stay

If the maximum door moment is within the corresponding moment range of the stay, then the stay is applicable.



※ The door moment is calculated according to horizontal distance from rotation centre to door centre of gravity. Therefore, it changes with the opening angle.
※ The door moment that is described in each product is the value for the installation in the catalogue.
※ Torque refers to the action of the force making an object rotate around the rotation axis, and moment refers to the action of the force tending to make a door or lid rotate around a point.

[Cautions]

Lift assist stays

- Be sure to observe the specified dimensions, levelness and perpendicularity for cabinet and door design and installation position of the product.

Soft closing stays

- Be sure to observe the specified dimensions, levelness and perpendicularity for cabinet and door design and installation position of the product. When multiple products are used for one door, difference in installation positions may concentrate load on a certain product, affecting product life and function. Pay full attention when installing.
- Incorrect installation dimension may cause malfunction (such as not able to close the door) or damage the product or hinge.
- Install to a firm and rigid cabinet. Insufficient rigidness may affect door opening and closing.
- Do not disassemble or modify the product.
- Add up door or handle weight when calculating door moment.
- Check the movement with actual item when door moment and door weight is close to the upper or lower limit of the specified range.
- Use a screw adhesive (when required) that will not penetrate into the resin part.

LIFT ASSIST STAY S-AT SERIES



- Spring mechanism assists in lifting the top-opening lid.
- Easily holds the door at any angle.

[Specifications]

- Operating temperature: 0°c~40°c
- Operating humidity: 90%RH or less
- For other specification exceeding the above range, please contact local representatives.

[Remarks]

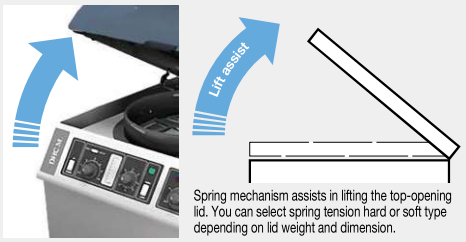
- Be sure to read the “Cautions” 1
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Material of the mounting surface should be take into consideration. Low rigidness may cause deformation or damage.
- Continuous opening and closing is not allowed.
- Do not use outdoors.
- Spring tension may vary over time.
- Do not use concealed hinges (multiaxial hinges).

Video Link

Selection Tool

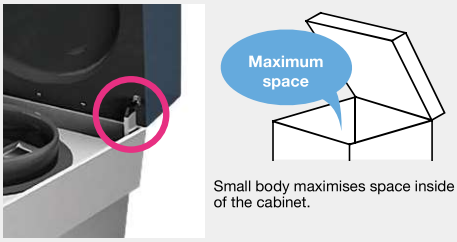
Sasuga-kun

●Easy operation with lift assist



Spring mechanism assists in lifting the top-opening lid. You can select spring tension hard or soft type depending on lid weight and dimension.

●Compact



Small body maximises space inside of the cabinet.

[S-ATH seriese]

Item name	Maximum Door Moment (N•m) (As a reference value)	Feature	Page
S-AT	4.1~6.1 / 6.1~8.8 / 8.8~11.8	Side Mount / Back Panel Mount	P.296
S-ATJ	6.1~8.8 / 8.8~11.8 — Balance Adjustable — Damper Available	Side Mount	P.298
S-ATJD	6.1~8.8 / 8.8~11.8 — Balance Adjustable — Damper Available	Back Panel Mount	P.300
S-ATJS	6.1~8.8 / 8.8~11.8 — Balance Adjustable	Back Panel Mount	P.302
S-AT02W	17.6~21.0	Side Mount / Back Panel Mount	P.306
S-ATH	54.0~60.0 / 63.0~70.0	Back Panel Mount	P.308

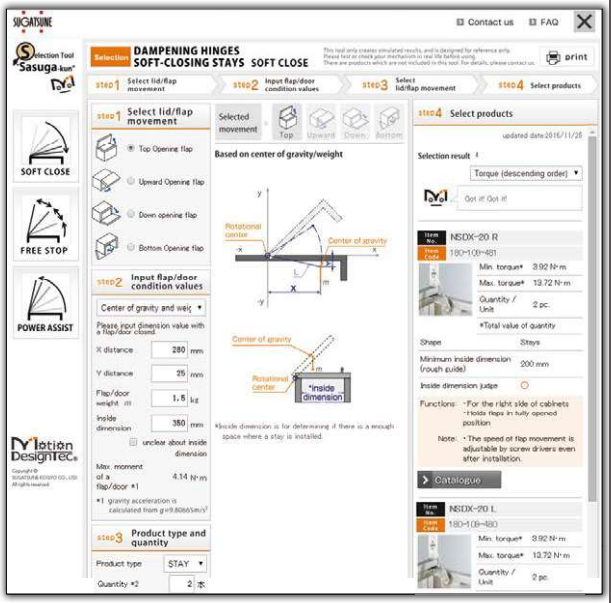
Torque

Refer to 1 : P.293

A tool for easily selecting soft-close, free stop and lift assist stays now available online!

Motion Design Tech
Selection Tool "Sasuga-kun"

Simply by inputting the movement, size, weight and centre of gravity of the door or lid to be used, the torque required can be automatically calculated and suitable stay can be selected.



LIFT ASSIST STAY S-AT Side Mount, Back Panel Mount

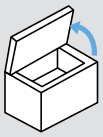
L=R INSTRUCTION



S-AT01, S-AT02 (Side mount type)



S-AT01S, S-AT02S (Back panel mount type)

Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Top-opening	S-AT01	Side mount	Yes	6.1~8.8 N・m/pc (62~90 kgf・cm/pc)
	S-AT02			8.8~11.8 N・m/pc (90~120 kgf・cm/pc)
	S-AT01S	Back panel mount		6.1~8.8 N・m/pc (62~90 kgf・cm/pc)
	S-AT02S			8.8~11.8 N・m/pc (90~120 kgf・cm/pc)

- Spring mechanism assists in lifting the top-opening lid.
- Easily holds the door at any angle (about 10° ~80°).
- Compact design maximises the space inside.
- Side mount and back panel mount are available. Both are non-handed.
- Can select spring tension hard or soft type depending on lid weight and dimension.
- S-AT02W 1 with doubled maximum door moment also available.

[Specifications]

- Operating temperature: 0℃~40℃
- Operating humidity: 90%RH or less
- For other specification exceeding the above range, please contact local representatives.

[Remarks]

- Be sure to read the “Cautions” 2.
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Material of the mounting surface should be take into consideration. Low rigidness may cause deformation or damage.
- Continuous opening and closing is not allowed.
- Do not use outdoors.
- Spring tension may vary over time.
- Do not use concealed hinges (multiaxial hinges).
- We recommend to test the assembly before final use.

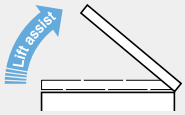
Video Link

Selection Tool

Sasuga-kun

●Easy operation with lift assist

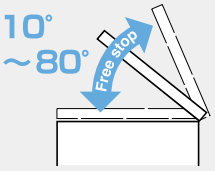




Spring mechanism assists in lifting the top-opening lid. You can select spring tension hard or soft type depending on lid weight and dimension.

●Free stop

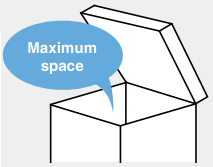




Easily holds the opening angle of top-opening lid at about 10° ~80° .

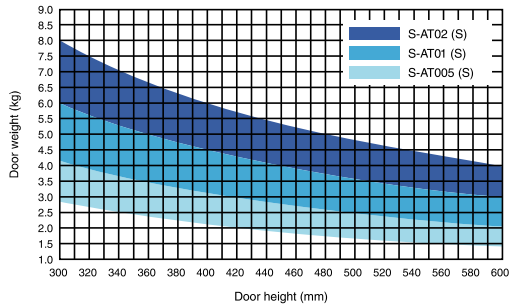
●Compact





Small body maximises space inside of the cabinet.

[Selection Graph]



Selection graph and door moment formula are obtained when door centre of gravity is at the height centre and installation is done according to dimensions in drawings on the next page.

[Applicable Range]

- Choose from 2 types according to the maximum door moment.
  Maximum Door Moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

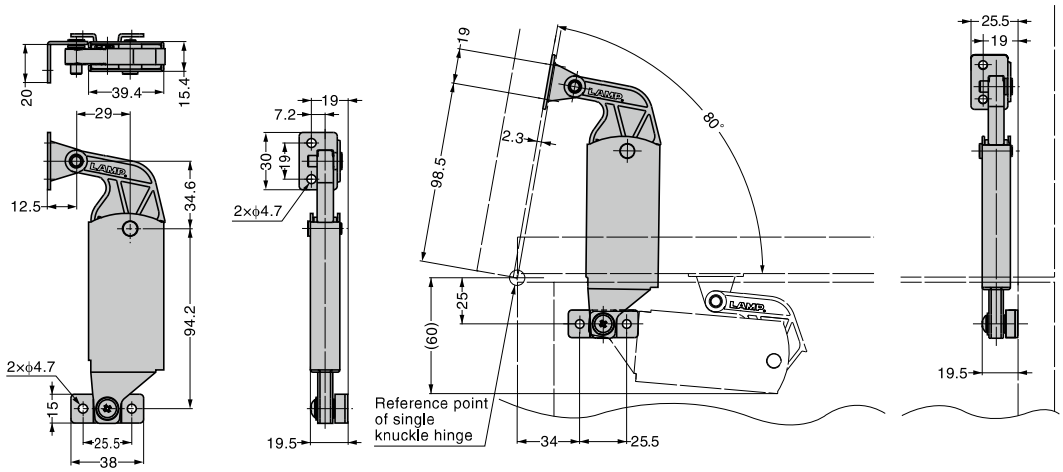
Maximum Door Moment N・m	Item Name	Qty
6.1~8.8	S-AT01 (S)	1pc
8.8~11.8	S-AT02 (S)	

- With 2 stays, the maximum door moment will be doubled.

Refer to 1 : P.306~P.307, 2 : P.293

LIFT ASSIST STAY S-AT01, S-AT02 Side Mount

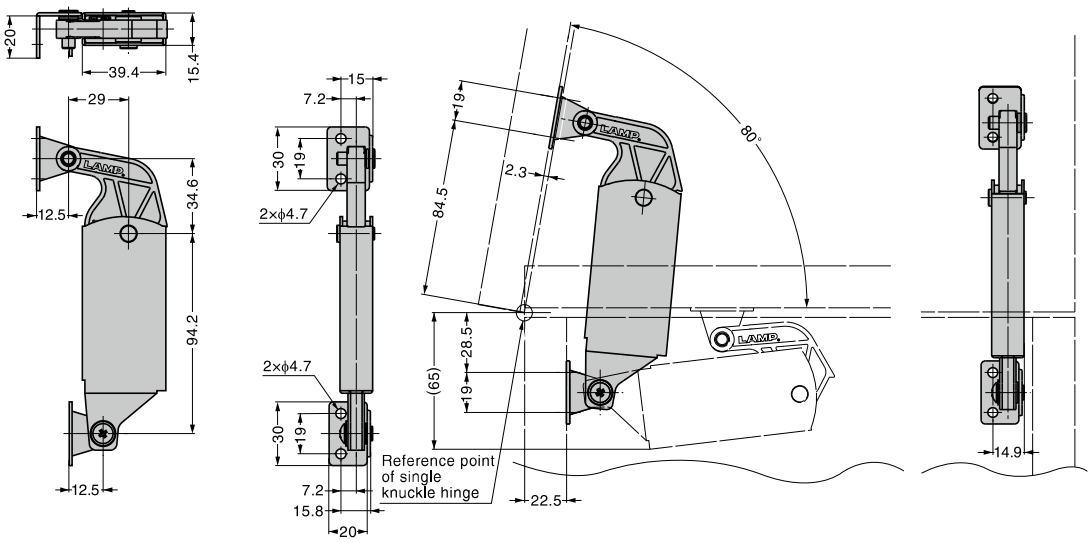
L=R INSTRUCTION



RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-017-544	S-AT01	Stainless Steel (SUS430)/ POM	Plain	6.1~8.8	62~90	195	10	50
G	3D	180-017-545	S-AT02			8.8~11.8	90~120	195	10	50
G	3D	180-043-522	S-AT005			4.1~6.1	42~62	195	10	50

LIFT ASSIST STAY S-AT01S, S-AT02S Back Panel Mount

L=R INSTRUCTION

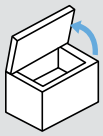


RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-017-546	S-AT01S	Stainless Steel (SUS430)/ POM	Plain	6.1~8.8	62~90	195	10	50
G	3D	180-017-547	S-AT02S			8.8~11.8	90~120	195	10	50
G	3D	180-043-523	S-AT005S			4.1~6.1	42~62	195	10	50

BALANCE-ADJUSTABLE LIFT-ASSIST STAY S-ATJ Side Mount, Back Panel Mount

L=R INSTRUCTION

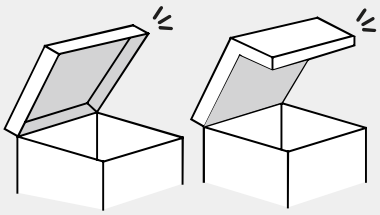


Opening Direction	Description	Non-handed	Maximum Door Moment*
 Top-opening	Side mount (damper option available)	Yes	6.1~8.8 N・m/pc (62~90 kgf・cm/pc)
			8.8~11.8 N・m/pc (90~120 kgf・cm/pc)

*The max. door moment depends on the following factors:
- Location of center of gravity
- Installation point of stays
- Balance adjustment

- Spring mechanism assists in lifting the top-opening lid.
- Easily holds the door at any angle.
- The balance adjustment allows for use in wider range of lids than conventional S-AT stays can be used.
- The locking hole prevents accidental close by inserting a screw driver into it.
- The optional damper S-ATD 1 provides soft closing.

[Balance Adjustment]



This feature allows adjustment to the location of center of gravity.

[Specifications]

- Operating temperature : 0℃~40℃
- Operating humidity : 90%RH or less
- For other specifications exceeding the above range, please contact local representatives.

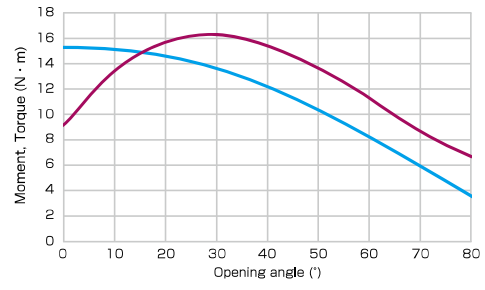
[Remarks]

- Be sure to read the "Cautions" 2.
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Material of the mounting surface should be take into consideration. Low rigidness may cause deformation or damage.
- Was not designed for continuous opening and closing .
- Do not use outdoors.
- Spring tension may vary over time.
- Do not use concealed hinges (multiaxial hinges).
- Installation points must be parallel when using more than one stay.

[Recommended Screw]

- Truss head screw M5)

[Door Moment and Stay Torque] (when using two stays, setting adjustment C)



The graph above shows a ideal example of curves.
The stay torque should be above the door moment from the middle of the opening.
・Door moment Mu > Stay torque : Force is applied in the closing direction of door.
・Door moment Mu < Stay torque : Force is applied in the opening direction of door.
・Door specs (example) : X=500mm Y=20mm L=500.4mm m=3kg
*The installation point is the same as the drawings on the page of the HG-PA300-15.

[Lift-assist]



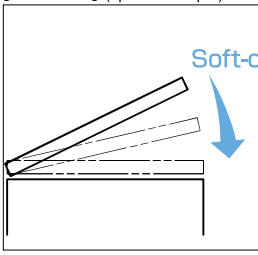
Spring mechanism assists in lifting the top-opening lid. You can select hard or soft spring tension type depending on lid weight and dimension.

[Compact]



Small body maximises space inside the cabinet.

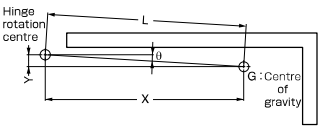
[Soft-close] (optional damper)



The S-ATD (optional damper) 1 provides soft-closing effect ensuring safety

[Calculatiog Door Moment]

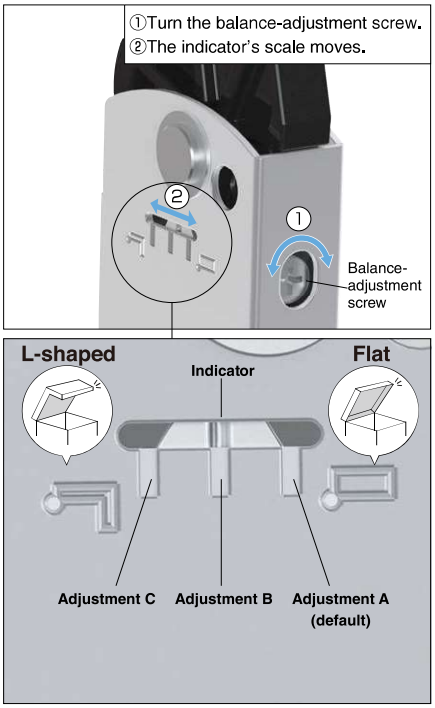
Calculation formula: Mu = m × L × cosθ



X	Horizontal distance from rotation centre to lid centre of gravity
Y	Vertical distance from rotation centre to lid centre of gravity
L	Distance from rotation centre to lid centre of gravity
θ	Angle from the horizontal line at the rotation centre to lid centre of gravity
m	Lid weight
G	Lid centre of gravity

Refer to 1 : P.304, 2 : P.293

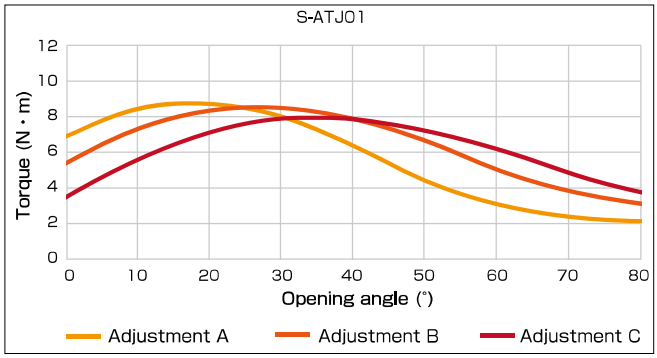
[Balance Adjustment]

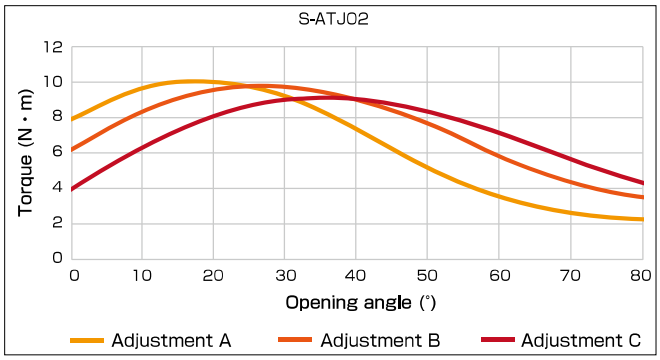


The indicator shows how much balance-adjustment is applied.
Balance-adjustment should depend on the location of the center of gravity.
When used in:
- a flat lid, "Adjustment A" becomes better setting.*
- a L-shaped lid, "Adjustment C" becomes better setting.*

*A flat lid's center of gravity is higher than its rotational center.
*A L-shaped lid's center of gravity is lower than its rotational center.

[Torque-Angle Graph] showing the variation of peak torque when balance-adjusted

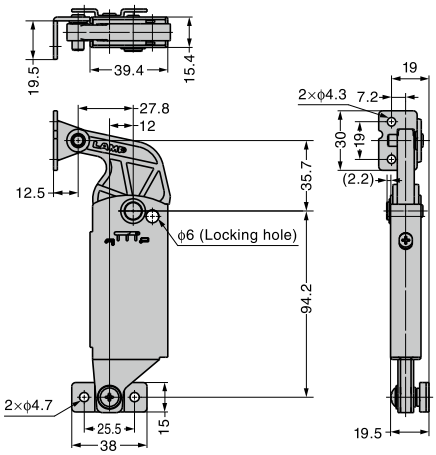




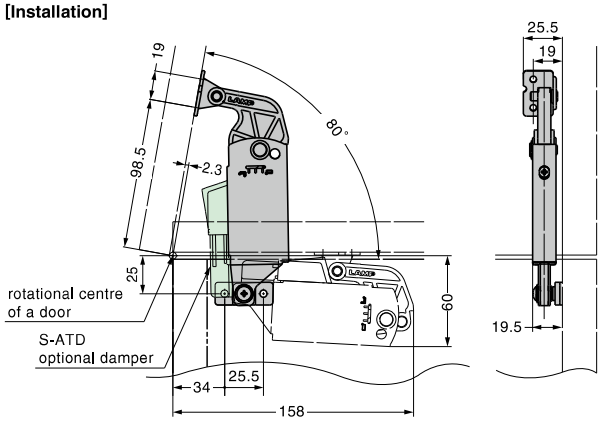
Video Link

Selection Tool

Sasuga-kun



[Installation]



[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-515	S-ATJ01	Stainless Steel (SUS430) / POM	Plain	6.1~8.8	62~90	200	10	50
G	3D	180-043-518	S-ATJ02			8.8~11.8	90~120		10	50

*The Max. door moment depends on location of center of gravity, installation point of stays, and balance adjustment.

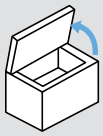
[Damper Unit] option

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-521	S-ATD-30	15	50	–

BALANCE-ADJUSTABLE LIFT-ASSIST STAY S-ATJD Back Panel Mount

L=R INSTRUCTION

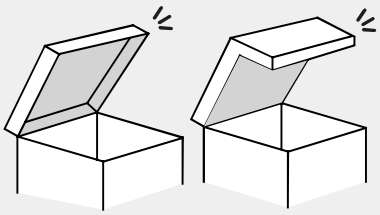


Opening Direction	Description	Non-handed	Maximum Door Moment*
 Top-opening	Back panel mount (damper option available)	Yes	6.1~8.8 N・m/pc (62~90 kgf・cm/pc)
			8.8~11.8 N・m/pc (90~120 kgf・cm/pc)

*The max. door moment depends on the following factors:
- Location of center of gravity
- Installation point of stays
- Balance adjustment

- Spring mechanism assists in lifting the top-opening lid.
- Easily holds the door at any angle.
- The balance adjustment allows for use in wider range of lids than conventional S-AT stays can be used.
- The locking hole prevents accidental close by inserting a screw driver into it.
- The optional damper S-ATD 1 provides soft closing.

[Balance Adjustment]



This feature allows adjustment to the location of center of gravity.

[Lift-assist]



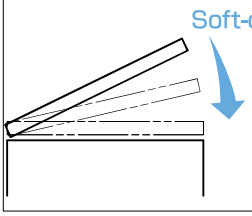
Spring mechanism assists in lifting the top-opening lid. You can select hard or soft spring tension type depending on lid weight and dimension.

[Compact]



Small body maximises space inside the cabinet.

[Soft-close] (optional damper)



The S-ATD (optional damper) 1 provides soft-closing effect ensuring safety

Refer to 1 : P.304, 2 : P.293

[Specifications]

- Operating temperature : 0℃~40℃
- Operating humidity : 90%RH or less
- For other specifications exceeding the above range, please contact local representatives.

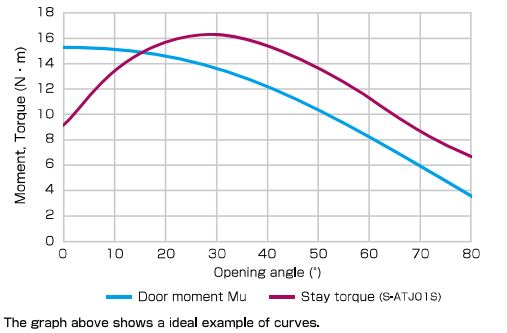
[Remarks]

- Be sure to read the "Cautions" 2.
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Material of the mounting surface should be take into consideration. Low rigidness may cause deformation or damage.
- Was not designed for continuous opening and closing .
- Do not use outdoors.
- Spring tension may vary over time.
- Do not use concealed hinges (multiaxial hinges).
- Installation points must be parallel when using more than one stay.

[Recommended Screw]

- Truss head screw M4

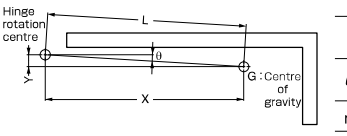
[Door Moment and Stay Torque] (when using two stays, setting adjustment C)



The graph above shows a ideal example of curves.
The stay torque should be above the door moment from the middle of the opening.
・Door moment Mu > Stay torque : Force is applied in the closing direction of door.
・Door moment Mu < Stay torque : Force is applied in the opening direction of door.
・Door specs (example) : X=500mm Y=20mm L=500.4mm m=3kg
*The installation point is the same as the drawings on the page of the HG-PA300-15.

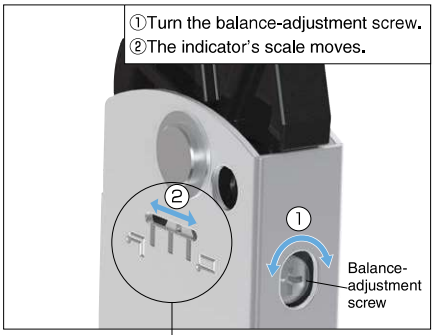
[Calculationg Door Moment]

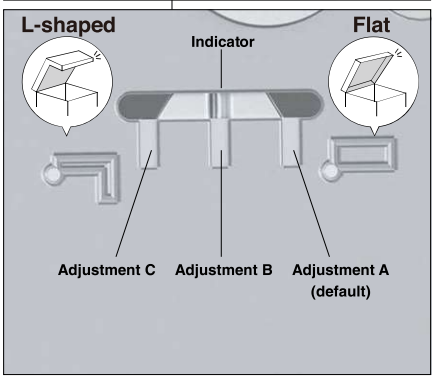
Calculation formula: $Mu = m \times L \times \cos\theta$



X	Horizontal distance from rotation centre to lid centre of gravity
Y	Vertical distance from rotation centre to lid centre of gravity
L	Distance from rotation centre to lid centre of gravity
θ	Angle from the horizontal line at the rotation centre to lid centre of gravity
m	Lid weight
G	Lid centre of gravity

[Balance Adjustment]

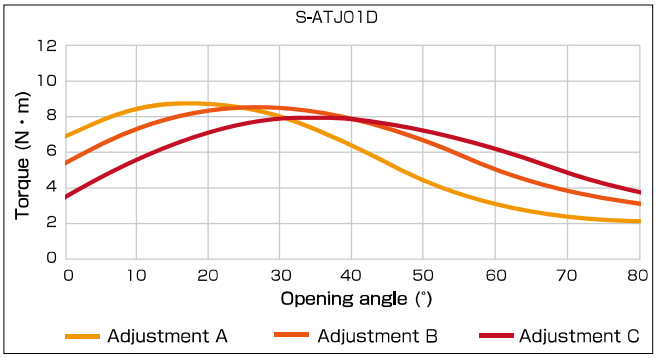


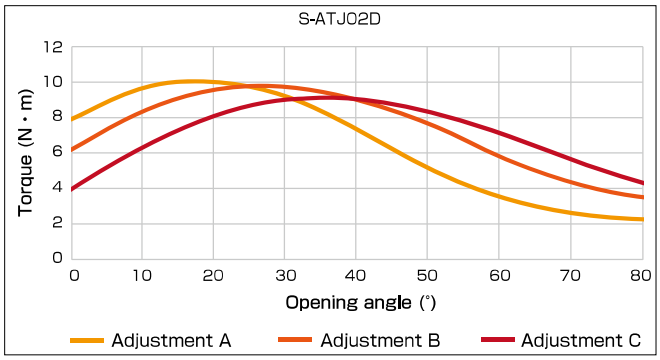


The indicator shows how much balance-adjustment is applied.
Balance-adjustment should depend on the location of the center of gravity.
When used in:
- a flat lid, "Adjustment A" becomes better setting.*
- a L-shaped lid, "Adjustment C" becomes better setting.*

*A flat lid's center of gravity is higher than its rotational center.
*A L-shaped lid's center of gravity is lower than its rotational center.

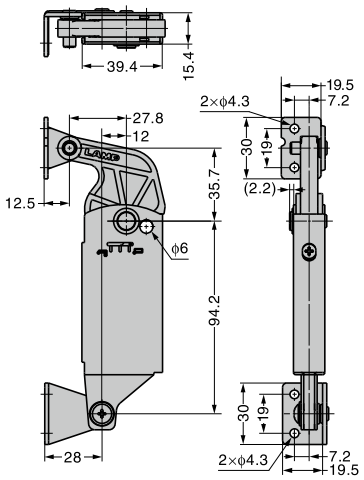
[Torque-Angle Graph] showing the variation of peak torque when balance-adjusted



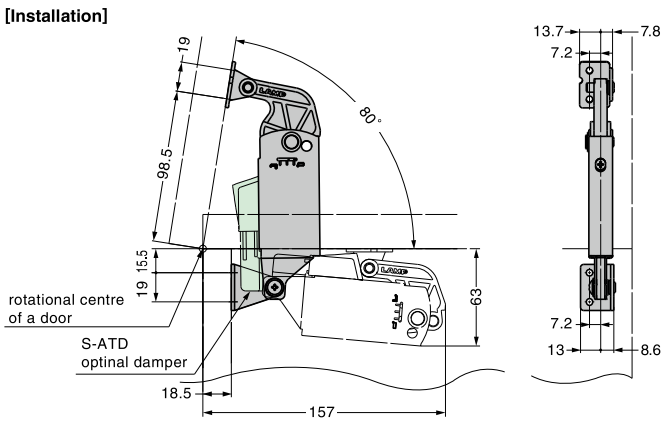


Video Link

Selection Tool
Sasuga-kun



[Installation]



[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-516	S-ATJ01D	Stainless Steel (SUS430) / POM	Plain	6.1~8.8	62~90	210	10	50
G	3D	180-043-519	S-ATJ02D			8.8~11.8	90~120		10	50

*The Max. door moment depends on location of center of gravity, installation point of stays, and balance adjustment.

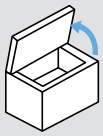
[Damper Unit] option

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-521	S-ATD-30	15	50	–

BALANCE-ADJUSTABLE LIFT-ASSIST STAY S-ATJS Back Panel Mount

L=R INSTRUCTION

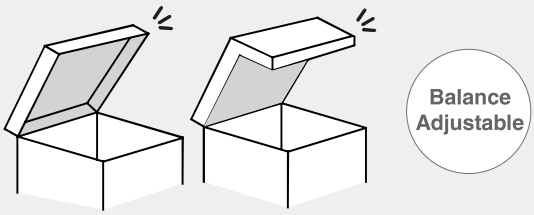


Opening Direction	Description	Non-handed	Maximum Door Moment*
 Top-opening	Back panel mount (damper option available)	Yes	6.1~8.8 N・m/pc (62~90 kgf・cm/pc)
			8.8~11.8 N・m/pc (90~120 kgf・cm/pc)

*The max. door moment depends on the following factors:
- Location of center of gravity
- Installation point of stays
- Balance adjustment

- Spring mechanism assists in lifting the top-opening lid.
- Easily holds the door at any angle.
- The balance adjustment allows for use in wider range of lids than conventional S-AT stays can be used.
- The locking hole prevents accidental close by inserting a screw driver into it.

[Balance Adjustment]



This feature allows adjustment to the location of center of gravity.

[Specifications]

- Operating temperature : 0℃~40℃
- Operating humidity : 90%RH or less
- For other specifications exceeding the above range, please contact local representatives.

[Remarks]

- Be sure to read the “Cautions” 1.
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Material of the mounting surface should be take into consideration. Low rigidness may cause deformation or damage.
- Was not designed for continuous opening and closing .
- Do not use outdoors.
- Spring tension may vary over time.
- Do not use concealed hinges (multiaxial hinges).
- Installation points must be parallel when using more than one stay.

[Recommended Screw]

- Truss head screw M4

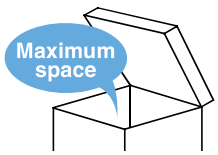
[Lift-assist]



Spring mechanism assists in lifting the top-opening lid. You can select hard or soft spring tension type depending on lid weight and dimension.

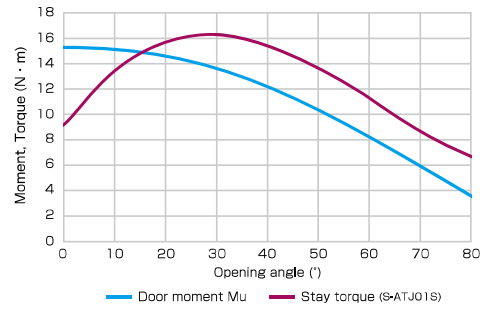
[Compact]





Small body maximises space inside the cabinet.

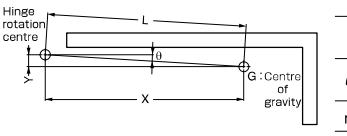
[Door Moment and Stay Torque] (when using two stays, setting adjustment C)



The graph above shows a ideal example of curves.
The stay torque should be above the door moment from the middle of the opening.
・Door moment Mu > Stay torque : Force is applied in the closing direction of door.
・Door moment Mu < Stay torque : Force is applied in the opening direction of door.
・Door specs (example) : X=500mm Y=20mm L=500.4mm m=3kg
*The installation point is the same as the drawings on the page of the HG-PA300-15.

[Calculatiog Door Moment]

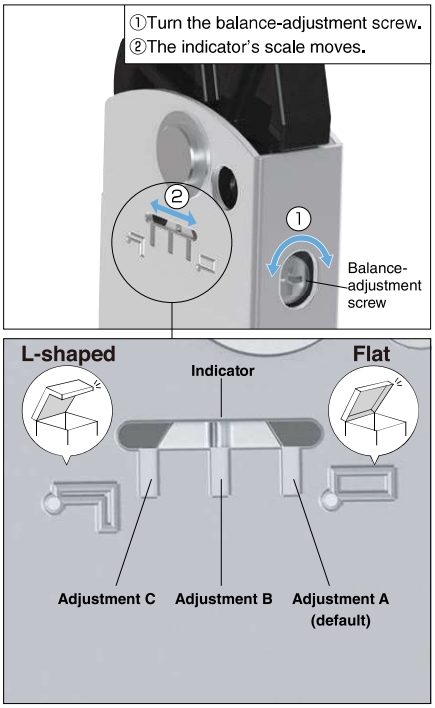
Calculation formula: $Mu = m \times L \times \cos\theta$



X	Horizontal distance from rotation centre to lid centre of gravity
Y	Vertical distance from rotation centre to lid centre of gravity
L	Distance from rotation centre to lid centre of gravity
θ	Angle from the horizontal line at the rotation centre to lid centre of gravity
m	Lid weight
G	Lid centre of gravity

Refer to 1 : P.293

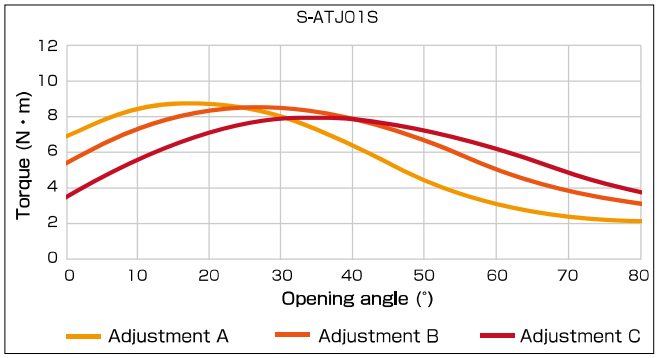
[Balance Adjustment]

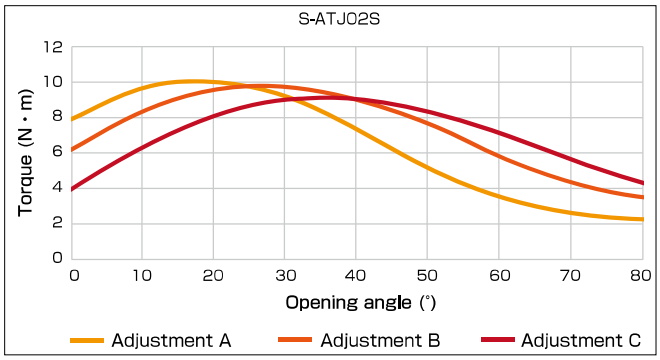


The indicator shows how much balance-adjustment is applied.
Balance-adjustment should depend on the location of the center of gravity.
When used in:
- a flat lid, "Adjustment A" becomes better setting.*
- a L-shaped lid, "Adjustment C" becomes better setting.*

*A flat lid's center of gravity is higher than its rotational center.
*A L-shaped lid's center of gravity is lower than its rotational center.

[Torque-Angle Graph] showing the variation of peak torque when balance-adjusted

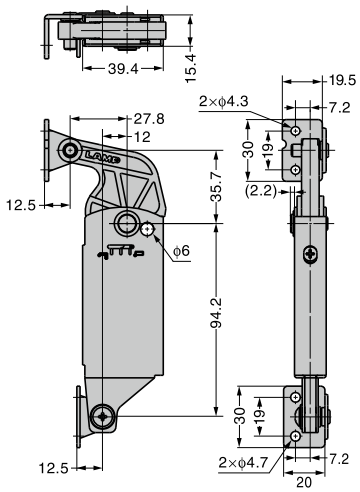




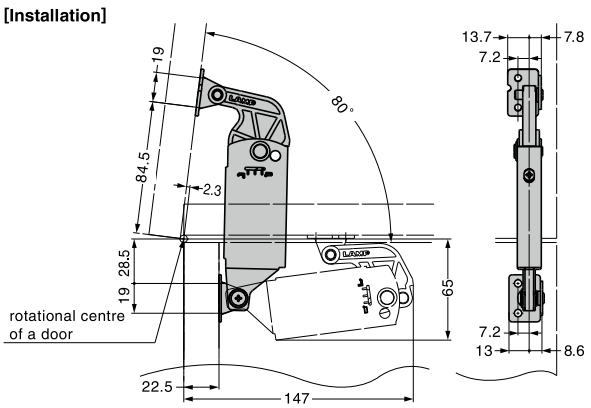
Video Link

Selection Tool

Sasuga-kun



[Installation]



[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-517	S-ATJ01S	Stainless Steel (SUS430) / POM	Plain	6.1~8.8	62~90	200	10	50
G	3D	180-043-520	S-ATJ02S			8.8~11.8	90~120		10	50

*The Max. door moment depends on location of center of gravity, installation point of stays, and balance adjustment.

DAMPER UNIT S-ATD For S-ATJ and S-ATJD



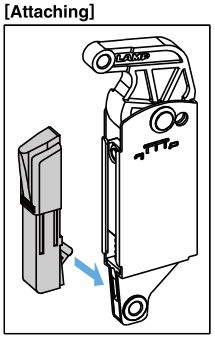
- Specially designed for use with the S-ATJ 1 and S-ATJD 2. Adds soft-closing feature to the stays.
- Easy to attach to the S-ATJ and S-ATJD stays by simply inserting it. The thickness is designed to fit the stays allowing for maximum space inside cabinets.

[Remarks]

- Only for use with the S-ATJ and S-ATJD. Can not be used with other items in the S-AT series.
- Other installation points than those in this catalogue may not be available. For details, please check with the product search engine called "Sasuga-kun" .



[Attaching]

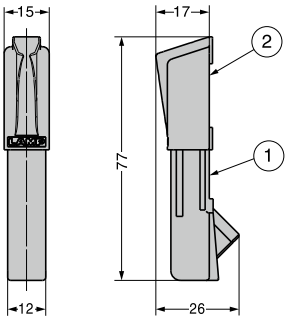


Selection Tool

Sasuga-kun

[When attached to the S-ATJD]





RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-043-521	S-ATD-30	15	50	–

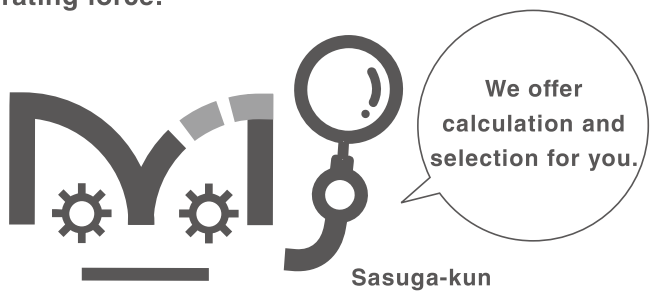
Refer to 1 : P.298, 2 : P.300

No.	Part Name	Material
①	Damper Case	POM
②	Slider	PBT

LIFT ASSIST STAYS
SOFT CLOSING STAYS
TORQUE STAYS
HEAVY DUTY LOCKING STAYS
FOOT STAYS
LID STAYS
OTHER STAYS
TOP-OPENING
DOWNWARD-OPENING
UPWARD-OPENING
BOTTOM-OPENING
SWING DOOR
LIFT-UP
LIFT-DOWN
UP & OVER
BI-FOLDING
OVER THE TOP

Product Selection Tool Sasuga-kun

Just inputting the dimensions and weight of the flap/door, you can select suitable Motion Design Tech products or simulate (graphically display) moment and operating force.



Access from here | Sasuga-kun | Search

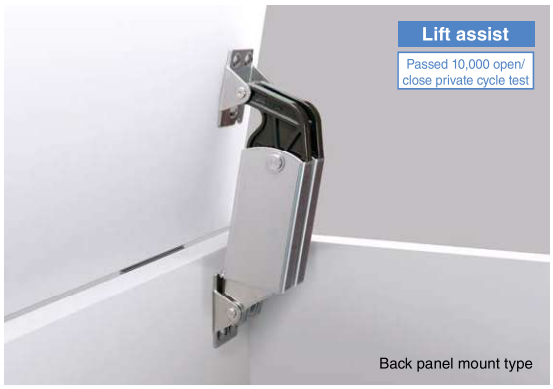
https://cont.sugatsune.co.jp/motion/en/

LIFT ASSIST STAY S-AT02W Side Mount, Back Panel Mount

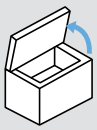
L=R INSTRUCTION



Side mount type



Back panel mount type

Opening Direction	Description	Non-handed	Maximum Door Moment
 Top-opening	Side Mount	Yes	17.6~21.0 N・m/pc (180~214 kgf・cm/pc)
	Back Panel Mount		15.0~16.5 N・m/pc (153~168 kgf・cm/pc)

- Doubled torque (※) compared with conventional S-AT 1. (※ For side mount)
- Spring mechanism assists in lifting heavy top-opening lid.
- Easily holds the lid at any angle (about 10° ~80°).
- Compact design maximises space inside of the cabinet.
- Non-handed for both side and back panel mount. Use side board bracket for side mount.

[Specifications]

- Operating temperature: 0℃~40℃
- Operating humidity: 90%RH or less
  ※ For other specification exceeding the above range, please contact local representatives.

[Remarks]

- Be sure to read the "Cautions" 2.
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Because of high spring tension product, abnormal noise, deformation or damage may occur depending on cabinet and hinge used.
  Check if the cabinet has sufficient strength and rigidity before use.
- Continuous opening and closing is not allowed.
- Spring tension may vary over time.
- Do not use with concealed hinges (multiaxial hinges).
- We recommend to test assembly before final use.

Video Link

Selection Tool

Sasuga-kun

[Parts Included]

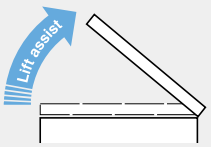
- Side board bracket (For side mount)
- Truss head screw M5×6 (Used for fixing the body and bracket in case of side mount)

[Recommended Screw]

- Truss head screw M5

- Easy operation with lift assist

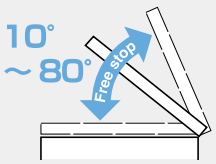




Built-in spring mechanism assists in lifting heavy top-opening lid.

- Free stop

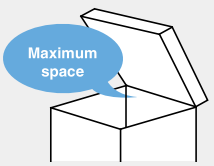




Easily holds the opening angle of top-opening lid at about 10°~80°.

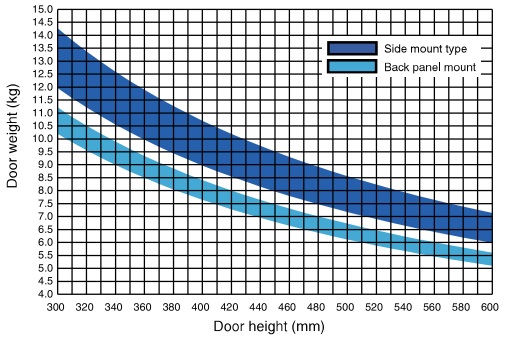
- Compact





Small body maximises space inside of the cabinet.

[Selection Graph]



Door size ranges and door moment formula are obtained when door centre of gravity is at the door centre and installation is done according to dimensions in drawings on the next page.

[Maximum Door Moment]

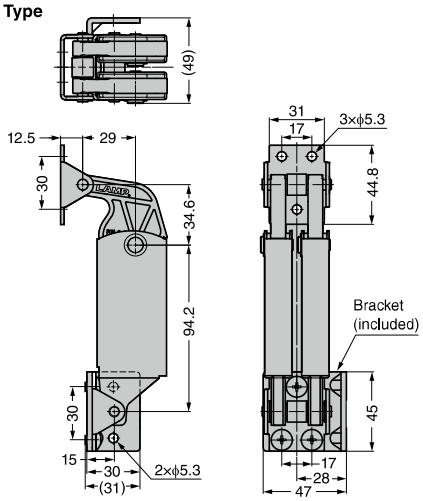
- Choose from 2 types of installation according to the maximum door moment.
  Maximum Door Moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum Door Moment N・m	Installation	Qty
17.6~21.0	Side Mount	1 pc
15.0~16.5	Back Panel Mount	

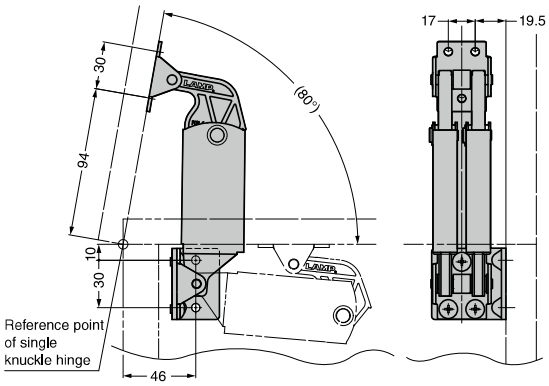
- With 2 stays, the maximum door moment will be doubled.

Refer to 1 : P.296, 2 : P.293

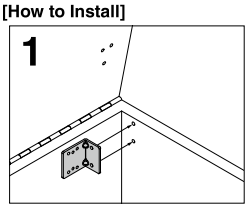
■Side Mount Type



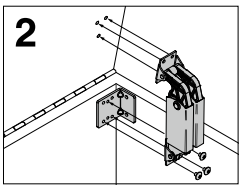
[Installation]



[How to Install]



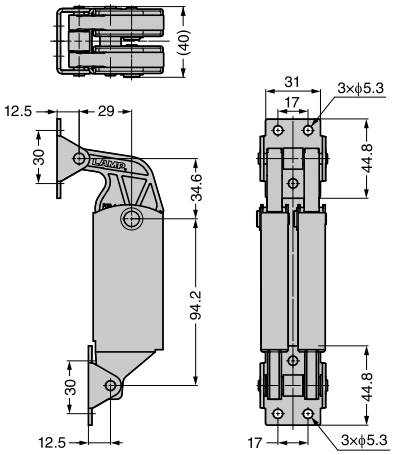
Install side board bracket (non-handed) to cabinet with mounting screws (※).
※Not included.



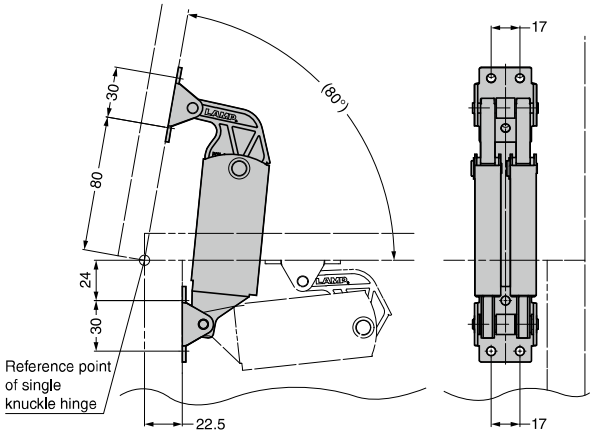
Fix stay body to side board bracket with supplied screws, and then install the body to top-opening lid with mounting screws (※).

For inset type or other non-specified installation types, please contact local representative.

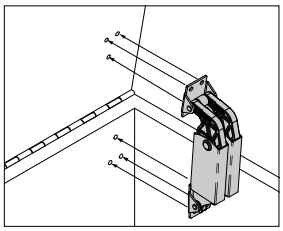
■Back Panel Mount Type



[Installation]



[How to Install]



Install the body to cabinet with mounting screws (※). Do not use the supplied side board bracket and truss head screws.
※Not included.

For inset type or other non-specified installation types, please contact local representative.

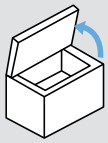
RoHS	CAD	Item Code	Item Name	Material	Finish/ Colour	Type	Side Mount Maximum Door Moment N·m/pc	Side Mount Maximum Door Moment kgf·cm/pc	Back Panel Mount Maximum Door Moment N·m/pc	Back Panel Mount Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)
G	3D	180-025-461	S-AT02W	Stainless Steel (SUS430)/POM	Plain/ Black	Side Mount Back Panel Mount	17.6~21.0	180~214	15.0~16.5	153~168	490	10

※Can be set at 90 degree opening by changing the installation position. Please contact your local agent or your nearest Sugatsune subsidiary for detail/availability.

LIFT ASSIST STAY S-ATH

L=R SUS



Opening Direction	Item Name	Non-handed	Maximum Door Moment
 Top-opening	S-ATH-60S	Yes	60 N・m/pc (611.6 kgf・cm/pc)
	S-ATH-70S		70 N・m/pc (713.6 kgf・cm/pc)

- Applicable to heavier top-opening lids.
- Spring mechanism assists in lifting heavy top-opening lid.
- Can choose from two types depending on the shape of top-opening lid.
- Torque adjustable (+0%, -10%) by turning the adjustment bolt.

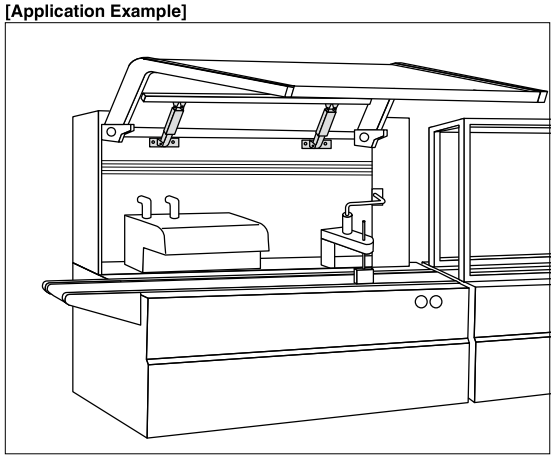
[Specifications]
- Operating temperature: 0℃~40℃
- Operating humidity: 90%RH or less

[Remarks]
- When used for the top-opening lid, install a stopper (not included) to prevent from exceeding the opening angle.
- Because of high spring tension product, abnormal noise, deformation or damage may occur depending on cabinet and hinge used. Check if the cabinet and hinge have sufficient strength and rigidity before use.
- Continuous opening and closing is not allowed.
- Do not use outdoors.
- Proper testing is necessary.
- Spring tension may vary over time.

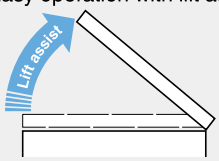
Selection Tool

Sasuga-kun
Simulation at other installation positions than those in the catalogue may also be done.

[Application Example]



- Easy operation with lift assist.



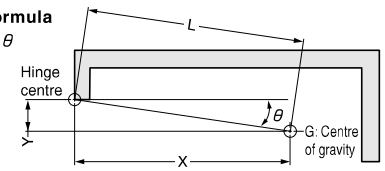
Easy to lift heavy top-opening lid with spring tension (lift assist function). Can choose from two types depending on the shape of top-opening lid.

[How to Select] Refer to the following 1~3 for model selection.

1. Calculating the maximum door moment

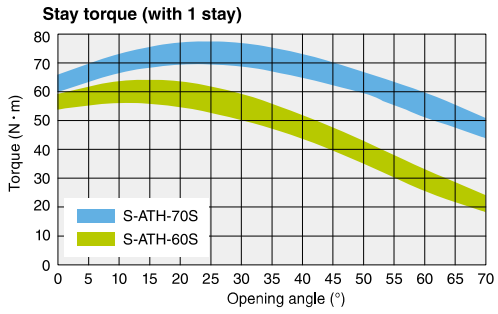
Calculation formula

$Mu = W \times L \times \cos\theta$



X	Horizontal distance from rotation centre to door centre of gravity
Y	Vertical distance from rotation centre to door centre of gravity
L	Distance from rotation centre to door centre of gravity
θ	Angle from horizontal line at hinge centre to door centre of gravity
W	Door weight
G	Door centre of gravity

2. Confirming stay torque



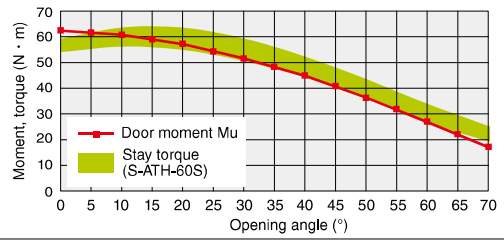
3. Selecting model

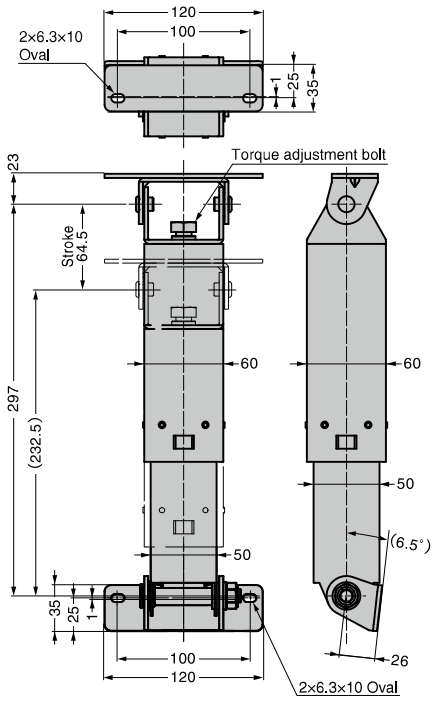
As shown in the graph on the right, if the door moment and stay torque overlap, the stay is considered to be consistent with the specifications.

Door moment Mu > Stay torque・・・Force is applied in the closing direction of door.
Door moment Mu < Stay torque・・・Force is applied in the opening direction of door.

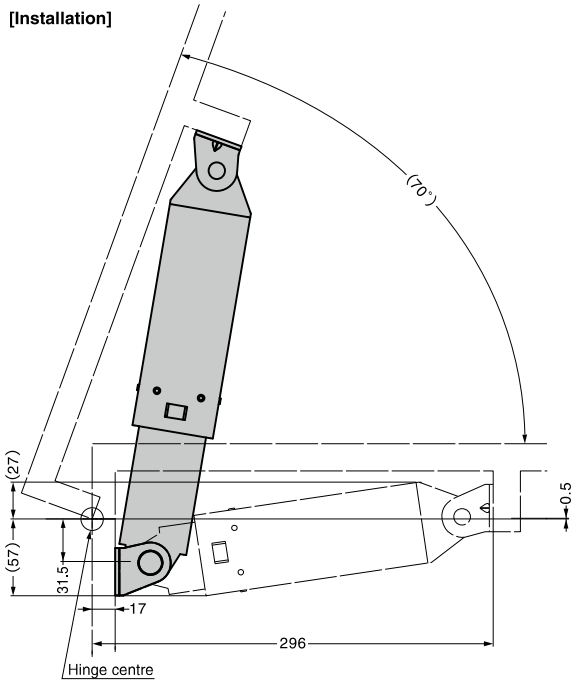
Conditions in the above example: X = 42cm, Y = 3cm, L = 42.1cm, W = 15kg
Stay in application example: S-ATH-60S (1 pc use)

Door moment and stay torque Overlap example (with 1 stay)



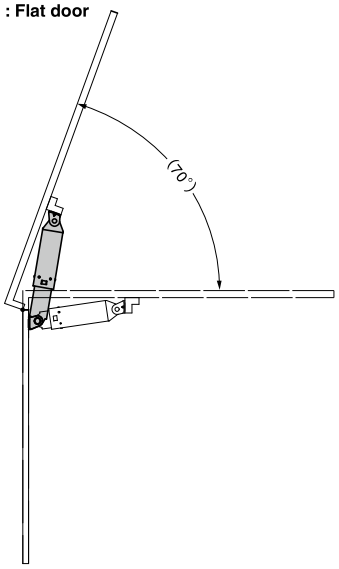


[Installation]

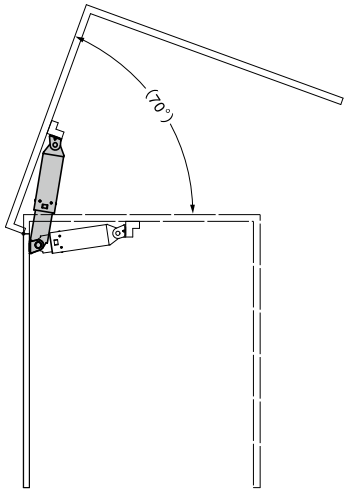


[Applicable Door Shape]

S-ATH-60S : Flat door



S-ATH-70S : L-shaped door

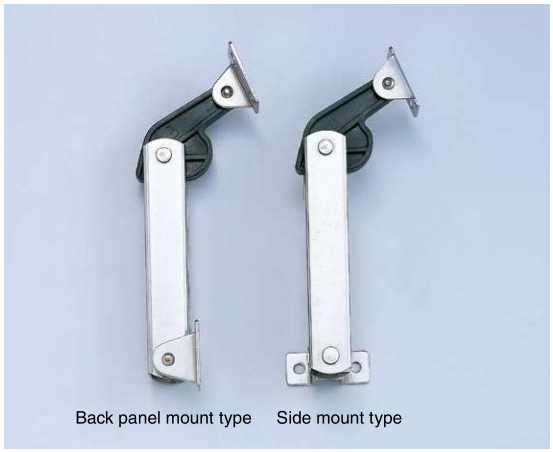


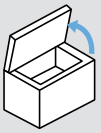
RoHS	CAD	Item Code	Item Name	Applicable Door Shape	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)
G	3D	180-033-866	S-ATH-60S	Flat Door	Stainless Steel (SUS304)	Satin	60	611.6	2500	1
G	3D	180-033-867	S-ATH-70S	L-shaped door			70	713.6		1

LIFT ASSIST STAY S-YT Side Mount, Back Panel Mount

SUS

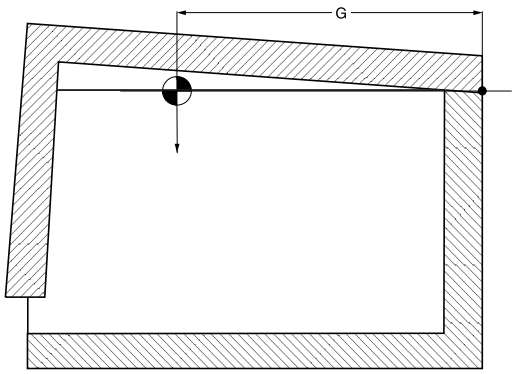

Side mount type (right-handed)


Back panel mount type Side mount type

Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Top-opening	S-YT01	Side Mount	–	Max. 2.94 N・m/pc (Max. 30 kgf・cm/pc)
	S-YT02			Max. 3.92 N・m/pc (Max. 40 kgf・cm/pc)
	S-YT01S	Back Panel Mount	Yes	Max. 2.94 N・m/pc (Max. 30 kgf・cm/pc)
	S-YT02S			Max. 3.92 N・m/pc (Max. 40 kgf・cm/pc)

- Lid can be opened with a small force and held in fully opened position.
- Can choose from 2 types of spring tension depending on lid weight.
- Two installation types (side mount and back panel mount) are available, while side mount is divided into left side installation and right side installation.
- Body and spring are made of stainless steel (SUS304), suitable for corrosive environments.
- Plastic parts and metal parts can be easily separated.

[Remarks]
- Be sure to read the “Cautions” 1.
- Do not open the lid above the opening angle.
- Spring tension may vary over time.
- Do not use with concealed hinges (multiaxial hinges).



[Calculation of Maximum Door Moment]

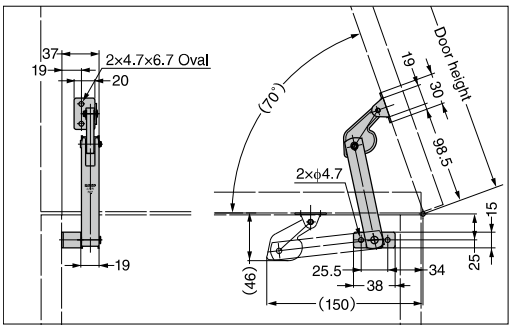
Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity G (m)

[Remarks]
- Since door moment varies depending on installation position, opening angle and centre-of-gravity position, the calculation result is only for reference in selection.
- Be sure to conduct verification before use.

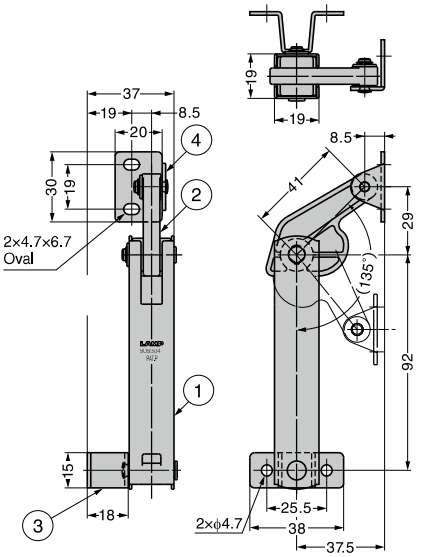
Refer to 1 : P.293

LIFT ASSIST STAY S-YT Side Mount

SUS

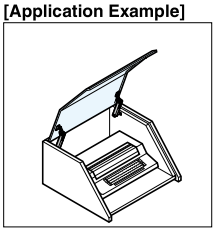


Installation for 70° opening (Left-handed)
Opening up to about 80° by changing installation position.



Left-handed type shown.

[Application Example]



No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm	POM	Black
③	Case Bracket (For Side Board)	Stainless Steel (SUS304)	Barrel Polished
④	Arm Bracket		

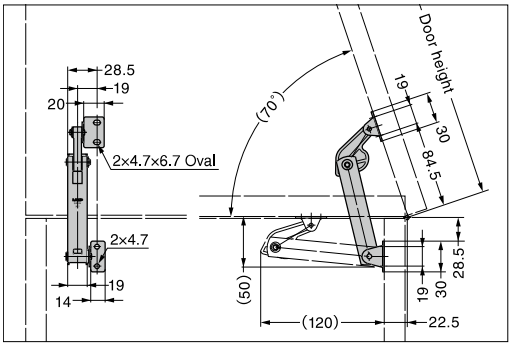
RoHS	CAD	Item Code	Item Name	Type	Spring Tension	Maximum Door Moment N · m/pc	Maximum Door Moment kgf · cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-083	S-YT01R	Right-handed	Soft	Max. 2.94	Max. 30	130	10	100
G	3D	180-100-084	S-YT01L	Left-handed				123	10	100
G	3D	180-100-085	S-YT02R	Right-handed	Hard	Max. 3.92	Max. 40	130	10	100
G	3D	180-100-086	S-YT02L	Left-handed				130	10	100

Refer to 1 : P.310

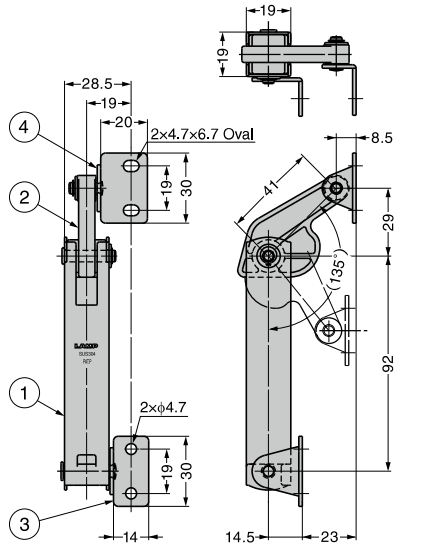
Refer to the calculation of maximum door moment 1.

LIFT ASSIST STAY S-YT Back Panel Mount

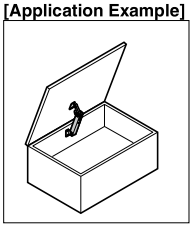
L=R SUS



Installation for 70° opening
Opening up to about 80° by changing installation position.



[Application Example]



No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm	POM	Black
③	Case Bracket (For Side Board)	Stainless Steel (SUS304)	Barrel Polished
④	Arm Bracket		

RoHS	CAD	Item Code	Item Name	Spring Tension	Maximum Door Moment N · m/pc	Maximum Door Moment kgf · cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-081	S-YT01S	Soft	Max. 2.94	Max. 30	120	10	100
G	3D	180-100-082	S-YT02S	Hard	Max. 3.92	Max. 40	128	10	100

Refer to 1 : P.310

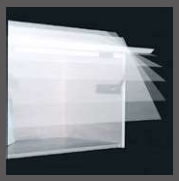
Refer to the calculation of maximum door moment 1.

Lapcon Series

Safe and smooth with Lapcon!



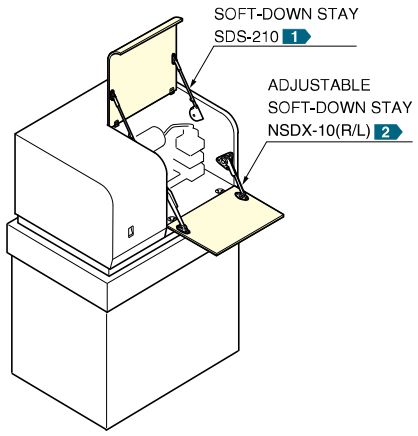
LAPCON refers to Sugatsune's patented damper mechanism which controls motion softly and smoothly. This damper mechanism with superior operability and safety has gained a high reputation from our customers, applicable to a wide variety of products such as stays, lift coat hangers, door closers, and storage beds, etc. These products are widely applied in Japan and overseas.

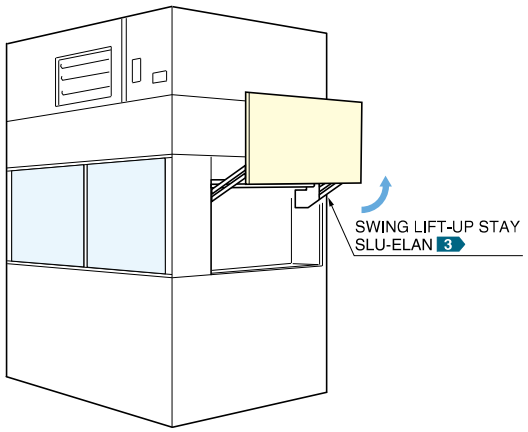


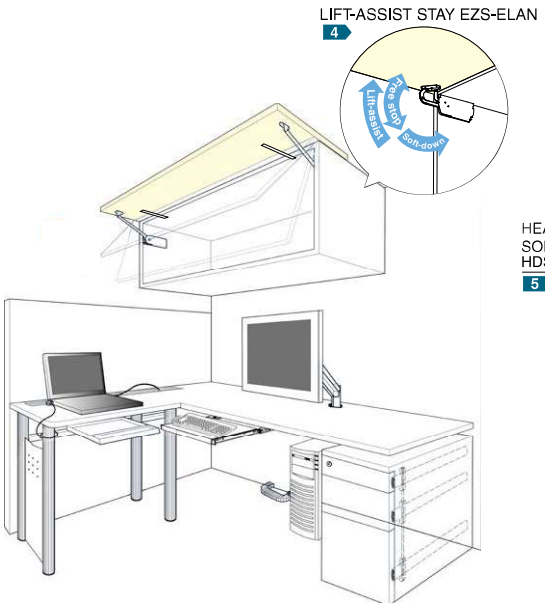


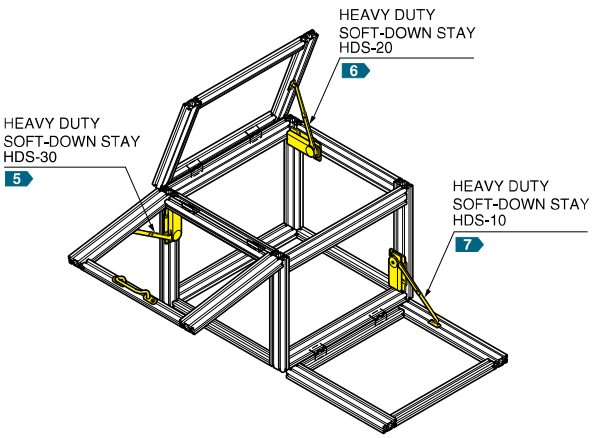
Motion DesignTec®

[Application Example]





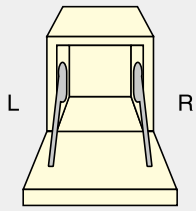




Refer to 1 : P.326, 2 : P.342 , 3 : P.370, 4 : P.374, 5 : P.356, 6 : P.320, 7 : P.338

Soft-Down Stay Selection by lid/flap movement

When viewing from door opening side, located on the right side is right-handed (R) and on the left side is left-handed (L).



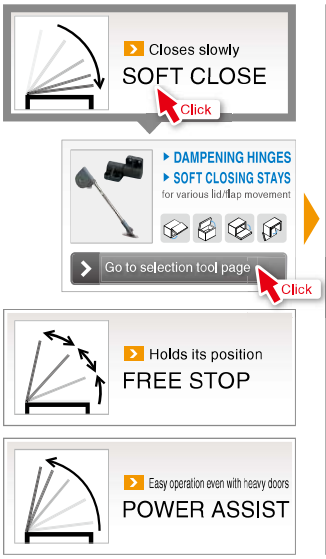
Lid/Flap Movement/Purpose	Hinge Type	Stay Type	Opening Angle
Top-opening	• Single knuckle hinge • Concealed hinge	HDS - 20S	75°
		HDS - 20	70°
		NSDX-20(R/L)	70°, 105°
	• Single knuckle hinge • Concealed hinge	SDS - 200, SDS - 201	70°
		SDS - 210	105°
		LAD - ST	95°
		LAD	–
Upward-opening	• Single knuckle hinge • Concealed hinge	SLS - ELAN, SLS - ELAN-TV	80°, 90°
		HDS - 30	80°
		HDSN - 30	80°, 90°
		NSDX - 35(R/L)	80°, 90°, 100°
		NSDX - 35(R/L)2S	80°/60°, 90°/65°, 100°/70°
		SDS - C301N	90°
Downward-opening	• Single knuckle hinge • Drop hinge • Concealed hinge	HDS - 10S	90°
		HDS - 10	
		NSDX - 10(R/L), NSDX - 10(R/L)K-TV	
		SDS - 100, SDS - C100	
		CSD - 10 - TV	
		SDS - 100TV, SDS - C100TV	
Bottom-opening	• Single knuckle hinge	SDS - 400 - W	70°

[Introduction of Selection Tool]

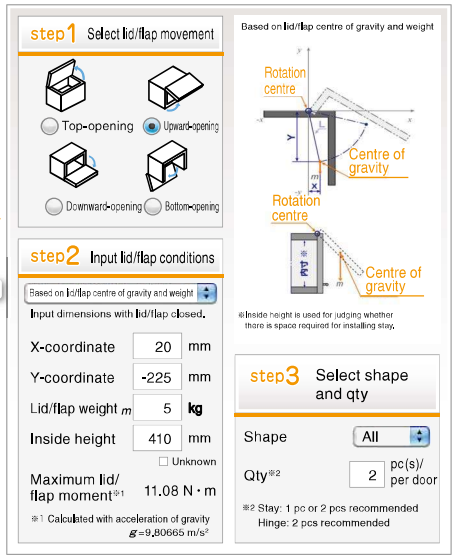
A tool for easily selecting Lapcon stays now available online!

Motion Design Tech
Selection Tool "Sasuga-kun"

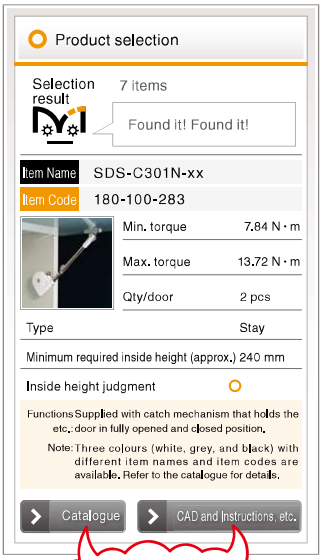
1 Select kind of movement



2 Input conditions



3 Choose a product !



No Registration Required Free

Let's try to use "Sasuga-kun" right now!

From PC

Enter by clicking the Sugatsune homepage.

Selection Tool "Sasuga-kun"

From tablet

Scan the 2D barcode on the right.

LAPCON STAY SERIES

Opening Direction	Description	Item Name	Qty 1 pc	Qty 2 pcs	Non-handed	Catch	Maximum Door Moment	Page
Upward-opening	Lift-assist Free Stop Soft-down	SLS-ELAN 	Yes	Yes	–	–	4.9~9.8 N・m (50~100 kgf・cm)	P.352
		SLS-ELAN-TV 	Yes	Yes	–	–	4.6~6.17 N・m (47~63 kgf・cm)	P.354
	Soft-down	HDS-30 	–	Yes	–	Yes	13.7~29.4 N・m (140~300 kgf・cm) ※	P.356
		HDSN-30 	–	Yes	–	Yes	13.7~34.3 N・m (140~350 kgf・cm) ※	P.358
		NSD-35 	Yes	Yes	–	Yes	1.96~6.86 N・m (20~70 kgf・cm)	P.361
		NSDX-35 (R/L) 	Yes	Yes	–	Yes	1.96~6.86 N・m (20~70 kgf・cm)	P.362
		NSDX-35 (R/L) 2S 	Yes	Yes	–	Yes (Two Angles)	1.96~4.9 N・m (20~50 kgf・cm)	P.364
		SDS-C301N 	Yes	Yes	Yes	Yes	3.92~6.86 N・m (40~70 kgf・cm)	P.365
Top-opening	Self & Soft-opening	HDS-20S 	–	Yes	–	Yes	6.9~14.7 N・m (70~150 kgf・cm) ※	P.318
	Soft-down	HDS-20 	–	Yes	–	Yes	13.7~29.4 N・m (140~300 kgf・cm) ※	P.320
		NSD-20 	Yes	Yes	–	Yes	1.96~6.86 N・m/pc (20~70 kgf・cm/pc)	P.323
		NSDX-20 (R/L) 	Yes	Yes	–	Yes	1.96~6.86 N・m (20~70 kgf・cm)	P.324
		SDS-200 SDS-201 	Yes	Yes	Yes	Yes	3.43~4.9 N・m (35~50 kgf・cm)	P.326
		SDS-210 				–		

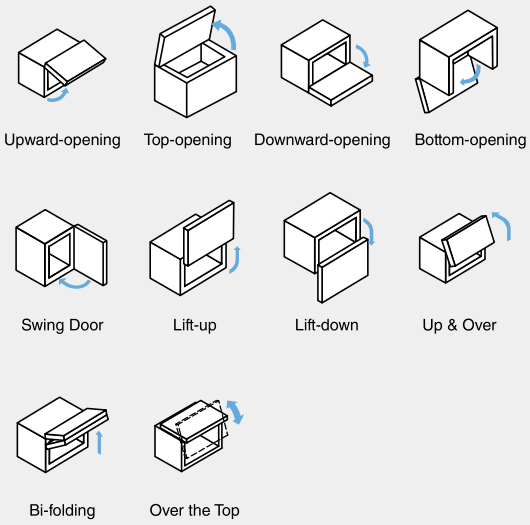
Opening Direction	Description	Item Name	Qty 1 pc	Qty 2 pcs	Non-handed	Catch	Maximum Door Moment	Page
Top-opening	Lift-assist Soft-close	LAD-ST 	Yes	Yes	Yes	–	8.0~16.0 N・m (81.6~163.2 kgf・cm)	P.328
		LAD 	Yes	Yes	Yes	–	8.0~16.0 N・m (81.6~163.2 kgf・cm)	P.330
		LADH 	Yes	Yes	Yes	–	25~50 N・m/pc (255~510 kgf・cm/pc)	P.334
Downward-opening	Self & Soft-close	HDS-10S 	–	Yes	–	Yes	5.9~17.6 N・m (60~180 kgf・cm) ※	P.336
	Soft-down	HDS-10 	–	Yes	–	Yes	13.7~29.4 N・m (140~300 kgf・cm) ※	P.338
		NSD-10 	Yes	Yes	–	Yes	1.96~6.86 N・m (20~70 kgf・cm)	P.341
		NSDX-10 (R/L) 	Yes	Yes	–	Yes	1.96~6.86 N・m (20~70 kgf・cm)	P.342
		SDS-100 	Yes	Yes	Yes	–	3.43~4.9 N・m (35~50 kgf・cm)	P.344
		SDS-C100 				Yes		
		CSD-10-TV 	Yes	Yes	Yes	–	1.0~4.0 N・m (10.2~40.8 kgf・cm)	P.346
		NSDX-10 (R/L) K-TV 	Yes	Yes	–	Yes	0.98~1.96 N・m (10~20 kgf・cm)	P.347
		SDS-100-TV 	Yes	Yes	Yes	–	0.49~1.18 N・m (5~12 kgf・cm)	P.348
		SDS-C100-TV 				Yes	1.62~3.68 N・m (16.5~37.6 kgf・cm)	
Bottom-opening	Soft-down	SDS-400-W 	Yes	Yes	Yes	–	3.43~4.9 N・m (35~50 kgf・cm)	P.366

※ is the value when using 2 pcs.

Opening Direction	Description	Item Name	Door Width	Door Height	Door Weight	Page
Lift-up	Lift-assist Free Stop Soft-close	SLU-ELAN 	Max. 1800	390~500	5~11 kg	P.370
	Lift-assist Soft-close	SLUN-N 	600~900	390~450	2.8~5.8 kg	P.372
Lift-down	Lift-assist Soft-close	SLD 	600~900	360~400	3~6 kg	P.373
Up & Over	Lift-assist Free Stop Soft-close	EZS-ELAN 	Max. 1200	500~750	5~12.5 kg	P.374
Bi-folding	Lift-assist Free Stop Soft-close	HBF-ELAN 	Max. 1200	320~370	2.5~6.5 kg	P.376
	Soft-close	HBFN 	450~900	320~370	2.5~5.5 kg	P.378
Over the Top	Soft-close	OV-1 	700 ~1400	350~450	3~5 kg	P.380
		IF 	Max. 1200	–	–	P.381

[Notes]

●Opening Direction



●Description

Lift-assist



Door can be opened with a slight force.

Free stop



Door can be stopped in any position.

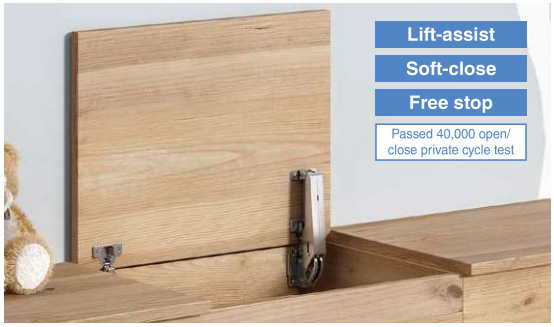
Soft-down, Soft-close



Door closes slowly.

AILERON STAY FOR OLYMPIA ARN-2 Top-opening Model

L=R INSTRUCTION



Opening	Description	Non-handed	Type	Maximum Door Moment
Top-opening	Lift-assist Soft-close Free-stop	Yes	M	4.0–6.0 N·m/pc (40.8–61.2 kgf·cm/pc)
			H	6.0–8.0 N·m/pc (61.2–81.6 kgf·cm/pc)

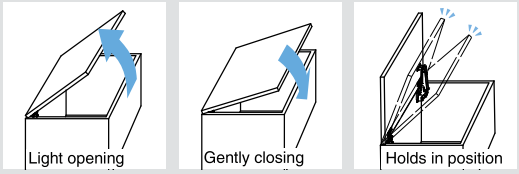
- Smooth door movement. It is specially designed for use with the OLYMPIA concealed hinge (360-D26-19 / H360-D26-26T).
- The lift-assist function allows for light opening of doors.
- The force of lift-assist is adjustable.
- The soft-close function makes doors close gently (0°–30° degrees).
- Integrated design combines a concealed hinge and lid stay.
- The free-stop function enables doors to hold in position.
- Closing speed of doors is adjustable.

[Door Movements]

Lift-assist
Allows for light opening of doors

Soft-close
OLYMPIA's damper makes doors close slowly. (0° - 30°)

Free-stop
Enables doors to hold in position.



[Specifications]
- Operating temperature: 0℃ – 40℃

[Parts Included]
- Door-side mounting plate
- Countersunk head tapping screw 3.5 × 1.5 (for attaching the mounting plate to AILERON)
- Binding head tapping screw 3.5 × 1.5 (for attaching the door-side mounting plate, mounting plate for AILERON, and AILERON)

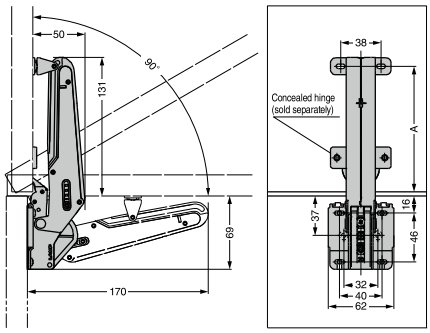
[Optional Parts]
- Hinge spacer 360-BCS
- Aileron spacer ARN-DP

[Sold Separately]
- Mounting plate for AILERON
- OLYMPIA concealed hinge
- Mounting plate for OLYMPIA

Video Link

Video Link

[Installation]



Hinge Used	A
360-D26-19T	118
H360-D26-26T	116

Please see pages of Olympia hinges for installation dimensions.

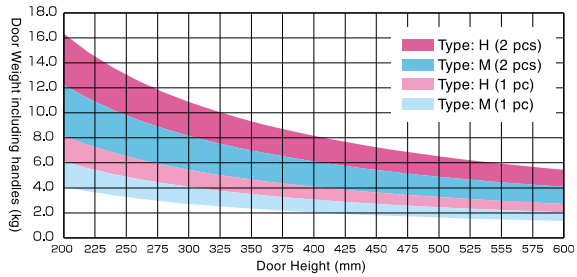
[Application Example]



Selection Tool

Sasuga-kun

[Selection Graph] (upward and top-opening models)



Maximum Door Moment	Type	Number of AILERON
4.0–6.0	M	1 pc
6.0–8.0	H	
8.0–12.0	M	2 pcs
12.0–16.0	H	

As a guide for model selection, please refer to the graph on the left .
For use with doors outside of the scope of this graph, use the calculation below. (The door weight includes attached decorations such as handles.)
- The selection should be based on Max. door moment. (Two types are available.)
- Maximum Door Moment (N·m) = Door weight (kg) × 9.80665 × Distance from rotation centre to door centre of gravity (m)

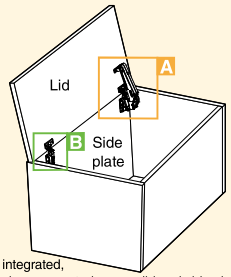
[Aileron Stay] Sold singly

RoHS	CAD	Item Code	Item Name	Material	Finish / Colour	Type	Max. Door Moment N·m/pc	Max. Door Moment kgf·cm/pc	Box (pc)	Carton (pc)
G	3D	180-043-945	ARN-2-M-GR	Steel (SPCC) / POM	Nickel plating / Grey	M	4.0 ~ 6.0	40.8 ~ 61.2	1	20
G	3D	180-043-946	ARN-2-H-GR			H	6.0 ~ 8.0	61.2 ~ 81.6	1	20
G	3D	180-049-501	ARN-2-M-BL		Nickel plating / Black	M	4.0 ~ 6.0	40.8 ~ 61.2	1	20
G	3D	180-049-502	ARN-2-H-BL			H	6.0 ~ 8.0	61.2 ~ 81.6	1	20

[Standard Set] Including parts sold separately

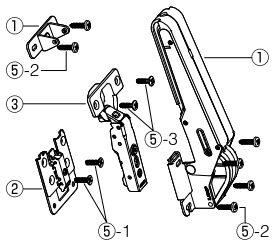
RoHS	CAD	Item Code	Item Name	Finish / Colour	Door Width	Max. Door Moment N·m	Max. Door Moment kgf·cm	Set Contents	Box (pc)	Carton (pc)
G	–	180-045-661	ARN-2-M-GR-S	Nickel plating / Grey	450~ 900	4.0 ~ 6.0	40.8~ 61.2	Aileron stay, Mounting plate for Aileron stay, Olympia hinge, Mounting plate for Olympia hinge, Screws	1	10
G	–	180-045-662	ARN-2-H-GR-S			6.0 ~ 8.0	61.2~ 81.6		1	10
G	–	180-049-505	ARN-2-M-BL-S	Nickel plating / Black		4.0 ~ 6.0	40.8~ 61.2		1	10
G	–	180-049-506	ARN-2-H-BL-S			6.0 ~ 8.0	61.2~ 81.6		1	10

Components for one lid

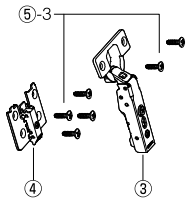


The hinges are integrated,
so the parts can be aggregated on one lid and side plate surface.

A With AILERON



B No AILERON



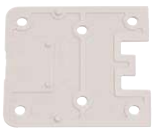
Required parts for one lid (A + B)

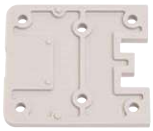
The required quantity depends on lid width and maximum moment.

			Item Code	Item Name	Lid width [mm] 450~900 / Lid max. moment [N·m] 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0	900~1600 / 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0	1600~2000 / 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0
AILERON	① Body		180-043-945 or 180-049-501	ARN-2-M-GR or ARN-2-M-BL	Standard Set 1	-	2	-	1	-	2	-	1	-	2	-
			180-043-946 or 180-049-502	ARN-2-H-GR or ARN-2-H-BL	-	1	-	2	-	1	-	2	-	1	-	2
	② Washer		180-043-949	ARN-SZ	1		2		1		2		1		2	
OLYMPIA CONCEALED HINGE	③ Body		160-026-840 or 160-029-084	360-D26-19T or H360-D26-26T (damper built-in)	2		3		2		3		2		3	
			160-026-836 or 160-029-081	360-26-19T or H360-26-26T (no catch)	-		-		1		-		2		-	
			160-026-832 or 160-029-078	360-C26-19T or H360-C26-26T (with catch)	-		-		-				-		1	
	④ Washer		160-026-846 *1	360-P6WT (System 32/4 holes)	1		1		2		1		3		2	
	⑤ Recommended Screws	⑤-1 M4 flat head machine screws			2		4		2		4		2		4	
		⑤-2 M4 binding machine screws			6		12		6		12		6		12	
		⑤-3 M4 round flat head machine screws or M4 flat head machine screws			8 *2		10 *2		14 *2		10 *2		20 *2		16 *2	

*1 For ④ Washer, 360-P4W-32T (Item Code: 160-026-845) and 360-P4W-30T (Item Code: 160-026-844) can also be used.
*2 Quantity when using ④ Washer 360-P6WT. When using 360-P4W-32T or 360-P4W-30T, the required quantity is reduced by one for each washer.

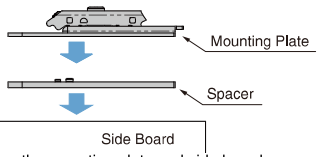
AILERON SPACER ARN-DP 2 and 5 mm Thick


ARN-DP2 (2 mm)


ARN-DP5 (5 mm)

- Specially designed for use with the AILERON stay 1 .
- The ARN-DP2 decreases overlay of outset doors by 2 mm.
- The ARN-DP5 decreases overlay of outset doors by 5 mm.
- The ARN-DP2 can be doubled for 4 mm thickness.

[How to Use]



Set the spacer between the mounting plate and side board.

[Available Mounting Plate]

- ARN-SZ 2

[Remarks]

- The included screws are for fixing the spacer (ARN-DP5) and mounting plate (ARN-SZ).
- Please use the optional screws if two ARN-DP2 are used.

[Parts Included]

- Cross-recessed binding head tapping screw 3.5×20
  (Only the ARN-DP5 comes with these screws.)

[Spacer]

RoHS	CAD	Item Code	Item Name	Colour	Type	Material	Box (pcs)	Carton (pcs)
G	3D	180-046-667	ARN-DP2	Grey	+ 2 mm	POM	80	640
G	3D	180-047-915	ARN-DP5		+ 5 mm (screw included)		80	640

[Optional screw when using two ARN-DP2]

RoHS	CAD	Item Code	Item Name
G	–	180-046-669	TAP3520NI

Sold in sets of 4 screws.

Refer to 1 : P.316, P.350, 2 : P.317, P.351

SELF-OPENING STAY HDS-20S For Use in Pairs

Lapcon INSTRUCTION



Right side installation shown.

Opening Direction	Description	Non-handed	Model	Maximum door moment
Top-opening	With Self-opening For Use in Pairs	–	H	6.9~10.8 N·m/2 pcs (70~110 kgf·cm/2 pcs)
			S	10.9~14.7 N·m/2 pcs (111~150 kgf·cm/2 pcs)

- Ideal for top-opening lids.
- Opens automatically after a small impulse.
- Holds the door at closed position.
- For door hinge, piano/butt hinge or concealed hinge is suitable.

[Specifications]
- Operating temperature: 0℃ ~40℃

[Remarks]
- Be sure to read the "Cautions" 1.
- Handed: Specific left and right-handed.
- Used in pairs.
- Do not push the door up over the max. opening angle. And do not roughly open and close the door.

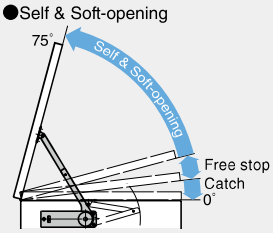
[Parts Included]
- Mounting plate
- Binding head tapping screw 3.5×15

Video Link Video Link

[Applicable Range]
- Choose from 2 types according to door moment.
  Maximum door moment (N·m) = Door weight (kg) × 9.80665 × Distance from rotation centre to door centre of gravity (m)

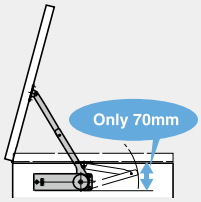
Maximum door moment N·m	Model	Qty
6.9~10.8	H	2pcs
10.9~14.7	S	2pcs

●Self & Soft-opening

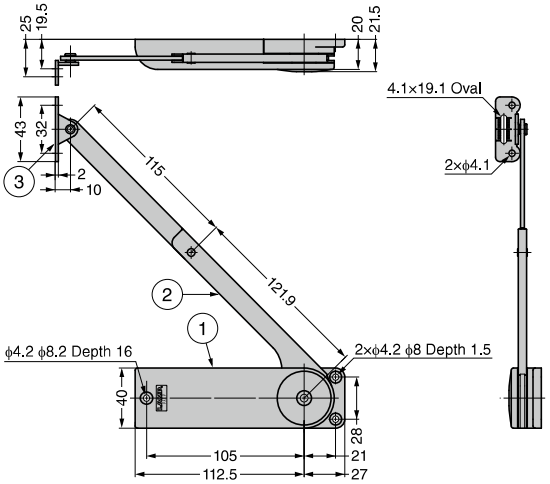


Opens automatically after a small impulse.

●Space-saving



Only 70mm mounting height maximises inside space.



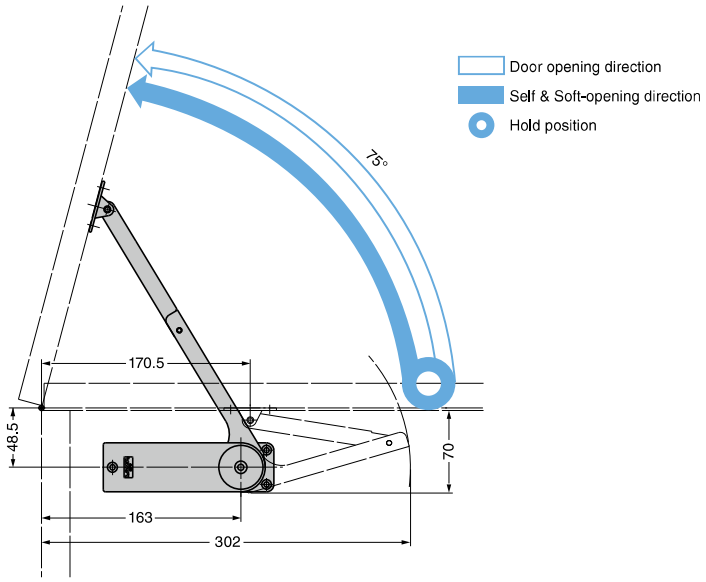
Right-handed type shown.

No.	Part Name	Material	Finish/Colour
①	Body	ABS	Black, White
②	Arm	Steel (SPCC)	Nickel
③	Mounting Plate		

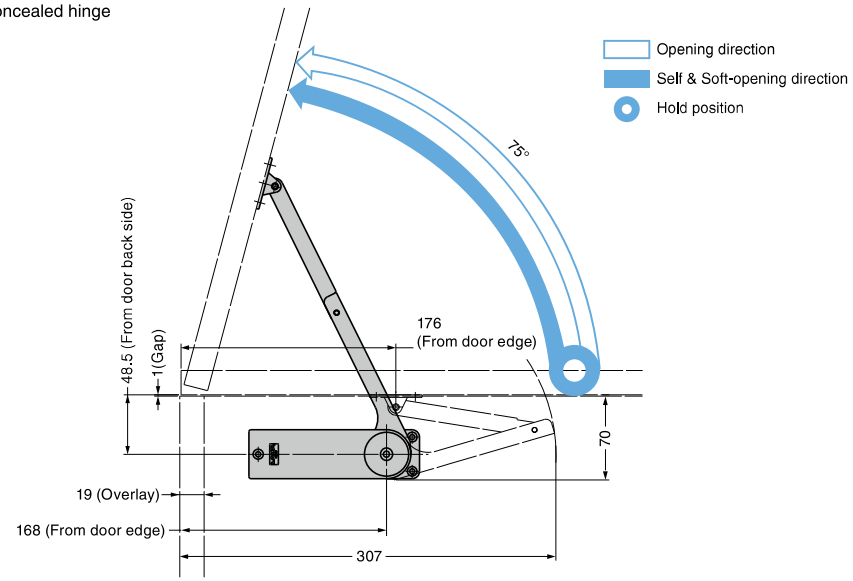
Refer to 1 : P.293

[Installation] Top-opening 75˚ and right side installation. Left side installation is symmetrical.

With piano/butt hinge



With concealed hinge



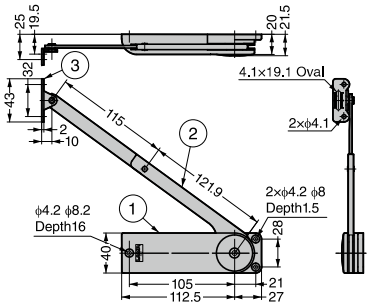
RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/2 pcs	Maximum Door Moment kgf·cm/2 pcs	Weight (g)	Box (pcs)
G	3D	180-029-751	HDS-20S-HL-BL	Left-handed	Steel / ABS	Nickel plating / Black	H	6.9~10.8	70~110	298	40
G	3D	180-029-752	HDS-20S-HR-BL	Right-handed						29	40
G	3D	180-029-753	HDS-20S-HL-WT	Left-handed		Nickel plating / White				298	40
G	3D	180-029-754	HDS-20S-HR-WT	Right-handed						298	40
G	3D	180-029-755	HDS-20S-SL-BL	Left-handed		Nickel plating / Black	S	10.9~14.7	111~150	311	40
G	3D	180-029-756	HDS-20S-SR-BL	Right-handed						311	40
G	3D	180-029-757	HDS-20S-SL-WT	Left-handed		Nickel plating / White				311	40
G	3D	180-029-758	HDS-20S-SR-WT	Right-handed						311	40

HEAVY DUTY SOFT-DOWN STAY HDS-20 For Use in Pairs



Opening	Description	Non-handed	Model	Max. door moment
Top-opening	With Catch For Use in Pairs	–	K	13.7~19.5 N·m/2 pcs (140~199 kgf·cm/2 pcs)
			M	19.6~24.4 N·m/2 pcs (200~249 kgf·cm/2 pcs)
			H	24.5~29.4 N·m/2 pcs (250~300 kgf·cm/2 pcs)
			XH	39~41 N·m/2 pcs (397~418 kgf·cm/2 pcs)

- For top-opening doors.
- Designed to hold the door in fully opened position.
- For door hinge, piano/butt hinge or concealed hinge is suitable.
- AS parts set 1 for installing to aluminium frame also available.



No.	Part Name	Material	Finish/Colour
①	Body	ABS	Black, White
②	Arm	Steel (SPCC)	Nickel
③	Mounting Plate		

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 2.
- Used in pairs.
- Do not push the door up more than opening angle 7°. And do not roughly open and close the door.

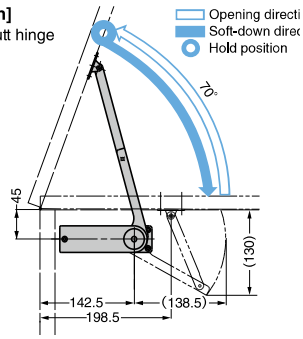
[Parts Included]
- Mounting plate
- Binding head tapping screw 3.5×15

Video Link

[Applicable Range]
- Max. door moment (N·m) = Door weight (kg)×9.80665× Distance from rotation centre to door centre of gravity (m)

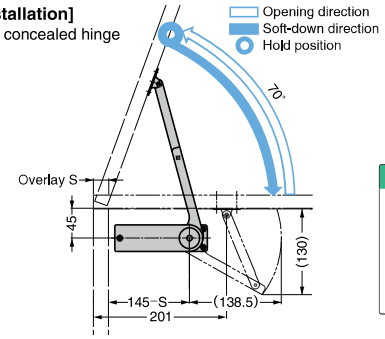
Maximum door moment N·m	Model	Qty
13.7~19.5	K	2 pcs
19.6~24.4	M	
24.5~29.4	H	
39~41	XH	

[Installation]
with piano/butt hinge



*Top-opening 70°and right side installation. Left side installation is symmetrical.

[Installation]
with concealed hinge



Selection Tool
Sasuga-kun

RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/2 pcs	Maximum Door Moment kgf·cm/2 pcs	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-237	HDS-20KL-BL	Left-handed	ABS/Steel	Nickel/Black	K	13.7~19.5	140~199	284	40	40
G	3D	180-109-236	HDS-20KR-BL	Right-handed						282	40	40
G	3D	180-109-243	HDS-20KL-WT	Left-handed		Nickel/White				310	40	40
G	3D	180-109-242	HDS-20KR-WT	Right-handed						283	40	40
G	3D	180-109-239	HDS-20ML-BL	Left-handed		Nickel/Black	M	19.6~24.4	200~249	288	40	40
G	3D	180-109-238	HDS-20MR-BL	Right-handed						289	40	40
G	3D	180-109-245	HDS-20ML-WT	Left-handed		Nickel/White				288	40	40
G	3D	180-109-244	HDS-20MR-WT	Right-handed						288	40	40
G	3D	180-109-241	HDS-20HL-BL	Left-handed		Nickel/Black	H	24.5~29.4	250~300	297	40	40
G	3D	180-109-240	HDS-20HR-BL	Right-handed						297	40	40
G	3D	180-109-247	HDS-20HL-WT	Left-handed		Nickel/White				299	40	40
G	3D	180-109-246	HDS-20HR-WT	Right-handed						299	40	40
G	3D	180-043-093	HDS-20XHL-BL	Left-handed		Nickel/Black	XH	39~41	397~418	–	40	40
G	3D	180-043-094	HDS-20XHR-BL	Right-handed						–	40	40
G	3D	180-043-095	HDS-20XHL-WT	Left-handed		Nickel/White				–	40	40
G	3D	180-043-096	HDS-20XHR-WT	Right-handed						–	40	40

Refer to 1 : P.321, 2 : P.293

AS Parts Set for Installing to Aluminium Frame

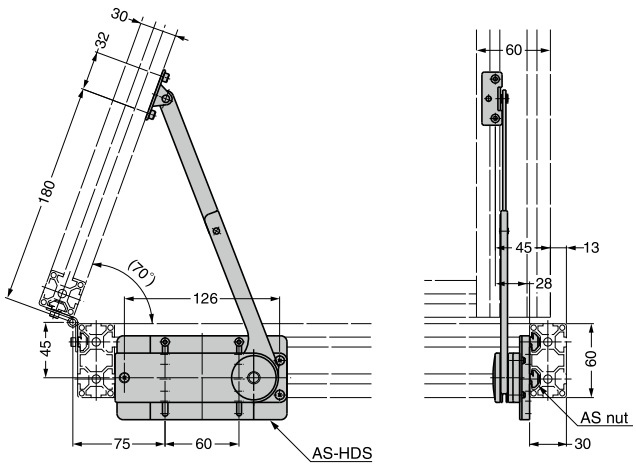
Please refer to the series introduction page 1 for details about AS series.



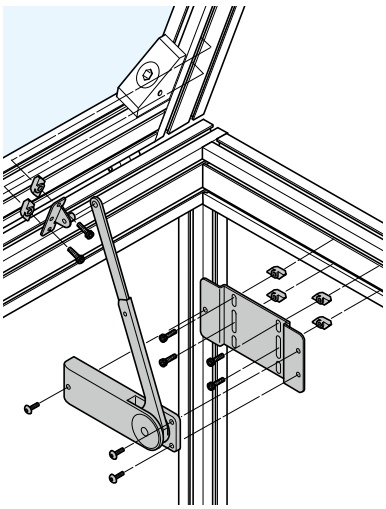
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts (Stays)	Parts (Others)	Weight (g)
G	3D	180-013-637	AS-HDS-20KR-BL-30-6	Groove Width 6 mm	HDS-20KR-BL : 1 pc	AS Nut AS-6M4 : 6pcs Pan Head Screw M4×8 : 3pcs Bracket AS-HDS : 1pc Hexagon Socket Head Cap Screw M4×10 : 6pcs	–
G	3D	180-013-638	AS-HDS-20KL-BL-30-6		HDS-20KL-BL : 1 pc		–
G	3D	180-013-639	AS-HDS-20KR-WT-30-6		HDS-20KR-WT : 1 pc		–
G	3D	180-013-640	AS-HDS-20KL-WT-30-6		HDS-20KL-WT : 1 pc		–
G	3D	180-013-641	AS-HDS-20MR-BL-30-6		HDS-20MR-BL : 1 pc		–
G	3D	180-013-642	AS-HDS-20ML-BL-30-6		HDS-20ML-BL : 1 pc		–
G	3D	180-013-643	AS-HDS-20MR-WT-30-6		HDS-20MR-WT : 1 pc		–
G	3D	180-013-644	AS-HDS-20ML-WT-30-6		HDS-20ML-WT : 1 pc		–
G	3D	180-013-645	AS-HDS-20HR-BL-30-6		HDS-20HR-BL : 1 pc		–
G	3D	180-013-646	AS-HDS-20HL-BL-30-6		HDS-20HL-BL : 1 pc		–
G	3D	180-013-647	AS-HDS-20HR-WT-30-6		HDS-20HR-WT : 1 pc		–
G	3D	180-013-648	AS-HDS-20HL-WT-30-6		HDS-20HL-WT : 1 pc		–
G	3D	180-013-649	AS-HDS-20KR-BL-30-8	Groove Width 8 mm	HDS-20KR-BL : 1 pc	AS Nut AS-8M4 : 6pcs Pan Head Screw M4×8 : 3pcs Bracket AS-HDS : 1pc Hexagon Socket Head Cap Screw M4×10 : 6pcs	–
G	3D	180-013-650	AS-HDS-20KL-BL-30-8		HDS-20KL-BL : 1 pc		–
G	3D	180-013-651	AS-HDS-20KR-WT-30-8		HDS-20KR-WT : 1 pc		–
G	3D	180-013-652	AS-HDS-20KL-WT-30-8		HDS-20KL-WT : 1 pc		–
G	3D	180-013-653	AS-HDS-20MR-BL-30-8		HDS-20MR-BL : 1 pc		–
G	3D	180-013-654	AS-HDS-20ML-BL-30-8		HDS-20ML-BL : 1 pc		–
G	3D	180-013-655	AS-HDS-20MR-WT-30-8		HDS-20MR-WT : 1 pc		–
G	3D	180-013-656	AS-HDS-20ML-WT-30-8		HDS-20ML-WT : 1 pc		–
G	3D	180-013-657	AS-HDS-20HR-BL-30-8		HDS-20HR-BL : 1 pc		–
G	3D	180-013-658	AS-HDS-20HL-BL-30-8		HDS-20HL-BL : 1 pc		–
G	3D	180-013-659	AS-HDS-20HR-WT-30-8		HDS-20HR-WT : 1 pc		–
G	3D	180-013-660	AS-HDS-20HL-WT-30-8		HDS-20HL-WT : 1 pc		–

[Dimensions]

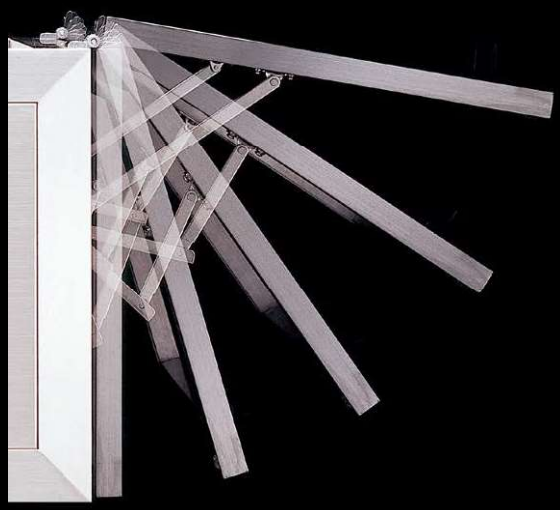


[How to Install]



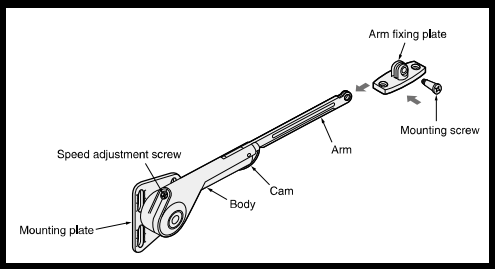
Refer to 1 : P.20

ADJUSTABLE SOFT-DOWN STAY NSD



- Keeps flap/lid from slamming shut.
- Successfully passed for 30,000 open/close private cycle tests.
- Opening/closing speed is adjustable.
- Opening angle is adjustable by changing mounting position.
- Handed.

[Remarks]
Designed to operate at room temperature 0°~40°C.



APPLICATION		MOUNTING SIDE	NSD-#
Downward-Opening Flap	90°	Right	NSD-10R
		Left	NSD-10L
Top-Opening Flap	70° ~ 105°	Right	NSD-20R
		Left	NSD-20L
Upward-Opening Flap	80° ~ 100°	Right	NSD-35R
		Left	NSD-35L

ADJUSTABLE SOFT-DOWN STAY NSD-20

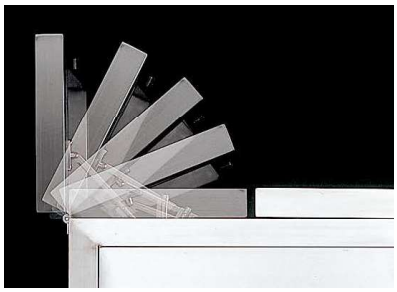
Lapcon INSTRUCTION

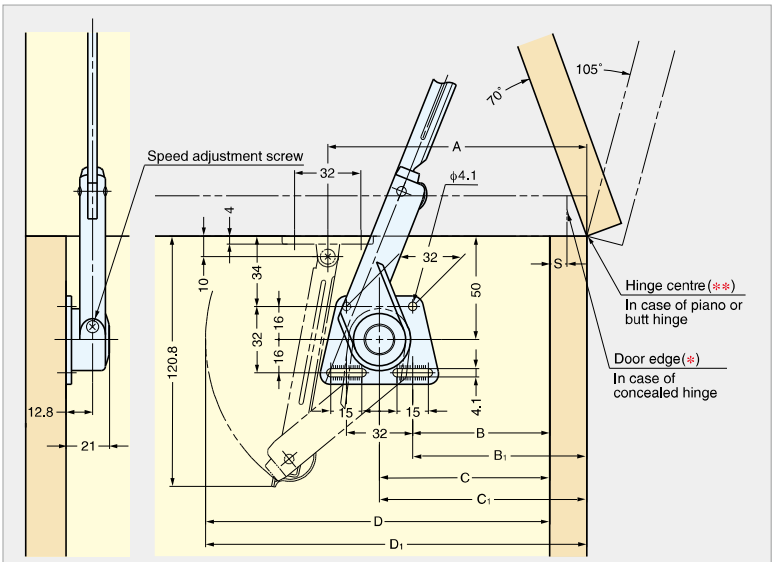


- For Top-opening flap door with piano, butt or concealed hinges.
- Opening angle adjustable from 70˚ to 105˚
- Designed to hold door in fully opened position.

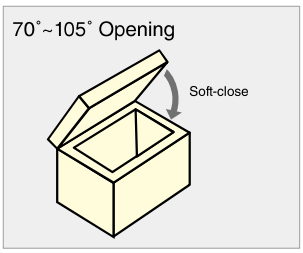
Torque Calculation :
Torque = Door Height x 1/2 x Door Weight.
Per Piece : 20~70 kg·cm.

Material	Finish
Zinc Alloy, Steel	Nickel





This drawing shows NSD-20L (left-hand side mounting). NSD-20R (right-hand) is symmetrical.



Opening Angle	Hinge Type	A	B	C	D	B_1	C_1	D_1
70˚	Concealed Hinge	126	85-S	101-S	185-S	-	-	-
	Piano / Butt Hinge	125	-	-	-	84	100	184
105˚	Concealed Hinge	103	62-S	78-S	162-S	-	-	-
	Piano / Butt Hinge	97	-	-	-	56	72	156

Note: "S" dimension is the overlay distance for concealed hinge(s).

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
–	3D	180-104-103	NSD-20R	210	20	80
–	3D	180-104-102	NSD-20L	210	20	80

ADJUSTABLE SOFT-DOWN STAY NSDX-20 (R/L)

Lapcon AS INSTRUCTION



Opening Direction	Description	Non-handed	Maximum Door Moment
Top-opening	With Catch	–	1.96~6.86 N・m/pc (20~70 kgf・cm/pc)

- For top-opening doors.
- Designed to hold the door in fully opened position.
- Opening angle 70° or 105° .
- Closing speed adjustable with adjustment screw.
- AS parts set 1 for installing to aluminium frame also available.

[Maximum Door Moment]

- With 1 stay
  Maximum door moment =1.96~6.86 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×
  Distance from rotation centre to door centre of gravity (m)

[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 2.
- Handed: Specific left and right-handed.
- Door closing speed varies depending on product difference and conditions.
- Do not push the door up over the max. opening angle. Also do not forcibly press the door down when closing.

[Sold Separately]

- Mounting plate 3
- SDS face plate and spacer for glass door (please order when using mounting plate NSDX-GZ 3.)

Video Link

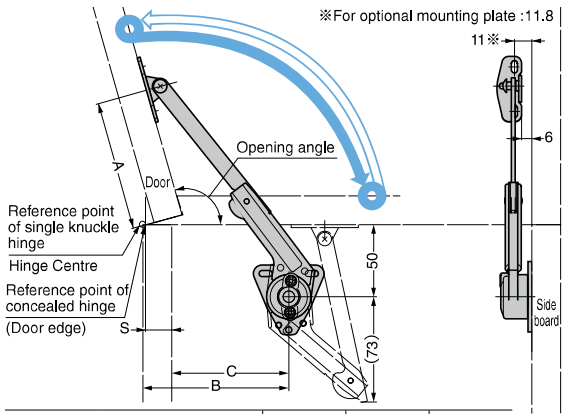
Selection Tool

Sasuga-kun

[Installation] Right side installation for top-opening 105° . Left side installation is symmetrical.

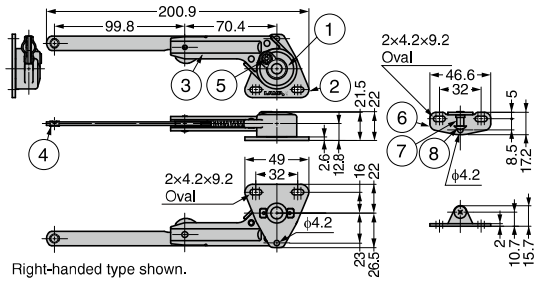
Comes down slowly and softly in closing direction. Installation with piano/butt hinge or concealed hinge shown below.

Opening direction Soft-down direction Hold position



Hinge Type		A	B	C
70° Opening	Concealed Hinge	126	–	101–S
	Single Knuckle Hinge	125	100	–
105° Opening	Concealed Hinge	103	–	78–S
	Single Knuckle Hinge	97	72	–

Installation dimensions vary depending on hinge type and opening angle.



No.	Part Name	Material	Finish/Colour
①	Body	Zinc Alloy (ZDC)	Nickel
②	Mounting Plate	Steel (SPCC)	
③	Arm		
④	Sleeve	POM	Black
⑤	Adjustment Screw	Steel (SWCH)	Nickel
⑥	Arm Mounting Plate	Steel (SPCC)	
⑦	Shaft	Steel (SWCH)	
⑧	Truss Head Screw (M4×5)		

- S is overlay at hinge side. For concealed hinge, use our recommended hinge 360-26-19T.
- Reference point for each dimension: hinge centre for single knuckle hinge, while door edge for concealed hinge.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-481	NSDX-20R	Right-handed	Zinc Alloy (ZDC)/ Steel	Nickel	1.96~6.86	20~70	170	20	80
G	3D	180-109-480	NSDX-20L	Left-handed						20	80

[Mounting Plate] Sold separately 3

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-032	NSDX-SZ	Screw on	14	160	640
G	3D	180-109-460	NSDX-CZ	Clip on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip on for 20 mm width Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip on Mounting Plate for Glass Door	14	160	640

[SDS Face Plate and Spacer for Glass Door] Sold Separately 3
(Please use with mounting plate NSDX-GZ.)

RoHS	CAD	Item Code	Item Name	Material	Finish/ Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.325, 2 : P.293, 3 : P.369

AS Parts Set for Installing to Aluminium Frame

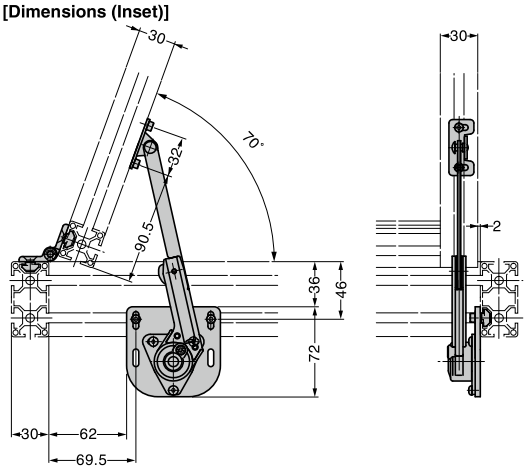
Please refer to the series introduction page 1 for details about AS series.



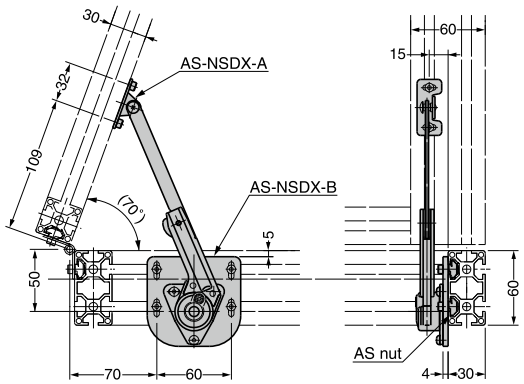
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	3D	180-041-643	AS-NSDX-20RK-30-6	Groove Width 6 mm	NSDX-20RK : 1pc AS Nut AS-6M4 : 6pcs Hexagon Socket Button Head Screw M4×6 : 3pcs Bracket AS-NSDX-B : 1pc Hexagon Socket Head Cap Screw M4×12 : 4pcs Bracket AS-NSDX-A : 1pc Hexagon Socket Head Cap Screw M4×10 : 2pcs	–
G	3D	180-041-645	AS-NSDX-20LK-30-6		NSDX-20LK : 1 pc AS Nut AS-6M4 : 6pcs Hexagon Socket Button Head Screw M4×6 : 3pcs Bracket AS-NSDX-B : 1pc Hexagon Socket Head Cap Screw M4×12 : 4pcs Bracket AS-NSDX-A : 1pc Hexagon Socket Head Cap Screw M4×10 : 2pcs	–
G	3D	180-041-644	AS-NSDX-20RK-30-8	Groove Width 8 mm	NSDX-20RK : 1pc AS Nut AS-8M4 : 6pcs Hexagon Socket Button Head Screw M4×6 : 3pcs Bracket AS-NSDX-B : 1pc Hexagon Socket Head Cap Screw M4×12 : 4pcs Bracket AS-NSDX-A : 1pc Hexagon Socket Head Cap Screw M4×10 : 2pcs	–
G	3D	180-041-646	AS-NSDX-20LK-30-8		NSDX-20LK : 1pc AS Nut AS-8M4 : 6pcs Hexagon Socket Button Head Screw M4×6 : 3pcs Bracket AS-NSDX-B : 1pc Hexagon Socket Head Cap Screw M4×12 : 4pcs Bracket AS-NSDX-A : 1pc Hexagon Socket Head Cap Screw M4×10 : 2pcs	–

[Dimensions (Inset)]



[Dimensions (Overlay)]



Refer to 1 : P.20

SOFT-DOWN STAY SDS-200, SDS-201, SDS-210

Lapcon L=R INSTRUCTION



Right side installation shown. (SDS-200-W)



Right side installation shown. (SDS-210-G)




Mounting plate SDS-A for SDS-210


Mounting plate SDS-B for SDS-200 and SDS-201

Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Top-opening	SDS-200	With Catch	Yes	3.43~4.9 N・m/pc (35~50 kgf・cm/pc)
	SDS-201			
	SDS-210	–		

- For top-opening doors.
- Non-handed: Can be installed either on left or right side.
- Designed to hold the door in fully opened position.
- Three types are available, depending on opening angle and type of hinge (sold separately).
  SDS-200: Opening angle 70° ※, piano/butt hinge
  SDS-201: Opening angle 70° ※, concealed hinge
  SDS-210 (wide angle opening): Opening angle 105° ※, piano/butt hinge or concealed hinge
  ※Fully opened angle of door at the installation position in the installation drawing next page.
- For opening angle or hinge type other than specified, please contact local representatives.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 1.
- Do not push the door up over the max. opening angle. Also do not forcibly press the door down when closing.

[Parts Included]
- Mounting plate
- Countersunk head tapping screw 3.5×14

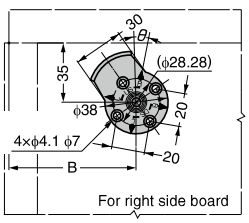
[Sold Separately]
- Concealed hinge OLYMPIA 360-26-19T, 360-26-0T

Video Link

Selection Tool
Sasuga-kun

[Maximum Door Moment]
- With 1 stay
  Maximum door moment = 3.43~4.9 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

[Installation for Mounting Plate]
SDS-200, SDS-201

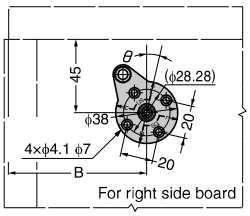


[Full Overlay]

Item Name	Hinge Type	Opening Angle	B	θ
SDS-200	Single Knuckle Hinge	70°	75	(0°)
SDS-201	Concealed Hinge 360-26/19T		74	
SDS-210	Single Knuckle Hinge	105°	81	(5°)
	Concealed Hinge 360-26/19T		87	(12°)

For right side board, install with the "→" mark of R at US side upwards.
For left side board, install with the "→" mark of L at US side upwards.

SDS-210

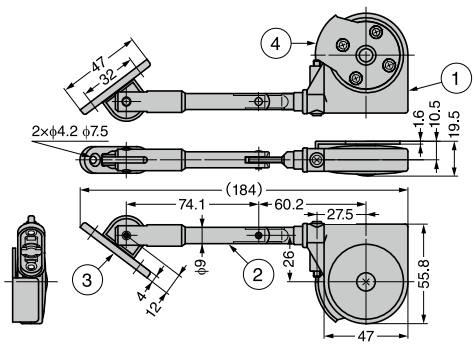


[Inset (Door Thickness 20mm)]

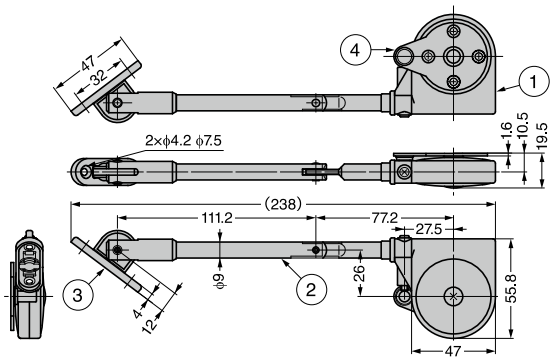
Item Name	Hinge Type	Opening Angle	B	θ
SDS-200	Single Knuckle Hinge	70°	63.5	(10°)
SDS-201	Concealed Hinge 360-26/0T		79	(0°)
SDS-210	Single Knuckle Hinge	105°	70	(15°)

For right side board, install with the "→" mark of R at US side upwards.
For left side board, install with the "→" mark of L at US side upwards.

Refer to 1 : P.293



SDS-200, SDS-201



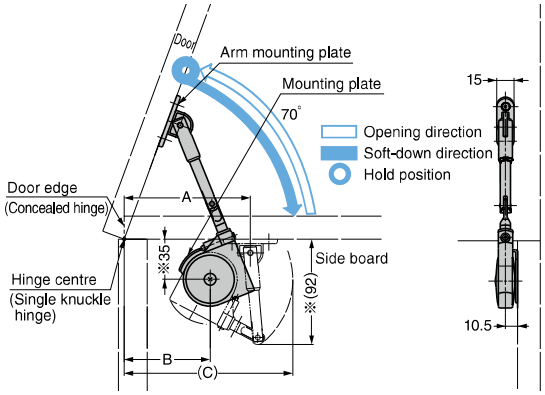
SDS-210

No.	Part Name	Material	Finish/Colour
①	Body	ABS	White, Grey, Umber
②	Arm	Steel (SPCC)	Nickel
③	Arm Mounting Plate		
④	Mounting Plate		

[Installation SDS-200 and SDS-201]

Right side installation for top-opening 70˚ . Left side installation is symmetrical.

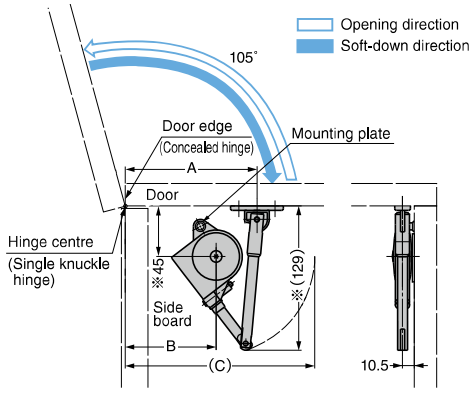
Comes down slowly and softly in closing direction. Installation with piano/butt hinge or concealed hinge shown below.



[Installation SDS-210]

Right side installation for top-opening 105˚ . Left side installation is symmetrical.

Comes down slowly and softly in closing direction. Installation with piano/butt hinge or concealed hinge shown below.



●Installation dimensions vary depending on hinge type. Reference point of installation dimension (A, B, C) : hinge centre for piano/butt hinge, while door edge for concealed hinge.
●Reference point of ※ marked dimensions is the back side of door.

[Full Overlay]

Item Name	Hinge Type	Opening Angle	A	B	C
SDS-200	Single knuckle hinge	70˚	110	75	147
SDS-201	Concealed Hinge 360-26/19T		109	74	146
SDS-210	Single knuckle hinge	105˚	117.5	81	169
	Concealed Hinge 360-26/19T		123.5	87	175

[Inset (Door Thickness 20mm)]

Item Name	Hinge Type	Opening Angle	A	B	C
SDS-200	Single knuckle hinge	70˚	98.5	63.5	135
SDS-201	Concealed Hinge 360-26/0T		114	79	151
SDS-210	Single knuckle hinge	105˚	108.3	70	157.3

[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Maximum Door Moment (N·m/pc)	Maximum Door Moment (kgf·cm/pc)	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-268	SDS-200-W	ABS/Steel	Nickel/Grey	3.43~4.9	35~50	153	20	100
G	3D	180-100-269	SDS-200-G		Nickel/Umber				20	100
G	3D	180-100-270	SDS-200-U		Nickel/White				20	100
G	3D	180-100-271	SDS-201-W		Nickel/Grey				20	100
G	3D	180-100-272	SDS-201-G		Nickel/Umber				20	100
G	3D	180-100-273	SDS-201-U		Nickel/White				20	100
G	3D	180-100-274	SDS-210-W		Nickel/Grey			159	20	100
G	3D	180-100-275	SDS-210-G		Nickel/Umber				20	100
G	3D	180-100-276	SDS-210-U		Nickel/White				20	100

[SDS Face Plate and Spacer for Glass Door] Sold Separately 1

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.369

LIFT-ASSIST DAMPER LAD-ST With Stopper

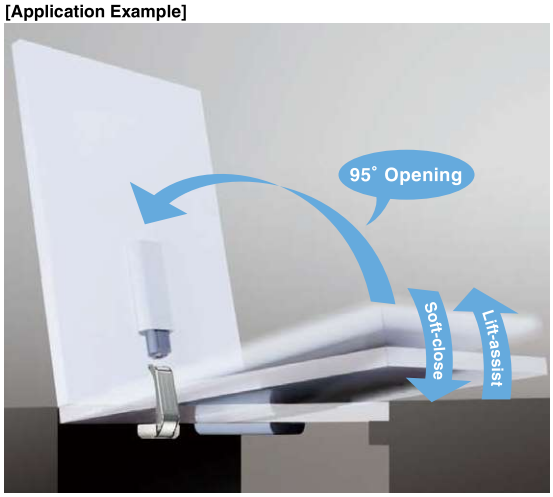
Lapcon L=R INSTRUCTION



Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
Top-opening	LAD-ST-L	Lift-assist Soft-close	Yes	8.0~10.5 N・m/pc (81.6~107.1 kgf・cm/pc)
	LAD-ST-M			10.5~13.5 N・m/pc (107.1~137.7 kgf・cm/pc)
	LAD-ST-H			13.5~16.0 N・m/pc (137.7~163.2 kgf・cm/pc)

- Ideal for counter flaps at bars, restaurants, and receptions.
- Smooth and soft close movement at the end, preventing flaps from slamming shut. Damper works even at a slight opening angle.
- Lift-assist mechanism with light opening.
- Stops flap at 95˚ opening with stopper.
- Suitable for door thickness 15~40mm.
- Can be post-installed to existing counters without processing.
- Installation position can be easily determined with the supplied template.

[Application Example]



[Specifications]

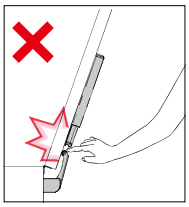
- Operating temperature: 0℃~40℃

Selection Tool

Sasuga-kun

[Remarks]

- Simply holds rather than fixes flap in opened position.
- Make sure to have sufficient hinge strength and installation strength at door hanging side.
- Do not use concealed hinge.
- Closed flap cannot be held with only this product. Please install a catch at the front end of flap.
- Do not forcibly open and close flap more than necessary.
- Ensure that the distance from mounting surface of damper unit and stopper to flap surface is 15~40mm (see drawing).
- Be careful not to pinch fingers between arm unit and damper unit.



- Do not use with spacer LAD-DP 1 (for thick door) and bracket for back mount LAD-BKT 2 (for horizontal installation).

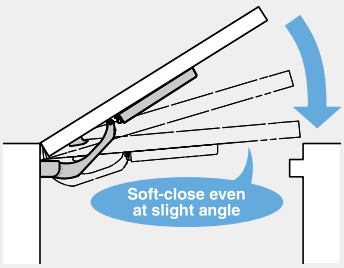
[Parts Included]

- Binding head tapping screw 4×16
- Template for positioning

[Recommended Hinge]

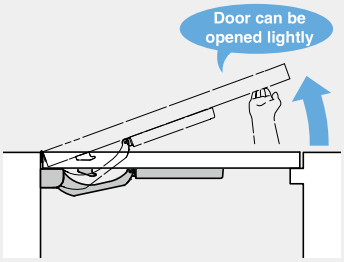
- Concealed hinge R 3

Soft-close



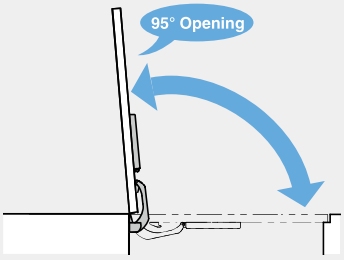
Damper works just before flap closes, preventing it from slamming shut and pinching fingers.

Lift-assist



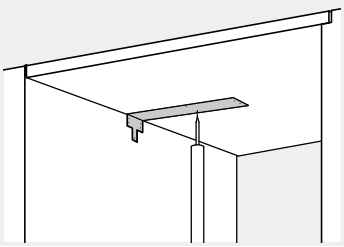
Lift-assist mechanism with light opening.

With stopper



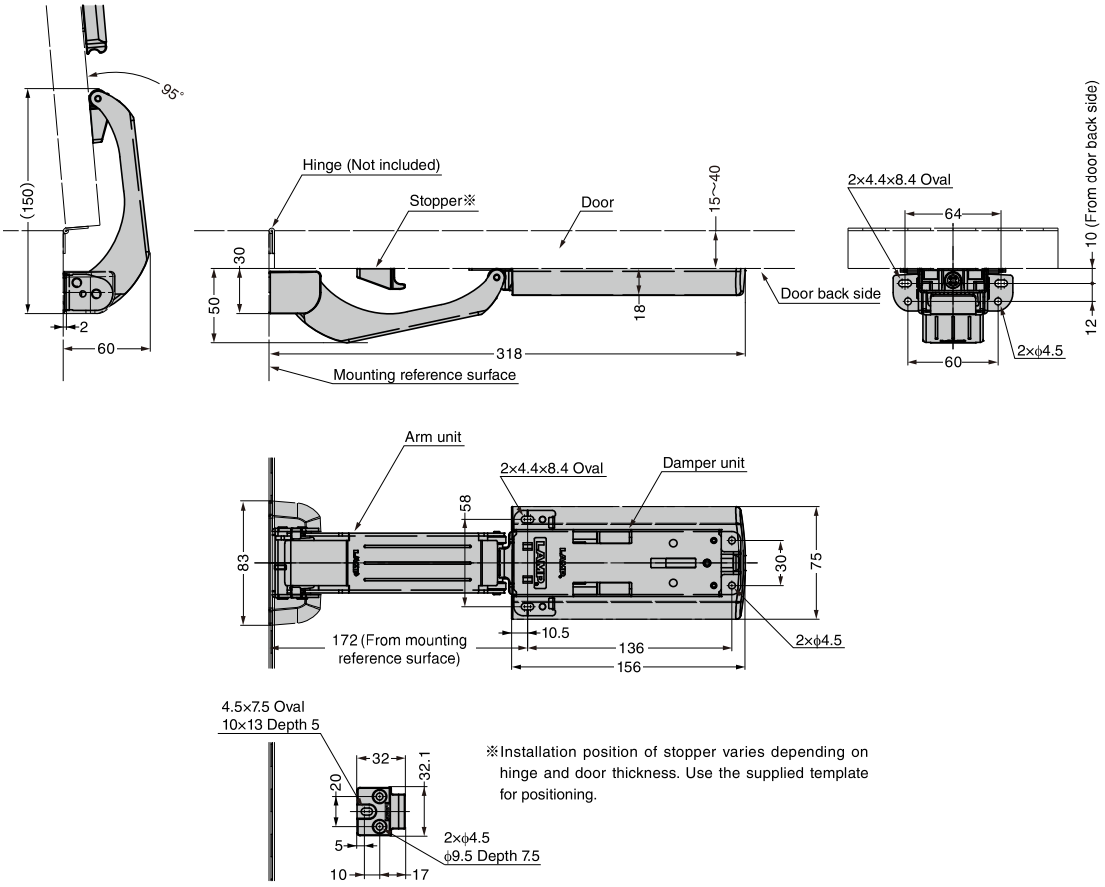
Stops flap at 95˚ opening.

Easy post-installation



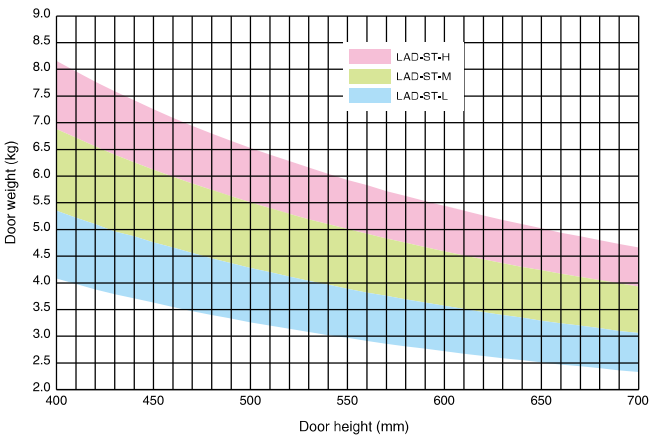
Can be post-installed to existing counters without processing. Simply by pressing against the supplied mounting template, installation position can be easily determined.

Refer to 1 2 : P.331, 3 : P.150



※Installation position of stopper varies depending on hinge and door thickness. Use the supplied template for positioning.

[Door Size Ranges] 1pc use only



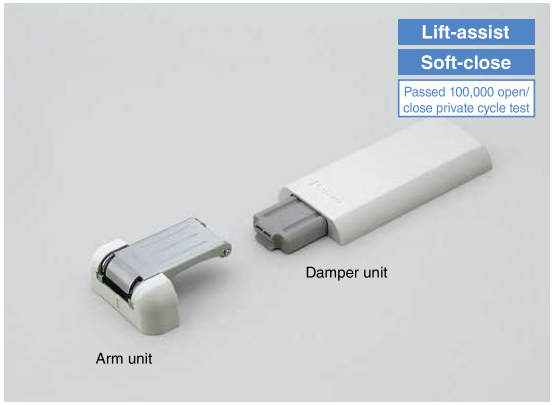
Refer to the left graph as a guide for model selection.
When using a door with size not given here, calculate the door moment as follows.
Door weight includes attached decorations.

Maximum Door Moment (N・m)
= Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Recommended Thickness	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	170-033-213	LAD-ST-L	ABS/POM/Steel/ Zinc Alloy (ZDC)	Zinc Chromate/ Nickel Chrome/ Nickel	8.0~10.5	81.6~107.1	15~40	750	1	10
G	3D	170-033-214	LAD-ST-M			10.5~13.5	107.1~137.7			1	10
G	3D	170-033-215	LAD-ST-H			13.5~16.0	137.7~163.2			1	10

LIFT-ASSIST DAMPER LAD

Lapcon L=R INSTRUCTION



Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
Top-opening	LAD-L	Lift-assist Soft-close	Yes	8.0~10.5 N・m/pc (81.6~107.1 kgf・cm/pc)
	LAD-M			10.5~13.5 N・m/pc (107.1~137.7 kgf・cm/pc)
	LAD-H			13.5~16.0 N・m/pc (137.7~163.2 kgf・cm/pc)

- Ideal for counter flaps at bars, restaurants, and receptions.
- Smooth and soft close movement at the end, preventing flaps from slamming shut. Damper works even at a slight opening angle.
- Lift-assist mechanism with light opening.
- Can be installed to existing counters without additional processing.
- Installation position can be easily determined with the supplied template.
- Slim arm unit does not disturb the doorway. Projection is only 35mm when opened.
- 2 pairs use possible. Torque becomes double. 3 pairs or more not allowed.

[Application Example]



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Use with single knuckle hinges or concealed hinges (sold separately) .
- Do not use with slide hinges. Otherwise, hinges may deform and flap may not close.
- No functions to hold flap in opened position and stop in opening direction. Install a safety device separately.
- Please prepare separate holder to support the flap in closed position. (see below※).
- Do not forcibly open and close flap more than necessary.
- Since load is applied to flap, side board and hinge, ensure that the frame structure has sufficient strength.
- Be careful not to pinch fingers between arm unit and damper unit.

Video Link

Selection Tool

Sasuga-kun

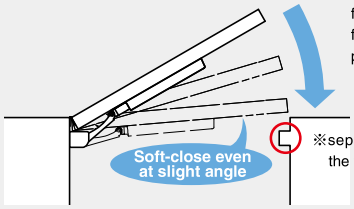
[Parts Included]

- Binding head tapping screw 4×16
- Template for positioning

[Recommended Hinge]

- Concealed hinge R 2

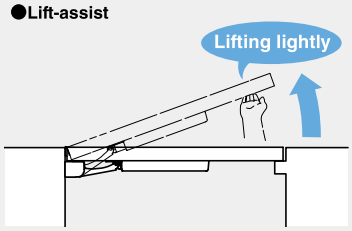
●Soft-Close



Damper works just before flap closes, preventing it from slamming shut and pinching fingers.

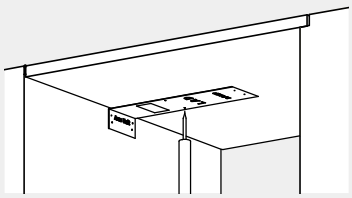
※separate holder to support the flap required.

●Lift-assist

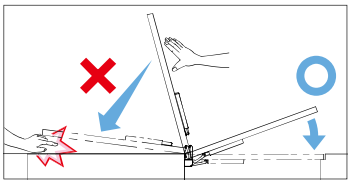


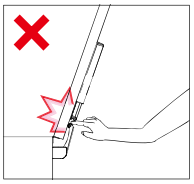
Top board can be lifted lightly.

●Easy post-installation



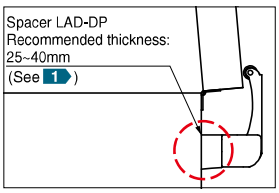
Can be post-installed to existing counters without processing. Simply by pressing against the supplied mounting template, installation position can be easily determined.

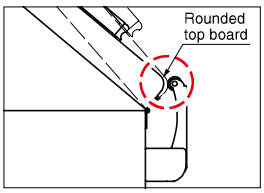




[For Door Thickness More Than 25 mm]

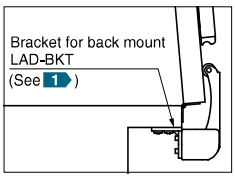
When door thickness exceeds 25mm, you may be able to use this product by using with spacer (sold separately) 1 or rounding the flap (figure below).



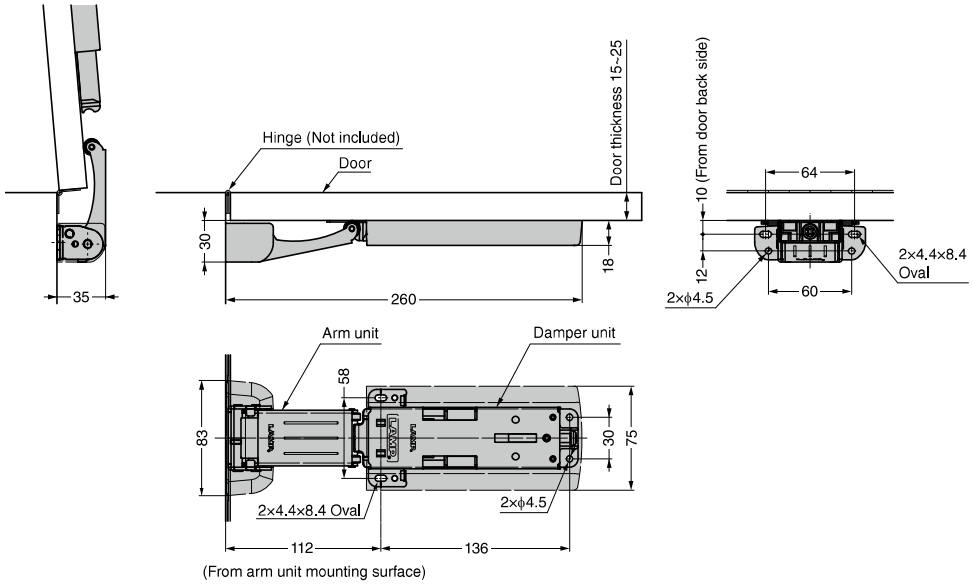


[For Installing on Horizontal Surface]

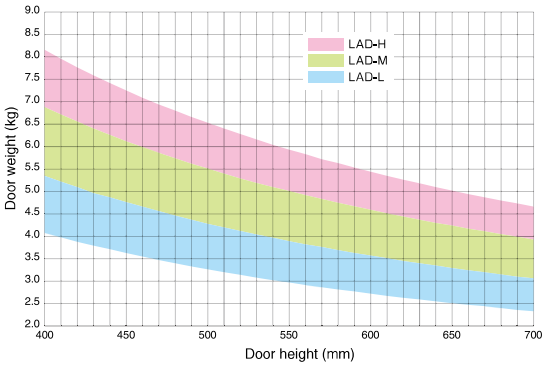
When installing on a horizontal surface, please use bracket for back mount (sold separately) 1 .



Refer to 1 : P.331, 2 : P.150



[Door Size Ranges] 1pc use (※2pcs use possible. Torque moment doubles)



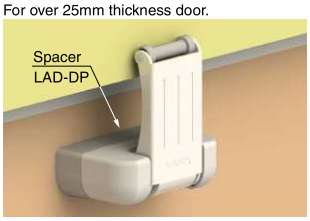
Refer to the left graph as a guide for model selection.
When using a door with size not given here, calculate the door moment as follows.

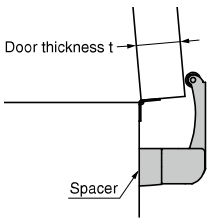
Maximum Door Moment (N・m)
= Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

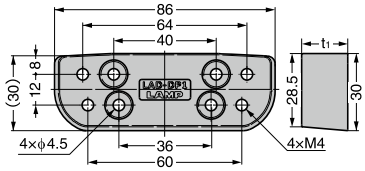
RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Door Thickness	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	170-025-804	LAD-L	ABS/POM/Steel	Zinc Chromate/ Nickel Chrome	8.0~10.5	81.6~107.1	15~25	545	1	20
G	3D	170-025-805	LAD-M			10.5~13.5	107.1~137.7		568	1	20
G	3D	170-025-806	LAD-H			13.5~16.0	137.7~163.2		571	1	20

SPACER LAD-DP

For over 25mm thickness door.

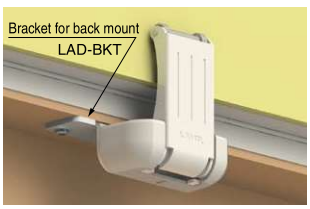


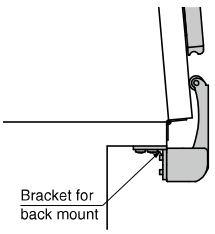


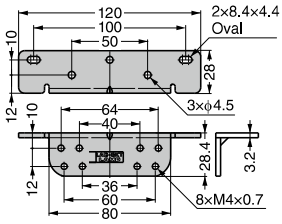


RoHS	CAD	Item Code	Item Name	t1	Door Thickness (t)	Material	Colour	Weight (g)	Box (pcs)
G	3D	170-028-234	LAD-DP1	18	25~35	POM	Grey	58	50
G	3D	170-028-235	LAD-DP2	25	30~40			67	50

BRACKET FOR BACK MOUNT LAD-BKT







RoHS	CAD	Item Code	Item Name	Material	Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	170-028-236	LAD-BKT	Steel (SPCC)	Nickel	129	20	100

MOUNTING PLATE FOR LAD LAD-SPT

INSTRUCTION



●A plate to reinforce the surface where the LAD Lift-Assist Damper or LAD-ST Arm Unit is mounted.

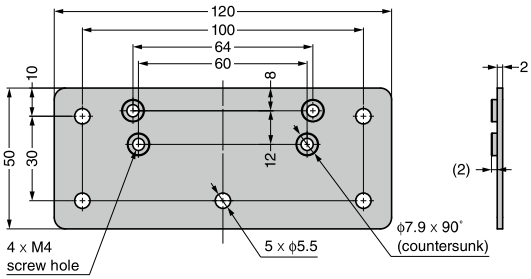
[Remarks]
- ●Use the single-side type when the lateral plate thickness is 20 mm or greater, and the double-sided type if the thickness is 15 - 19 mm.
- ●Two plates are required when using the double-sided type.
- ●Cannot be used with the LAD-DP Spacer for thick plates or the LAD-BKT Bracket for Back Mount.

[Parts Included]
- ●Size M4 x 8 binding screws

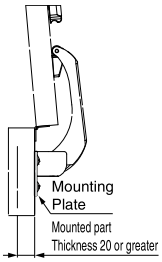
[Recommended Screw]
- ●Single-side type: Size 5 x 20 or larger cross-recessed truss tapping screws
- ●Double-sided type: Size M5 cross-recessed truss screws and flat washers, spring washers and nuts for M5 screws

[Application Example]

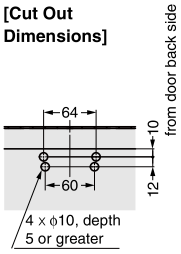




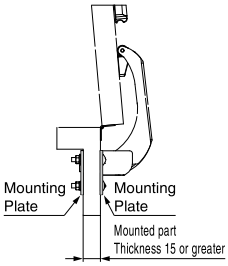
[Single-side Type]



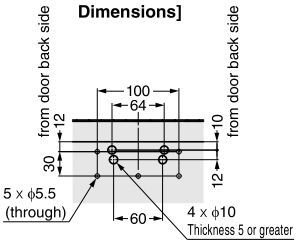
[Cut Out Dimensions]



[Double-sided Type]



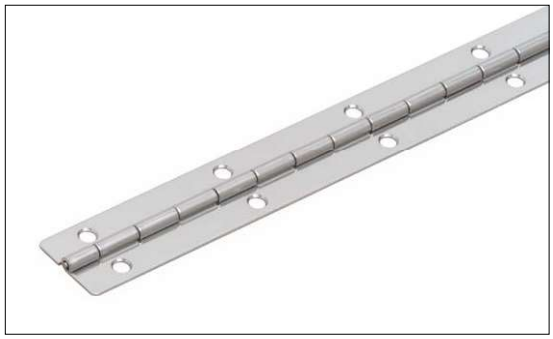
[Cut Out Dimensions]



RoHS	CAD	Item Code	Item Name	Material	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	170-034-754	LAD-SPT	Stainless Steel	130	10	50

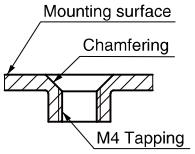
STAINLESS STEEL PIANO HINGE LSN-C

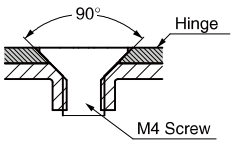
SUS

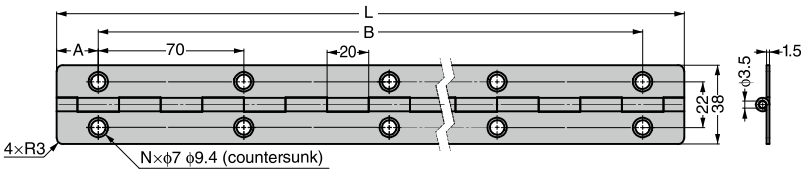


[Remarks]
- ●The load capacity is the value when using one hinge. For calculation conditions, please refer to the "Concept of Load-bearing" 1.
- ●Please note this product is designed for use on wood. Hole positioning on wood should be done by aligning the actual hinge. This product is not suitable for sheet metal or installations with hole pitch limitations.
- ●When installing to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side. In this way, the screw head will not protrude when the hinge is fixed.

[Processing and Installation]







Selection Tool

Hinge Selection

RoHS	CAD	Item Code	Item Name	Material	Finish	L	A	B	Number of Holes (N)	Load Capacity N/pc	Load Capacity kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	170-045-408	LSN15-38-450C	Stainless Steel (SUS304)	Polished	450	15	420	14	392	40	270	10	40
G	3D	170-045-409	LSN15-38-600C			600	20	560	18	519	53	360	10	40

Refer to 1 : P.43

Understandable! Selectable! Usable!

Sugatsune Website

https://global.sugatsune.com/

You can visit the website to

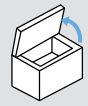
- Check new product information
- View product introduction video
- Browse digital web catalogue
  Refer to Back Cover
- Use product selection tool
  Refer to Back Cover
- Download installation instructions

SUGATSUNE **Search**

LIFT-ASSIST DAMPER (FOR HEAVY DUTY) LADH

Lapcon INSTRUCTION



Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Top-opening	LADH-35	Lift-assist Soft-close	Yes	25~35 N・m/pc (255~357 kgf・cm/pc)
	LADH-50			35~50 N・m/pc (357~510 kgf・cm/pc)

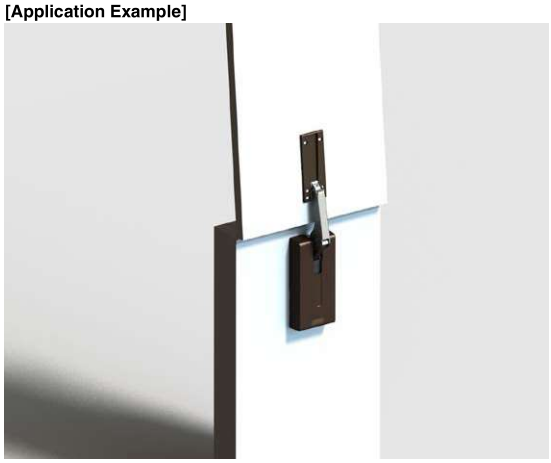
- Ideal for counter flaps at bars, restaurants, and receptions.
- Smooth and soft close movement at the end, preventing flaps from slamming shut. Damper works even at a slight opening angle.
- Suitable for door moment 25~50N・m.
- Lift-assist mechanism with light opening.
- Stops flap at 95° opening with stopper.
- Installation position can be easily determined with the supplied template.
- Can be post-installed to existing counters without processing.

[Applications]
- Counter flaps, etc.

[Remarks]
- Do not use more than 1 LADH per flap.
- Simply holds rather than fixes flap in opened position.
- Make sure to have sufficient hinge strength and installation strength at damper mounting surface and door hanging side.
- Do not use concealed hinge.
- Closed flap cannot be held with only this product. Please install a catch at the front end of flap.

[Parts Included]
- Binding head tapping screw 5.1×25
- Paper template

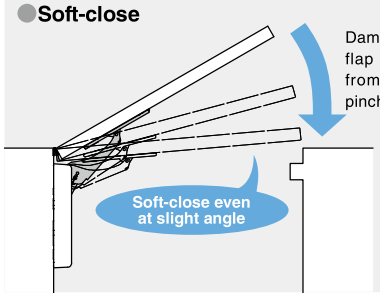
[Application Example]



Video Link Video Link Selection Tool

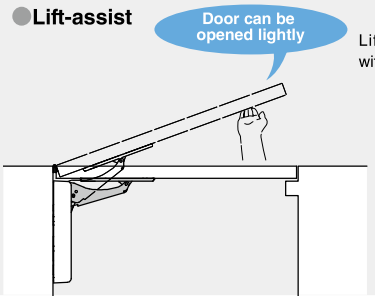
Sasuga-kun

Soft-close



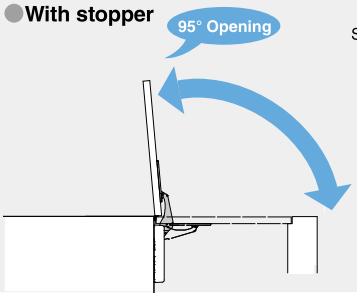
Damper works just before flap closes, preventing it from slamming shut and pinching fingers.

Lift-assist



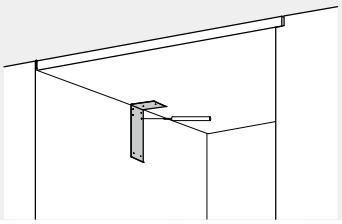
Lift-assist mechanism with light opening.

With stopper

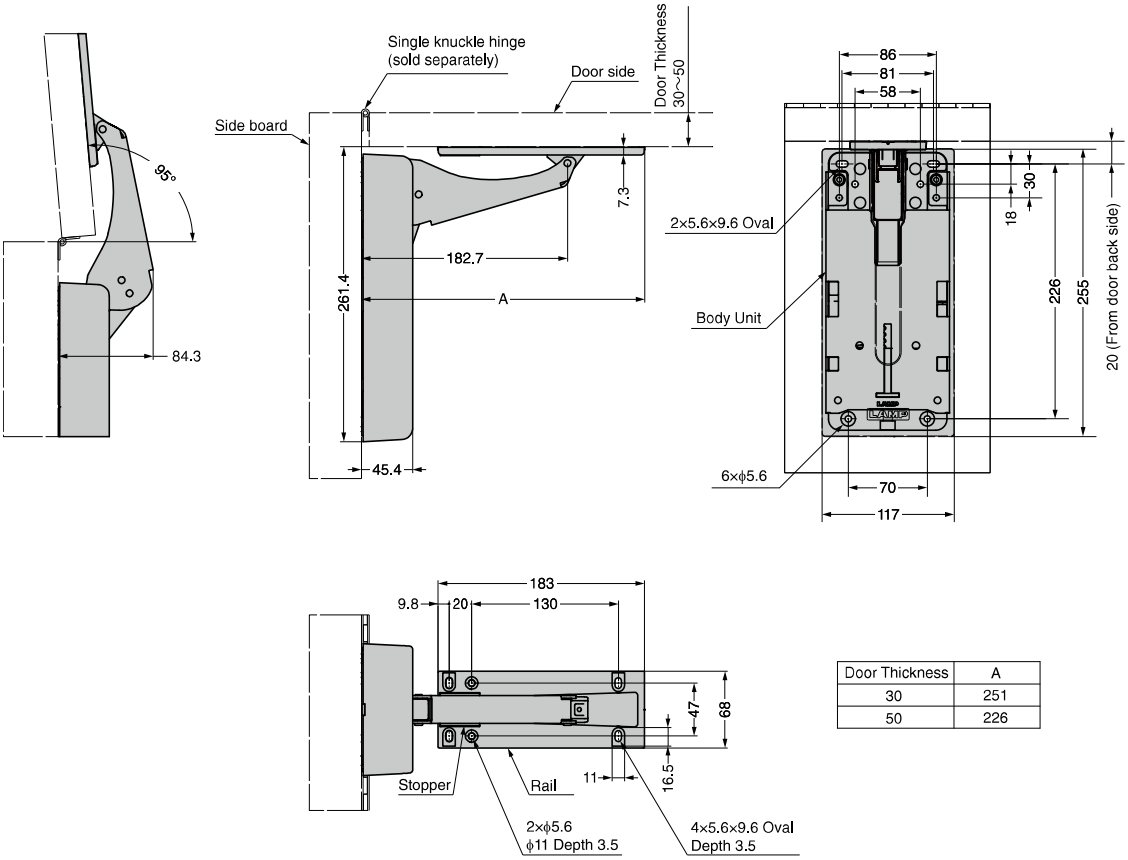


Stops flap at 95° opening.

Easy post-installation

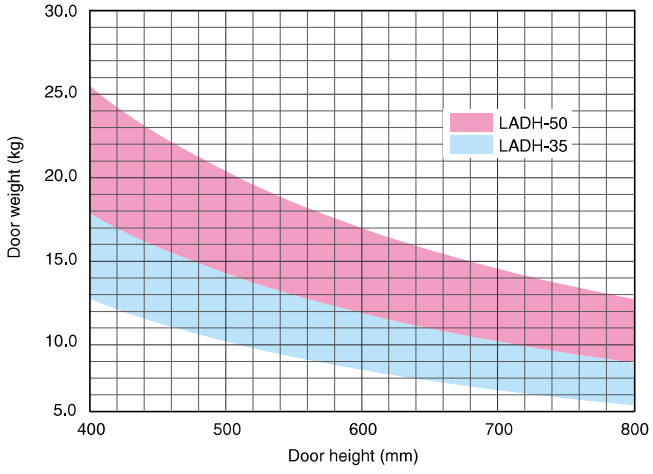


Can be post-installed to existing counters without processing. Simply by pressing against the supplied mounting template, installation position can be easily determined.



Door Thickness	A
30	251
50	226

[Door Size Ranges]



Refer to the left graph as a guide for model selection.
When using a door with size not given here, calculate the door moment as follows.
Door weight includes attached decorations.

Maximum Door Moment (N・m)
= Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

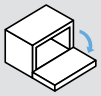
RoHS	CAD	Item Code	Item Name	Material	Finish	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Recommended Thickness	Weight (kg)	Box (pcs)	Carton (pcs)
G	3D	170-034-868	LADH-35	Steel (SPCC)/ Polyacetal (POM)/ABS	Nickel Plating/Nickel	25~35	254.9~356.9	30~50	2	1	4
G	3D	170-034-869	LADH-50		Chrome/Dark Brown	35~50	356.9~509.9			1	4

SELF-CLOSE STAY HDS-10S For Use in Pairs

Lapcon INSTRUCTION





Opening Direction	Description	Non-handed	Model	Maximum Door Moment
 Downward-opening	Self-close With Catch For Use in Pairs	–	K	5.9~9.3 N·m/2 pcs (60~95 kgf·cm/2 pcs)
			M	9.3~12.7 N·m/2 pcs (95~130 kgf·cm/2 pcs)
			H	10.8~15.7 N·m/2 pcs (110~160 kgf·cm/2 pcs)
			S	13.7~17.6 N·m/2 pcs (140~180 kgf·cm/2 pcs)

- For downward opening flaps.
- Self-closes after a small impulse.
- Holds door in fully closed or fully opened position.
- For door hinge, piano/butt hinge or 3-way adjustable drop hinge SDH-001 is suitable.

[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the “Cautions” 1.
- Used in pairs.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.
- Do not roughly open and close the door.

[Parts Included]

- Mounting plate
- Binding head tapping screw 3.5×15

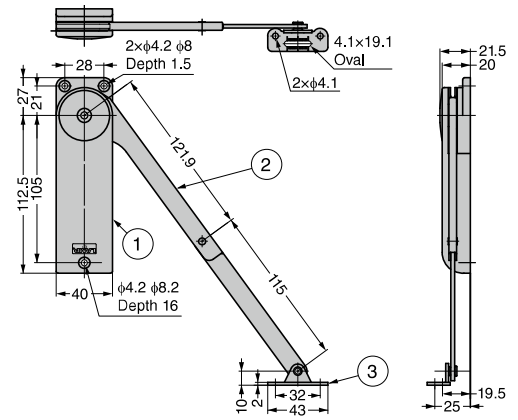
Video Link

Video Link

[Applicable Range]

- Choose from 4 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

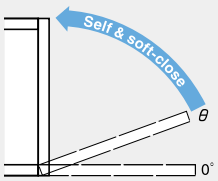
Maximum door moment N・m	Model	Qty
5.9~ 9.3	K	2 pcs
9.3~12.7	M	
10.8~15.7	H	
13.7~17.6	S	



Right-handed type shown.

●Self & Soft-close

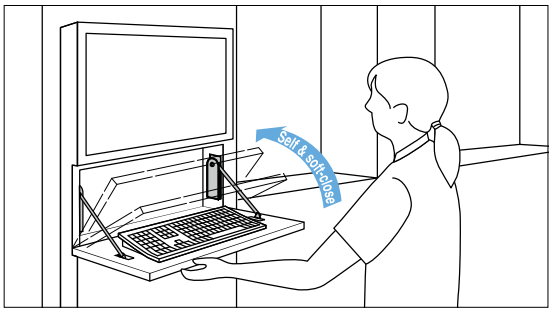
Self-closes after a small impulse.



Model	Self & Soft-close Starting Angle θ
K	5°~35°
M	5°~20°
H	
S	5°~15°

No.	Part Name	Material	Finish
①	Body	ABS	Black, White
②	Arm	Steel (SPCC)	Nickel
③	Mounting Plate		

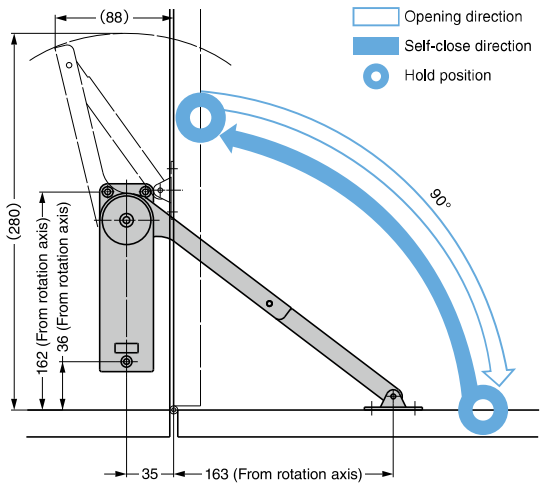
[Application Example]



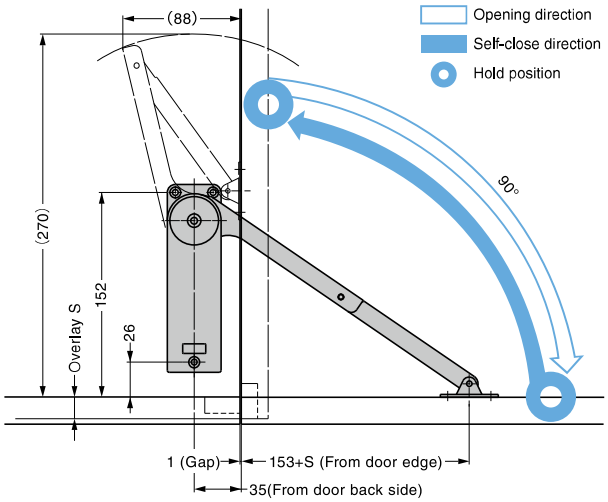
Refer to 1 : P.293, 2 : P.269

[Installation] Right side installation for downward-opening 90°. Left side installation is symmetrical.

With single knuckle hinge



With drop hinge



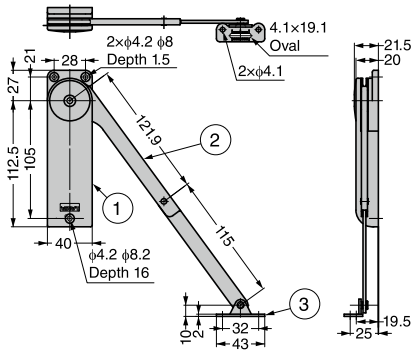
RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/2 pcs	Maximum Door Moment kgf·cm/2 pcs	Weight (g)	Box (pcs)
G	3D	180-025-872	HDS-10S-KL-BL	Left-handed	ABS/Steel	Nickel/Black	K	5.9~9.3	60~95	292	40
G	3D	180-026-723	HDS-10S-KL-WT			Nickel/White				292	40
G	3D	180-025-873	HDS-10S-KR-BL	Right-handed		Nickel/Black				292	40
G	3D	180-026-724	HDS-10S-KR-WT			Nickel/White				292	40
G	3D	180-025-874	HDS-10S-ML-BL	Left-handed		Nickel/Black	M	9.3~12.7	95~130	301	40
G	3D	180-026-725	HDS-10S-ML-WT			Nickel/White				301	40
G	3D	180-025-875	HDS-10S-MR-BL	Right-handed		Nickel/Black				301	40
G	3D	180-026-726	HDS-10S-MR-WT			Nickel/White				301	40
G	3D	180-025-876	HDS-10S-HL-BL	Left-handed		Nickel/Black	H	10.8~15.7	110~160	309	40
G	3D	180-026-727	HDS-10S-HL-WT			Nickel/White				309	40
G	3D	180-025-877	HDS-10S-HR-BL	Right-handed		Nickel/Black				309	40
G	3D	180-026-728	HDS-10S-HR-WT			Nickel/White				309	40
G	3D	180-025-902	HDS-10S-SL-BL	Left-handed		Nickel/Black	S	13.7~17.6	140~180	312	40
G	3D	180-026-729	HDS-10S-SL-WT			Nickel/White				312	40
G	3D	180-025-903	HDS-10S-SR-BL	Right-handed		Nickel/Black				312	40
G	3D	180-026-730	HDS-10S-SR-WT			Nickel/White				312	40

HEAVY DUTY SOFT-DOWN STAY HDS-10 For Use in Pairs



Opening Direction	Description	Non-handed	Model	Maximum Door Moment
Downward-opening	With Catch / For Use in Pairs	–	K	13.7~19.5 N·m/2 pcs (140~199 kgf·cm/2 pcs)
			M	19.6~24.4 N·m/2 pcs (200~249 kgf·cm/2 pcs)
			H	24.5~29.4 N·m/2 pcs (250~300 kgf·cm/2 pcs)

- For downward-opening doors.
- Designed to hold the door in fully closed position.
- For door hinge, piano/butt hinge or 3-way adjustable drop hinge SDH-001 1 is suitable.
- AS parts set 2 for installing to aluminium frame also available.



No.	Part Name	Material	Finish
①	Body	ABS	Black, White
②	Arm	Steel (SPCC)	Nickel
③	Mounting Plate		

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 3.
- Handed: Specific left and right-handed.
- Used in pairs.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.
- Do not roughly open and close the door.

[Parts Included]
- Mounting plate
- Binding head tapping screw 3.5×15

Video Link

Selection Tool

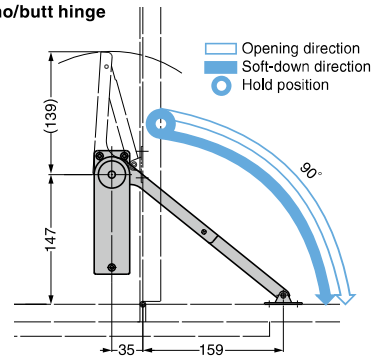
Sasuga-kun

[Applicable Range]
- Choose from 3 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

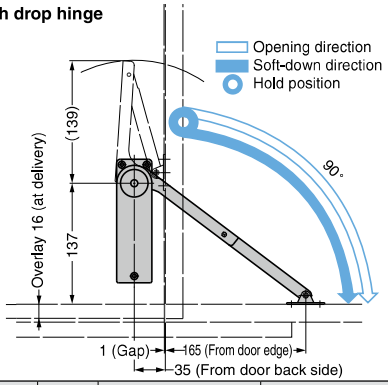
Maximum door moment N・m	Model	Qty
13.7~19.5	K	2 pcs
19.6~24.4	M	
24.5~29.4	H	

[Installation] Right side installation for downward-opening 90°. Left side installation is symmetrical.

With piano/butt hinge



With drop hinge

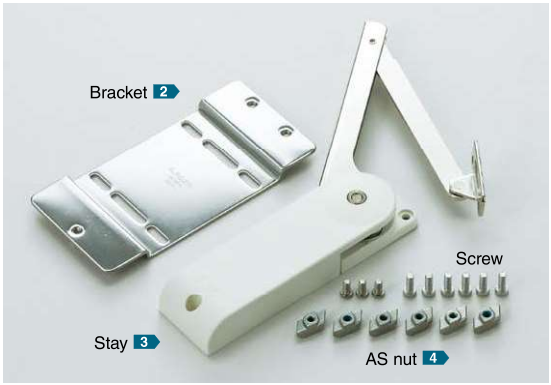


RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/2 pcs	Maximum Door Moment kgf·cm/2 pcs	Weight (g)	Box (pcs)
G	3D	180-104-067	HDS-10KL-BL	Left-handed	ABS/Steel	Nickel/Black	K	13.7~19.5	140~199	292	40
G	3D	180-104-066	HDS-10KR-BL	Right-handed						292	40
G	3D	180-104-073	HDS-10KL-WT	Left-handed		Nickel/White				292	40
G	3D	180-104-072	HDS-10KR-WT	Right-handed						292	40
G	3D	180-104-069	HDS-10ML-BL	Left-handed		Nickel/Black	M	19.6~24.4	200~249	302	40
G	3D	180-104-068	HDS-10MR-BL	Right-handed						302	40
G	3D	180-104-075	HDS-10ML-WT	Left-handed		Nickel/White				302	40
G	3D	180-104-074	HDS-10MR-WT	Right-handed						302	40
G	3D	180-104-071	HDS-10HL-BL	Left-handed		Nickel/Black	H	24.5~29.4	250~300	308	40
G	3D	180-104-070	HDS-10HR-BL	Right-handed						308	40
G	3D	180-104-077	HDS-10HL-WT	Left-handed		Nickel/White				308	40
G	3D	180-104-076	HDS-10HR-WT	Right-handed						308	40

Refer to 1 : P.269, 2 : P.339, 3 : P.293

AS Parts Set for Installing to Aluminium Frame

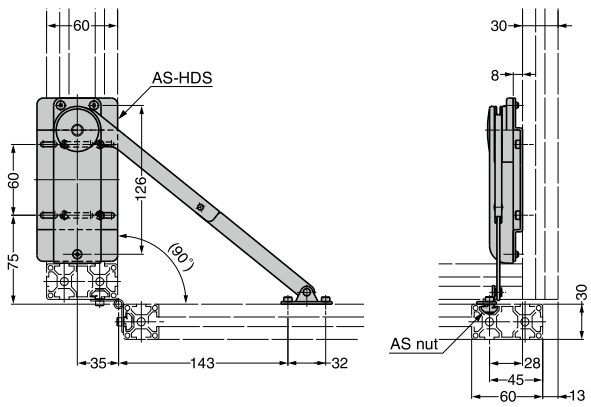
Please refer to the series introduction page 1 for details about AS series.



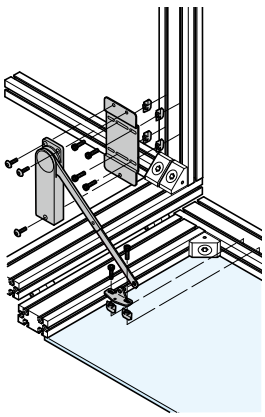
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts (Stays)	Parts (Others)	Weight (g)
G	3D	180-013-685	AS-HDS-10KR-BL-30-6	Groove Width 6 mm	HDS-10KR-BL : 1 pc	Bracket AS-HDS : 1 pc Hexagon Socket Head Cap Screw M4×10 : 6 pcs	–
G	3D	180-013-686	AS-HDS-10KL-BL-30-6		HDS-10KL-BL : 1 pc		–
G	3D	180-013-687	AS-HDS-10KR-WT-30-6		HDS-10KR-WT : 1 pc		–
G	3D	180-013-688	AS-HDS-10KL-WT-30-6		HDS-10KL-WT : 1 pc		–
G	3D	180-013-689	AS-HDS-10MR-BL-30-6		HDS-10MR-BL : 1 pc	AS Nut AS-6M4 : 6 pcs	–
G	3D	180-013-690	AS-HDS-10ML-BL-30-6		HDS-10ML-BL : 1 pc	Pan Head Screw M4×8 : 3 pcs	–
G	3D	180-013-691	AS-HDS-10MR-WT-30-6		HDS-10MR-WT : 1 pc		–
G	3D	180-013-692	AS-HDS-10ML-WT-30-6		HDS-10ML-WT : 1 pc		–
G	3D	180-013-693	AS-HDS-10HR-BL-30-6		HDS-10HR-BL : 1 pc		–
G	3D	180-013-694	AS-HDS-10HL-BL-30-6		HDS-10HL-BL : 1 pc		–
G	3D	180-013-695	AS-HDS-10HR-WT-30-6		HDS-10HR-WT : 1 pc		–
G	3D	180-013-696	AS-HDS-10HL-WT-30-6		HDS-10HL-WT : 1 pc		–
G	3D	180-013-697	AS-HDS-10KR-BL-30-8	Groove Width 8 mm	HDS-10KR-BL : 1 pc	Bracket AS-HDS : 1 pc Hexagon Socket Head Cap Screw M4×10 : 6 pcs	–
G	3D	180-013-698	AS-HDS-10KL-BL-30-8		HDS-10KL-BL : 1 pc		–
G	3D	180-013-699	AS-HDS-10KR-WT-30-8		HDS-10KR-WT : 1 pc		–
G	3D	180-013-700	AS-HDS-10KL-WT-30-8		HDS-10KL-WT : 1 pc		–
G	3D	180-013-701	AS-HDS-10MR-BL-30-8		HDS-10MR-BL : 1 pc	AS Nut AS-8M4 : 6 pcs	–
G	3D	180-013-702	AS-HDS-10ML-BL-30-8		HDS-10ML-BL : 1 pc	Pan Head Screw M4×8 : 3 pcs	–
G	3D	180-013-703	AS-HDS-10MR-WT-30-8		HDS-10MR-WT : 1 pc		–
G	3D	180-013-704	AS-HDS-10ML-WT-30-8		HDS-10ML-WT : 1 pc		–
G	3D	180-013-705	AS-HDS-10HR-BL-30-8		HDS-10HR-BL : 1 pc		–
G	3D	180-013-706	AS-HDS-10HL-BL-30-8		HDS-10HL-BL : 1 pc		–
G	3D	180-013-707	AS-HDS-10HR-WT-30-8		HDS-10HR-WT : 1 pc		–
G	3D	180-013-708	AS-HDS-10HL-WT-30-8		HDS-10HL-WT : 1 pc		–

[Dimensions]

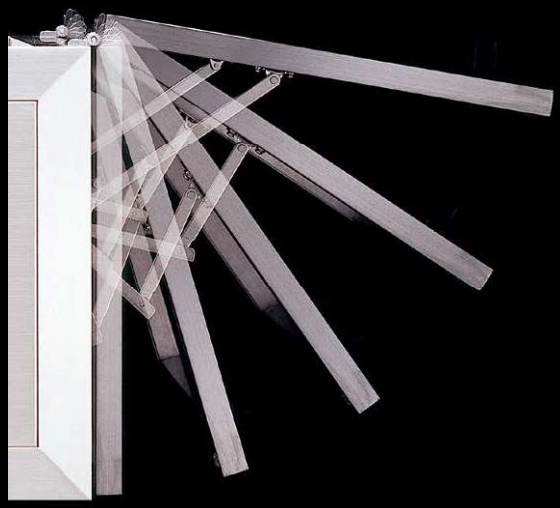


[How to Install]



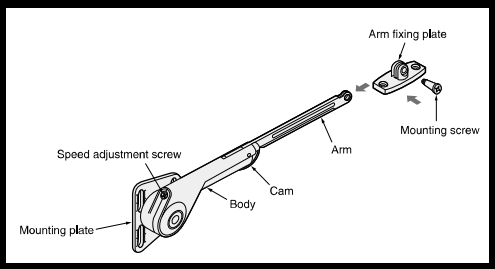
Refer to 1 : P.20, 2 : P.367, 3 : P.338, 4 : P.526

ADJUSTABLE SOFT-DOWN STAY NSD



- Keeps flap/lid from slamming shut.
- Successfully passed for 30,000 open/close private cycle tests.
- Opening/closing speed is adjustable.
- Opening angle is adjustable by changing mounting position.
- Handed.

[Remarks]
Designed to operate at room temperature 0°~40°C.



APPLICATION		MOUNTING SIDE	NSD-#
Downward-Opening Flap	90°	Right	NSD-10R
		Left	NSD-10L
Top-Opening Flap	70° ~ 105°	Right	NSD-20R
		Left	NSD-20L
Upward-Opening Flap	80° ~ 100°	Right	NSD-35R
		Left	NSD-35L

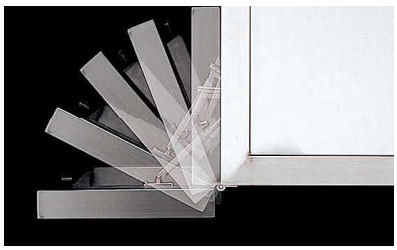
ADJUSTABLE SOFT-DOWN STAY NSD-10

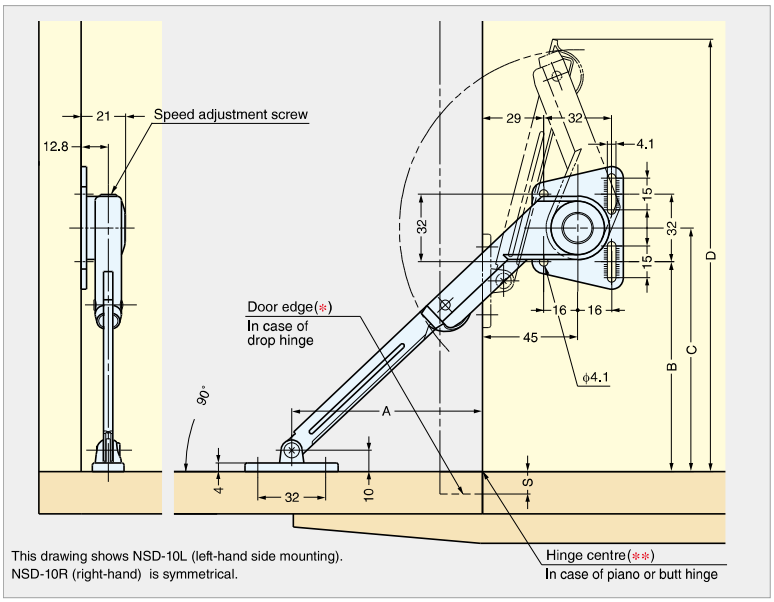
Lapcon INSTRUCTION

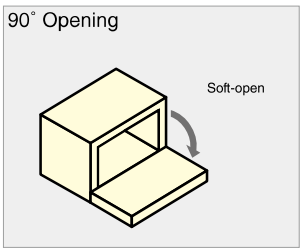


- For downward-opening flap door with piano, butt or drop Hinges.
- NSD-10 is designed to hold door in closed position.
- Torque Calculation :
  Torque = Door Height x 1/2 x Door Weight.
  Per Piece : 20~70 kg·cm.
  Per Pair : 40~140 kg·cm.

Material	Finish
Zinc Alloy, Steel	Bright Nickel







The distance for A, B, C is measured from "door edge (*)" and "top surface of bottom board" when drop hinges are used, and from "hinge centre (**)" and "top surface of bottom board" when piano or butt hinges are used.

Hinge Type	A	B	C	D
Drop Hinge	97	106-S	122-S	211-S
Piano / Butt Hinge	90	99	115	204

Note: "S" dimension is the overlay distance for drop hinge(s).

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
–	3D	180-109-376	NSD-10R	210	20	80
–	3D	180-109-381	NSD-10L	210	20	80

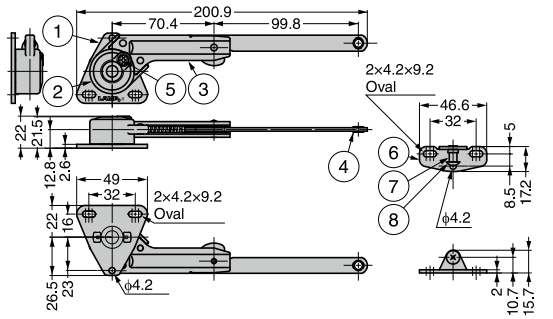
ADJUSTABLE SOFT-DOWN STAY NSDX-10 (R/L)

Lapcon AS INSTRUCTION



Opening Direction	Description	Non-handed	Maximum Door Moment
Downward-opening	With Catch	–	1.96~6.86 N・m/pc (20~70 kgf・cm/pc)

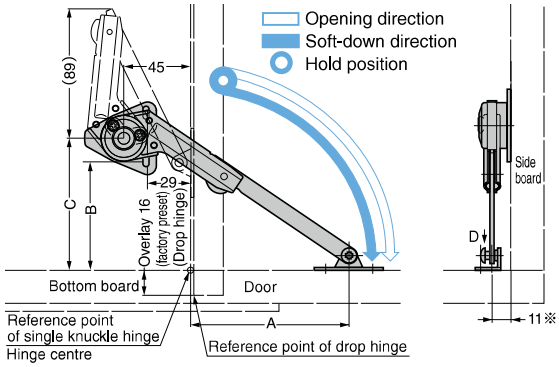
- For downward-opening doors.
- Designed to hold the door in fully closed position.
- Door opening speed can be adjusted with adjustment screw.
- AS parts set 1 for installing to aluminium frame also available.



No.	Part Name	Material	Finish/Colour
①	Body	Zinc Alloy (ZDC)	Nickel
②	Mounting plate	Steel (SPCC)	
③	Arm		
④	Sleeve	POM	Black
⑤	Adjustment Screw	Steel (SWCH)	Nickel
⑥	Arm Mounting Plate	Steel (SPCC)	
⑦	Shaft	Steel (SWCH)	
⑧	Truss head screw (M4×5)		

[Installation] Right side installation for downward-opening 90°. Left side installation is symmetrical.

Comes down slowly and softly in opening direction.
Installation with piano/butt hinge or drop hinge shown below.



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 2.
- Handed: Specific left and right-handed.
- Door opening speed varies depending on product and conditions.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.

[Sold Separately]

- Mounting plate 3
- SDS face plate and spacer for glass door 4

Video Link

Selection Tool

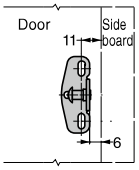
Sasuga-kun

[Maximum Door Moment]

- With 1 stay
  Maximum door moment = 1.96~6.86 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

[Installation for Mounting Plate]

D-view (refer to "Installation")



Hinge Type	A	B	C
Drop Hinge (SDH-001)	97※2	91	107
Drop Hinge (SDH-P)	98※3	88	104
Piano/Butt Hinge	90	99	115

Installation dimensions vary depending on hinge type.

- ※1: 11.8 for optional mounting plate.
- ※2: In case of overlay 16 mm (factory preset). For drop hinge, use our 3-way adjustable type SDH-001 5.
- ※3: In case of overlay 19mm (factory preset). Use SDH-P 6.
- Reference point for each dimension: hinge centre for single knuckle hinge, while door edge for drop hinge.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-008	NSDX-10R	Right-handed	Zinc Alloy (ZDC)/ Steel	Nickel	1.96~6.86	20~70	170	20	80
G	3D	180-109-009	NSDX-10L	Left-handed						20	80

[Mounting Plate] Sold Separately 3

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-032	NSDX-SZ	Screw on	14	160	640
G	3D	180-109-460	NSDX-CZ	Clip on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip on for 20 mm width Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip on Mounting Plate for Glass Door	14	160	640

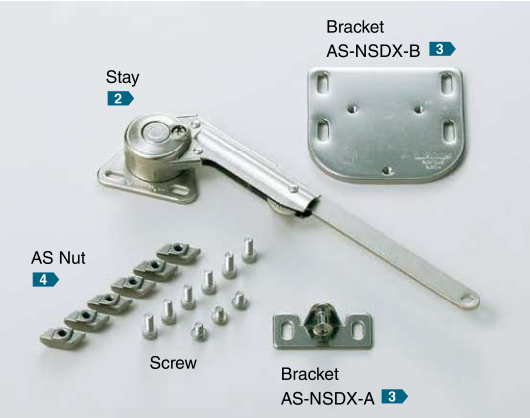
[SDS Face Plate and Spacer for Glass Door] Sold Separately 4
(Please use with mounting plate NSDX-GZ.)

RoHS	CAD	Item Code	Item Name	Material	Finish/ Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ ABS	Chrome/ Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.343, 2 : P.293, 3 4 : P.369, 5 : P.269, 6 : P.268

AS Parts Set for Installing to Aluminium Frame

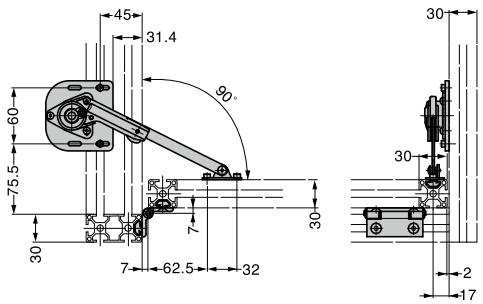
Please refer to the series introduction page 1 for details about AS series.



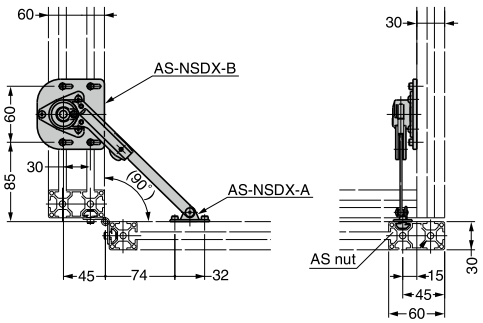
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	3D	180-041-639	AS-NSDX-10RK-30-6	Groove Width 6 mm	NSDX-10RK : 1 pc AS Nut AS-6M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-641	AS-NSDX-10LK-30-6		NSDX-10LK : 1 pc AS Nut AS-6M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-640	AS-NSDX-10RK-30-8	Groove Width 8 mm	NSDX-10RK : 1 pc AS Nut AS-8M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-642	AS-NSDX-10LK-30-8		NSDX-10LK : 1 pc AS Nut AS-8M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–

[Dimensions (Inset)]



[Dimensions (Overlay)]



Refer to 1 : P.20, 2 : P.342, 3 : P.368, 4 : P.526

SOFT-DOWN STAY SDS-100, SDS-C100

Lapcon L=R INSTRUCTION



Right side installation shown. (SDS-C100-G)


White Grey Umber Black


Mounting Plate SDS-A

Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Downward-opening	SDS-100	–	Yes	3.43~4.9 N・m/pc (35~50 kgf・cm/pc)
	SDS-C100	With Catch		

- For downward-opening doors.
- Non-handed: Can be installed either on left or right side.
- SDS-C100 (with catch) is designed to hold the door in fully closed position. Catch is necessary when using SDS-100 (without catch).
- For door hinge, piano/butt hinge or 3-way adjustable drop hinge SDH-001 1 is suitable.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 2.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.

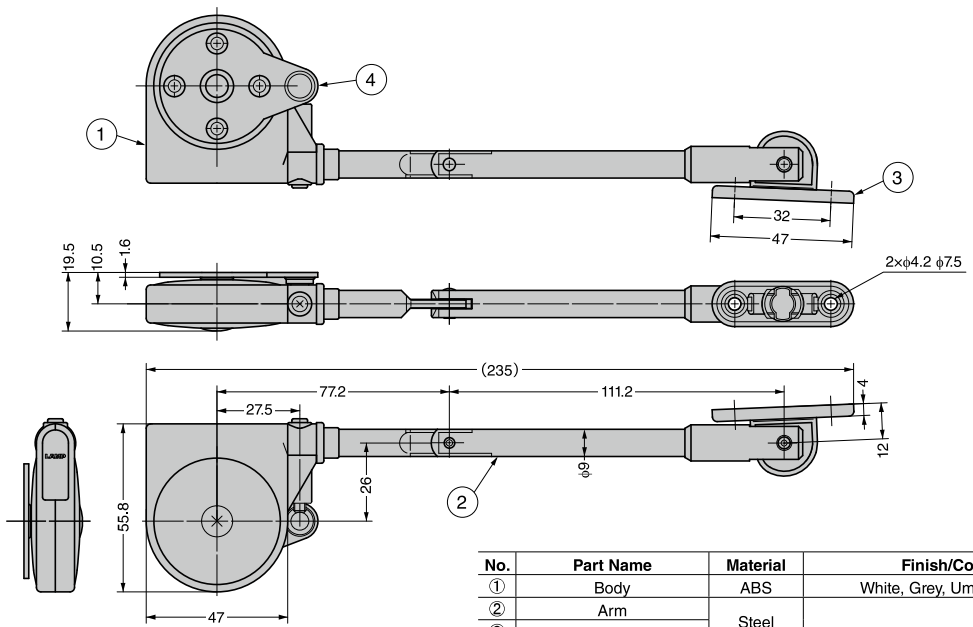
[Parts Included]
- Mounting plate SDS-A
- Countersunk head tapping screw 3.5×14

[Sold Separately]
- SDS face plate and spacer for glass door 3

Video Link

Selection Tool
Sasuga-kun

[Maximum Door Moment]
- With 1 stay
  Maximum door moment = 3.43~4.9 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

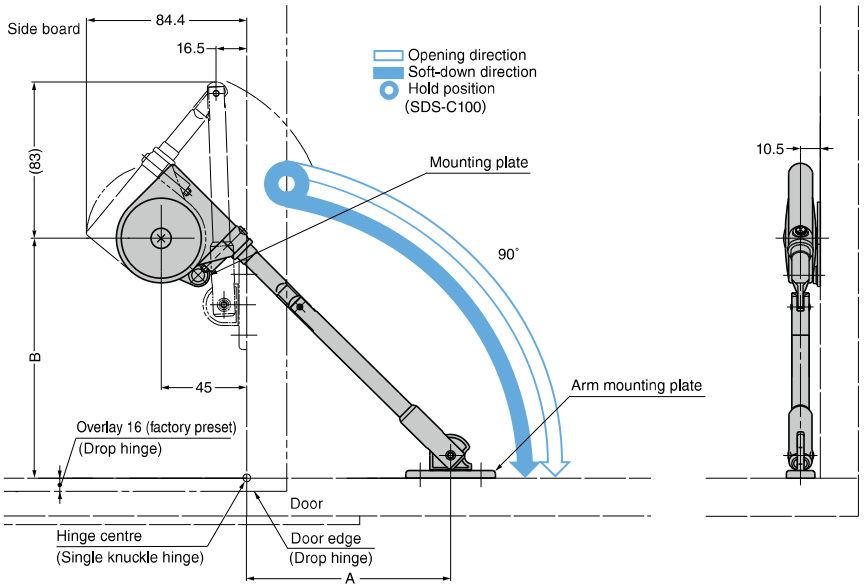


No.	Part Name	Material	Finish/Colour
①	Body	ABS	White, Grey, Umber, Black
②	Arm	Steel (SPCC)	Nickel
③	Arm Mounting Plate		
④	Mounting Plate		

Refer to 1 : P.269, 2 : P.293, 3 : P.369

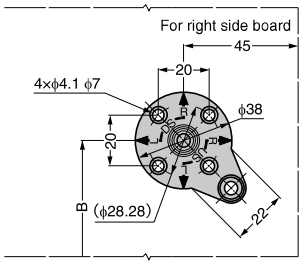
[Installation] Right side installation for downward-opening 90˚. Left side installation is symmetrical.

Comes down slowly and softly in opening direction. Installation with piano/butt hinge or drop hinge shown below.



Installation dimensions vary depending on hinge type. Reference point of installation dimension: hinge centre for piano/butt hinge or two-piece piano hinge, while door edge for drop hinge 1.

[Installation for Mounting Plate]



For right side board, install with the "→" mark of R at DS side directly upwards.
For left side board, install with the "→" mark of L at DS side directly upwards.

Hinge Type	Arm Mounting Plate Position	Mounting Plate Position
	A	B
Single Knuckle Hinge	100	135
Drop Hinge (SDH-001)	107※1	126
Drop Hinge (SDH-P)	108.5※2	124.5

※1 In case of overlay 16mm (factory preset)
※2 In case of overlay 19mm (factory preset)

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish/ Colour	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-261	SDS-100W	Without Catch	ABS/Steel	Nickel/ White	3.43~4.9	35~50	167	20	100
G	3D	180-014-892	SDS-C100-W	With Catch						20	100
G	3D	180-100-262	SDS-100G	Without Catch		Nickel/ Grey				20	100
G	3D	180-100-266	SDS-C100-G	With Catch						20	100
G	3D	180-100-263	SDS-100U	Without Catch		Nickel/ Umber				20	100
G	3D	180-100-267	SDS-C100-U	With Catch						20	100
G	3D	180-027-278	SDS-100-B	Without Catch		Nickel/ Black				20	100
G	3D	180-014-891	SDS-C100-B	With Catch						20	100

[SDS Face Plate and Spacer for Glass Door] Sold Separately 2

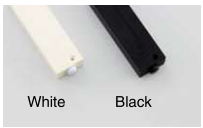
RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.268, P.269, 2 : P.369

COMPACT SOFT-DOWN STAY CSD-10-TV

Lapcon L=R INSTRUCTION



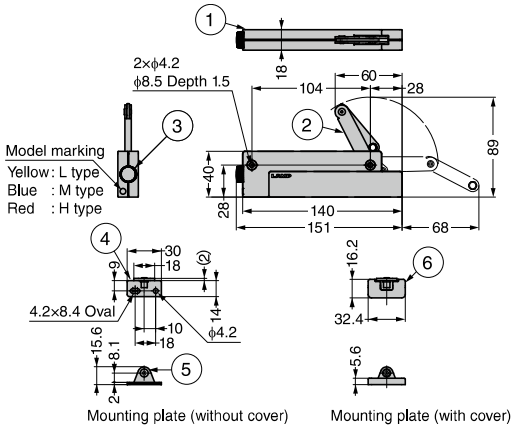


[Applicable Range]

- Choose from 3 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum door moment N・m	Model	Qty
1.0 ~ 2.0	L	1 pc
2.0 ~ 3.0	M	
3.0 ~ 4.0	H	

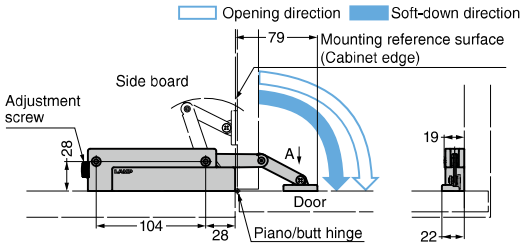
- With 2 stays, the maximum door moment will be doubled.



No.	Part Name	Material	Finish/Colour
①	Body	PC/ABS	White, Black
②	Arm	Steel (SPCC)	Nickel
③	Adjustment Screw	Steel + Resin	White, Black
④	Mounting Plate	Steel (SPCC)	Nickel
⑤	Shaft	Stainless Steel	Plain
⑥	Cover	ABS	White, Black

[Installation] Right side installation for downward-opening 90˚ .Left side installation is symmetrical.

Comes down slowly and softly in opening direction. Installation with piano/butt hinge or drop hinge shown below.



Opening Direction	Description	Non-handed	Model	Maximum Door Moment
Downward-opening	–	Yes	L	1.0 ~2.0 N・m/pc (10.2~20.4 kgf・cm/pc)
			M	2.0~3.0 N・m/pc (20.4~30.6 kgf・cm/pc)
			H	3.0~4.0 N・m/pc (30.6~40.8 kgf・cm/pc)

- For downward-opening doors.
- Easy-installed just by aligning the main body to the inside cabinet corner and then fixing with screws.
- Mounting plate can be positioned easily with a template.
- Non-handed.
- Installed on the bottom board of cabinet for maximum space inside the cabinet.
- Cover for mounting plate may be of the same colour as the main body.

[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- CSD-10-TV does not have catch feature. Please install a catch separately.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.
- Do not use concealed hinge.

Selection Tool

Sasuga-kun

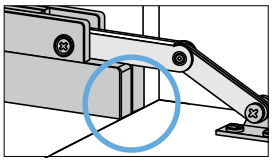
[Parts Included]

- Mounting plate
- Cover for mounting plate
- Binding head screw M4×4 (for connecting main body and mounting plate)
- Binding head tapping screw 3.5×30 (for main body)
- Binding head tapping screw 3.5×15 (for mounting plate)

[Sold Separately]

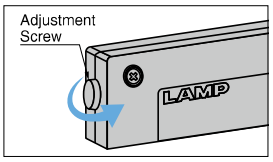
- Butt hinge
- Drop hinge SDH-P, SDH-001
- Drop hinge for glass door SDH-G
- Face plate for glass door SDH-FP, SDS-50G
- Mounting plate for glass door NSDX-GZ

[Easy to Position]



- Installation position is determined simply by pressing the main body against bottom and aligning to cabinet edge.

[Speed adjustment]

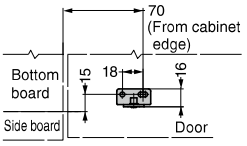


- Opening speed may be slightly changed.

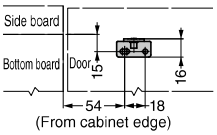
[Installation Position of Mounting Plate (Included)]
A-view (refer to "Installation")

Can easily position with the supplied template.

For left side board



For right side board



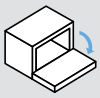
RoHS	CAD	Item Code	Item Name	Colour	Model	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-033-207	CSD-10-TV-L-WT	White	L	1.0~2.0	10.2~20.4	130	10	100
G	3D	180-033-208	CSD-10-TV-L-BL	Black					10	100
G	3D	180-033-209	CSD-10-TV-M-WT	White	M	2.0~3.0	20.4~30.6		10	100
G	3D	180-033-210	CSD-10-TV-M-BL	Black					10	100
G	3D	180-033-211	CSD-10-TV-H-WT	White	H	3.0~4.0	30.6~40.8		10	100
G	3D	180-033-212	CSD-10-TV-H-BL	Black					10	100

SHORT ARM SOFT-DOWN STAY NSDX-10 (R/L) K-TV

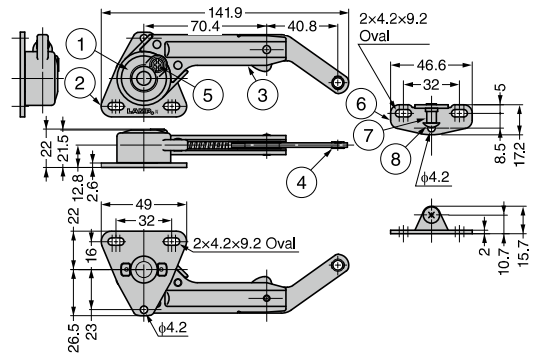
Lapcon INSTRUCTION



Right side installation shown. (NSDX-10RK-TV)

Opening Direction	Description	Non-handed	Maximum Door Moment
 Downward-opening	With Catch	–	0.98~1.96 N・m/pc (10~20 kgf・cm/pc)

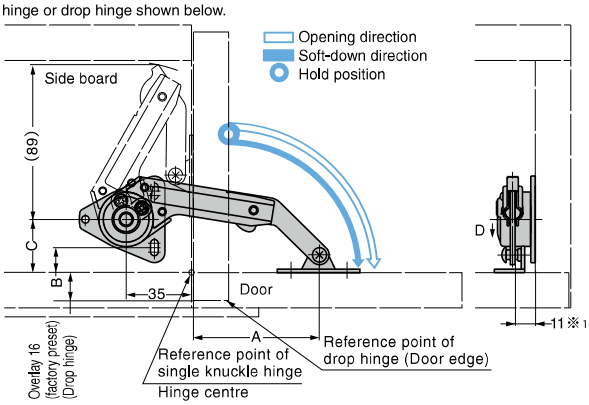
- For downward-opening doors.
- Designed to hold the door in fully closed position.
- Opening speed can be adjusted with adjustment screw.



No.	Part Name	Material	Finish/Colour
①	Body	Zinc Alloy (ZDC)	Nickel
②	Mounting plate	Steel (SPCC)	
③	Arm		
④	Sleeve	POM	Black
⑤	Adjustment Screw	Steel (SWCH)	Nickel
⑥	Arm Mounting Plate	Steel (SPCC)	
⑦	Shaft	Steel (SWCH)	
⑧	Truss Head Screw (M4×5)		

[Installation] Right side installation for downward-opening 90°. Left side installation is symmetrical.

Comes down slowly and softly in opening direction. Installation with piano/butt hinge or drop hinge shown below.



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 1.
- Handed: Specific left and right-handed.
- Door opening speed varies depending on product and conditions.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.

Video Link

Video Link

[Parts Included]

- Mounting plate NSDX-SZ
- Binding head tapping screw 3.5×15

[Sold Separately]

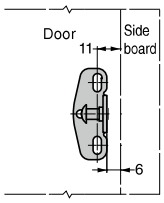
- Mounting plate 2
- SDS face plate and spacer for glass door 2

[Maximum Door Moment]

- With 1 stay
  Maximum door moment = 0.98 N~1.96 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

[Installation for Mounting Plate]

D-view (refer to "Installation")



Selection Tool

Sasuga-kun

Hinge Type	A	B	C
Drop Hinge (SDH-001)	74※2	14	30
Drop Hinge (SDH-P)	75※3	12	28
Piano/Butt Hinge	71	27	43

Installation dimensions vary depending on hinge type.

- ※1 : 11.8 for optional mounting plate.
- ※2 : In case of overlay 16 mm (factory preset).
  For drop hinge, use our 3-way adjustable type SDH-001 3.
- ※3: In case of overlay 19mm (factory preset). Use SDH-P 4.
- Reference point for each dimension: hinge centre for single knuckle hinge, while door edge for drop hinge.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-016-425	NSDX-10RK-TV	Right-handed	Zinc Alloy (ZDC)/ Steel	Nickel	0.98~1.96	10~20	143	20	80
G	3D	180-016-424	NSDX-10LK-TV	Left-handed						20	80

[Mounting Plate] Sold Separately 2

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-460	NSDX-CZ	Clip on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip on for 20 mm width Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip on for Glass Door	14	160	640

[SDS Face Plate and Spacer for Glass Door] Sold Separately 2
(Please use with mounting plate NSDX-GZ.)

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ ABS	Chrome/ Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.293, 2 : P.369, 3 : P.269, 4 : P.268

SHORT ARM SOFT-DOWN STAY SDS-100-TV, SDS-C100-TV

Lapcon L=R INSTRUCTION



Right side installation shown.


White Black


Mounting plate SDS-A

Opening Direction	Item Name	Description	Non-handed	Maximum Door Moment
 Downward-opening	SDS-100W(B)-TV	–	Yes	0.49~1.18 N・m/pc (5~12 kgf・cm/pc)
	SDS-100W(B)-TVZ			1.62~3.68 N・m/pc (16.5~37.6 kgf・cm/pc)
	SDS-C100W(B)-TV	With Catch		0.49~1.18 N・m/pc (5~12 kgf・cm/pc)
	SDS-C100W(B)-TVZ			1.62~3.68 N・m/pc (16.5~37.6 kgf・cm/pc)

- For downward-opening doors.
- Non-handed: Can be installed either on left or right side.
- SDS-C100-TV (with catch) is designed to hold the door in fully closed position. Catch is necessary when using SDS-100-TV (without catch).
- 3-way adjustable drop hinge SDH-001 1 is suitable.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 2.
- When placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.

[Parts Included]
- Mounting plate SDS-A
- Countersunk head tapping screw 3.5×14

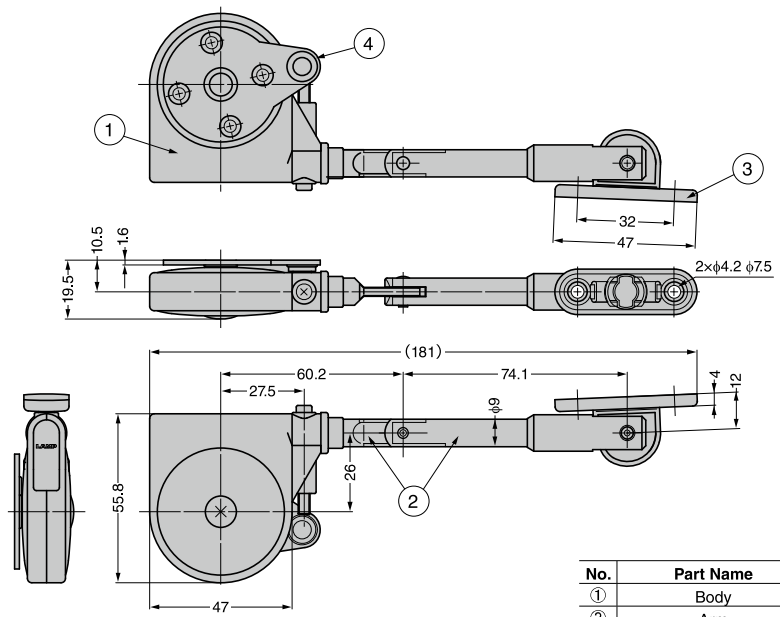
[Sold Separately]
- SDS face plate and spacer for glass door 3

[Applicable Range]
- Choose from 2 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum door moment N・m	Item Name Suffix	Qty
0.49~1.18	TV	1 pc
1.62~3.68	TVZ	

- With 2 stays, the maximum door moment will be doubled.

Video Link Video Link Selection Tool
Sasuga-kun

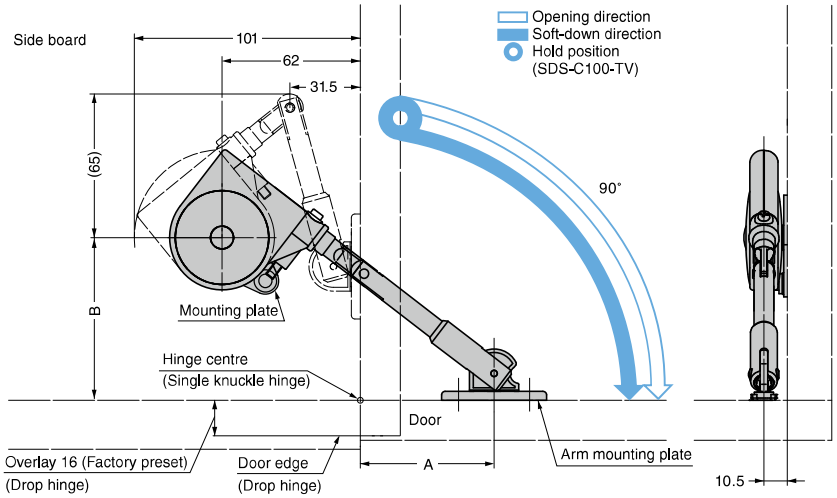


No.	Part Name	Material	Finish/Colour
①	Body	ABS	White, Black
②	Arm	Steel (SPCC)	Nickel
③	Arm Mounting Plate		
④	Mounting plate		

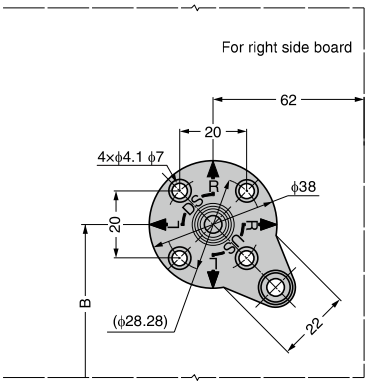
Refer to 1 : P.269, 2 : P.293, 3 : P.369

[Installation] Right side installation for downward-opening 90˚.

Comes down slowly and softly in opening direction. Installation with piano/butt hinge or drop hinge shown below.



[Installation for Mounting Plate]



For right side board, install with the "→" mark of R at DS side directly upwards.
For left side board, install with the "→" mark of L at DS side directly upwards.

Hinge Type	A	B
Single Knuckle Hinge	60	73
Drop Hinge (SDH-001)	65※1	62
Drop Hinge (SDH-P)	66※2	60

●※1 In case of overlay 16 mm (factory preset).
●※2 In case of overlay 19mm (factory preset).
※Install according to the dimensions in the above figure and table after making door overlay, clearance and horizontal adjustment.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Colour	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-258	SDS-100W-TV	Without Catch	White	0.49~1.18	5~12	144	20	100
G	3D	180-100-259	SDS-100B-TV		Black			144	20	100
G	3D	180-100-006	SDS-C100W-TV	With Catch	White			154	20	100
G	3D	180-109-263	SDS-C100B-TV		Black			152	20	100
G	3D	180-014-181	SDS-100W-TVZ	Without Catch	White	1.62~3.68	16.5~37.6	147	20	100
G	3D	180-014-182	SDS-100B-TVZ		Black			147	20	100
G	3D	180-014-183	SDS-C100W-TVZ	With Catch	White			154	20	100
G	3D	180-014-184	SDS-C100B-TVZ		Black			158	20	100

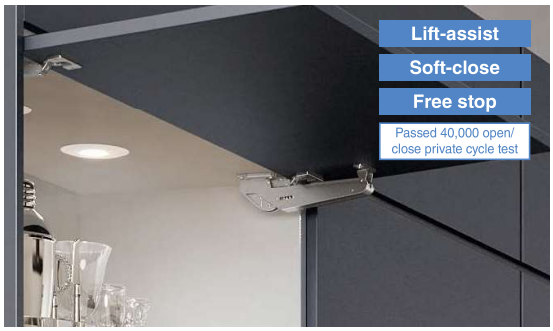
[SDS Face Plate and Spacer for Glass Door] Sold Separately 1

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.369

AILERON STAY FOR OLYMPIA ARN-3 Upward Opening Model

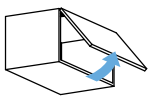
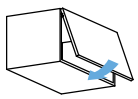
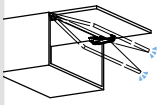
L=R INSTRUCTION



Opening	Description	Non-handed	Type	Maximum Door Moment
 Upward	Lift-assist Soft-close Free-stop	Yes	M	4.0–6.0 N·m/pc (40.8–61.2 kgf·cm/pc)
			H	6.0–8.0 N·m/pc (61.2–81.6 kgf·cm/pc)

- Smooth door movement. It is specially designed for use with the OLYMPIA concealed hinge (360-D26-19 / H360-D26-26T).
- The lift-assist function allows for light opening of doors.
- The force of lift-assist is adjustable.
- The soft-close function makes doors close gently (0°–30° degrees).
- Integrated design combines a concealed hinge and lid stay.
- The free-stop function enables doors to hold in position.
- Closing speed of doors is adjustable.

[Door Movements]

Lift-assist	Soft-close	Free-stop
Allows for light opening of doors	OLYMPIA's damper makes doors close slowly. (0° - 30°)	Enables doors to hold in position.
 Light opening	 Gently closing	 Holds in position

[Specifications]

- Operating temperature: 0℃ – 40℃

[Parts Included]

- Door-side mounting plate
- Countersunk head tapping screw 3.5 × 1.5 (for attaching the mounting plate to AILERON)
- Binding head tapping screw 3.5 × 1.5 (for attaching the door-side mounting plate, mounting plate for AILERON, and AILERON)

[Optional Parts]

- Hinge spacer 360-BCS
- Aileron spacer ARN-DP

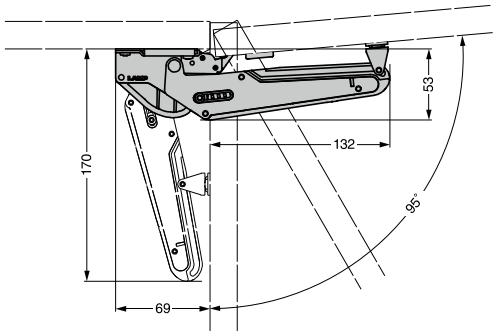
[Sold Separately]

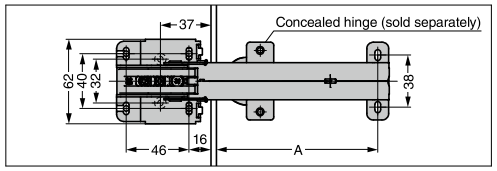
- Mounting plate for AILERON
- OLYMPIA concealed hinge
- Mounting plate for OLYMPIA

Video Link

Video Link

[Installation]





Please see pages of Olympia hinges for installation dimensions.

Hinge Used	A
360-D26-19T	118
H360-D26-26T	116

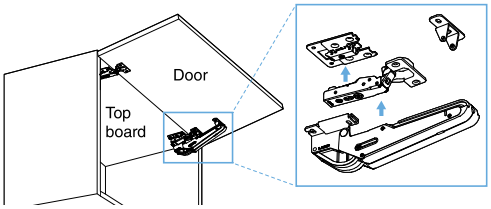
[Application Example]



Selection Tool

Sasuga-kun

[Combined unit attaches to the top of the cabinet]



Simple installation only requires AILERON to be placed on OLYMPIA with a mounting plate designed for AILERON

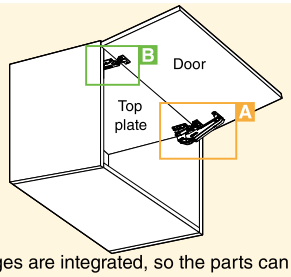
[Aileron Stay] Sold singly

RoHS	CAD	Item Code	Item Name	Material	Finish / Colour	Type	Max. Door Moment N·m/pc	Max. Door Moment kgf·cm/pc	Box (pc)	Carton (pc)
G	3D	180-043-947	ARN-3-M-GR	Steel (SPCC) / POM	Nickel plating / Grey	M	4.0 ~ 6.0	40.8 ~ 61.2	1	20
G	3D	180-043-948	ARN-3-H-GR			H	6.0 ~ 8.0	61.2 ~ 81.6	1	20
G	3D	180-049-503	ARN-3-M-BL		Nickel plating / Black	M	4.0 ~ 6.0	40.8 ~ 61.2	1	20
G	3D	180-049-504	ARN-3-H-BL			H	6.0 ~ 8.0	61.2 ~ 81.6	1	20

[Standard Set] Including parts sold separately

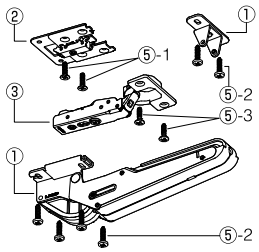
RoHS	CAD	Item Code	Item Name	Finish / Colour	Door Width	Max. Door Moment N·m	Max. Door Moment kgf·cm	Set Contents	Box (pc)	Carton (pc)
G	–	180-045-659	ARN-3-M-GR-S	Nickel plating / Grey	450~ 900	4.0 ~ 6.0	40.8~ 61.2	Aileron stay, Mounting plate for Aileron stay, Olympia hinge, Mounting plate for Olympia hinge, Screws	1	10
G	–	180-045-660	ARN-3-H-GR-S			6.0 ~ 8.0	61.2~ 81.6		1	10
G	–	180-049-507	ARN-3-M-BL-S	Nickel plating / Black		4.0 ~ 6.0	40.8~ 61.2		1	10
G	–	180-049-508	ARN-3-H-BL-S			6.0 ~ 8.0	61.2~ 81.6		1	10

Components for one door

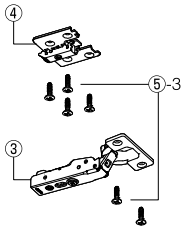


The hinges are integrated, so the parts can be aggregated on one door and top plate.

A With AILERON



B No AILERON



Required parts for one door (A + B)

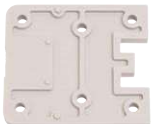
The required quantity depends on door width and maximum moment.

			Item Code	Item Name	Door width [mm] 450~900 / Door max. moment [N·m] 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0	900~1600 / 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0	1600~2000 / 4.0 t 6.0	6.0 t 8.0	8.0 t 12.0	12.0 t 16.0
AILERON	① Body		180-043-947 or 180-049-503	ARN-3-M-GR or ARN-3-M-BL	Standard Set 1	-	2	-	1	-	2	-	1	-	2	-
			180-043-948 or 180-049-504	ARN-3-H-GR or ARN-3-H-BL	-	1	-	2	-	1	-	2	-	1	-	2
	② Washer		180-043-949	ARN-SZ	1		2		1		2		1		2	
OLYMPIA CONCEALED HINGE	③ Body		160-026-840 or 160-029-084	360-D26-19T or H360-D26-26T (damper built-in)	2		3		2		3		2		3	
			160-026-836 or 160-029-081	360-26-19T or H360-26-26T (no catch)	-		-		1		-		2		-	
			160-026-832 or 160-029-078	360-C26-19T or H360-C26-26T (with catch)	-		-		-				-		1	
	④ Washer		160-026-846 *1	360-P6WT (System 32/4 holes)	1		1		2		1		3		2	
	⑤ Recommended Screws	⑤-1 M4 flat head machine screws			2		4		2		4		2		4	
		⑤-2 M4 binding machine screws			6		12		6		12		6		12	
		⑤-3 M4 round flat head machine screws or M4 flat head machine screws			8 *2		10 *2		14 *2		10 *2		20 *2		16 *2	

*1 For ④ Washer, 360-P4W-32T (Item Code: 160-026-845) and 360-P4W-30T (Item Code: 160-026-844) can also be used.
*2 Quantity when using ④ Washer 360-P6WT. When using 360-P4W-32T or 360-P4W-30T, the required quantity is reduced by one for each washer.

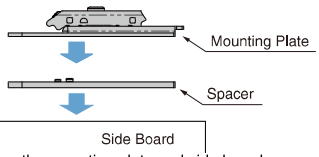
AILERON SPACER ARN-DP 2 and 5 mm Thick


ARN-DP2 (2 mm)


ARN-DP5 (5 mm)

- Specially designed for use with the AILERON stay 1 .
- The ARN-DP2 decreases overlay of outset doors by 2 mm.
- The ARN-DP5 decreases overlay of outset doors by 5 mm.
- The ARN-DP2 can be doubled for 4 mm thickness.

[How to Use]



Set the spacer between the mounting plate and side board.

[Available Mounting Plate]
- ARN-SZ 2

[Remarks]
- The included screws are for fixing the spacer (ARN-DP5) and mounting plate (ARN-SZ).
- Please use the optional screws if two ARN-DP2 are used.

[Parts Included]
- Cross-recessed binding head tapping screw 3.5×20 (Only the ARN-DP5 comes with these screws.)

[Spacer]

RoHS	CAD	Item Code	Item Name	Colour	Type	Material	Box (pcs)	Carton (pcs)
G	3D	180-046-667	ARN-DP2	Grey	+ 2 mm	POM	80	640
G	3D	180-047-915	ARN-DP5		+ 5 mm (screw included)		80	640

[Optional screw when using two ARN-DP2]

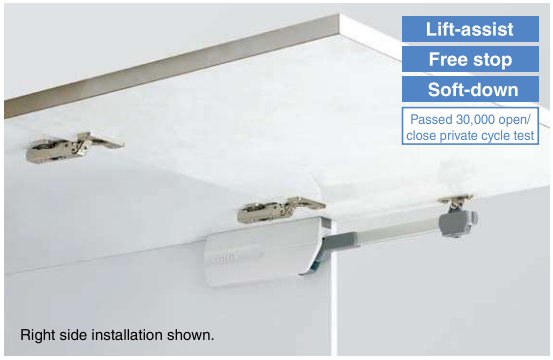
RoHS	CAD	Item Code	Item Name
G	–	180-046-669	TAP3520NI

Sold in sets of 4 screws.

Refer to 1 : P.316, P.350, 2 : P.317, P.351

EASY LIFT-UP STAY SLS-ELAN®

Lapcon INSTRUCTION

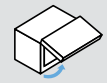


Right side installation shown.





Compact body saves space, not even affecting the shelf mounting.

Opening Direction	Description	Non-handed	Model	Maximum Door Moment
 Upward-opening	Lift-assist Free stop Soft-down	–	M	4.90~7.35 N·m/pc (50~75 kgf·cm/pc)
			H	7.35~9.80 N·m/pc (75~100 kgf·cm/pc)

- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
  - ・Door can be opened with a slight force (see Fig.1).
  - ・Door can be stopped in any position in the range of about 30° to fully opened position (see Fig.2).
  - ・Door closes slowly in the range of about 0° to 30° (see Fig. 3)
- Easy installation from the front for both left and right.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the “Cautions” 1.
- Handed: Specific left and right-handed.
- Never push down the arm of stay before door installation.
- Do not open the door further in fully opened position.
- Do not roughly open and close the door.

[Parts Included]
- Countersunk head tapping screw 3.5×35
- Binding head tapping screw 3.5×15
- Truss head screw M4×5 (for mounting plate)

[Sold Separately]
- Mounting plate SLS-ELAN-AZ 2
- Slider (for maintenance)

Video Link

Selection Tool
Sasuga-kun

[3 Functions in 1 Stay]

Lift-assist
Door can be opened with a slight force.

Fig.1





Free stop
Door can be stopped in any position in the range of about 30 ° to fully opened position.

Fig.2





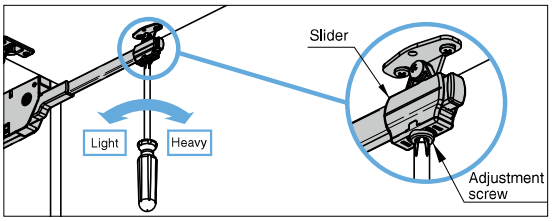
Soft-close
Door closes slowly in the range of about 0° to 30° even if you release your hands from the door.

Fig.3





[Adjustment of Lift-assisting Force]

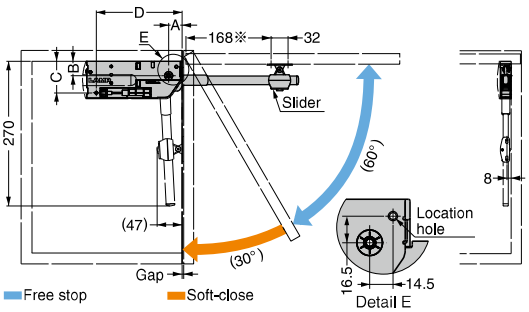


- If the door opens and closes improperly, turn the adjustment screw at the bottom of the slider to adjust door movement.

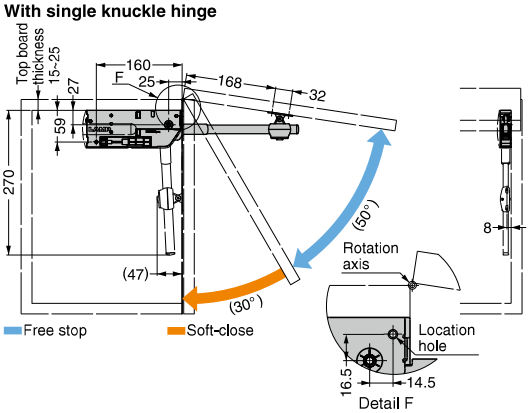
Refer to 1 : P.293, 2 : P.355

[Installation] Right side installation for upward-opening 90˚ .Left side installation is symmetrical.

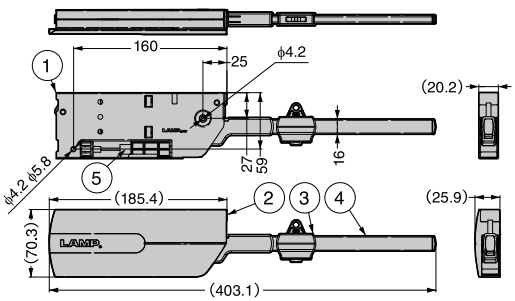
With concealed hinge

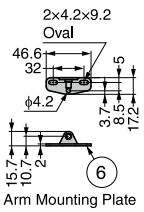


With single knuckle hinge



- If axis position of single knuckle hinge different from the figure above, please contact local representatives.
- Top board thickness is 15~25mm. For other thicknesses, please contact local representatives.





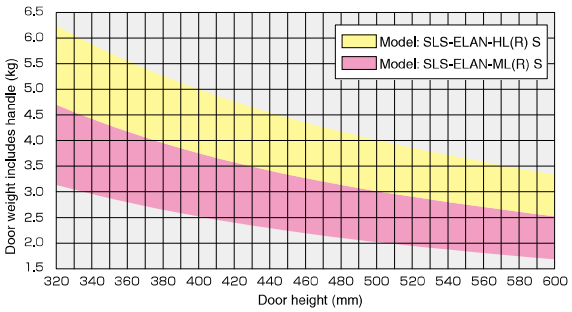
No.	Part Name	Material	Finish/Colour
①	Body	Steel (SECC)	–
②	Body Cover R	ABS	Light Grey
③	Slider	POM	Dark Grey
④	Tip Arm	Aluminium Alloy	Anodised
⑤	Damper	–	–
⑥	Arm Mounting Plate	Steel (SPCC)	Nickel

Hinge Type	Bore Distance	A	B	C	D
360-(C)26/19T (19 mm Overlay)	5	25	27	59	160
H360-(C)26/19T (26 mm Overlay)	7				
360-(C)26/9T (9 mm Overlay)	5		37	69	
H360-(C)26/16T (16 mm Overlay)	7				
360-(C)26/0T (Inset)	5	Door Thickness + 27	47	79	A+135
H360-(C)26/0T (Inset)	7		53	85	

Table above is the combination with mounting plate 360-P4W-30T or 360-P4W-32T.

If the clearance between cabinet and door is 4mm or more, install the mounting plate according to a dimension obtained by subtracting the clearance from ※ marked dimension (Installation position of the body unit is unchanged).
(Example) When the gap between cabinet and door is 5mm: 168 - 5 (Gap) =163
If the connection between the body and cabinet is weak due to cabinet material etc., tighten a screw additionally in the location hole shown left. (Additional screws are sold separately)

[Door Size Ranges]



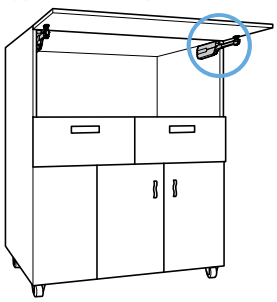
Refer to the above graph as a guide for model selection.
For a door with size not given here, calculate as follows.
Door weight includes handle.

●Choose from 2 types according to maximum door moment.
Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum door moment N・m	Model	Qty
4.90~7.35	M	1 pc
7.35~9.80	H	

●With 2 stays, the maximum door moment will be doubled.
※Confirm the movement with actual item.

[Application Example]



[Installation]



[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/pc	Maximum Door Moment kgf·cm/pc	Weight (g)	Box (pcs)
G	3D	180-015-491	SLS-ELAN-MRS	Right-handed	Aluminium Alloy/ABS	Anodised/ Light Grey	M	4.90~7.35	50~75	600	20
G	3D	180-015-490	SLS-ELAN-MLS	Left-handed							20
G	3D	180-015-493	SLS-ELAN-HRS	Right-handed			H	7.35~9.80	75~100		20
G	3D	180-015-492	SLS-ELAN-HLS	Left-handed							20

[Mounting Plate for Aluminium Frame Door] Sold Separately 1

RoHS	CAD	Item Code	Item Name	Part Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-017-647	SLS-ELAN-AZ	Body	11	320	1280
G	3D	180-018-555	SLS-ELAN-AZS	Screw Set	4	–	800

Refer to 1 : P.355

LAPCON STAY SLS-ELAN-TV

INSTRUCTION



Right side installation shown.

Opening Direction	Description	Non-handed	Maximum Door Moment
Upward-opening	Lift-assist Free stop Soft-down	–	4.60~6.17 N·m/pc (47~63 kgf·cm/pc)

- Short-arm type of easy lift-up stay SLS-ELAN 1.
- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
  Door can be opened with a slight force. (see Fig. 1)
  Door can be stopped in any position in the range of about 30° to fully opened position. (see Fig. 2)
  Door closes slowly in the range of about 0° to 30°. (see Fig. 3)
- Easy installation from the front for both left and right.



Compact body saves space, not even affecting the shelf mounting.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 2.
- Handed: Specific left and right-handed.
- Never push down the arm of stay before door installation.
- Do not open the door further in fully opened position.
- Do not roughly open and close the door.

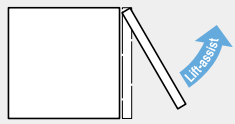
Selection Tool
Sasuga-kun

[Parts Included]
- Countersunk head tapping screw 3.5×35
- Binding head tapping screw 3.5×15
- Truss head screw M4×5 (for mounting plate)

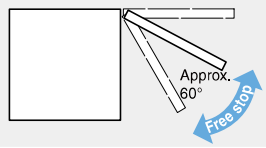
[Sold Separately]
- Mounting plate SLS-ELAN-AZ 3
- Slider (for maintenance)

[3 Functions in 1 Stay]

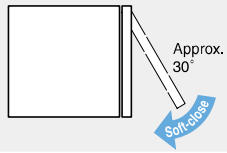
Lift-assist
Door can be opened with a slight force.

Fig.1


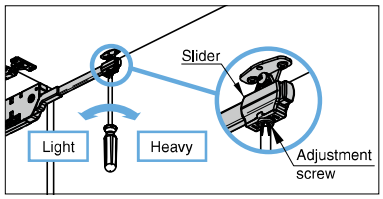
Free stop
Door can be stopped in any position in the range of about 30° to fully opened position.

Fig.2


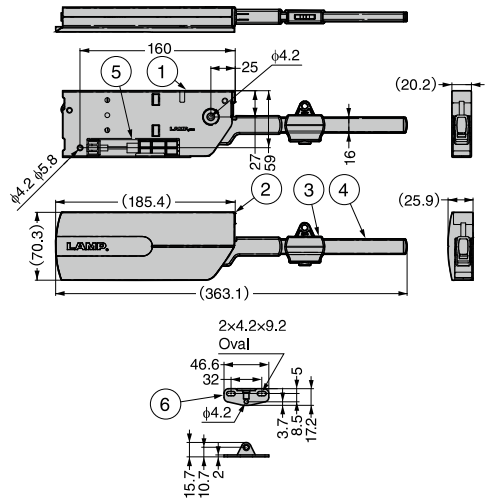
Soft-close
Door closes slowly in the range of about 0° to 30° even if you release your hands from the door.

Fig.3


[Adjustment of Lift-assisting Force]



- If the door opens and closes improperly, turn the adjustment screw at the bottom of the slider to adjust door movement.

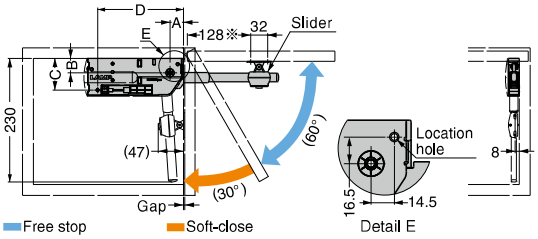


No.	Part Name	Material	Finish/Colour
①	Body	Steel (SECC)	–
②	Body Cover	ABS	Light Grey
③	Adjustment Slider	POM	Dark Grey
④	Tip Arm	Aluminium Alloy	Anodised
⑤	Damper	–	–
⑥	Mounting Plate	Steel (SPCC)	Nickel

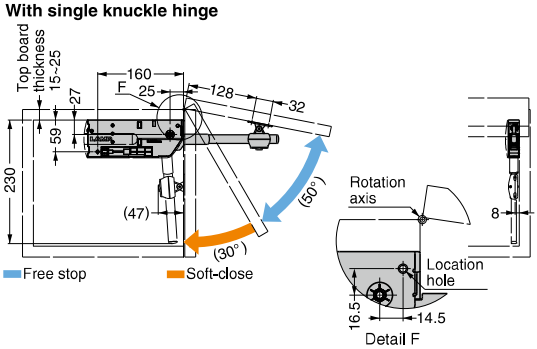
Refer to 1 : P.352, 2 : P.293, 3 : P.355

[Installation] Right side installation for upward-opening. Left side installation is symmetrical.

With concealed hinge



With single knuckle hinge



- If axis position of single knuckle hinge different from the figure above, please contact local representatives.
- Top board thickness is 15 ~ 25mm.For other thicknesses, please contact local representatives.

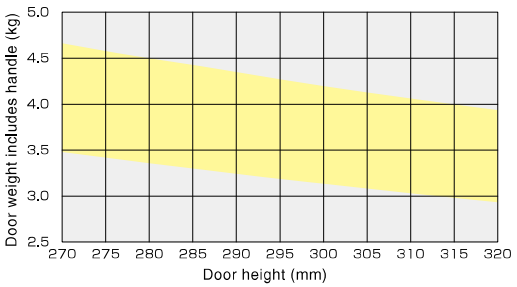
Hinge Type	Bore Distance	A	B	C	D
360-(C)26/19T (19 mm Overlay)	5	25	27	59	160
H360-(C)26/26T (26 mm Overlay)	7				
360-(C)26/9T (9 mm Overlay)	5		37	69	
H360-(C)26/16T (16 mm Overlay)	7				
360-(C)26/0T (Inset)	5	Door Thickness + 27	47	79	A+135
H360-(C)26/0T (Inset)	7		53	85	

Table above is the combination with mounting plate 360-P4W-30T or 360-P4W-32T.

If the clearance between cabinet and door is 4mm or more, install the mounting plate according to a dimension obtained by subtracting the clearance from ※ marked dimension (Installation position of the body unit is unchanged).)
(Example) When the gap between cabinet and door is 5 mm: 128 - 5 (Gap) =123

If the connection between the body and cabinet is weak due to cabinet material etc., tighten a screw additionally in the location hole shown left. (Additional screws are sold separately)

[Door Size Ranges]



Refer to the above graph as a guide for model selection.
For a door with size not given here, calculate as follows.
Door weight includes handle.

- With 1 stay
  Maximum door moment = 4.6~6.17 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

※Confirm the movement with actual item.

[Application Example]



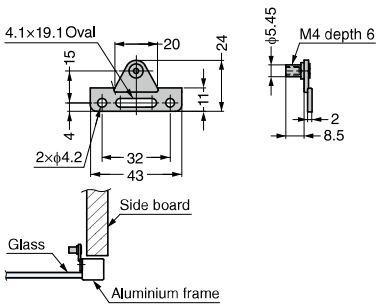
[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish/ Colour	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-018-057	SLS-ELAN-HR-TV-S	Right-handed	Aluminium	Anodised/	4.6~6.17	47~63	590	20	20
G	3D	180-018-056	SLS-ELAN-HL-TV-S	Left-handed	Alloy/ABS	Light Grey				20	20

MOUNTING PLATE FOR ALUMINIUM FRAME DOOR SLS-ELAN-AZ



Refer to 1 : P.352, 2 : P.354



- Used for installing SLS-ELAN 1, SLS-ELAN-TV 2 to aluminium frame.

[Sold Separately]

- Screw set
  Binding head tapping screw 3.5×12 (2 pcs)
  Truss head screw M4×5 (1 pc)

[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-017-647	SLS-ELAN-AZ	Steel	Nickel	9.5	320	1280

[Screw Set] Sold Separately

RoHS	CAD	Item Code	Item Name	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	–	180-018-555	SLS-ELAN-AZS	Steel	Nickel	50	–	800

HEAVY DUTY SOFT-DOWN STAY HDS-30 For Use in Pairs


Right side installation shown.

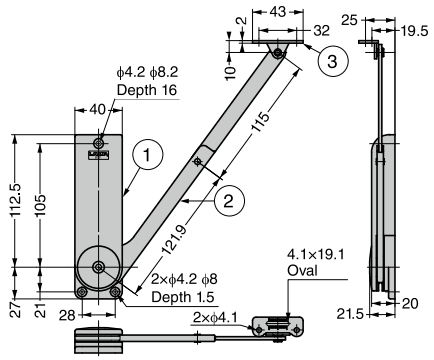
Opening Direction	Description	Non-handed	Model	Maximum Door Moment
Upward-opening	With Catch For Use in Pairs	–	K	13.7~19.5 N·m/2 pcs (140~199 kgf·cm/2 pcs)
			M	19.6~24.4 N·m/2 pcs (200~249 kgf·cm/2 pcs)
			H	24.5~29.4 N·m/2 pcs (250~300 kgf·cm/2 pcs)

- For upward-opening doors.
- Designed to hold the door in fully opened and closed positions.
- For door hinge, piano/butt hinge or concealed hinge is suitable.
- AS parts set 1 for installing to aluminium frame also available.

[Applicable Range]

- Choose from 3 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum door moment N・m	Model	Qty
13.7~19.5	K	2 pcs
19.6~24.4	M	
24.5~29.4	H	



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 2.
- Used in pairs.
- Do not push the door further over 80°. And do not roughly open and close the door.

[Parts Included]

- Mounting plate
- Binding head tapping screw 3.5×15

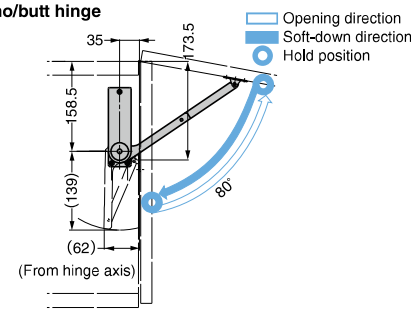
Video Link

Selection Tool
Sasuga-kun

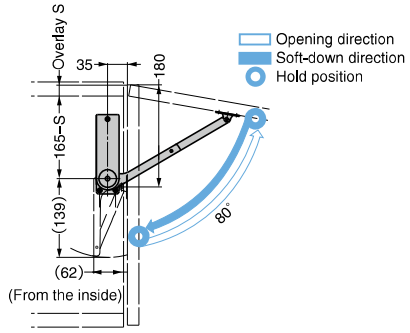
No.	Part Name	Material	Finish/Colour
①	Body	ABS	Black, White
②	Arm	Steel (SPCC)	Nickel
③	Mounting Plate		

[Installation] Right side installation for upward-opening 80°. Left side installation is symmetrical.

With piano/butt hinge



With concealed hinge



RoHS	CAD	Item Code	Item Name	Type	Material	Finish/Colour	Model	Maximum Door Moment N·m/2 pcs	Maximum Door Moment kgf·cm/2 pcs	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-104-078	HDS-30KR-BL	Right-handed	ABS/Steel	Nickel/Black	K	13.7~19.5	140~199	276	40	–
G	3D	180-104-079	HDS-30KL-BL	Left-handed						276	40	–
G	3D	180-109-270	HDS-30KR-WT	Right-handed		Nickel/White				276	40	–
G	3D	180-109-271	HDS-30KL-WT	Left-handed						276	40	–
G	3D	180-104-080	HDS-30MR-BL	Right-handed		Nickel/Black	M	19.6~24.4	200~249	294	40	–
G	3D	180-104-081	HDS-30ML-BL	Left-handed						294	40	–
G	3D	180-109-272	HDS-30MR-WT	Right-handed		Nickel/White				294	40	–
G	3D	180-109-273	HDS-30ML-WT	Left-handed						294	40	–
G	3D	180-104-082	HDS-30HR-BL	Right-handed		Nickel/Black	H	24.5~29.4	250~300	300	40	–
G	3D	180-104-083	HDS-30HL-BL	Left-handed						300	40	–
G	3D	180-109-274	HDS-30HR-WT	Right-handed		Nickel/White				300	40	–
G	3D	180-109-275	HDS-30HL-WT	Left-handed						300	40	–

Refer to 1 : P.357, 2 : P.293

AS Parts Set for Installing to Aluminium Frame

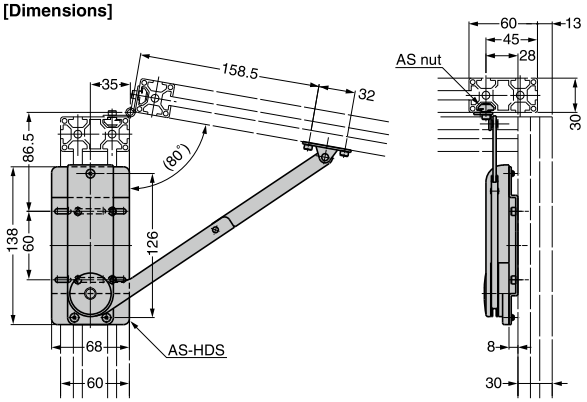
Please refer to the series introduction page 1 for details about AS series.



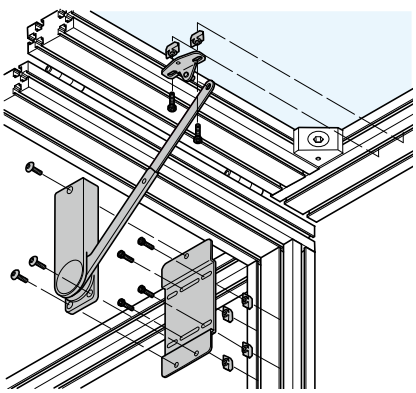
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts (Stays)	Parts (Others)	Weight (g)
G	3D	180-013-661	AS-HDS-30KR-BL-30-6	Groove Width 6 mm	HDS-30KR-BL : 1 pc	AS Nut AS-6M4 : 6 pcs Pan Head Screw M4×8 : 3 pcs Bracket AS-HDS : 1 pc Hexagon Socket Head Cap Screw M4×10 : 6 pcs	–
G	3D	180-013-662	AS-HDS-30KL-BL-30-6		HDS-30KL-BL : 1 pc		–
G	3D	180-013-663	AS-HDS-30KR-WT-30-6		HDS-30KR-WT : 1 pc		–
G	3D	180-013-664	AS-HDS-30KL-WT-30-6		HDS-30KL-WT : 1 pc		–
G	3D	180-013-665	AS-HDS-30MR-BL-30-6		HDS-30MR-BL : 1 pc		–
G	3D	180-013-666	AS-HDS-30ML-BL-30-6		HDS-30ML-BL : 1 pc		–
G	3D	180-013-667	AS-HDS-30MR-WT-30-6		HDS-30MR-WT : 1 pc		–
G	3D	180-013-668	AS-HDS-30ML-WT-30-6		HDS-30ML-WT : 1 pc		–
G	3D	180-013-669	AS-HDS-30HR-BL-30-6		HDS-30HR-BL : 1 pc		–
G	3D	180-013-670	AS-HDS-30HL-BL-30-6		HDS-30HL-BL : 1 pc		–
G	3D	180-013-671	AS-HDS-30HR-WT-30-6		HDS-30HR-WT : 1 pc		–
G	3D	180-013-672	AS-HDS-30HL-WT-30-6		HDS-30HL-WT : 1 pc		–
G	3D	180-013-673	AS-HDS-30KR-BL-30-8	Groove Width 8 mm	HDS-30KR-BL : 1 pc	AS Nut AS-8M4 : 6 pcs Pan Head Screw M4×8 : 3 pcs Bracket AS-HDS : 1 pc Hexagon Socket Head Cap Screw M4×10 : 6 pcs	–
G	3D	180-013-674	AS-HDS-30KL-BL-30-8		HDS-30KL-BL : 1 pc		–
G	3D	180-013-675	AS-HDS-30KR-WT-30-8		HDS-30KR-WT : 1 pc		–
G	3D	180-013-676	AS-HDS-30KL-WT-30-8		HDS-30KL-WT : 1 pc		–
G	3D	180-013-677	AS-HDS-30MR-BL-30-8		HDS-30MR-BL : 1 pc		–
G	3D	180-013-678	AS-HDS-30ML-BL-30-8		HDS-30ML-BL : 1 pc		–
G	3D	180-013-679	AS-HDS-30MR-WT-30-8		HDS-30MR-WT : 1 pc		–
G	3D	180-013-680	AS-HDS-30ML-WT-30-8		HDS-30ML-WT : 1 pc		–
G	3D	180-013-681	AS-HDS-30HR-BL-30-8		HDS-30HR-BL : 1 pc		–
G	3D	180-013-682	AS-HDS-30HL-BL-30-8		HDS-30HL-BL : 1 pc		–
G	3D	180-013-683	AS-HDS-30HR-WT-30-8		HDS-30HR-WT : 1 pc		–
G	3D	180-013-684	AS-HDS-30HL-WT-30-8		HDS-30HL-WT : 1 pc		–

[Dimensions]



[How to Install]



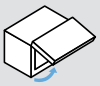
Refer to 1 : P.20

HEAVY DUTY SOFT-DOWN STAY HDSN-30 For Use in Pairs

Lapcon INSTRUCTION



Right side installation shown.

Opening Direction	Description	Non-handed	Model	Maximum Door Moment
 Upward-opening	With Catch For Use in Pairs	–	K	13.7~19.5 N・m/2 pcs (140~199 kgf・cm/2 pcs)
			M	19.6~24.4 N・m/2 pcs (200~249 kgf・cm/2 pcs)
			H	24.5~29.3 N・m/2 pcs (250~299 kgf・cm/2 pcs)
			S	29.4~34.3 N・m/2 pcs (300~350 kgf・cm/2 pcs)

- For upward-opening doors.
- Designed to hold the door in closed and opened position and close the door softly.
- Secures enough space for shelf board.
- Can be easily and quickly installed on mounting plate.
- Maximum moment of HDSN is 34.3N・m (for opening angle 80° only), while conventional HDS is only 29.4N・m.
- Mounting plate (sold separately) suitable for 20mm aluminium frame available.

[Applicable Range]

- Choose from 4 types according to maximum door moment.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

Maximum door moment N・m		Model	Qty
Opening angle 90°	Opening angle 80°		
13.7~17.5	13.7~19.5	K	2 pcs
17.6~21.5	19.6~24.4	M	
21.6~25.4	24.5~29.3	H	
25.5~29.4	29.4~34.3	S	

[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the “Cautions” 1.
- Handed: Specific left and right-handed.
- Hinges not included. Customer should provide concealed hinges (without catch) or single knuckle hinges.
- 1 mounting plate (sold separately) is necessary for 1 stay body.
- Used in pairs.

[Parts Included]

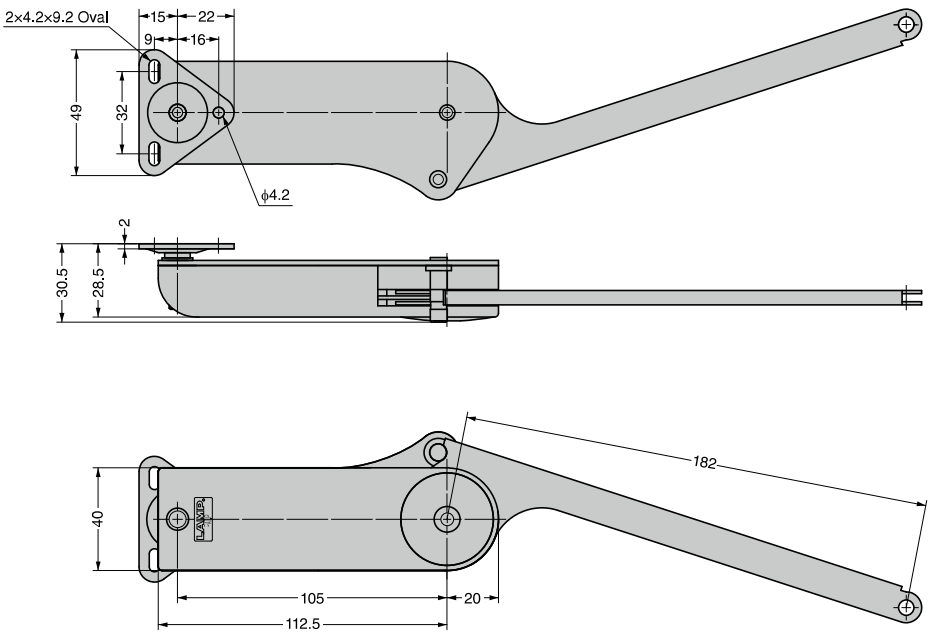
- Mounting plate
- Binding head tapping screw 3.5×15

[Sold Separately]

- Mounting Plate HDSN-SZ, HDSN-AZ 2

Selection Tool

Sasuga-kun



Refer to 1 : P.293, 2 : P.359

[Installation] 45mm or more aluminium frame door or wooden door (HDSN-SZ) and opening angle 90°

- ( ) Dimensions for 80° opening. Figures 1, 2 and 3 are in case of using mounting plate (HDSN-AZ) for 20mm aluminium frame.
- Dimensions for door with gasket shown. Without gasket, shift stay installation position towards back panel side by gasket thickness D.

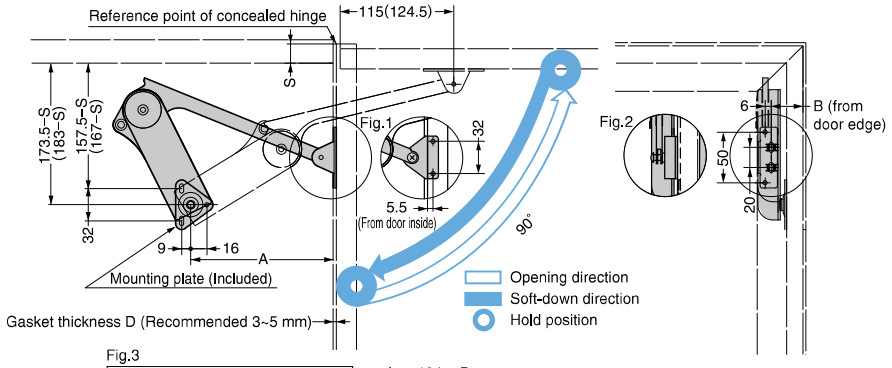
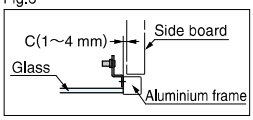


Fig.3



A = 134 − D

B = 15+T₀−($\frac{W_0 - W_1}{2}$)

C = Distance from the side board inside to the aluminium frame

T₀ = Cabinet side board thickness

W₀ = Cabinet overall width

W₁ = Door width

S = Overlay

RoHS	CAD	Item Code	Item Name	Type	Material	Finish/ Colour	Model	Maximum Door Moment/2 pcs				Weight (g)	Box (pcs)	Carton (pcs)
								Opening angle 90°/ (N·m)	Opening angle 90°/ (kgf·cm)	Opening angle 80°/ (N·m)	Opening angle 80°/ (kgf·cm)			
G	3D	180-109-601	HDSN-30KL	Left-handed	ABS/ Steel	Nickel/ Light Grey	K	13.7~17.5	140~179	13.7~19.5	140~199	366	40	–
G	3D	180-109-602	HDSN-30KR	Right-handed								283	40	–
G	3D	180-109-603	HDSN-30ML	Left-handed			M	17.6~21.5	180~219	19.6~24.4	200~249	415	40	–
G	3D	180-109-604	HDSN-30MR	Right-handed								415	40	–
G	3D	180-109-605	HDSN-30HL	Left-handed			H	21.6~25.4	220~259	24.5~29.3	250~299	415	40	–
G	3D	180-109-606	HDSN-30HR	Right-handed								415	40	–
G	3D	180-109-607	HDSN-30SL	Left-handed			S	25.5~29.4	260~300	29.4~34.3	300~350	415	40	–
G	3D	180-109-608	HDSN-30SR	Right-handed								393	40	–

ARM MOUNTING PLATE FOR HDSN HDSN-SZ, HDSN-AZ


HDSN-SZ


HDSN-AZ

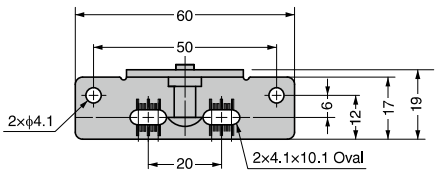
- For aluminium frame door.
- Two types are available.

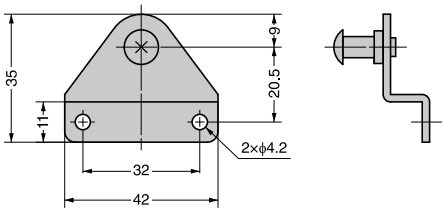
[Parts Included]

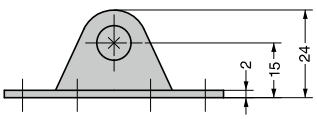
- Binding head tapping screw 3.5×15 (for HDSN-SZ)

[Recommended Screw]

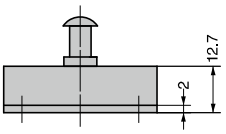
- M4 Screw (HDSN-AZ)







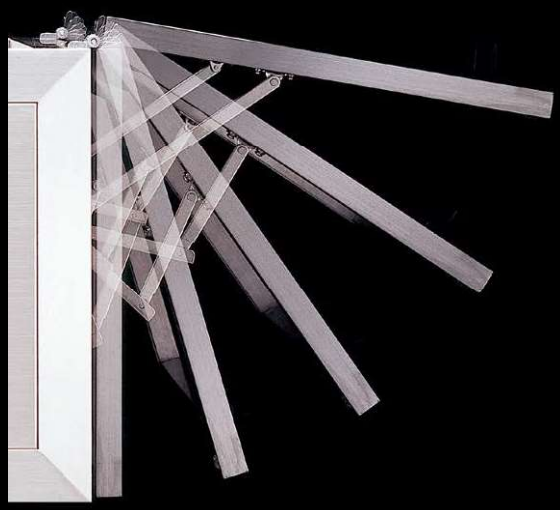
HDSN-SZ



HDSN-AZ

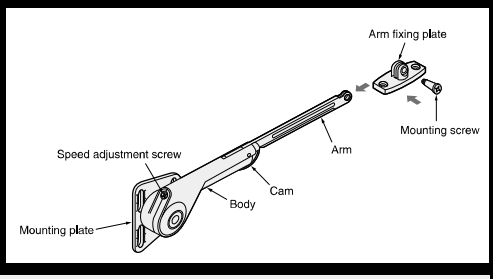
RoHS	CAD	Item Code	Item Name	Application	Included Screw	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-609	HDSN-SZ	For 45 mm or more Aluminium Frame Door / Wooden Door	Yes	Steel	Nickel	24	120	–
G	3D	180-109-610	HDSN-AZ	For 20 mm Aluminium Frame Door	No			25	120	–

ADJUSTABLE SOFT-DOWN STAY NSD



- Keeps flap/lid from slamming shut.
- Successfully passed for 30,000 open/close private cycle tests.
- Opening/closing speed is adjustable.
- Opening angle is adjustable by changing mounting position.
- Handed.

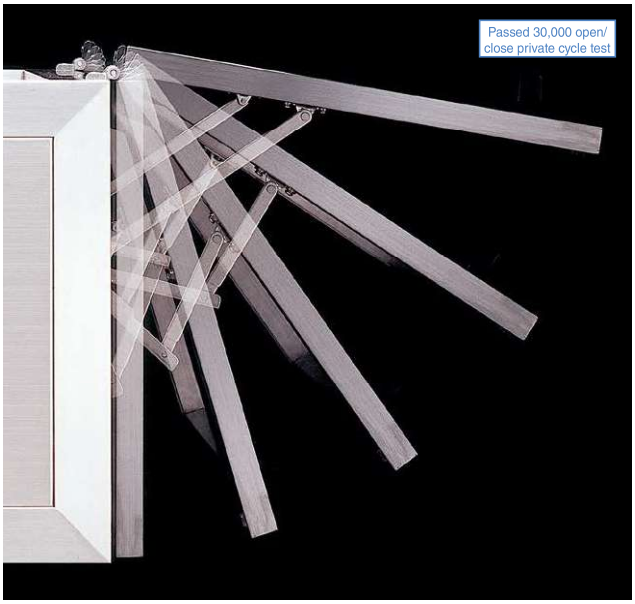
[Remarks]
Designed to operate at room temperature 0°~40°C.



APPLICATION		MOUNTING SIDE	NSD-#
Downward-Opening Flap	90°	Right	NSD-10R
		Left	NSD-10L
Top-Opening Flap	70° ~ 105°	Right	NSD-20R
		Left	NSD-20L
Upward-Opening Flap	80° ~ 100°	Right	NSD-35R
		Left	NSD-35L

ADJUSTABLE SOFT-DOWN STAY NSD-35

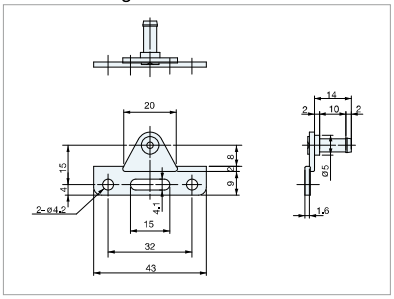
Lapcon INSTRUCTION



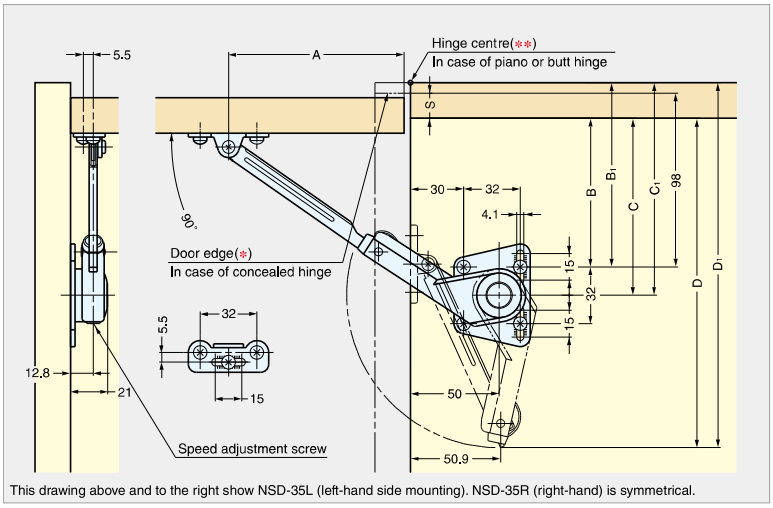
- For Upward-opening flap door with piano, butt or concealed hinges.
- Opening angle adjustable from 80˚ to 100˚ .
- Designed to hold door in fully opened position.
- Two stop version (holds door at 65˚ and 90˚) is also available.
- Torque Calculation :
  Torque = Door Height x 1/2 x Door Weight.
  Per Piece : 20~70 kg·cm.
  Per Pair : 40~140 kg·cm.

Material	Finish
Zinc Alloy, Steel	Bright Nickel

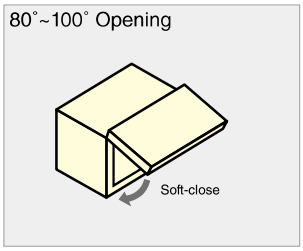
NSDX-AZ Angle Bracket

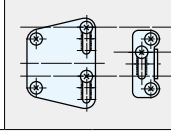
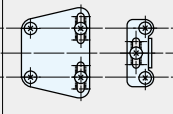
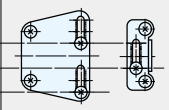


NSDX-AZ (angle bracket) for aluminium frame application available upon request.



This drawing above and to the right show NSD-35L (left-hand side mounting). NSD-35R (right-hand) is symmetrical.



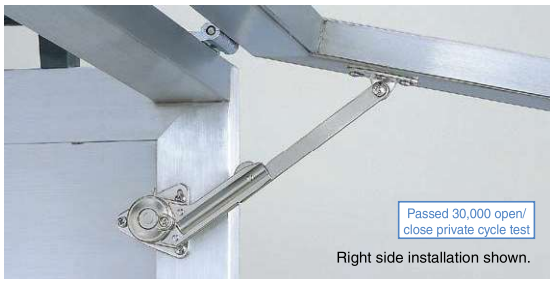
Opening Angle	80˚		90˚		100˚	
Position of Plates	Down		Middle		Up	
	Mounting Plate	Arm Bracket	Mounting Plate	Arm Bracket	Mounting Plate	Arm Bracket
For Hinge Centre (Up) ↕ (Down)						

Hinge Type	A	B	C	D	B1	C1	D1
Concealed Hinge	99	98-S	114-S	200-S	-	-	-
Piano / Butt Hinge	93	-	-	-	92	108	194

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
–	3D	180-109-280	NSD-35R	210	20	80
–	3D	180-109-279	NSD-35L	210	20	80

ADJUSTABLE SOFT-DOWN STAY NSDX-35 (R/L)

Lapcon AS INSTRUCTION

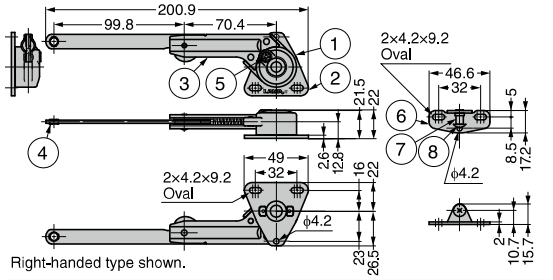


Opening Direction	Description	Non-handed	Maximum Door Moment
Upward-opening	With Catch	–	1.96~6.86 N・m/pc (20~70 kgf・cm/pc)

- For upward-opening doors.
- Designed to hold the door in fully opened and closed position.
- Opening angle 80°, 90° or 100°.
- Closing speed adjustable with adjustment screw.
- AS parts set 1 for installing to aluminium frame also available.

[Maximum Door Moment]

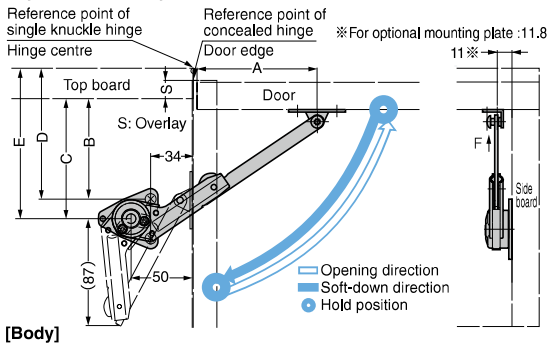
- With 1 stay
  Maximum door moment = 1.96~6.86 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)



No.	Part Name	Material	Finish/Colour
①	Body	Zinc Alloy (ZDC)	Nickel
②	Mounting Plate	Steel (SPCC)	
③	Arm		
④	Sleeve	POM	Black
⑤	Adjustment Screw	Steel (SWCH)	Nickel
⑥	Arm Mounting Plate	Steel (SPCC)	
⑦	Shaft	Steel (SWCH)	
⑧	Truss Head Screw (M4×5)		

[Installation] Right side installation for upward-opening 90°.
Left side installation is symmetrical.

Comes down slowly and softly in closing direction. Installation with piano/butt hinge or concealed hinge shown below.



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 2.
- Handed: Specific left and right-handed.
- Door closing speed varies depending on product difference and use conditions.
- Do not push the door up more than opening angle. Also do not forcibly press the door down when closing.

[Sold Separately]

- Mounting plate 3
- SDS face plate and spacer for glass door 4 (Please order when using 5 mounting plate NSDX-GZ.)

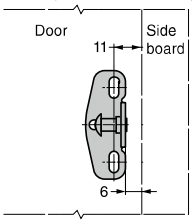
Video Link

Selection Tool

Sasuga-kun

[Installation for Mounting Plate]

F-view (refer to "Installation")



Hinge Type		A	B	C	D	E
80° Opening	Concealed Hinge	106	105–S	121–S	–	–
	Single Knuckle Hinge	100	–	–	99	115
90° Opening	Concealed Hinge	98	97–S	113–S	–	–
	Single Knuckle Hinge	91.5	–	–	90.5	106.5
100° Opening	Concealed Hinge	92.5	91.5–S	107.5–S	–	–
	Single Knuckle Hinge	85	–	–	84	100

Installation dimensions vary depending on hinge type and opening angle.

- S is overlay at hinge side.
- Reference point for each dimension: hinge centre for single knuckle hinge, while door edge for concealed hinge.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-028	NSDX-35R	Right-handed	Zinc Alloy (ZDC)/Steel	Nickel	1.96~6.86	20~70	170	20	80
G	3D	180-109-029	NSDX-35L	Left-handed						20	80

[Mounting Plate] Sold Separately 3

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-032	NSDX-SZ	Screw on	14	160	640
G	3D	180-109-460	NSDX-CZ	Clip on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip on for 20 mm Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip on for Glass Door	14	160	640

[SDS Face Plate and Spacer for Glass Door] Sold Separately 4
(Please use with mounting plate NSDX-GZ 5.)

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ ABS	Chrome/ Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.363, 2 : P.293, 3 4 5 : P.369

AS Parts Set for Installing to Aluminium Frame

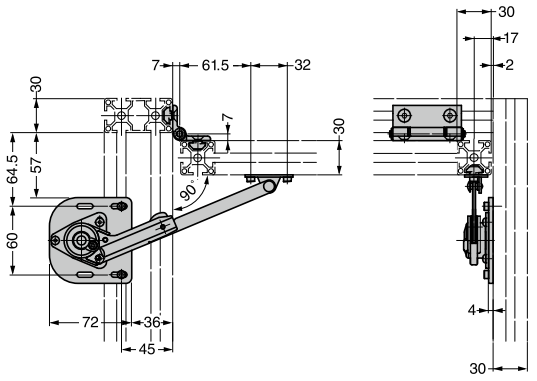
Please refer to the series introduction page 1 for details about AS series.



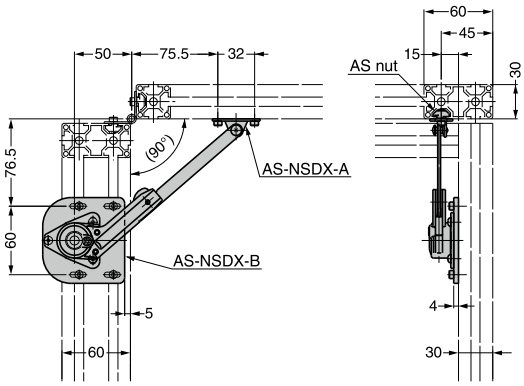
[AS Parts Set] Parts set of brackets, screws and AS nuts used for installing to aluminium frame.

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	3D	180-041-647	AS-NSDX-35RK-30-6	Groove Width 6 mm	NSDX-35RK : 1 pc AS Nut AS-6M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-649	AS-NSDX-35LK-30-6		NSDX-35LK : 1 pc AS Nut AS-6M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-648	AS-NSDX-35RK-30-8	Groove Width 8 mm	NSDX-35RK : 1 pc AS Nut AS-8M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–
G	3D	180-041-650	AS-NSDX-35LK-30-8		NSDX-35LK : 1 pc AS Nut AS-8M4 : 6 pcs Hexagon Socket Button Head Screw M4×6 : 3 pcs Bracket AS-NSDX-B : 1 pc Hexagon Socket Head Cap Screw M4×12 : 4 pcs Bracket AS-NSDX-A : 1 pc Hexagon Socket Head Cap Screw M4×10 : 2 pcs	–

[Dimensions (Inset)]



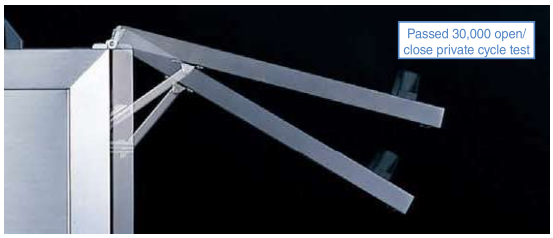
[Dimensions (Overlay)]



Refer to 1 : P.20

SOFT-DOWN STAY NSDX-35(R/L) 2S

Lapcon INSTRUCTION

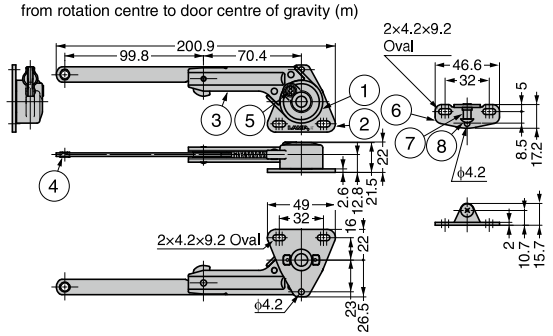


Opening Direction	Description	Non-handed	Maximum Door Moment
Upward-opening	With Catch	–	1.96~4.9 N・m/pc (20~50 kgf・cm/pc)

- For upward-opening doors.
- Holds the opened door at two angles.
- Designed to hold the door in fully closed position.
- Opening angle 80˚, 90˚ or 100˚.
- Closing speed adjustable with adjustment screw.

[Maximum Door Moment]

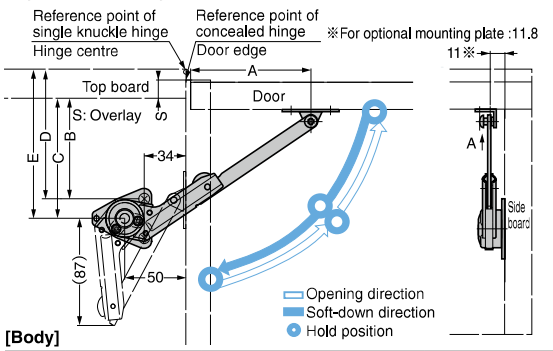
- With 1 stay
  Maximum door moment = 1.96~4.9 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)



No.	Part Name	Material	Finish/Colour
①	Body	Zinc Alloy (ZDC)	Nickel
②	Mounting Plate	Steel (SPCC)	
③	Arm		
④	Sleeve	POM	Black
⑤	Adjustment Screw	Steel (SWCH)	Nickel
⑥	Arm Mounting Plate	Steel (SPCC)	
⑦	Shaft	Steel (SWCH)	
⑧	Truss Head Screw (M4×5)		

[Installation] Right side installation for upward-opening 90˚.
Left side installation is symmetrical.

Comes down slowly and softly in closing direction.Installation with piano/butt hinge or concealed hinge shown below.



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the "Cautions" 1.
- Handed: Specific left and right-handed.
- Door closing speed varies depending on product difference and use conditions.
- Do not push the door up more than opening angle. Also do not forcibly press the door down when closing.

[Sold Separately]

- Mounting plate 2
- SDS face plate and spacer for glass door 3

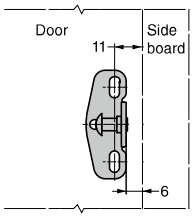
Video Link

Selection Tool

Sasuga-kun

Installation for Mounting Plate]

A-view (refer to "Installation")



Hinge Type		A	B	C	D	E
80˚60˚ Opening	Concealed Hinge	106	105–S	121–S	–	–
	Single Knuckle Hinge	100	–	–	99	115
90˚65˚ Opening	Concealed Hinge	98	97–S	113–S	–	–
	Single Knuckle Hinge	91.5	–	–	90.5	106.5
100˚70˚ Opening	Concealed Hinge	92.5	91.5–S	107.5–S	–	–
	Single Knuckle Hinge	85	–	–	84	100

Installation dimensions vary depending on hinge type and opening angle.

- S is overlay at hinge side.
- Reference point for each dimension: hinge centre for single knuckle hinge, while door edge for concealed hinge.

[Body]

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-026	NSDX-35R2S	Right-handed	Zinc Alloy (ZDC)/ Steel	Nickel	1.96~4.9	20~50	170	20	80
G	3D	180-109-027	NSDX-35L2S	Left-handed						20	80

[Mounting Plate] Sold Separately 2

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-460	NSDX-CZ	Clip-on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip-on for 20 mm Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip-on for Glass Door	14	160	640

[SDS Face Plate and Spacer for Glass Door] Sold Separately 3
(Please use with mounting plate NSDX-GZ.)

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ ABS	Chrome/ Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

Refer to 1 : P.293, 2 3 : P.369

SOFT-DOWN STAY SDS-C301N

Lapcon L=R INSTRUCTION







Opening Direction	Description	Non-handed	Maximum Door Moment
Upward-opening	With Catch	Yes	3.92~6.86 N・m/pc (40~70 kgf・cm/pc)

- For upward-opening doors.
- Non-handed: Can be installed either on left or right side.
- Designed to hold the door in fully opened and closed position.
- Use butt hinge or concealed hinge for door hinge. (In case of wooden door or metal door)

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 1.
- Do not push the door up more than opening angle. Also do not forcibly press the door down when closing.

[Parts Included]
- Mounting plate SDS-A
- Countersunk head tapping screw 3.5×14

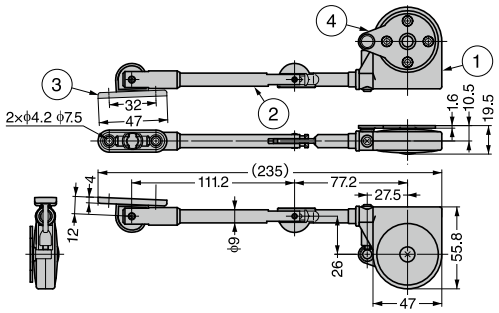
[Sold Separately]
- Concealed hinge OLYMPIA 360-26-19T

Video Link

Selection Tool

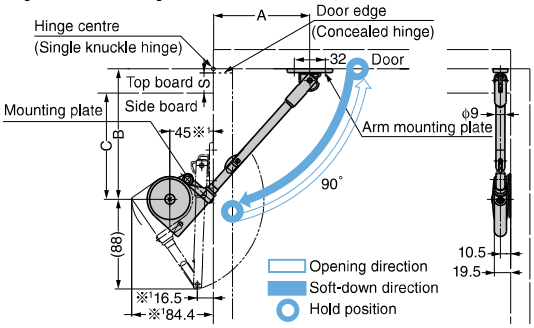
Sasuga-kun

[Maximum Door Moment]
- With 1 stay
  Maximum door moment = 3.92~6.86 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)
- Custom-made products (small door moment type) also available.



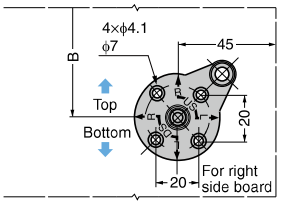
[Installation] Right side installation for upward-opening 90˚. Left side installation is symmetrical.

Comes down slowly and softly in closing direction.Installation with piano/butt hinge or concealed hinge shown below.



No.	Part Name	Material	Finish/Colour
①	Body	ABS	White, Grey, Black
②	Arm	Steel (SPCC)	Nickel
③	Arm Mounting Plate		
④	Mounting plate		

[Installation for Mounting Plate]



For right side board, install with the "→" mark of R at US side directly upwards.
For left side board, install with the "→" mark of L at US side directly upwards.

Overlay	Hinge Type	A	B	C
Full Overlay	Single Knuckle Hinge	100	135	–
Full Overlay	Concealed Hinge 360-26-19T	108	–	143–S
Inset	Single Knuckle Hinge	97※²	132※²	–

※² In case the door thickness is 20 mm.

- S is overlay at hinge side.
- Installation dimensions vary depending on hinge type. Reference point of installation dimensions (A, B, C): hinge centre for piano/butt hinge, while door edge for concealed hinge.
- ※¹ Reference point of ※¹ marked dimensions is the back side of door.

[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-012-151	SDS-C301NW	ABS/Steel	Nickel/White	3.92~6.86	40~70	165	20	100
G	3D	180-100-284	SDS-C301NG		Nickel/Grey				20	100
G	3D	180-100-285	SDS-C301NBL		Nickel/Black				20	100

[SDS Face Plate and Spacer for Glass Door] Sold Separately 2

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish/Black		50	200

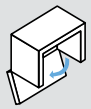
Refer to 1 : P.293, 2 : P.369

SOFT-DOWN STAY SDS-400-W

Lapcon L=R INSTRUCTION



Right side installation shown. (SDS-400-W)

Opening Direction	Description	Non-handed	Maximum Door Moment
 Bottom-opening	–	Yes	3.43~4.9 N・m/pc (35~50 kgf・cm/pc)

- For bottom-opening doors.
- Suitable for glove box, etc.
- Non-handed: Can be installed either on left or right side.
- Piano/butt hinge is suitable.
- When using hinges other than specified, please contact local representatives.

[Specifications]
- Operating temperature: 0℃~40℃

[Remarks]
- Be sure to read the "Cautions" 1.
- Customer should provide a catch to hold the door in fully closed position.
- Do not push the door down more than opening angle 70°. Also do not forcibly push the door up when closing.

[Parts Included]
- Mounting plate SDS-B
- Countersunk head tapping screw 3.5×14

[Sold Separately]
- SDS face plate and spacer for glass door 2

Video Link

Selection Tool
Sasuga-kun

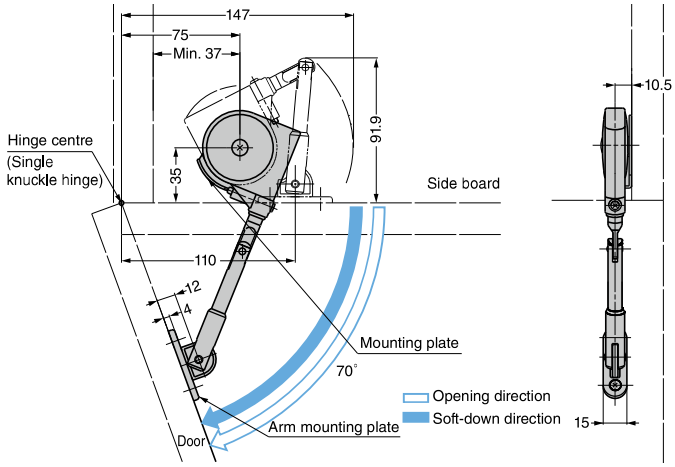

White


Mounting plate SDS-B

[Maximum Door Moment]
- With 1 stay
  Maximum door moment = 3.43~4.9 N・m
- With 2 stays, the maximum door moment will be doubled.
  Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

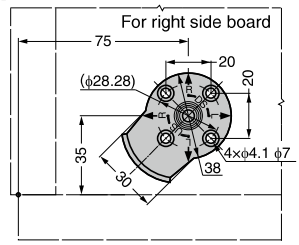
[Installation] Right side installation for bottom-opening 70°. Left side installation is symmetrical.

Comes down slowly and softly in opening direction.Installation with piano/butt hinge shown below.



No.	Part Name	Material	Finish/Colour
①	Body	ABS	White
②	Arm	Steel (SPCC)	Nickel
③	Arm Mounting Plate		
④	Mounting plate		

[Installation for Mounting Plate]



(SDS-400 is marked with DS.)
For right side board, install with the "→" mark of R at DS side directly upwards.
For left side board, install with the "→" mark of L at DS side directly upwards.

[Body]

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Maximum Door Moment N・m/pc	Maximum Door Moment kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-286	SDS-400-W	ABS/Steel	Nickel/White	3.43~4.9	35~50	146	20	100

[Mounting Plate] Sold Separately 2

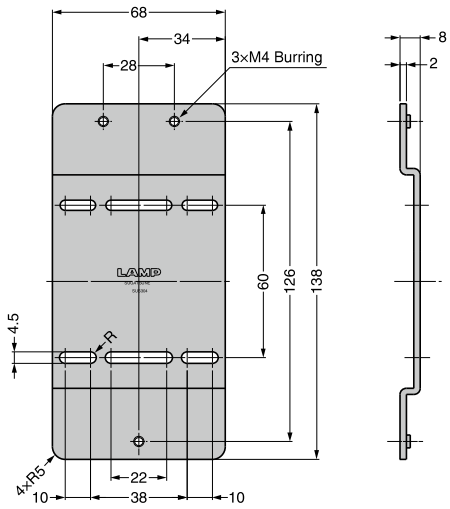
RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	25	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish		50	200

Refer to 1 : P.293, 2 : P.369

AS BRACKET FOR HDS AS-HDS



●Used for installing soft-down stay HDS to aluminium frame.



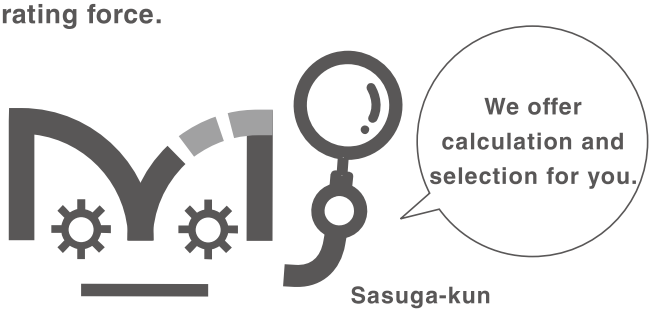
[Installation]



RoHS	CAD	Item Code	Item Name	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-235	AS-HDS	Stainless Steel (SUS304)	Barrel Polished	198	10	100

Product Selection Tool Sasuga-kun

Just inputting the dimensions and weight of the flap/door, you can select suitable Motion Design Tech products or simulate (graphically display) moment and operating force.



Access from here
Sasuga-kun Search
https://cont.sugatsune.co.jp/motion/en/

NSDX BRACKET FOR STAY AS-NSDX

AS SUS



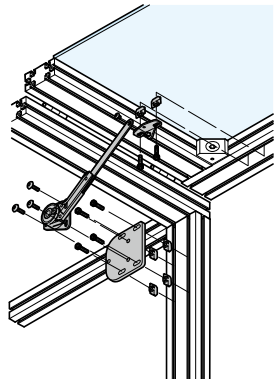
Application Example

- Used for installing soft-down stay NSDX to aluminium frame.
- Use AS nuts 1 for installation.

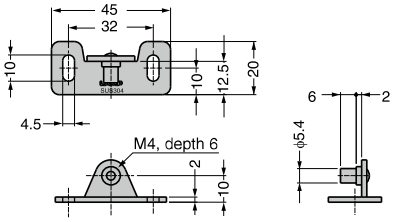
[Parts Included]

- AS-NSDX-A: Truss head screw M4×5 (SUS)
  AS-NSDX-B: None

[How to Install]

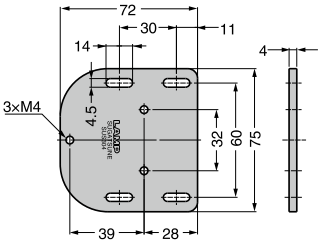



AS-NSDX-A



AS-NSDX-A


AS-NSDX-B



AS-NSDX-B

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-234	AS-NSDX-A	For Arm	Stainless Steel (SUS304)	Barrel Polished	15	100	1000
G	3D	180-100-233	AS-NSDX-B	For Body			151	20	200

Refer to 1 : P.526

MOUNTING PLATE FOR NSDX NSDX-SZ, NSDX-CZ, NSDX-AZ, NSDX-GZ

- For quick installation of NSDX stay.
- Three types are available.



NSDX-CZ

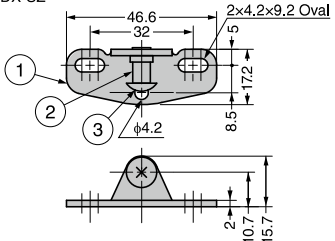


NSDX-AZ

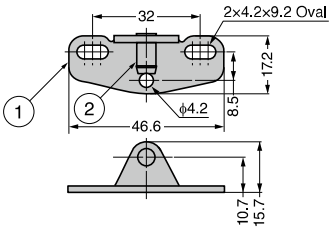


NSDX-GZ

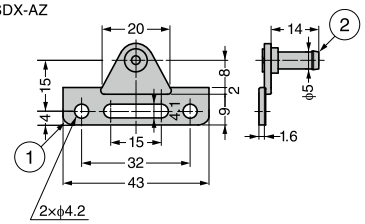
NSDX-SZ



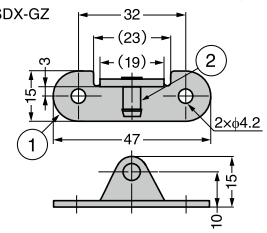
NSDX-CZ



NSDX-AZ



NSDX-GZ

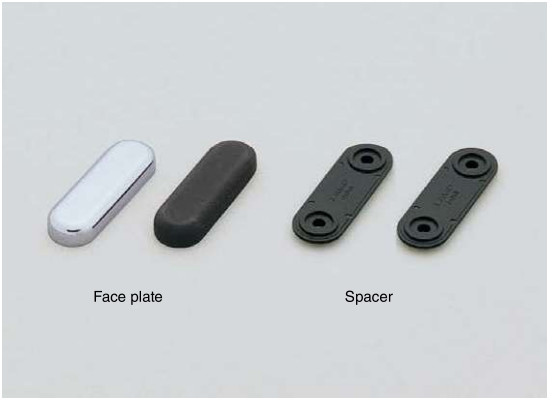


No.	Part Name	Material	Finish
①	Mounting Plate	Steel (SPCC)	Nickel
②	Shaft	Steel (SWCH)	
③	Truss Head Screw (M4×5)		

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-032	NSDX-SZ	Screw on	14	160	640
G	3D	180-109-460	NSDX-CZ	Clip-on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip-on for 20 mm Aluminium Frame	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip-on for Glass Door	14	160	640

SDS FACE PLATE AND SPACER FOR GLASS DOOR SDS-50G

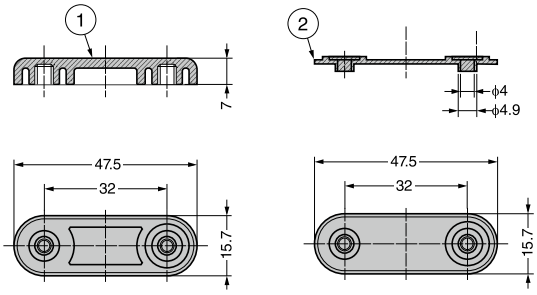
TEMPERED GLASS



- Glass door face plate for SDS and NSDX.

[Parts Included]

- Countersunk head screw M4×14 (2 pcs)



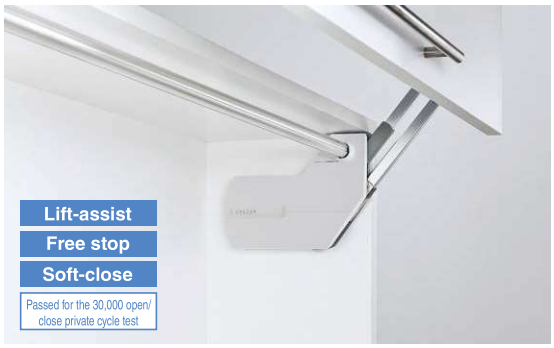
Face plate Spacer

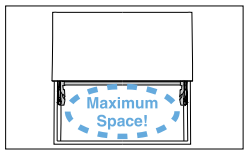
No.	Part Name	Material	Finish	Carton
①	Face Plate	Zinc Alloy (ZDC)	Chrome (CR), Black (BL)	1 pc
②	Spacer	ABS	Black	2 pcs

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	25	50	200
G	3D	180-928-046	SDS-50G-BL		50	200

SWING LIFT-UP STAY SLU-ELAN

Lapcon INSTRUCTION





[3 Functions in 1 Stay]

●Lift-assist

Can open the door with a slight force.



Fig. 1



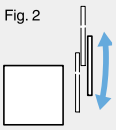
●Free stop

Door can be stopped in any position.

※The operating range varies slightly depending on the door size and weight.



Fig. 2



●Soft-close

Door closes slowly even if you release your hands from the door.

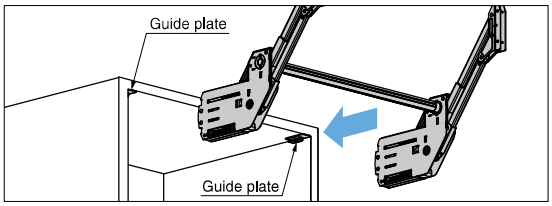
※The operating range varies slightly depending on the door size and weight.



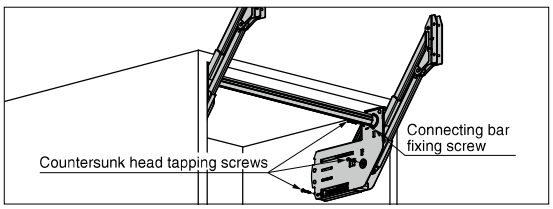
Fig. 3



[Easy Installation] Fig.4 ※1 connecting bar (sold separately) is necessary for 1 set of stay.

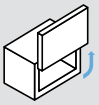


Install on left and right sides of top board bottom after aligning the guide plate with internal surface and edge of cabinet. Installation position is determined by inserting the main body with the main body and connecting bar temporarily assembled.



Fix the main body to cabinet with countersunk head tapping screws (included). Tighten connecting bar fixing screws (left and right sides).

Refer to 1 : P.293, 2 : P.371

Opening Direction	Description	Item Name	Door Width	Door Height	Door Weight※
 Lift-Up	Lift-assist Free stop Soft-close	SLU-ELAN-S4	Max. 1800	390~500	5~6.5 kg
		SLU-ELAN-L4			6.5~8 kg
		SLU-ELAN-M4			8~9.5 kg
		SLU-ELAN-H4			9.5~11 kg

※ Door weight includes handle.

- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
  - ・Door can be opened with a slight force (see Fig. 1).
  - ・Door can be stopped in any position (see Fig. 2).
  - ・Door closes slowly even if you release your hands from the door (see Fig. 3).
- Door can be opened and closed smoothly regardless of handle position.
- Installed on the bottom of cabinet top board for maximum space inside the cabinet, not even affecting the shelf mounting.
- Installation position of the main body can be easily determined (see Fig.4).
- Mounting plate can be quickly attached to the main body (see Fig.5).

[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Be sure to read the “Cautions” 1.
- 1 connecting bar (sold separately) is necessary for 1 set of stay.
- Use in pairs.
- Never push down the arm of single stay before installation.
- Do not open the door further in fully opened position. And do not roughly.

[Parts Included]

- Mounting plate (2 pcs)
- Guide plate (2 pcs)
- Countersunk head tapping screw 3.5×38 (6 pcs) for main body
- Binding head tapping screw 3.5×15 (6 pcs) for mounting plate

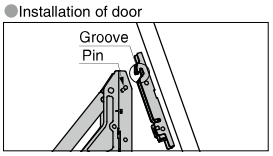
[Sold Separately]

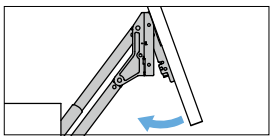
- Connecting bar ELB 2

Video Link

[Installation and Removal of Door] Fig. 5

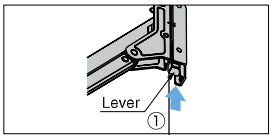
- Installation of door

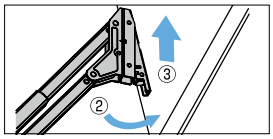




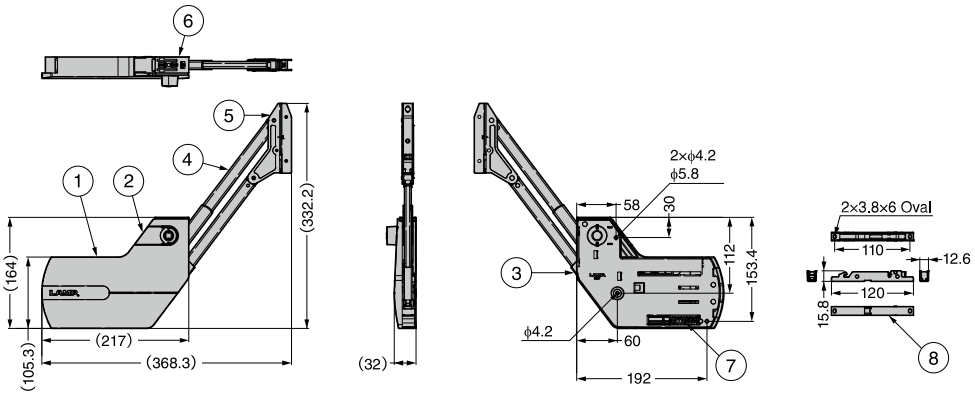
Hang the groove at the tip of mounting plate on the pin of main body, and then push the door along the arrow with a click feeling.

- Removal of door



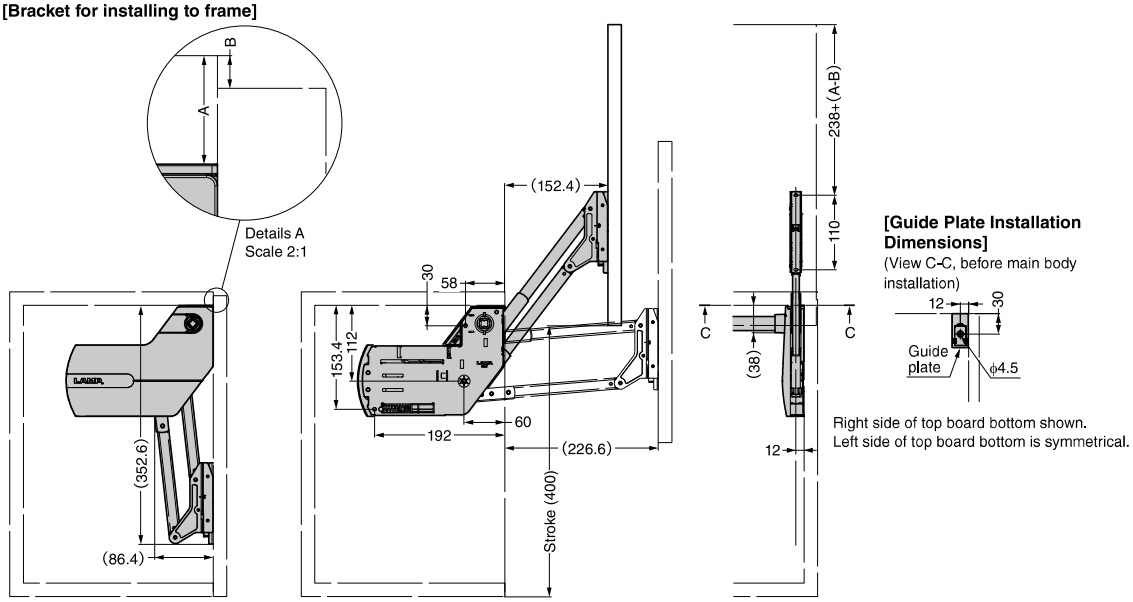


Lift the door along ② arrow while pushing the lever along ① arrow, and then move the door along ③ arrow to detach.



No.	Part Name	Material	Finish/Colour
①	Body Cover	ABS	Light Grey
②	Side Cover		
③	Main Body	Steel (SECC)	–
④	Arm	Aluminium Alloy	Anodised
⑤	Mounting Plate Body	Steel (SPCC)	Nickel
⑥	Guide Plate	POM	Dark Grey
⑦	Damper	–	–
⑧	Mounting Plate	Steel (SPCC)	Nickel

[Bracket for installing to frame]



For vertical continuous doors, the gap from upper door should be 3mm or more (for door thickness 16~22mm).

[Body] 1 set

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Door Width	Door Height※1	Door Weight kg※2	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-022-312	SLU-ELAN-S4	Steel/ ABS	Nickel/ Light Grey	Max. 1800	390~500	5~6.5	2491	5	–
G	3D	180-022-313	SLU-ELAN-L4					6.5~8	2542	5	–
G	3D	180-022-314	SLU-ELAN-M4					8~9.5	2581	5	–
G	3D	180-022-315	SLU-ELAN-H4					9.5~11	2631	5	–

※1 Cabinet inside height is Min. 360 mm. ※2 Door weight includes handle.

[Connecting Bar] Sold Separately

RoHS	CAD	Item Code	Item Name	Material	Finish	Cabinet Inside Width※3	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-022-319	ELB-480	Aluminium Alloy	Anodised	556~566	181	10	–
G	3D	180-022-320	ELB-780			856~866	294	10	–
G	3D	180-022-321	ELB-1080			1156~1166	407	10	–
G	3D	180-022-322	ELB-1380			1456~1466	520	10	–
G	3D	180-026-323	ELB-1680			1756~1766	633	10	–

※3 For other cabinet inside widths, the bar can be cut on site (connecting bar length = cabinet inside width - 80mm).

SWING LIFT-UP STAY SLUN-N

Lapcon INSTRUCTION



Opening Direction	Item Name	Description	Door Width	Door Height	Door Weight
 Lift-up	SLUN-3N	Lift-assist Soft-close	600 ~900	390 ~450	2.8~3.8 kg
	SLUN-4N				3.8~4.8 kg
	SLUN-5N				4.8~5.8 kg

- Patented Lapcon mechanism helps open and close the door smoothly.
- Spring mechanism assists opening the door lightly when it is opened outwards by 50~70mm.
- Damper provides smooth and soft closing.
- Installed on the bottom of cabinet top board for maximum space inside the cabinet.

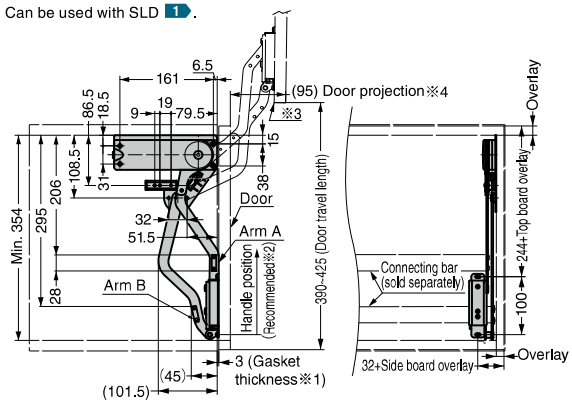




[Parts Included]
- Binding head tapping screw 3.5×15 (for main body)
- Countersunk head tapping screw 3.5 × 20 (for damper)
- Truss head tapping screw 4.5 ×12 (for connecting bar)

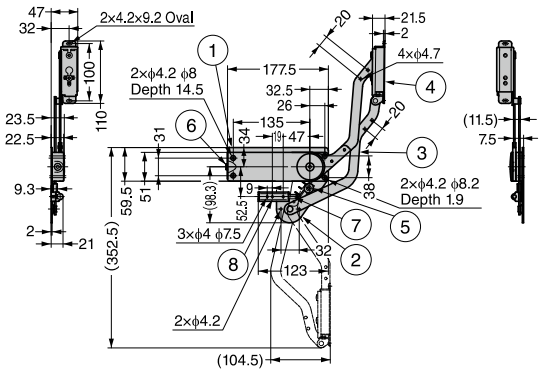
[Sold Separately]
- Connecting bar SLUB (below)

Can be used with SLD 1.



[Specifications]
- Operating temperature: 5℃~35℃

[Remarks]
- Be sure to read the "Cautions" 2.
- 1 connecting bar (sold separately) is necessary for 1 set of stay. Install 2 pcs to ensure lateral strength.
- For glass door, the frame width needs 75mm or more.
- Be sure to install a handle (sold separately) in the middle of door width. For easy door opening, install the handle above the bottom edge of door side mounting plate (see ※2 in the figure below).
- Used in pairs.



[Installation]
- ※1: Dimension with gasket attached on door. Without gasket, shift stay installation position towards back panel side by 3mm.
- ※2: Install handle above the bottom edge of door side mounting plate as shown above.
- ※3: If door height is 425mm or more, lower part of door will cover cabinet top board when door is fully opened.
- ※4: Maximum door projection is 267mm.

No.	Part Name	Material	Finish/Colour
①	Body	ABS	Grey
②	Mounting Plate	Steel (SPCC)	Chrome
③	Arm		
④	Mounting Plate		
⑤	Stopper	EPDM	Black
⑥	Adjustment Screw	Steel (SWCH)	Tin Cobalt Plating
⑦	Damper Core	POM	–
⑧	Damper Holder	PA	

[Body] 1 set

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Door Width	Door Height	Door Weight kg	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-020-832	SLUN-3N	ABS/ Steel	Chrome/Grey	600~900	390~450	2.8~3.8	1972	5	–
G	3D	180-020-833	SLUN-4N					3.8~4.8	1967	5	–
G	3D	180-020-834	SLUN-5N					4.8~5.8	2012	5	–

[Connecting Bar] Sold Separately

RoHS	CAD	Item Code	Item Name	Material	Finish	Mounting Position	Length of Connecting Bar for Cabinet Overall Width 600	Length of Connecting Bar for Cabinet Overall Width 900	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-120-287	SLUB-535	Aluminium Alloy	Anodised	Arm A	535	–	191	10	–
G	3D	180-104-088	SLUB-551			Arm B※	551		196	10	–
G	3D	180-120-288	SLUB-835			Arm A	–	835	308	10	–
G	3D	180-100-131	SLUB-851			Arm B※		851	312	10	–

※ If the centre part of door is glass etc., install the connecting bar on arm B to make it inconspicuous.

Refer to 1 : P.373, 2 : P.293

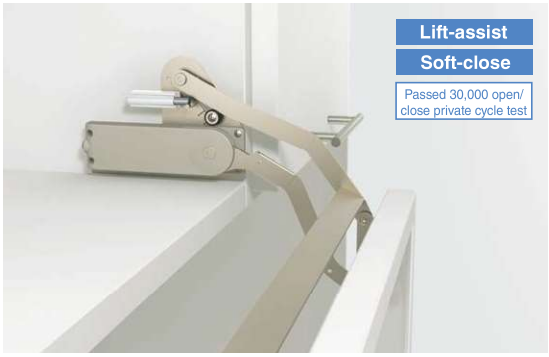
- 2 types of connecting bars are available for cabinet overall width 600mm and 900mm.
- Dimensions in the left table are for standard products with side board thickness of cabinet 15mm. If the side board thickness is over 15mm, the connecting bar should be cut according to the below formula.

Arm A: Connecting bar length = Cabinet overall width - (Side board thickness×2) - 35

Arm B: Connecting bar length = Cabinet overall width - (Side board thickness×2) - 19

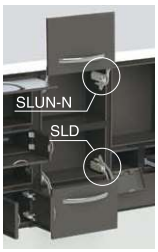
SWING DOWN STAY SLD

Lapcon INSTRUCTION



Opening Direction	Item Name	Description	Door Width	Door Height	Door Weight
Lift-down	SLD-3	Lift-assist Soft-close	600 ~900	360 ~400	3~4 kg
	SLD-4				4~5 kg
	SLD-5				5~6 kg

- Patented Lapcon mechanism helps open and close the door smoothly.
- Unique swing down mechanism holds the door in fully opened position.
- Damper provides smooth and soft closing.
- Installed on the top of cabinet bottom board for maximum space inside the cabinet.





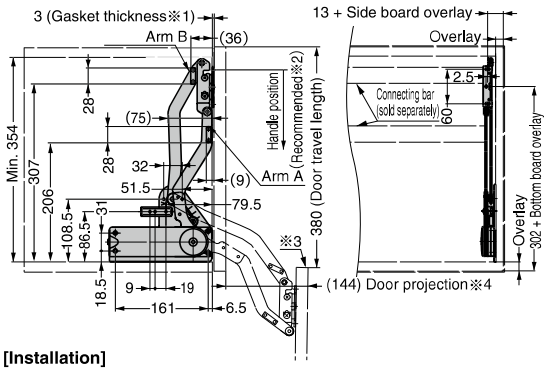
[Parts Included]
- Binding head tapping screw 3.5×15 (for main body)
- Countersunk head tapping screw 3.5 × 20 (for damper)
- Truss head tapping screw 4.5 ×12 (for connecting bar)

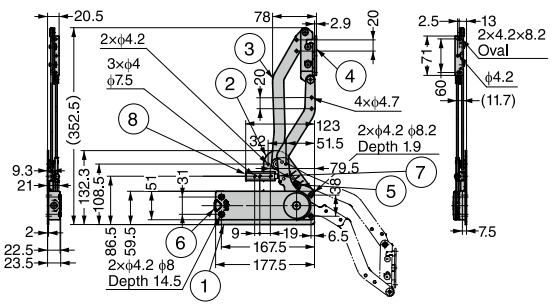
[Sold Separately]
- Connecting bar SLUB (below)

Can be used with SLUN-N 1 .

[Specifications]
- Operating temperature: 5℃~35℃

[Remarks]
- Be sure to read the "Cautions" 2 .
- 1 connecting bar (sold separately) is necessary for 1 set of stay.Install 2 pcs to ensure lateral strength.
- For glass door, the frame width needs 45mm or more.
- Be sure to install a handle (sold separately) in the middle of door width. For easy door opening, install the handle below the top edge of door mounting Plate (see ※2 in the figure below).
- Used in pairs.





[Installation]

※1: Dimension with gasket attached on door. Without gasket, shift stay installation position towards back panel side by 3mm.
※2: Install handle below the top edge of door side mounting Plate as shown above.
※3: If door height is 380mm or more, upper part of door will cover cabinet bottom board when door is fully opened.
※4: Maximum door projection is 242mm.

No.	Part Name	Material	Finish/Colour
①	Body	ABS	Grey
②	Mounting Plate	Steel (SPCC)	Chrome
③	Arm		
④	Mounting Plate		
⑤	Stopper	POM	Black
⑥	Adjustment Screw	Steel (SWCH)	Tin Cobalt Plating
⑦	Damper Core	POM	–
⑧	Damper Holder	PA	

[Body] 1 set

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Door Width	Door Height	Door Weight kg	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-020-848	SLD-3	ABS/Steel	Chrome/Grey	600~900	360~400	3~4	1900	5	–
G	3D	180-020-849	SLD-4					4~5	1900	5	–
G	3D	180-020-850	SLD-5					5~6	1980	5	–

[Connecting Bar] Sold Separately

RoHS	CAD	Item Code	Item Name	Material	Finish	Mounting Position	Length of Connecting Bar for Cabinet Overall Width 600	Length of Connecting Bar for Cabinet Overall Width 900	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-120-287	SLUB-535	Aluminium Alloy	Anodised	Arm A	535	–	191	10	–
G	3D	180-104-088	SLUB-551			Arm B※	551		196	10	–
G	3D	180-120-288	SLUB-835			Arm A	–	835	308	10	–
G	3D	180-100-131	SLUB-851			Arm B※		851	312	10	–

※If the centre part of door is glass etc., install the connecting bar on arm B to make it inconspicuous.

Refer to 1 : P.372, 2 : P.293

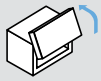
- 2 types of connecting bars are available for cabinet overall width 600mm and 900mm.
- Dimensions in the left table are for standard products with side board thickness of cabinet 15mm. If the side board thickness is over 15mm, the connecting bar should be cut according to the below formula.

Arm A: Connecting bar length = Cabinet overall width - (Side board thickness×2) - 35
Arm B: Connecting bar length = Cabinet overall width - (Side board thickness×2) - 19

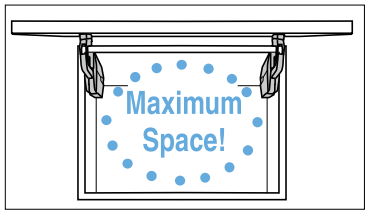
LIFT-ASSIST STAY EZS-ELAN®

Lapcon INSTRUCTION



Opening Direction	Description	Door Width	Door Height	Door Weight※
 Up & Over	Lift-assist Free stop Soft-close	Max. 1200	500~750	5~12.5 kg

※ Door weight includes handle.



Slim design maximises space inside of the cabinet.

- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
  - ・Door can be opened with a slight force (see Fig. 1).
  - ・Door can be stopped in any position in the range of about 30˚ to 70˚ (see Fig.2).
  - ・Door closes slowly in the range of about 0˚ to 20˚ (see Fig.3).
- Installed on the bottom of cabinet top board for maximum space inside the cabinet.
- No hinges and connecting bar required for installation.
- Installation position of the main body is determined simply by aligning to the bottom surface of top board and cabinet edge (see Fig.4).
- Mounting plate can be quickly attached to the main body (see Fig.5).
- Torque adjustment according to the door weight is unnecessary.

[3 Functions in 1 Stay]

●Lift-assist

Door can be opened with a slight force.

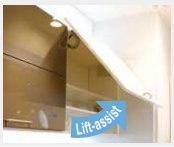
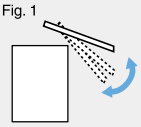


Fig. 1

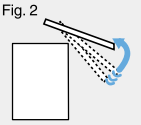


●Free stop

Door can be stopped in any position in the range of about 30˚ to 70˚ .



Fig. 2

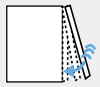


●Soft-close

Door closes slowly in the range of about 0˚ to 20˚ even if you release your hands from the door.



Fig. 3



[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

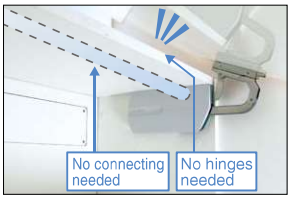
- Be sure to read the "Cautions" 1.
- Used in pairs.
- Never push down the arm of single stay before installation.
- Do not open the door further in fully opened position.
- Do not roughly open and close the door.

[Parts Included]

- Mounting plate
- Countersunk head tapping screw 3.5×38 (for main body)
- Binding head tapping screw 3.5×15 (for mounting plate)

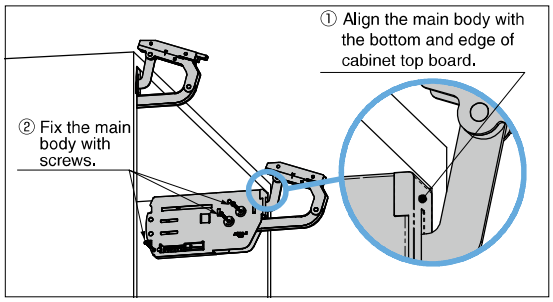
Video Link





No need to install connecting bar and hinge separately, maximising space inside of the cabinet.

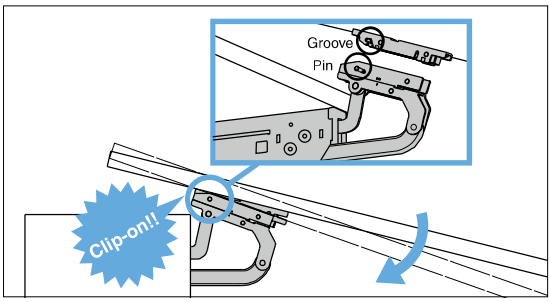
[Easy Installation] Fig.4



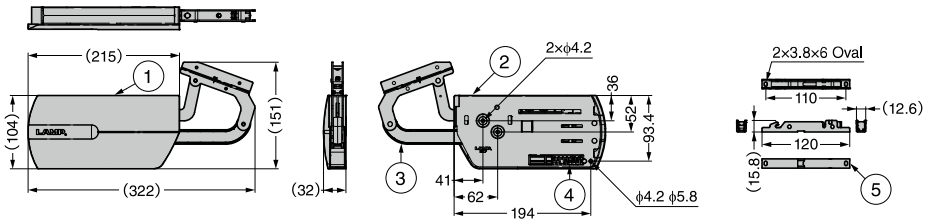
Installation position is determined simply by pressing the main body against the bottom surface of top board and aligning the surface indicated by ① with cabinet edge.

Refer to 1 : P.293

[Quick Door Installation] Fig.5

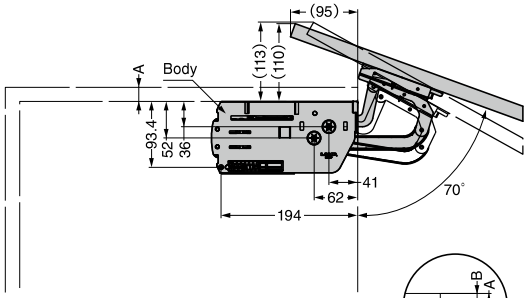


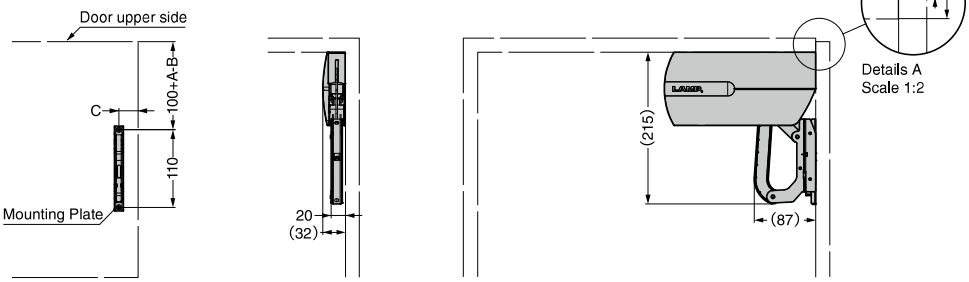
To install the door, simply hook the pin of main unit to the groove of mounting plate and lower the door until it clicks in place.



No.	Part Name	Material	Finish
①	Body Cover	ABS	–
②	Body	Steel (SECC)	
③	Arm	Steel (SPCC)/POM	Nickel
④	Damper	–	–
⑤	Mounting Plate	Steel (SPCC)	Nickel

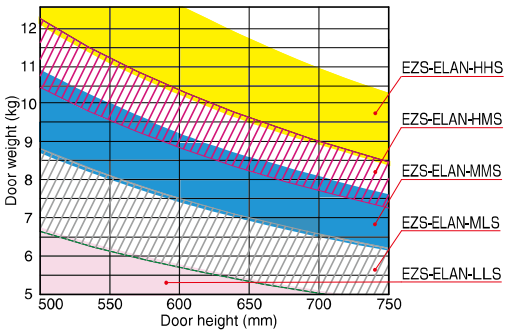
[Installation]





$$C = \frac{\text{Door width - Cabinet inside width}}{2} + 12$$

[Door Size Range]



Refer to the left graph or the following as a guide for model selection.

1. Calculation of lifting power

Lifting power = Door height [mm]×(Door weight [kg] - 1)

Door size

Door width: Max. 1200mm
Door height: 500~750 mm
Door weight: 5~12.5 kg

※ Confirm the movement with actual item if lifting power is at the upper or lower limit of each model.
※ Door weight includes handle.

2. Applicable models

Liftting Power	Model
1900~2860	EZS-ELAN-LLS
2820~3900	EZS-ELAN-MLS
3850~4950	EZS-ELAN-MMS
4700~5600	EZS-ELAN-HMS
5550~6930	EZS-ELAN-HHS

[Body] 1 set

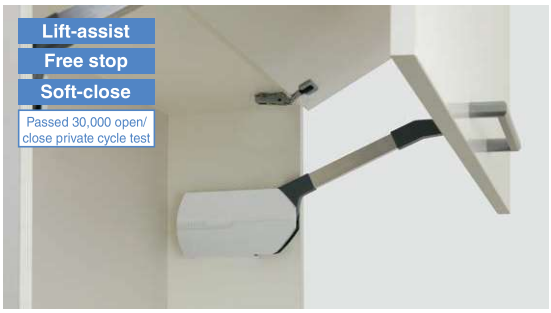
RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-018-903	EZS-ELAN-LLS	Steel/ABS	Nickel/Light Grey	2245	1	5
G	3D	180-018-904	EZS-ELAN-MLS			2316	1	5
G	3D	180-018-905	EZS-ELAN-MMS			2387	1	5
G	3D	180-018-906	EZS-ELAN-HMS			2431	1	5
G	3D	180-018-907	EZS-ELAN-HHS			2475	1	5

[Cover] Sold Separately

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-018-983	EZS-ELAN-COVER	ABS	Light Grey	160	1	5

BI-FOLD LIFT-ASSIST STAY HBF-ELAN

Lapcon INSTRUCTION



Opening Direction	Description	Door Width	Door Height	Door Weight
Bi-folding	Lift-assist Free stop Soft-close	Max. 1200	320~370	2.5~6.5 kg

Values above are for 1 bi-fold door.

- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
  - ・Door can be opened with a slight force (see Fig. 1).
  - ・Door can be stopped in any position in the range of about 50˚ to fully opened position (see Fig.2).
  - ・Door closes slowly in the range of about 0˚ to 40˚ even if you release your hands from the door (see Fig.3).
- Opening angle can be easily adjusted according to hinge used (see Fig.4).
- Quick installation due to innovative vertical adjustment function of mounting plate (see Fig.5~7).
- Easy installation by using supplied template.

[3 Functions in 1 Stay]

Lift-assist
Door can be opened with a slight force.

Fig. 1



Free stop
Door can be stopped in any position in the range of about 50˚ to fully opened position.

Fig. 2



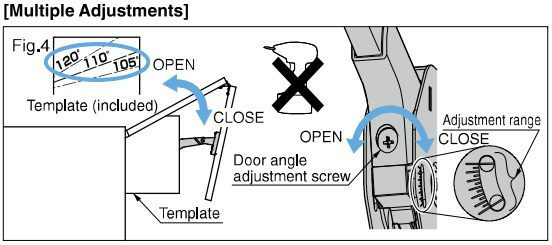
Soft-close
Door closes slowly in the range of about 0˚ to 40˚ even if you release your hands from the door.

Fig. 3



[Multiple Adjustments]

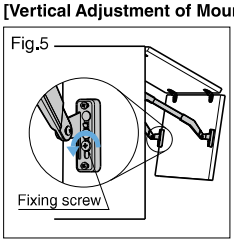
Fig.4



Place the template folded at the opening angle position of hinge against the hinge side of cabinet, and then turn the door angle adjustment screw to match the opening angle with the template.

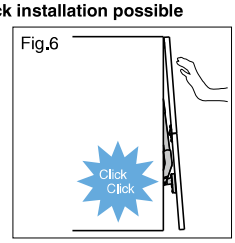
[Vertical Adjustment of Mounting Plate]Quick installation possible

Fig.5



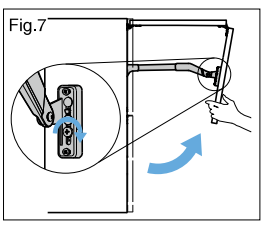
Loosen the fixing screws of the left and right mounting plates.

Fig.6



Press the upper door until the door is closed, then the mounting plates is adjusted to the appropriate position with a click sound.

Fig.7



Grasp the lower part of the lower door, slowly open the door, and then tighten the fixing screws of the left and right mounting plates.

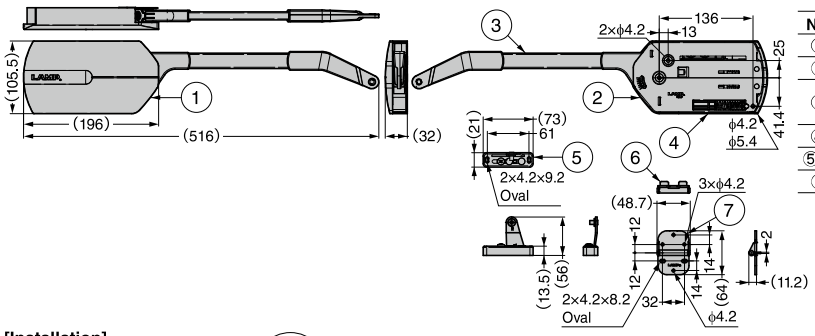
Refer to 1 : P.293

[Specifications]
- Operating temperature: 0℃~40℃

Video Link

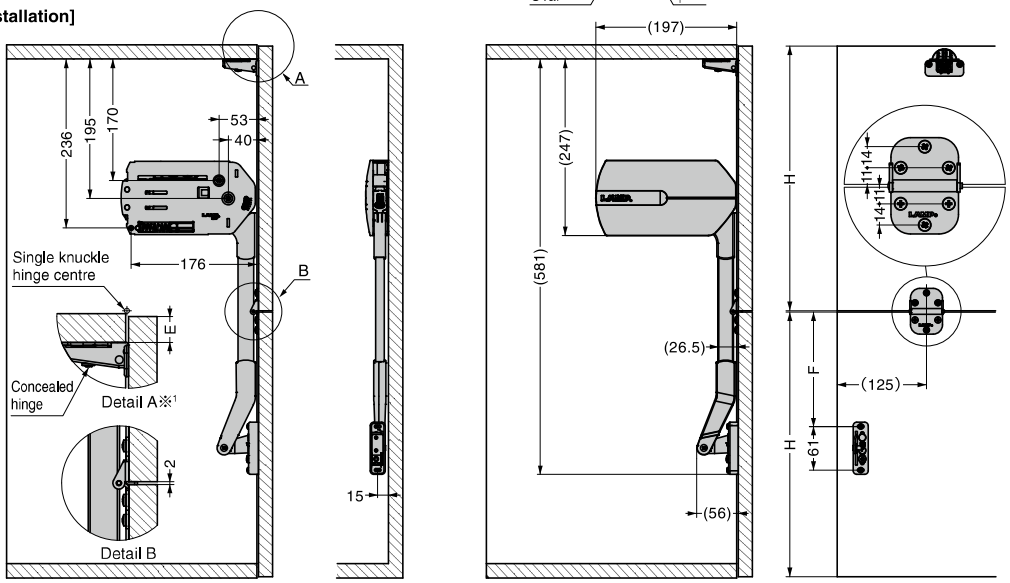
[Remarks]
- Be sure to read the “Cautions” 1.
- Never push down the arm of single stay before installation.
- Do not open the door further in fully opened position.
- Do not roughly open and close the door.
- Hinges not included. Customer should provide concealed hinges (without catch) or single knuckle hinges.
- Specified range of movement and door weight slightly vary depending on the type of hinge used (concealed hinge or piano/butt hinge).Confirm with actual item before use.
- Two centre hinges connecting the upper door and the lower door are included.
- For easy door opening, recommended to install the handle above the centre of the lower door mounting plate.
- Use in pairs.

[Parts Included]
- Mounting plate
- Centre hinge
- Paper template
- Countersunk head tapping screw 3.5×38 (for main body)
- Binding head tapping screw 3.5×15 (for centre hinge)
- Binding head tapping screw 3.5×27 (for mounting plate)
- Truss head screw M4×5 (for mounting plate)



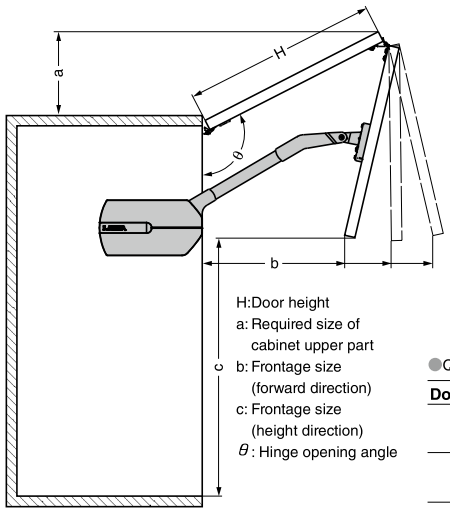
No.	Part Name	Material	Finish/Colour
①	Body Cover	ABS	–
②	Body	Steel (SECC)	
③	Arm	Aluminium Alloy/ABS	Anodised
④	Damper	–	–
⑤⑥	Mounting Plate	Steel (SPCE)	Nickel
⑦	Centre Hinge	Steel (SPCC)	

[Installation]



※1 Concealed hinge or piano/butt hinge not included.

F = 512 + E (Overlay) - H (Door height)



H:Door height
a: Required size of cabinet upper part
b: Frontage size (forward direction)
c: Frontage size (height direction)
θ: Hinge opening angle

[With concealed hinge]

●Hinge opening angle and door position

Opening Angle θ	Door Height H	a	b	c
105°	320	58	364	341
	350	65	348	373
	370	69	314	399
110°	320	85	364	369
	350	93	344	402
	370	99	303	431
120°	320	134	359	424
	350	148	330	459
	370	157	270	492

●Qty of Concealed Hinges

Door Weight kg	Door Width	Qty
2.5~5.5	~900	2 pcs
	900~1200	
5.6~6.5	~900	3 pcs
	900~1200	

[With single knuckle hinge]

●Hinge opening angle and door position

Opening Angle θ	Door Height H	a	b	c
120°	320	167	351	452
	350	181	313	490
110°	370	131	289	461

※When using single knuckle hinge, use the template (included) and adjust so that the opening angle θ of the hinge becomes 120 ° or less (see Fig. 4).

[Body]1 set Values below are for 1 door (bi-fold door). 2 doors are necessary for 1 cabinet.

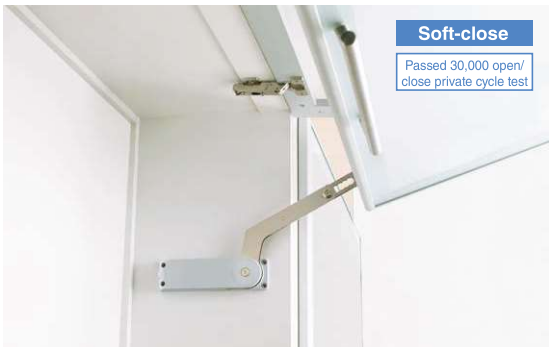
RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Door Width	Door Height※2	Door Weight kg※3	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-024-608	HBF-ELAN-LL	Aluminium Alloy/ ABS	Anodised/ Light Grey	Max. 1200	320~370	2.5~3.3	2245	1	5
G	3D	180-024-609	HBF-ELAN-ML					3.3~4.1	2316	1	5
G	3D	180-024-610	HBF-ELAN-MM					4.1~4.9	2387	1	5
G	3D	180-024-611	HBF-ELAN-HM					4.9~5.7	2431	1	5
G	3D	180-024-612	HBF-ELAN-HH					5.7~6.5	2475	1	5

For supplied centre hinge (2 pcs), use 2 pcs regardless of door width.

※2 Cabinet inside height is Min. 600mm. ※3 Door weight includes handle.

HORIZONTAL BI-FOLDING UNIT HBFN

Lapcon INSTRUCTION



Opening Direction	Item Name	Description	Door Width	Door Height	Door Thickness	Door Weight
 Bi-folding	HBFN-(2~4)M	Soft-close	450~900	320~370	17~20	2.5 ~ 5.5 kg

- Patented Lapcon mechanism controls door closing softly and smoothly.
- Designed to hold the door in closed and opened position.
- Mounting plates (sold separately) suitable for 20mm and 45mm aluminium frames are available.

[Specifications]

- Operating temperature: 5℃~35℃

[Remarks]

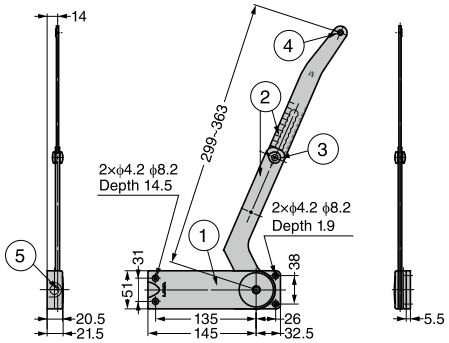
- Be sure to read the "Cautions" 1.
- 1 set of stays needs 1 set of mounting plates (sold separately).
- Hinges used for installing door to cabinet are not included. Customer should provide concealed hinges (overlay type, opening angle 105°).
- Two offset hinges used for connecting upper door and lower door are included.Order additionally if door width exceeds 600mm.
- For easy door opening, recommended to install the handle above the centre of the lower door mounting plate.

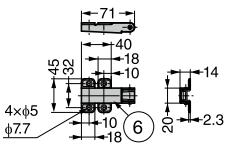
[Parts Included]

- Center hinge HBFN-CH (2 pcs)
- Binding head tapping screw 3.5×15

[Sold Separately]

- Mounting plate HBFN-SZ, HBFN-AZ-S 2





No.	Part Name	Material	Finish/Colour
①	Body	ABS	–
②	Arm	Steel (SPCC)	Nickel
③	Adjustment Dial	Zinc Alloy (ZDC)	
④	Sleeve	POM	Natural
⑤	Adjustment screw	Steel (SWCH)	Tin Cobalt Plating
⑥	Center hinge	Steel (SPCC)	Nickel

[Center Hinge] 2 pcs supplied with the main body. Order additionally for door width more than 600mm.

RoHS	CAD	Item Code	Item Name	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-099-941	HBFN-CH	Steel	Nickel	64	40	160

[Body] 1 set ※ Values below are only for 1 door. 2 doors are necessary for 1 cabinet.

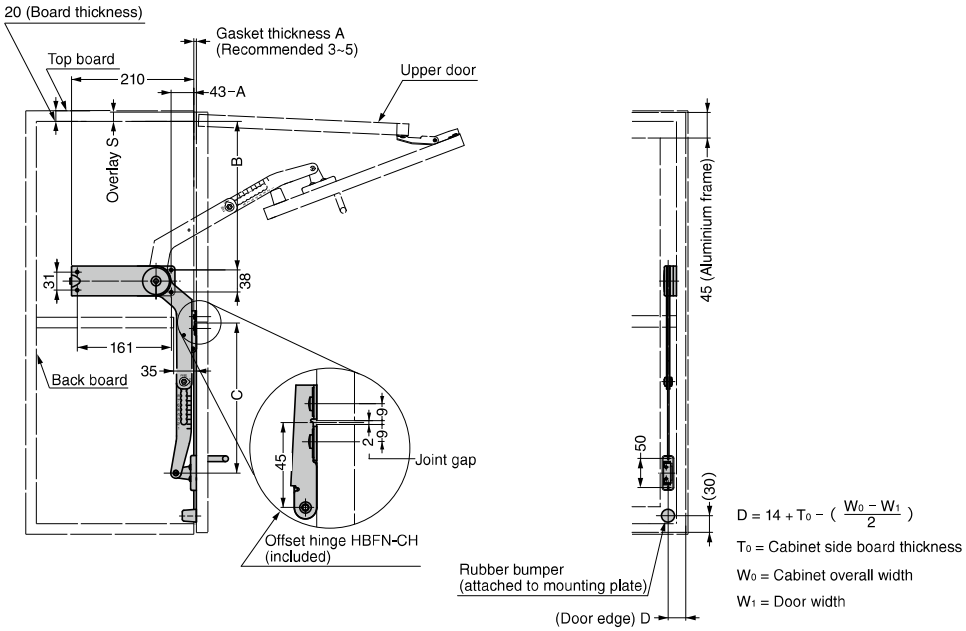
RoHS	CAD	Item Code	Item Name	Arm Size	Door Width	Door Height	Door Thickness	Door Weight kg	θ	L	t	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-109-615	HBFN-2M	M	450~900	320~370	17~20	2.5~3.5	171°	299~363	14	1500	10	–
G	3D	180-109-616	HBFN-3M					3.5~4.5				1500	10	–
G	3D	180-109-617	HBFN-4M					4.5~5.5				1600	10	–

Refer to 1 : P.293, 2 : P.379

※Limited stock available. Please contact your local agent or your nearest Sugatsune subsidiary for detail/availability.

[Installation]

※Dimensions for door with gasket shown. Without gasket, shift main body installation position towards back panel side by gasket thickness A.



[Installation Dimensions]

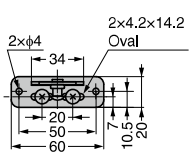
Door Height	Upper Opening Angle 90°			Upper Opening Angle 105°		
	Arm Adjustment Position	B	C	Arm Adjustment Position	B	C
320	1	247–S	241	4	226–S	244
330	2	252–S	244	5	234–S	250
340	3	258–S	248	6	243–S	257
350	4	263–S	251	7	251–S	263
360	5	269–S	255	8	259–S	269
370	6	274–S	258	9	267–S	275

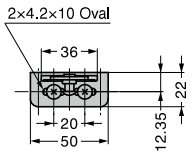
ARM MOUNTING PLATE FOR HBFN HBFN-SZ, HBFN-AZ-S

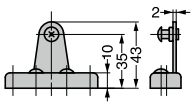
INSTRUCTION

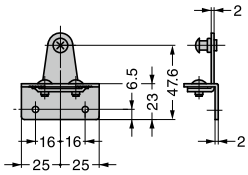

HBFN-SZ


HBFN-AZ-S (made to order)









HBFN-SZ

HBFN-AZ-S (made to order)

- For wooden doors and aluminium frame doors. Only for HBFN.

[Remarks]

- Sold in sets.

[Parts Included]

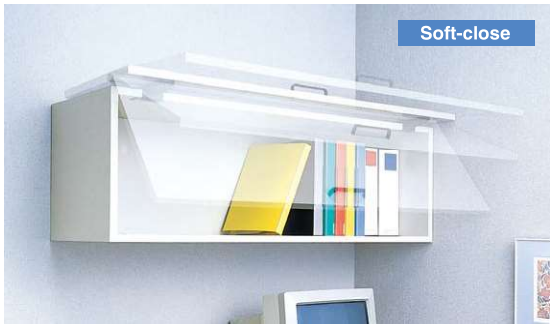
- Truss head screw M4×6
- Countersunk head tapping screw 3.5×25

RoHS	CAD	Item Code	Item Name	Application	Material	Finish	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-109-618	HBFN-SZ	For 45 mm or more Aluminium Frame Door / Wooden Door	Steel/ Rubber	Nickel	44	50	–
–	3D	–	☆HBFN-AZ-S	For 20mm Aluminium Frame Door			52	–	–

☆Made to order.

OVER THE TOP FLIPPER DOOR MECHANISM (W/ SOFT CLOSING) OV-1

Lapcon INSTRUCTION









Opening Direction	Description	Door Width	Door Height	Door Thickness	Door Weight
 Over the Top	Soft-close	700~1400	350~450	Min. 20	3~5 kg

- Patented Lapcon technology provides a smooth and quiet motion.
- Prevents from slamming shut.
- Adjustable closing speed.

[Remarks]

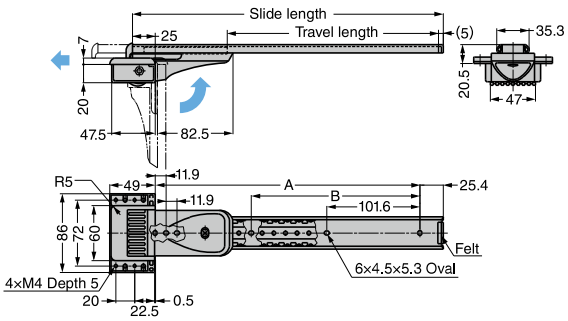
- 2 pcs of OV1-MBP-BL-TRN-N2 (Main body) and 2 pcs of OV-SLP RN (Rail) are necessary for 1 cabinet.

[Parts Included]

- Installation plate (4 pcs)
- Countersunk head screw M4×26 for wooden door (8 pcs)
- Binding head screw M4×8 for metal door (8 pcs)
- Binding head tapping screw 4×10 for rail installation (12 pcs)

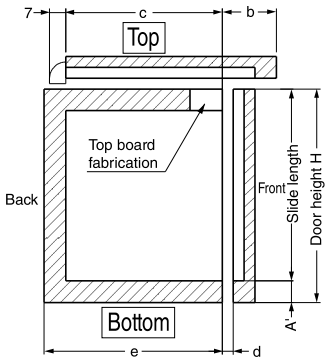
Video Link

[Installation Plate]

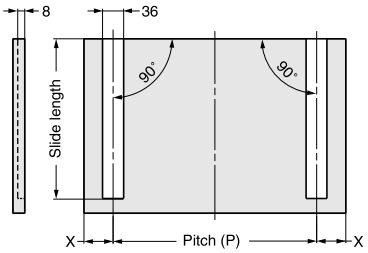


[Cut Out Dimensions]

Cabinet dimensions

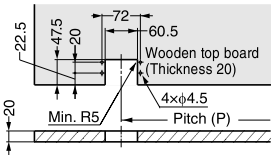


Door fabrication

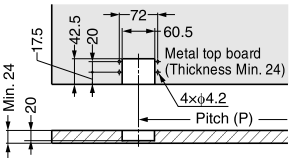


Top board fabrication

(Wooden panel)



(Sheet metal)



	b	c	d	e
Wooden Top Board	A'+81.4	H-b	2.5	Min. c+7
Metal Top Board	A'+86.4		7.5	

	X
Inset Application	80
Overlay Application	Side Board Thickness+80

[Main Body] 2 pcs are necessary for 1 cabinet.

RoHS	CAD	Item Code	Item Name	Material	Colour	Door Width	Door Height	Door Thickness	Door Weight kg	Torque Moment N·m	Torque Moment kgf·cm	Weight (g)	Carton (pcs)
–	3D	180-109-206	OV1-MBP-BL-TRN-N2	Steel & Plastic	Black	700~1400	350~450	Min. 20	3~5	5.9~9.8	60~100	282	40

[Rail] 2 pcs are necessary for 1 cabinet.

RoHS	CAD	Item Code	Item Name	Material	Finish	Slide Length	Travel Length	A	B	Weight (g)	Carton (pcs)
–	–	190-119-672	OV-13 SLP RN	Steel	Clear Zinc Chromate	330.2	223.8	279.4	177.8	270	20
–	–	190-119-673	OV-14 SLP RN			355.6	249.2	304.8	203.2	287	20
–	–	190-119-674	OV-15 SLP RN			381	274.6	330.2	228.6	310	20
–	–	190-119-675	OV-16 SLP RN			406.4	300	355.6	254	322	20

INSET RECEDING DOOR MECHANISM (W/ SOFT CLOSING) IF

Lapcon INSTRUCTION









Opening Direction	Item Name	Description	Door Width	Door Thickness	Maximum Door Moment
Over the Top	IF-360S (L/R)	Soft-close	Max. 1200	15~20	1.96~6.86 N・m/2 pcs (20~70 kgf・cm/2 pcs)
	IF-360W				3.92~13.72 N・m/2 pcs (40~140 kgf・cm/2 pcs)
	IF-H1360S (L/R)			18~30	1.96~6.86 N・m/2 pcs (20~70 kgf・cm/2 pcs)
	IF-H360W				3.92~13.72 N・m/2 pcs (40~140 kgf・cm/2 pcs)

- Patented Lapcon mechanism controls door opening and closing softly and smoothly.
- Prevents from slamming shut.
- Stores the door horizontally on the underside of cabinet top board.

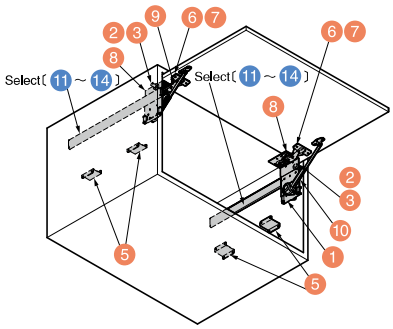
[Specifications]

- Operating temperature: 0℃~40℃

[Remarks]

- Ensure that the door centre of gravity is at the centre of door.
- When closing door, fully pull the door out first. Otherwise, it may cause a malfunction.

※The circled numbers shown below are part numbers. Please check with the parts list 1.



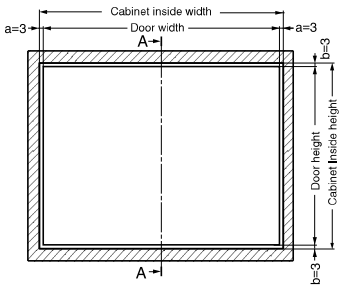
Video Link

Video Link

- 5 shown above is guard plate for preventing storage articles from contacting brackets and others.
- 7 is included in parts set d e f 1. 6 concealed hinge in d e f is not used.

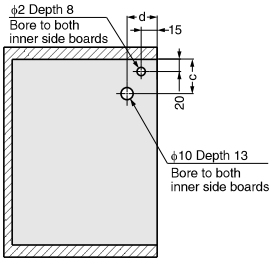
[Cut Out Dimensions]

Cabinet front

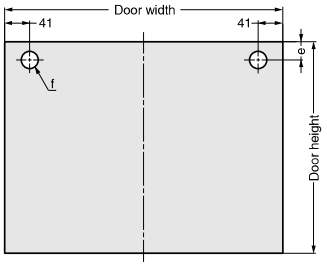


a: Clearance in the width direction (3 mm)
b: Clearance in the height direction (3 mm)

Cabinet cutaway view (A-A)



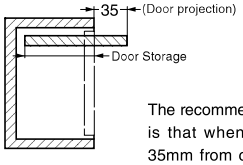
Door cut out dimensions



Item Name	c	d	e	f
IF-360SL	37.5	9.5+Door Thickness	22.5	ϕ35 Depth 11
IF-360SR				
IF-360W				
IF-H360SL	43.6		26	ϕ40 Depth 15
IF-H360SR				
IF-H360W				

[Door Storage and Recommended Door Height]

Rail \ Item Name	Door Storage		Recommended Door Height	
	IF-360SL IF-360SR IF-360W	IF-H360SL IF-H360SR IF-H360W	IF-360SL IF-360SR IF-360W	IF-H360SL IF-H360SR IF-H360W
AL-78-14	263.7+Door Thickness	260.9+Door Thickness	298.7+Door Thickness	295.9+Door Thickness
AL-78-16	314.5+Door Thickness	311.7+Door Thickness	349.5+Door Thickness	346.7+Door Thickness
AL-78-19	390.7+Door Thickness	387.9+Door Thickness	425.7+Door Thickness	422.9+Door Thickness
AL-78-24	517.7+Door Thickness	514.9+Door Thickness	552.7+Door Thickness	549.9+Door Thickness



The recommended door height is that when door protrudes 35mm from cabinet with door stored as shown on the left.

Refer to 1 : P.382

When ordering IF ●Necessary Parts ..... Parts Set + Rails

Parts Set

Necessary parts. (See page 1 for details about dimensions and description of each part in the parts set)

Refer to "[Cut Out Dimensions]" and "[Door Storage and Recommended Door Height]" in the page 2 and order the necessary parts set.

Item Code	Item Name	Parts Included									
		1 Bracket	2 Roller	3 Insert	4 Slider	5 Guard Plate	6 Hinge 360-C26-19T	7 Hinge H360-C26-26T	8 Mounting Plate	9 Soft-down Stay (Left-handed)	10 Soft-down Stay (Right-handed)
											
a – 3D 180-046-067	IF-360SL	2 pcs	2 pcs	2 pcs	2 pcs	4 pcs	2 pcs	–	2 pcs	1 pc	–
b – 3D 180-046-068	IF-360SR									–	1 pc
c – 3D 180-046-069	IF-360W									1 pc	1 pc
d – 3D 180-046-070	*IF-H360SL	2 pcs	2 pcs	2 pcs	2 pcs	4 pcs	2 pcs	2 pcs	2 pcs	1 pc	–
e – 3D 180-046-071	*IF-H360SR									–	1 pc
f – 3D 180-046-072	*IF-H360W									1 pc	1 pc

*Please use 7 concealed hinge H360-C26-26T (Φ40) only. (Do not use 6 concealed hinge 360-C26-19T (Φ35)).

[Remarks]

The hinge 6 and 7 model included in the parts set is now the OLYMPIA 360 hinge.
The parts sets have been changed as follows:

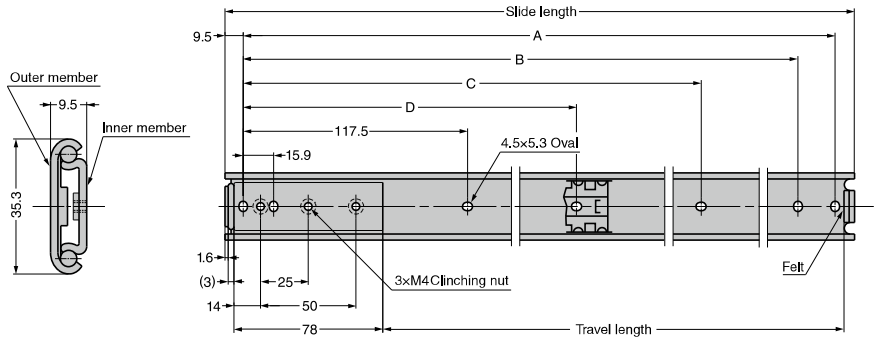
- IF-102 → IF-360
- IF-H102 → IF-H360

Rails

Necessary Parts.

2 pcs are necessary for 1 cabinet. Please refer to the figure below and order the necessary rails.

No.	Slide Length	RoHS	CAD	Item Code	Parts Name	Description
11	Slide Length 355.6 mm	G	3D	190-113-945 AL-78-14	Rail 	●Material Steel ●Finish Clear Zinc Chromate
12	Slide Length 406.4 mm	G	3D	190-113-942 AL-78-16		
13	Slide Length 482.6 mm	G	3D	190-113-943 AL-78-19		
14	Slide Length 609.6 mm	G	3D	190-113-944 AL-78-24		

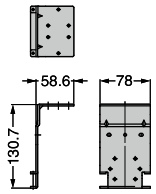
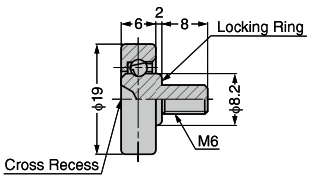
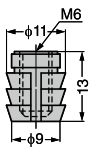
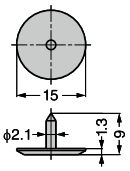
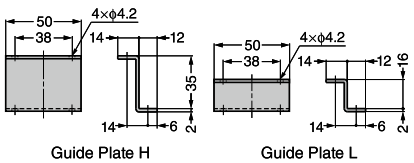
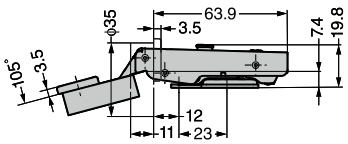
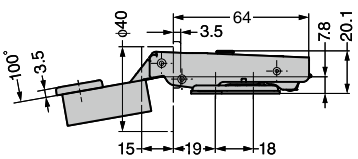


Item Name	Slide Length	Travel Length	A	B	C	D	Weight (g)
AL-78-14	355.6	267.6	336.6	320.7	219.1	–	274
AL-78-16	406.4	318.4	387.4	371.5	269.9		280
AL-78-19	482.6	394.6	463.6	447.7	346.1	231.8	350
AL-78-24	609.6	521.6	590.6	574.7	473.1	295.3	420

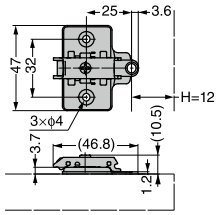
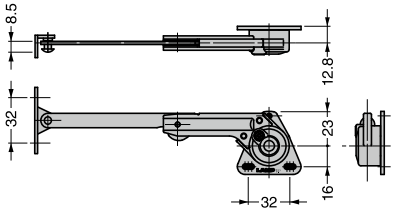
Refer to 1 : P.383, 2 : P.381

IF Parts Included

All parts except rails for item codes in 1 are in a set.

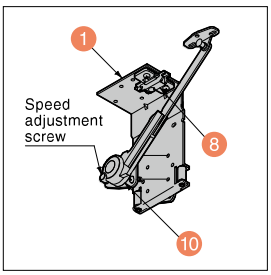
No.	Qty a	Qty b	Qty c	Qty d	Qty e	Qty f	Parts Name	Dimensions	Description
1	2 pcs			2 pcs			Bracket (For IF) 		●Material Steel ●Finish Clear Zinc Chromate
2	2 pcs			2 pcs			Roller 		Item Code : 210-140-587 Item Name : DR-19-B2 ●Material POM ●Colour Natural
3	2 pcs			2 pcs			Insert 		Item Code : 120-041-310 Item Name : SC-107-13 ●Material PA ●Colour White
4	2 pcs			2 pcs			Slider 		Item Code : 210-030-122 Item Name : F-15 ●Material POM ●Colour Natural
5	4 pcs a / b / d / e : Plate H/L (2 pcs each) c / f : Plate H (4 pcs)						Guide Plate 		●Material Stainless Steel (SUS430) ●Finish Satin
6	2 pcs			2 pcs			Concealed Hinge (Body) 		Item Code : 160-026-832 Item Name : 360-C26-19T ●Material Steel ●Finish Nickel
7	–			2 pcs			Concealed Hinge (Body) For Thick Door 		Item Code : 160-029-078 Item Name : H360-C26-26T ●Material Steel ●Finish Nickel

Refer to 1 : P.382

No.	Qty a	b	c	d	e	f	Parts Name	Dimensions	Description
8	2 pcs			2 pcs			Mounting Plate 		Item Code : 160-026-845 Item Name : 360-P4W-32T ●Material Steel ●Finish Nickel
9	1 pc	–	1 pc	1 pc	–	1 pc	Soft-down Stay 		(9) Left-handed Item Code : 180-100-071 Item Name : NSDX-35LK (10) Right-handed Item Code : 180-100-072 Item Name : NSDX-35RK ●Material Steel ●Finish Nickel
10	–	1 pc	1 pc	–	1 pc	1 pc			

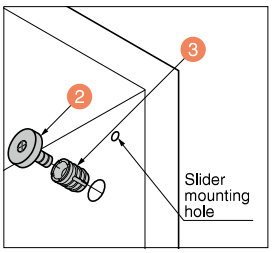
[Installation]

※The circled numbers are part numbers. Refer to the parts included 1 .



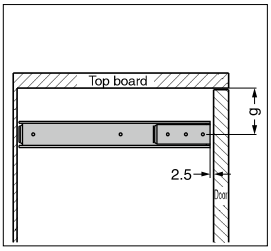
●Bracket assembling

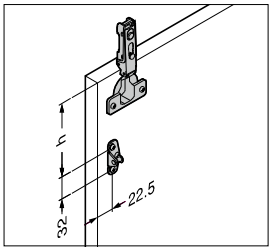
As shown left, use supplied mounting screws M4×8 and M3.5×6 to install the main body of soft-down stay NSDX-35(L/R) and mounting plate 8 (360-P4W-32T) to bracket 1, respectively.



●Parts installation to cabinet

Drive F type slider 4 (F-15) and insert 3 (SC-107-13) into mounting holes on the inner surface of cabinet side panel, respectively. Next, screw bearing roller 2 (DR-19-B2) into the insert.





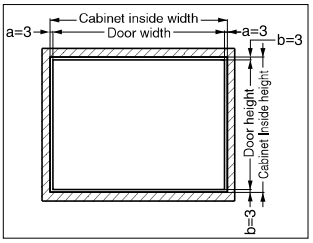
Item Name	g	h
IF-360SL	66.5	84
IF-360SR		
IF-360W		
IF-H360SL	71.5	82
IF-H360SR		
IF-H360W		

●Rail installation

Install rail at the position shown left. (Dimensions is the distance of the first hole)

●Parts installation to door

Install concealed hinge with the supplied screws (raised countersunk head tapping screws 3.5×16).Next, install the door side mounting plate of soft-down stay NSDX-35(L/R) at the position shown left with the supplied screws.

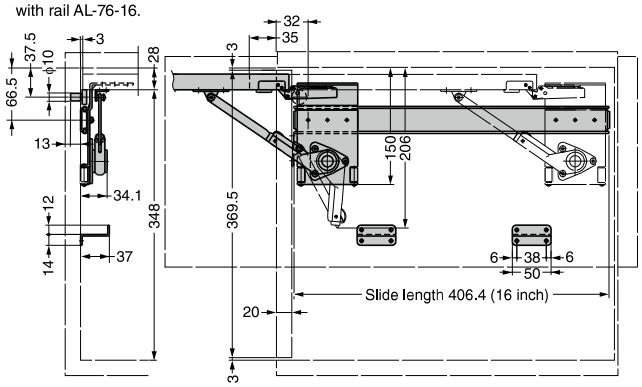


●How to adjust

1. When the door is installed to cabinet, if vertical dimensions of clearance (a) in opening direction and clearance (b) in height direction are different, make adjustment with the mounting plate adjustment screw of concealed hinge.
2. Door slowly closes under the action of soft-down stay. Adjust door closing speed with the speed adjustment screw of soft-down stay.

[Installation]

●Drawing below is an example of door thickness 20mm and using IF-360S in combination with rail AL-76-16.



Refer to 1 : P.383~P.384

DISK DAMPER UDD DIGEST



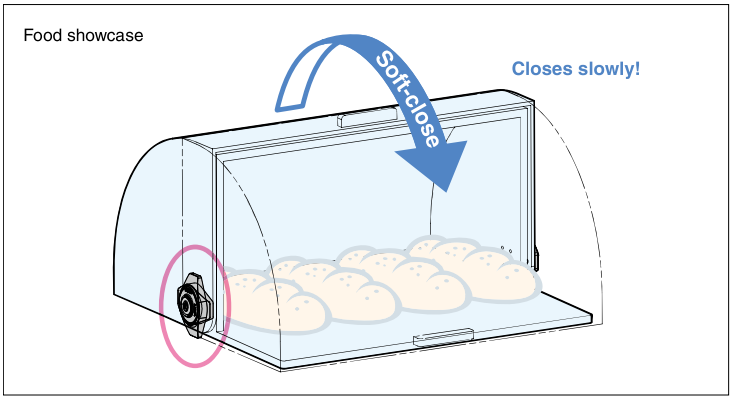
- Mounted at the rotation shaft of cover, etc.
- Simple design does not affect cabinet appearance.
- Ideal for food showcase, etc.
- Refer to 1 for details.

Video Link

Selection Tool

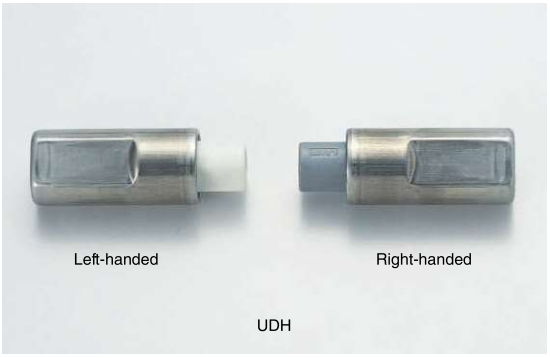
Sasuga-kun

[Application Example]



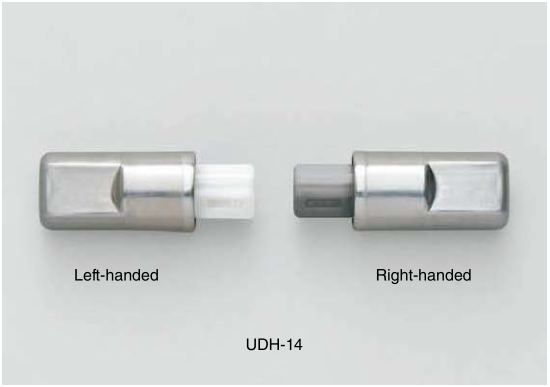
Refer to 1 : P.119

DAMPER HINGE UDH DIGEST

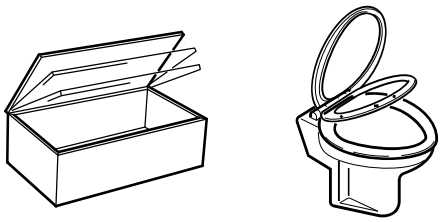


- Patented technology allows compact design.
- Can be detached as a single unit.
- Keeps lids / doors from slamming shut.
- Applicable to places with safety and motion quality requirements, also can effectively prevent noise and impact.
- Refer to 1 for details.

Video Link



[Application Example]



Refer to 1 : P.115~P.117

FREE-STOP STAY (ONE WAY) S-TAR

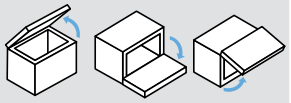
INSTRUCTION HEX KEY



Right side installation for top-opening shown.


Picture above shows right side installation for downward-opening.


Picture above shows right side installation for upward-opening.

Opening Direction	Description	Torque
 Top-opening Downward-opening Upward-opening	Free stop	0~7 N・m (0~71 kgf・cm)

- Torque stay for upward-opening, downward-opening and top-opening.
- Free stop in any position when lifting up the door.
- Friction in one direction only, provides smooth opening.
- Optional mounting plates available. (Mounting plate, mounting plate for aluminium frame, and mounting plate for glass door)
- Torque adjustable with a hex key (included).

[Remarks]

- Be sure to read the "Cautions" 1.
- Refer to the graph 2 for applicable doors.
- Handed: Specific left and right-handed.
- Use S-TAR-2030 for upward-opening/top-opening and S-TAR-10 for downward-opening.
- For downward-opening, when placing objects or working on the surface of opened door, install a brace or reinforcement material to support the door in addition to the stay.
- When using 2 pcs, adjust free stop mechanisms evenly. Over loosening may cause free stop function failure.
- Without soft-close function.
- Install a catch (sold separately) to keep the door closed.
- Operating temperature : 0℃~40℃
- The torque may vary depending on the temperature of the operating environment. Torque adjustment should be done at room temperature.
- If there is a reduction in the torque, please readjust it.

[Parts Included]

- Countersunk head tapping screw 4×20
- Binding head tapping screw 3.5×15
- Hex key 4
- Mounting plate

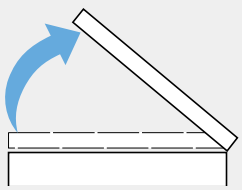
[Sold Separately]

- Mounting plate 3
- Face plate and spacer 4 for SDS glass door

Selection Tool
Sasuga-kun

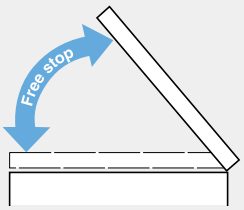
●One way torque

Door can be opened lightly by reducing unnecessary torque.



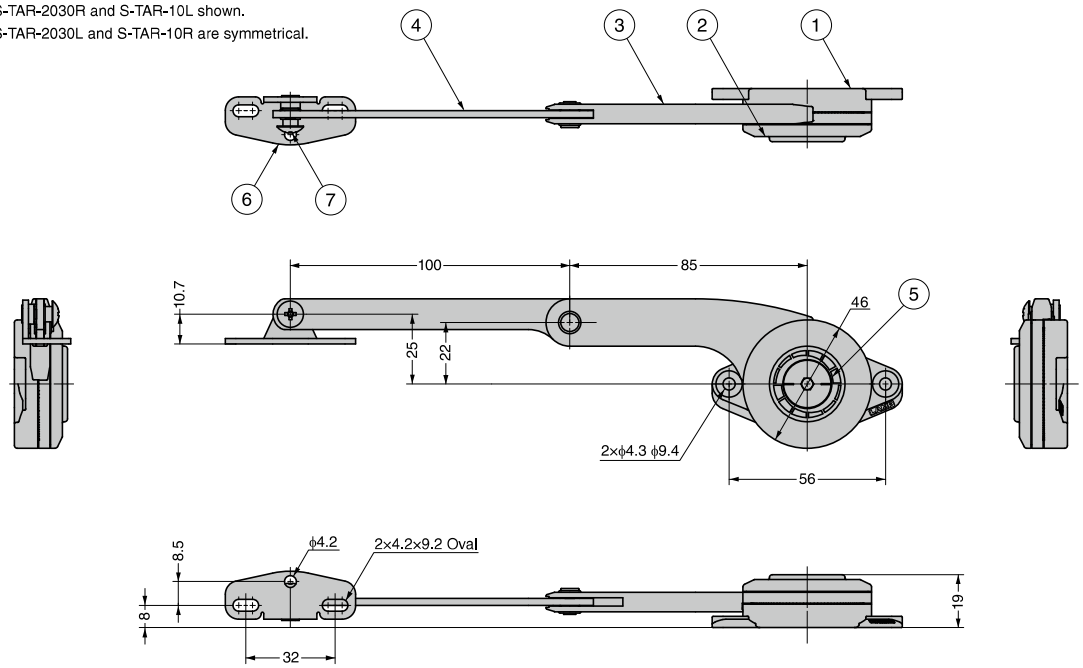
●Free stop

Door can be stopped in any position.



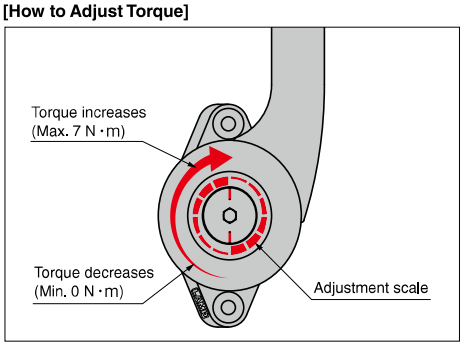
Refer to 1 : P.293, 2 : P.388~P.389, 3 4 : P.369

S-TAR-2030R and S-TAR-10L shown.
S-TAR-2030L and S-TAR-10R are symmetrical.



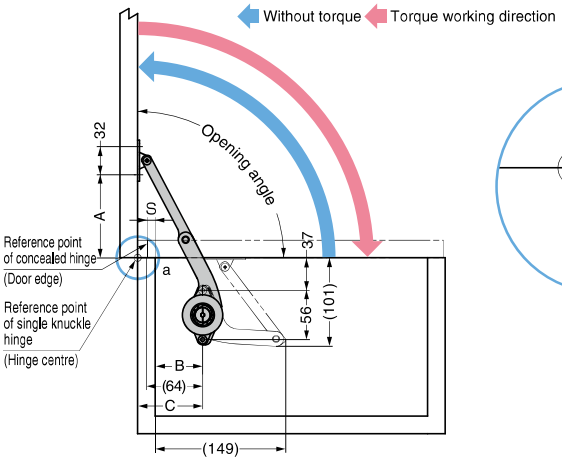
No.	Part Name	Material	Finish
①	Body	Zinc Alloy (ZDC)	Nickel
②	Cover		
③	Root Arm		
④	Tip Arm	Steel (SPCC)	
⑤	Torque Adjustment Screw	Steel	
⑥	Mounting Plate	Steel (SPCC)	
⑦	Truss Head Screw	Steel	

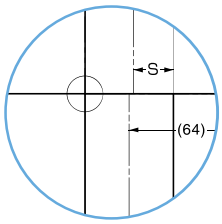
[How to Adjust Torque]



Adjustable with the supplied hex key.
By using adjustment scale, you can easily match the left torque with the right one when using 2 pcs.

[Installation (Top-opening)] For right side board

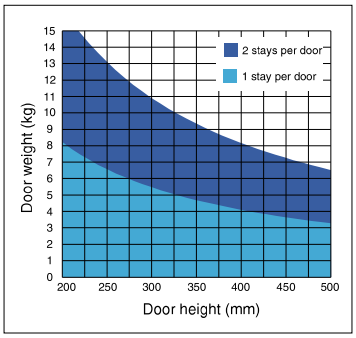




Detail a

S = Overlay by concealed hinge

[Door Size Ranges (Top-opening)]



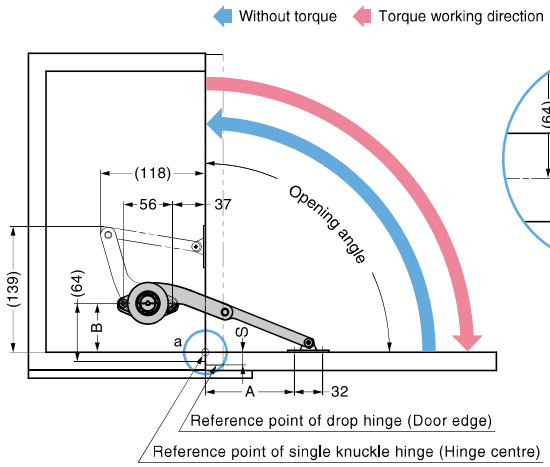
Hinge	Opening Angle	A	B	C
Concealed Hinge	70°	114	73-S	—
Concealed Hinge	90°	98		
Single Knuckle Hinge	70°	115	—	77
Single Knuckle Hinge	90°	93		

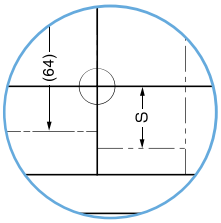
[Maximum Door Moment]

- With 1 stay
  Maximum door moment = Max. 8.1 N・m
- With 2 stays, the maximum door moment will be doubled.

Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

[Installation (Downward-opening)] For right side board

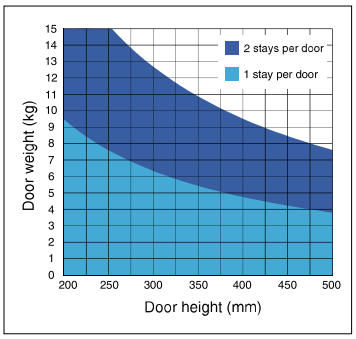




Detail a

S = Overlay by drop hinge

[Door Size Ranges (Downward-opening)]



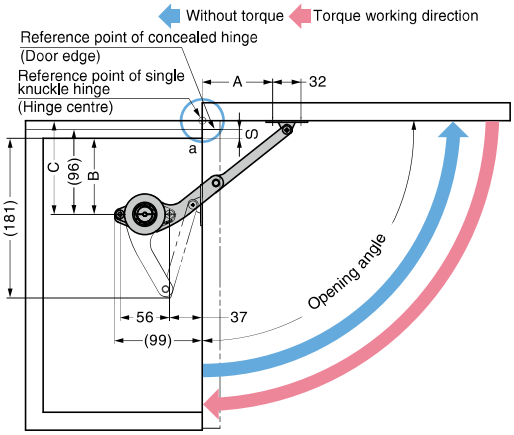
Hinge	Opening angle	A	B
Drop Hinge	90°	99	70-S
Single Knuckle Hinge		100	51

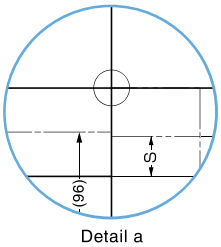
[Maximum Door Moment]

- With 1 stay
  Maximum door moment = Max. 9.3 N・m
- With 2 stays, the maximum door moment will be doubled.

Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

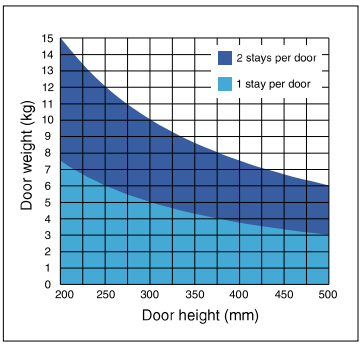
[Installation (Upward-opening)] For right side board





S = Overlay by concealed hinge

[Door Size Ranges (Upward-opening)]



Hinge	Opening Angle	A	B	C
Concealed Hinge	80°	98	105-S	–
Concealed Hinge	90°	88		
Concealed Hinge	100°	80		
Single Knuckle Hinge	80°	90	–	109
Single Knuckle Hinge	90°	77		
Single Knuckle Hinge	100°	66		

[Maximum Door Moment]

- With 1 stay
  Maximum door moment = Max. 7.4 N・m
- With 2 stays, the maximum door moment will be doubled.

Maximum door moment (N・m) = Door weight (kg)×9.80665×Distance from rotation centre to door centre of gravity (m)

[Body]

RoHS	CAD	Item Code	Item Name	Torque N·m/pc	Torque kgf·cm/pc	Type	Opening Direction	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-028-991	S-TAR-2030R	0~7	0~71	Right-handed	Upward-opening, Top-opening	234	20	40
G	3D	180-028-990	S-TAR-2030L			Left-handed			20	40
G	3D	180-028-993	S-TAR-10R			Right-handed	Downward-opening		20	40
G	3D	180-028-992	S-TAR-10L			Left-handed			20	40

[Mounting Plate] Sold Separately 2

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-460	NSDX-CZ	Clip-on	13	160	640
G	3D	180-109-019	NSDX-AZ	Clip-on for 20 mm Aluminium Frame Door	11	320	1280
G	3D	180-109-459	NSDX-GZ	Clip-on for Glass Door	14	160	640

[SDS Face Plate and Spacer for Glass Door] Sold Separately 1 (Please use with mounting plate NSDX-GZ.)

RoHS	CAD	Item Code	Item Name	Material	Finish/Colour	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-260	SDS-50G-CR	Zinc Alloy (ZDC)/ABS	Chrome/Black	26	50	200
G	3D	180-928-046	SDS-50G-BL		Black Enamel Finish	25	50	200

Refer to 1 2 : P.369

FREE-STOP STAY S-100T30

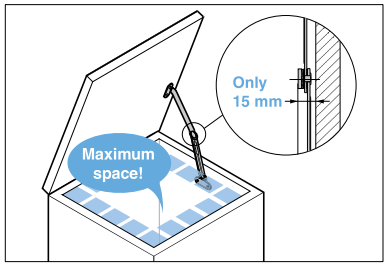
SUS



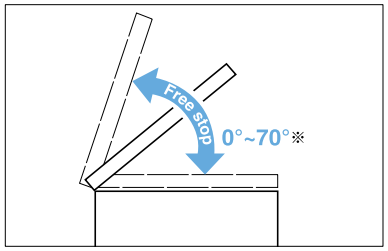
Picture above shows top-opening installation of S-100T30R (right-handed).



Picture above shows swing door installation of S-100T30R (right-handed).



Distance from the mounting surface to the disk surface of stay is only 15mm, maximising space inside of the cabinet.



※Opening angle changes depending on installation position. (70° is for installation as per Fig.1)

Opening Direction	Torque
Top-opening Upward-opening Swing Door	$3^{\pm 20\%}$ N・m/pc ($30.6^{\pm 20\%}$ kgf・cm/pc)

- Disk structure that generates torque by the friction of metal plates is thin and space-saving, maximising space inside of the cabinet.

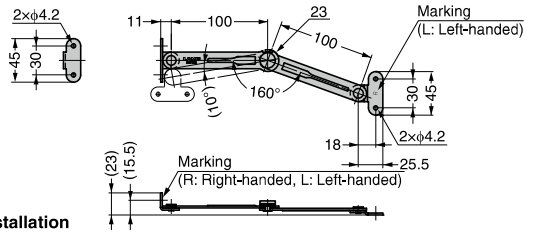
[Remarks]

- Do not operate continuously (repeatedly in a short time).
- Do not contact with water, oil and lubricant, etc.

[Example Chart for the Below Installation]

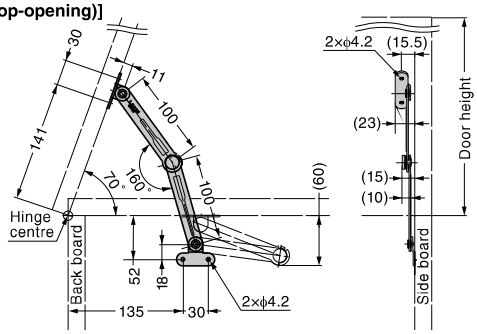
- Relations between door height and door weight for free stop are listed in the table below.
- The following table shows the values for installation as per Fig.1 and Fig. 2.For reference only.

Door height (door width for swing door)	Door Weight kg/pc	Door Weight kg/pair
200	Max. 3.9	Max. 7.8
250	Max. 3.1	Max. 6.2
300	Max. 2.6	Max. 5.2
350	Max. 2.2	Max. 4.4
400	Max. 1.9	Max. 3.8
450	Max. 1.7	Max. 3.4
500	Max. 1.5	Max. 3.0



[Right Side Installation (For Top-opening)]

Fig.1



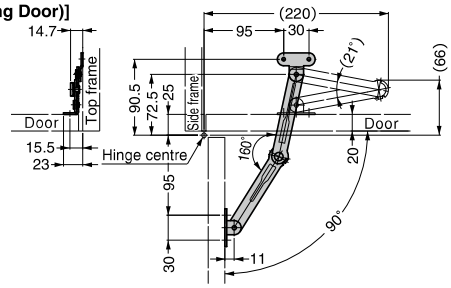
Video Link

Selection Tool

Sasuga-kun

[Right Side Installation (For Swing Door)]

Fig.2



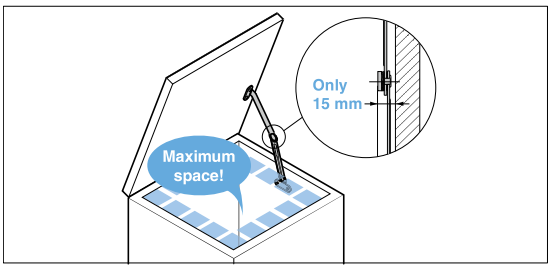
RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Torque N・m/pc	Torque kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-011-966	S-100T30R	Right-handed	Stainless Steel	Barrel	$3^{\pm 20\%}$	$30.6^{\pm 20\%}$	100	30	120
G	3D	180-011-967	S-100T30L	Left-handed	(SUS430)	Polished				30	120

FREE-STOP STAY S-52T15

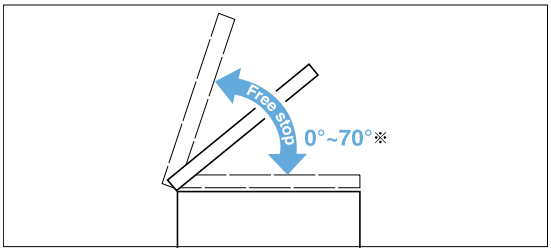
SUS



Picture above shows top-opening installation of S-52T15R (right-handed).



Distance from the mounting surface to the disk surface of stay is only 15mm, maximising space inside of the cabinet.



※Opening angle changes depending on installation position.
(70° is for installation as per Right)

Opening Direction	Torque
Top-opening, Downward-opening, Upward-opening, Swing Door	$1.5^{\pm 20\%}$ N・m/pc ($15.3^{\pm 20\%}$ kgf・cm/pc)

- Disk structure that generates torque by the friction of metal plates is thin and space-saving, maximising space inside of the cabinet.

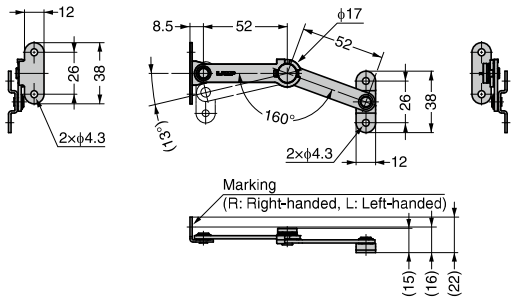
[Remarks]

- Do not operate continuously (repeatedly in a short time).
- Do not contact with water, oil and lubricant, etc.

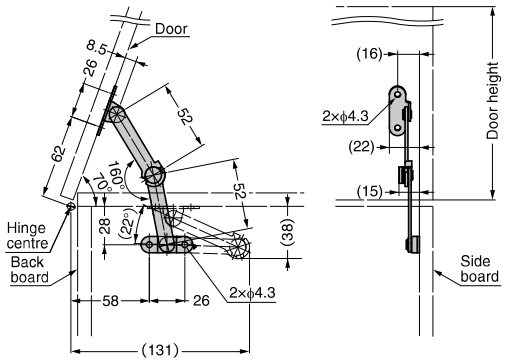
[Example Chart for the Below Installation]

- Relations between door height and door weight for free stop are listed in the table below.
- The following table shows the values for installation below. For reference only.

Door Height	Door Weight kg/pc	Door Weight kg/pair
200	Max. 1.8	Max. 3.6
250	Max. 1.4	Max. 2.8
300	Max. 1.2	Max. 2.4
350	Max. 1.0	Max. 2.0
400	Max. 0.9	Max. 1.8



[Right Side Installation (For Top-opening)]



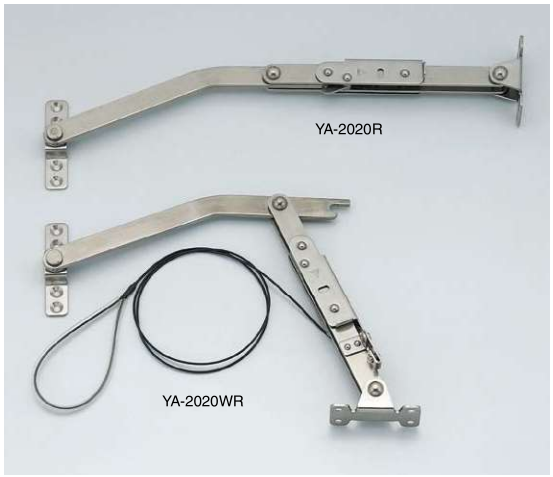
Selection Tool

Sasuga-kun

RoHS	CAD	Item Code	Item Name	Type	Material	Finish	Torque N・m/pc	Torque kgf・cm/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-023-579	S-52T15R	Right-handed	Stainless Steel	Barrel	$1.5^{\pm 20\%}$	$15.3^{\pm 20\%}$	40	25	200
G	3D	180-023-580	S-52T15L	Left-handed	(SUS430)	Polished				25	200

DOOR HOLDER YA-2020, YA-2020W

TEST METHOD 15 TEST METHOD 16 SUS



Opening Direction	Item Name	Description	Lock Release Part	Tension Force	Compression Load
Top-opening Upward-opening	YA-2020 (R/L)	Locks When Fully Opened	Grip	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)
Swing Door	YA-2020W (R/L)	Keeps Unlocked	Wire		

- Automatically locks door when fully opened.
- Slide the grip (see part ③ in the figure below) to release the lock. Slide the grip to the end to remain unlocked.
- Safe and reliable operation without closing the door while releasing the lock.
- Indicator turns red when locked.
- YA-2020W (R/L) (with lock release wire) available for tall application.
- Either 1 piece use and 2 pieces use is available.

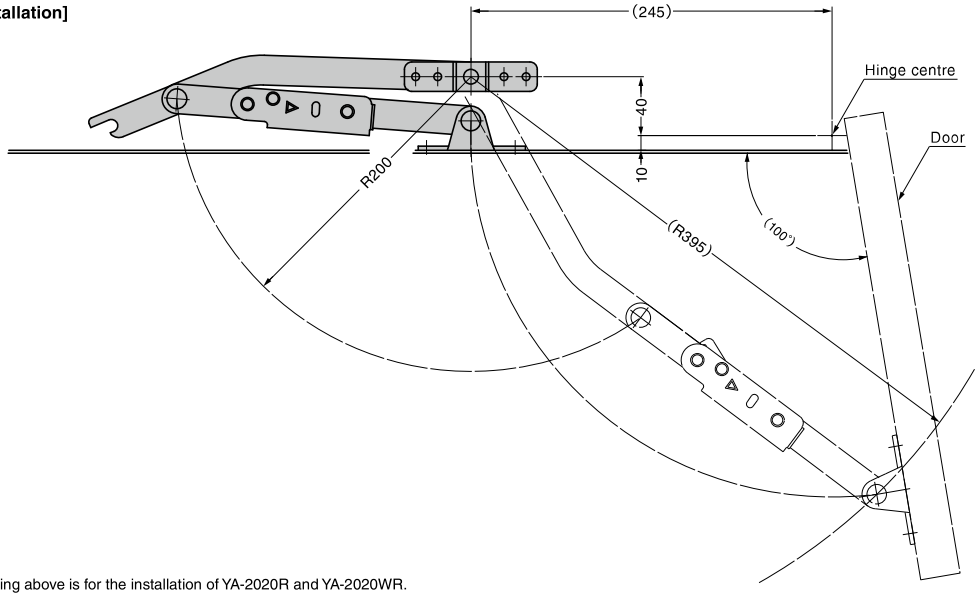
[Remarks]

- Release the lock while supporting the door.
- Opening angle and installation position change depending on the position of hinge centre.
  Determine the installation position based on the hinges used and cabinet shape.

[Application Example]



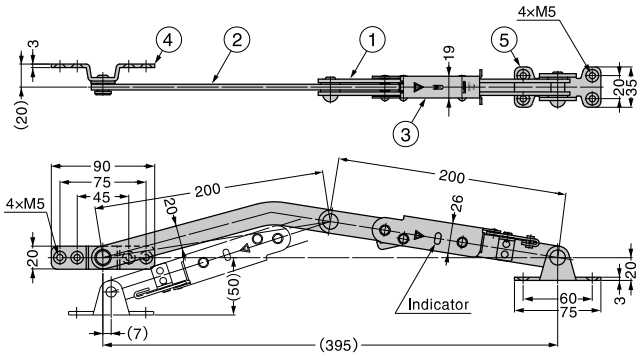
[Installation]



Drawing above is for the installation of YA-2020R and YA-2020WR.
This drawing shows the right-handed type seen from above. Left-handed type is symmetrical.

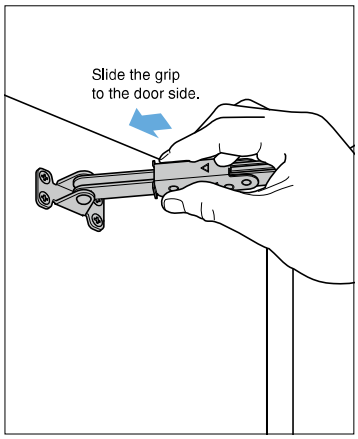
DOOR HOLDER YA-2020 Without Wire

TEST METHOD 15 TEST METHOD 16 SUS



Right-handed type shown. Left-handed type is symmetrical.

[Lock Release with Grip]

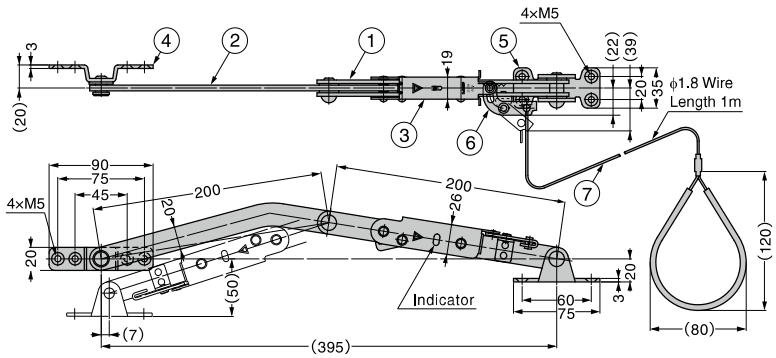


No.	Part Name	Material	Finish
①	Outer Plate	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Slide Grip		
④	Arm Bracket		
⑤	Base Bracket		

RoHS	CAD	Item Code	Item Name	Type	Tension Force N	Tension Force kgf	Compression Load N	Compression Load kgf	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-200	YA-2020R	Right-handed	1470	150	588	60	630	4	16
G	3D	180-100-201	YA-2020L	Left-handed						4	16

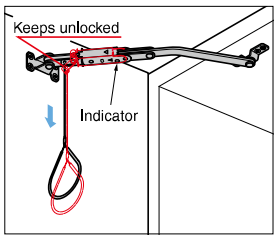
DOOR HOLDER YA-2020W With Wire

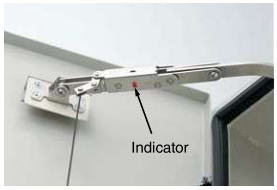
TEST METHOD 15 TEST METHOD 16 SUS



Right-handed type shown. Left-handed type is symmetrical.

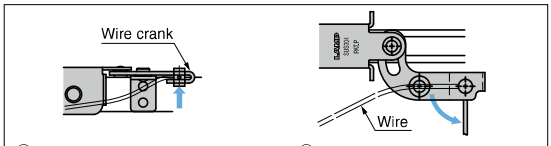
[Lock Release with Wire]





No.	Part Name	Material	Finish
①	Outer Plate	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Slide Grip		
④	Arm Bracket		
⑤	Base Bracket		
⑥	Wire Crank		
⑦	Wire	Stainless Steel (SUS304), PA	–

[How to Install Wire] ※ Already installed in the stay.



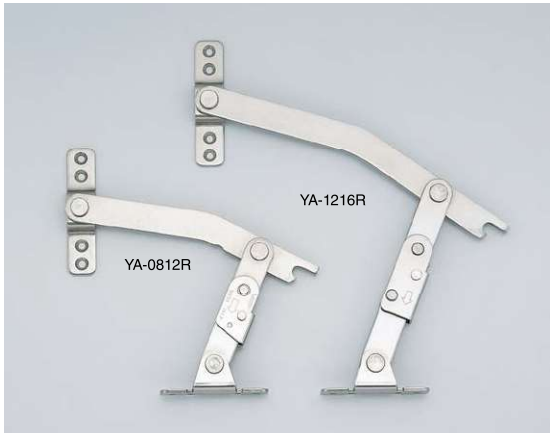
①Push the wire in from the slit on the back side of wire crank.

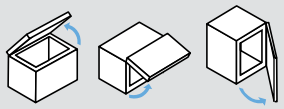
②Rotate the wire about 90˚ while the slit is pushed in..

RoHS	CAD	Item Code	Item Name	Type	Tension Force N/pc	Tension Force kgf/pc	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-202	YA-2020WR	Right-handed	1470	150	588	60	650	4	16
G	3D	180-100-203	YA-2020WL	Left-handed						4	16

DOOR HOLDER YA-0812, YA-1216

INSTRUCTION SUS



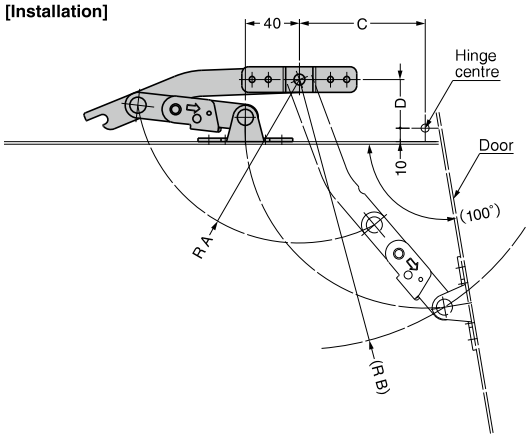
Opening Direction	Description	Lock Release Part	Tension Force	Compression Load
 Top-opening Upward-opening Swing Door	Locks When Fully Opened Keeps Unlocked	Grip	–	–

- Automatically locks door when fully opened.
- Slide the grip (see part ③ in the figure below) to release the lock. Slide the grip to the end to remain unlocked.
- Safe and reliable operation without closing the door while releasing the lock.
- Either 1 piece use and 2 pieces use is available.

[Remarks]

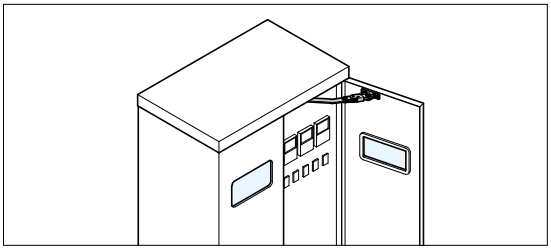
- Release the lock while supporting the door.
- Opening angle and installation position change depending on the position of hinge centre.
  Determine the installation position based on the hinges used and cabinet shape.

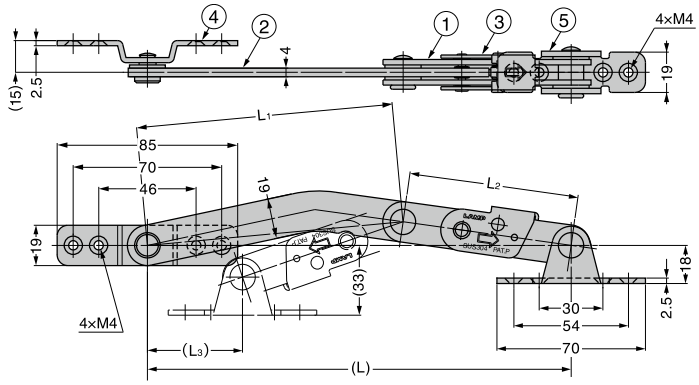
[Installation]



Drawing above is for the installation of YA-0812R and YA-1216R.
This drawing shows the right-handed type seen from above. Left-handed type is symmetrical.

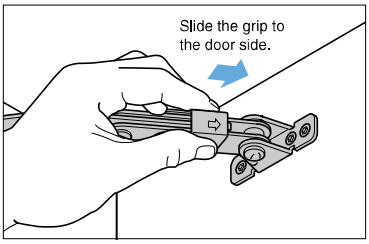
[Application Example] Right-handed





Right-handed type shown. Left-handed type is symmetrical.

[Lock Release]

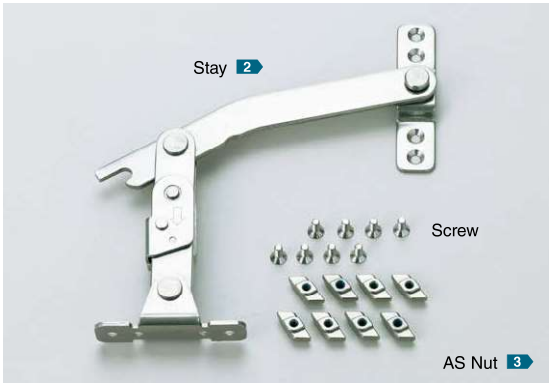


No.	Part Name	Material	Finish
①	Outer Plate	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Slide Grip		
④	Arm Bracket		
⑤	Base Bracket		

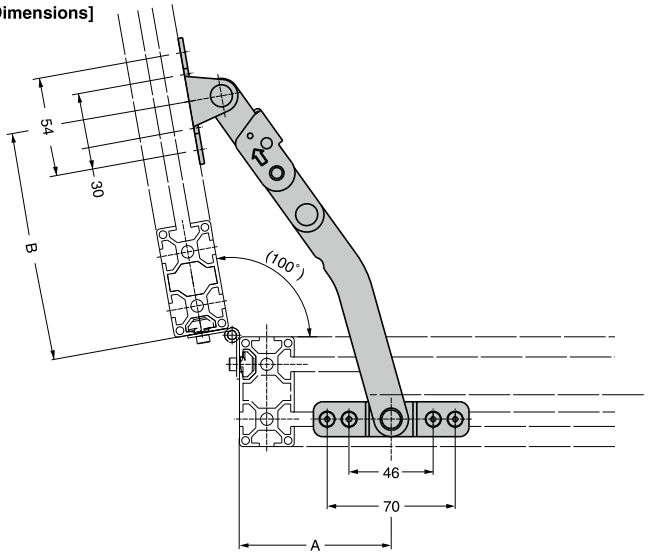
RoHS	CAD	Item Code	Item Name	Type	L	L_1	L_2	L_3	A	B	C	D	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-205	YA-0812L	Left-handed	200	121	80	45	121	200	93	36	275	5	30
G	3D	180-100-204	YA-0812R	Right-handed										5	30
G	3D	180-100-199	YA-1216L	Left-handed	280	161	120	44	161	280	145	40	340	5	30
G	3D	180-100-198	YA-1216R	Right-handed										5	30

AS Parts Set for Installing to Aluminium Frame

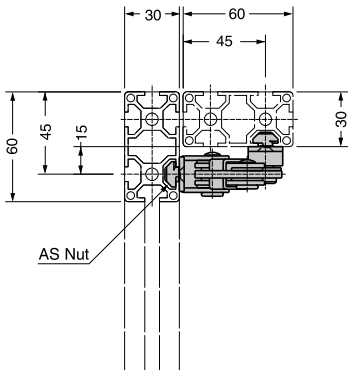
Please refer to the series introduction page 1 for details about AS series.



[Dimensions]



Side view in closed state



[AS Parts Set] Parts set of screws and AS nuts

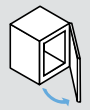
RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	–	180-041-617	AS-YA-0812L-30-6	Groove Width 6 mm	YA-0812L (Left-handed) : 1 pc AS Nut AS-6M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-618	AS-YA-0812R-30-6		YA-0812R (Right-handed) : 1 pc AS Nut AS-6M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-619	AS-YA-0812L-30-8	Groove Width 8 mm	YA-0812L (Left-handed) : 1 pc AS Nut AS-8M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-620	AS-YA-0812R-30-8		YA-0812R (Right-handed) : 1 pc AS Nut AS-8M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-621	AS-YA-1216L-30-6	Groove Width 6 mm	YA-1216L (Left-handed) : 1 pc AS Nut AS-6M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-622	AS-YA-1216R-30-6		YA-1216R (Right-handed) : 1 pc AS Nut AS-6M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-623	AS-YA-1216L-30-8	Groove Width 8 mm	YA-1216L (Left-handed) : 1 pc AS Nut AS-8M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–
G	–	180-041-624	AS-YA-1216R-30-8		YA-1216R (Right-handed) : 1 pc AS Nut AS-8M4 : 8 pcs Hexagon Socket Countersunk Head Screw M4×10 : 8 pcs	–

Refer to 1 : P.20, 2 : P.394, 3 : P.526

FOOT STAY YFN-300W Two-angle Lock

L=R



Opening Direction	Description	Lock Release Part	Tension Force	Compression Load
 Swing Door	Two-angle Lock	Body (Lifting with Foot)	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)

- Locks the door at two angles: 85° and 110° (fully opened).
- Simply lift the stay with foot toe to release the lock.
- Non-handed: Can be installed on left or right side.
- Designed for bottom mount.
  (Vertical use not allowed)
- Improved version of the foot stay YF-300W

(The product size and dimensions for installation have not changed.)

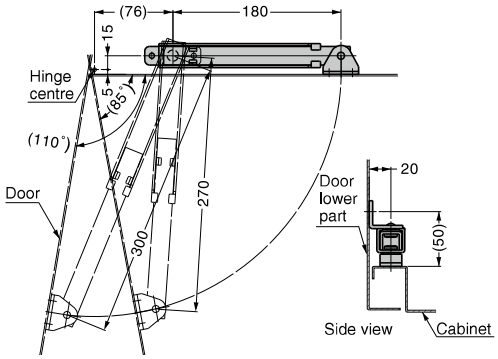
[Applications]

- Switch board, communication equipment, control panel, various display boards, etc.

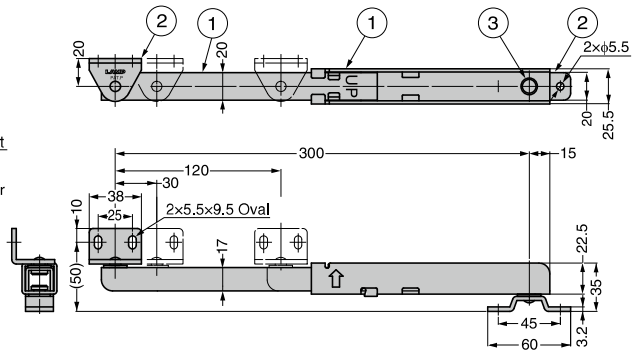
[Remarks]

- Release the lock while supporting the door.
- Do not step on the stay.
- Open or close the door slowly. Quick opening operation may not lock the door.
- Opening angle and installation position change depending on the position of hinge.

[Installation]



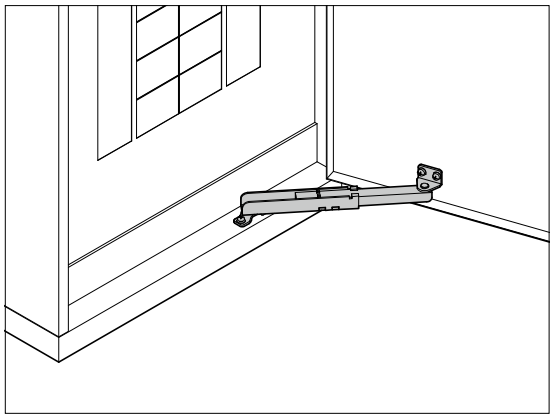
- Drawing above shows the state where the stay is installed to the door bottom, seeing the door from above.



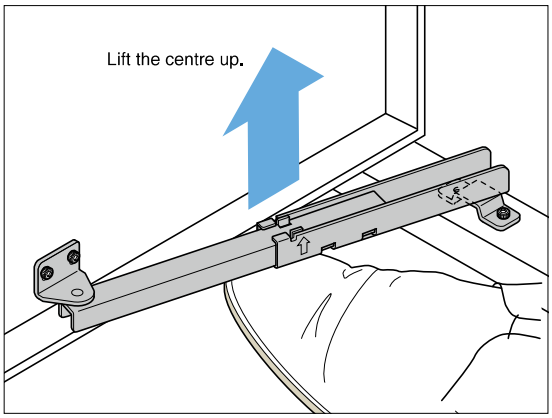
No.	Part Name	Material	Finish
①	Body	Steel (SPCC)	Coloured Zinc Chromate (Trivalent)
②	Bracket		
③	Shaft	Stainless Steel (SUS304)	–

RoHS	CAD	Item Code	Item Name	Tension Force N/pc	Tension Force kgf/pc	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-036-852	YFN-300W	1470	150	588	60	435	5	30

[Application Example]



[Lock Release]



FOOT STAY YFN

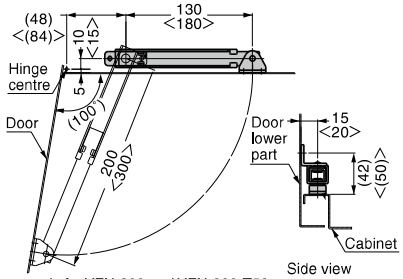
L=R



Opening Direction	Item Name	Description	Lock Release Part	Tension Force	Compression Load
Swing Door	YFN-200	Locks When Fully Opened	Body (Lifting with Foot)	882 N/pc (90 kgf/pc)	490 N/pc (50 kgf/pc)
	YFN-300 YFN-300-T50			1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)

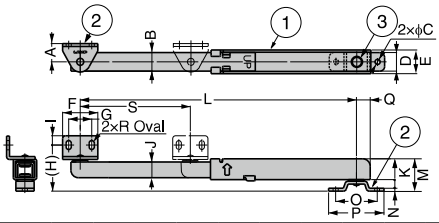
- Automatically locks door when fully opened.
- Simply lift the stay with foot toe to release the lock.
- Non-handed: Can be installed on left or right side.
- Designed for bottom mount. (Vertical use not allowed)
- AS parts set for installing to aluminium frame also available. Content of the parts set is as follows.
- Improved version of the foot stay YF-200, YF-300, YF-300-T50. (The product size and dimensions for installation have not changed.)

[Installation]



※Dimensions in < > is for YFN-300 and YFN-300-T50.

- Drawing above shows the state where the stay is installed to the door bottom, seeing the door from above.



[Applications]

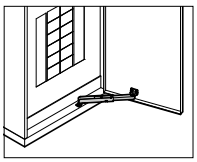
- Switch board, communication equipment, control panel, various display boards, etc.

[Remarks]

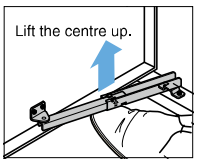
- Release the lock while supporting the door.
- Do not step on the stay.
- Opening angle and installation position change depending on the position of hinge.

No.	Part Name	Material	Finish
①	Body	Steel (SPCC)	Coloured Zinc Chromate (Trivalent)
②	Bracket		
③	Shaft	Stainless Steel (SUS304)	–

[Application Example]



[Lock Release]



Item Name	L	S	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	R
YFN-200	200	70	15	15.9	5.5	17	20	33	20	42	8	15.7	20	30	2.3	35	50	10	5.5×8
YFN-300	300	120	20	20		20	25.5	38	25	50	10	17	22.5	35	3.2	45	60	15	5.5×9.5
YFN-300-T50					9											50	72		

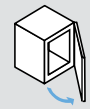
RoHS	CAD	Item Code	Item Name	Tension Force N/pc	Tension Force kgf/pc	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-036-882	YFN-200	882	90	490	50	198	10	100
G	3D	180-036-854	YFN-300	1470	150	588	60	438	5	30
G	3D	180-036-853	YFN-300-T50					476	5	30

※The item names and item codes have changed. (Old item names : YF-200, YF-300, YF-300-T50)

FOOT STAY YFNS-300W Two-angle Lock

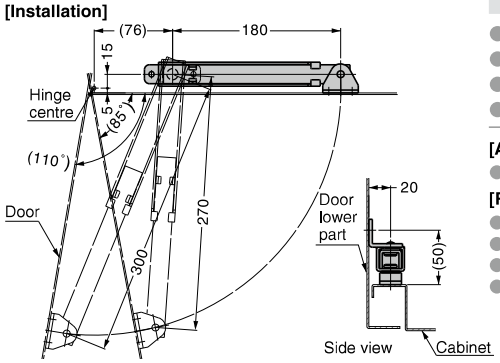
L=R SUS



Opening Direction	Description	Lock Release Part	Tension Force	Compression Load
 Swing Door	Two-angle Lock	Body (Lifting with Foot)	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)

- Locks the door at two angles: 85° and 110° (fully opened).
- Simply lift the stay with foot toe to release the lock.
- Non-handed: Can be installed on left or right side.
- Designed for bottom mount. (Vertical use not allowed)

[Installation]



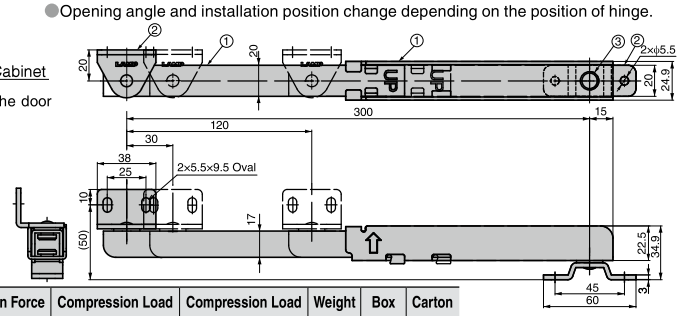
- Drawing above shows the state where the stay is installed to the door bottom, seeing the door from above.

[Applications]

- Switch board, communication equipment, control panel, various display boards, etc.

[Remarks]

- Release the lock while supporting the door.
- Do not step on the stay.
- Open or close the door slowly. Quick opening operation may not lock the door.
- Opening angle and installation position change depending on the position of hinge.



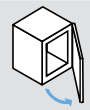
No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Barrel
②	Bracket		Polished
③	Shaft		–

RoHS	CAD	Item Code	Item Name	Tension Force N/pc	Tension Force kgf/pc	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-036-923	YFNS-300W	1470	150	588	60	386	5	30

FOOT STAY YFNS-300, YFNS-300-T50

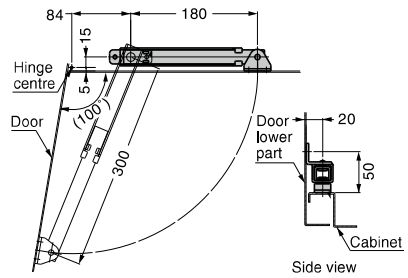
L=R SUS



Opening Direction	Description	Lock Release Part	Tension Force	Compression Load
 Swing Door	Locks When Fully Opened	Body (Lifting with Foot)	1470 N/pc (150 kgf/pc)	588 N/pc (60 kgf/pc)

- Automatically locks door when fully opened.
- Simply lift the stay with foot toe to release the lock.
- Non-handed: Can be installed on left or right side.
- Designed for bottom mount. (Vertical use not allowed)
- AS parts set for installing to aluminium frame also available. Content of the parts set is as follows.

[Installation]



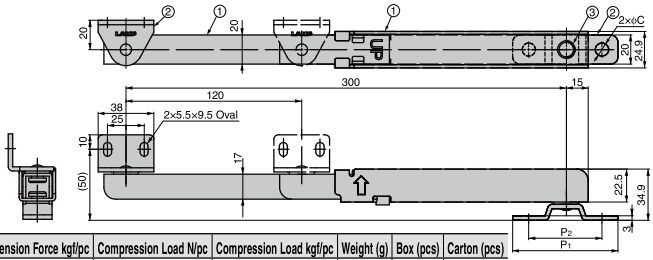
- Drawing above shows the state where the stay is installed to the door bottom, seeing the door from above.

[Applications]

- Switch board, communication equipment, control panel, various display boards, etc.

[Remarks]

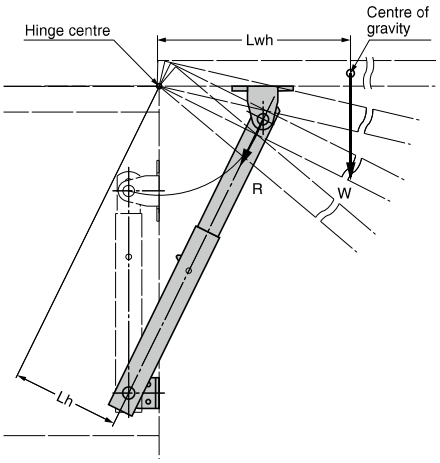
- Release the lock while supporting the door.
- Do not step on the stay.
- Opening angle and installation position change depending on the position of hinge.



No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Barrel
②	Bracket		Polished
③	Shaft		–

RoHS	CAD	Item Code	Item Name	P1	P2	C	Tension Force N/pc	Tension Force kgf/pc	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-036-922	YFNS-300	60	45	5.5	1470	150	588	60	389	5	30
G	3D	180-036-924	YFNS-300-T50	72	60	9					396	5	30

LID STAY L SERIES



[How to Select]

1. Calculate door moment Mt.
   Mt (mN・m) = W (kg) × 9.80665 × Lwh (mm)
   W(kg) : Door weight
   Lwh (mm) : Horizontal distance to door centre of gravity
2. Calculate load R applied in the axial direction of stay.

$$R\ (N) = \frac{Mt\ (mN \cdot m)}{Lh\ (mm) \times n}$$

   Lh (mm) : Distance from rotation centre of door to fixed point of stay
   n : Number of stays used (n=1 or 2)
3. Compare load R applied in the axial direction of stay with compressive load P of stay.
   Possible to use if P>R.

Product Name	Picture	Item Name	Opening Direction: Top-opening	Opening Direction: Upward-opening	Opening Direction: Swing Door	Qty: 1 Unit Per Door	Qty: 2 Units Per Door	Non-handed	Hold & Lock	Lock Release	Compression Load	Page
Lid Stay LB-200A LB-350A LB-500A		LB-200A	No ※1	Yes	No	Yes	Yes	Yes	Holds When Fully Opened	Releases When Fully Opened	294 N/pc (30 kgf/pc)	P.401
		LB-350A									245 N/pc (25 kgf/pc)	
		LB-500A									196 N/pc (20 kgf/pc)	
Heavy Duty Multi-angle Lid Stay LBTS-350 LBTS-450		LBTS-350	No ※1	Yes	No	Yes	No	No	Holds at Multiple Angles	Releases When Fully Opened	686 N/pc (70 kgf/pc)	P.402
		LBTS-450										
Heavy Duty Lid Stay LB-S350 LB-S450		LB-S350	No ※1	Yes	No	Yes	It depends ※2	Yes	Holds When Fully Opened	Releases When Fully Opened	1307 N/pc (133 kgf/pc)	P.403
		LB-S450									953 N/pc (97 kgf/pc)	
Lid Stay LK-222 LK-335 LK-380		LK-222	Yes	Yes	No	No	Yes	Yes	Holds When Fully Opened	–	Spring Tension/pc Extended: 31 N (3.2 kgf) Compressed: 68 N (7.0 kgf)	P.404
		LK-335									Spring Tension/pc Extended: 37 N (3.8 kgf) Compressed: 83 N (8.5 kgf)	
		LK-380									Spring Tension/pc Extended: 35 N (3.6 kgf) Compressed: 83 N (8.5 kgf)	
Multi-angle Lid Stay (W/ Lock) L-FS350A		L-FS350A	Yes	Yes	Yes	Yes	Yes	Yes	Multi-angle Lock	Slide to Release	294 N/pc (30 kgf/pc)	P.405

※1 Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.
※2 (It depends) More Consultation Needed.

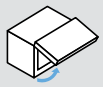
Product Name	Picture	Item Name	Opening Direction			Qty		Non-handed	Hold & Lock	Lock Release	Compression Load	Page
			Top-opening	Upward-opening	Swing Door	1 Pc Per Door	2 Pcs Per Door					
Lid Stay LB-215 LB-290		LB-215 LB-290	No※	Yes	No	Yes	Yes	Yes	Holds When Fully Opened	Releases When Fully Opened	147 N//pc (15 kgf//pc)	P.406
Lid Stay (W/ Lock) LSP-195B LSP-270B		LSP-195B LSP-270B	Yes	Yes	Yes	Yes	No	Yes	Locks When Fully Opened	Releases with Knob	294 N//pc (30 kgf//pc)	P.407
Lid Stay L-195 L-270	L-195A-TI (Titanium Alloy)  L-270B (Stainless Steel)	L-195 L-270	No※	Yes	No	Yes	No	Yes	Holds When Fully Opened	Releases When Fully Opened	147 N//pc (15 kgf//pc)	P.408
Lid Stay (Clean Room) LB-CV215A		LB-CV215A	No※	Yes	No	Yes	Yes	Yes	Holds When Fully Opened	Releases When Fully Opened	147 N//pc (15 kgf//pc)	P.409
Low Profile Lid Stay L-200P		L-200P	No※	Yes	No	Yes	No	Yes	Holds When Fully Opened	Releases When Fully Opened	147 N//pc (15 kgf//pc)	P.410
Lid Stay L-195-JC		L-195-JC	No※	Yes	No	Yes	No	Yes	Holds When Fully Opened	Releases When Fully Opened	147 N//pc (15 kgf//pc)	P.411
Mini Lid Stay (W/ Lock) L-FS140		L-FS140	Yes	Yes	Yes	Yes	Yes	Yes	Multi-angle Lock	Slide Release	58.8 N//pc (6 kgf//pc)	P.412
Mini Lid Stay (W/ Lock) L-SL140		L-SL140	Yes	Yes	No	Yes	No	Yes	Locks When Fully Opened	Safety Lock Release	147 N//pc (15 kgf//pc)	P.413
Mini Lid Stay L-100S L-140S		L-100S L-140S	No※	Yes	No	Yes	No	Yes	Holds When Fully Opened	Releases When Fully Opened	58.8 N//pc (6 kgf//pc)	P.414

※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

LID STAY LB-200A, LB-350A, LB-500A

TEST METHOD 16 | AS | L=R | SUS



Opening Direction	Item Name	Description	Non-handed	Qty	Compression Load
 Upward-opening※	LB-200A	Holds When Fully Opened	Yes	1 Pc Per Door 2 Pcs Per Door	294 N/pc (30 kgf/pc)
	LB-350A				245 N/pc (25 kgf/pc)
	LB-500A				196 N/pc (20 kgf/pc)

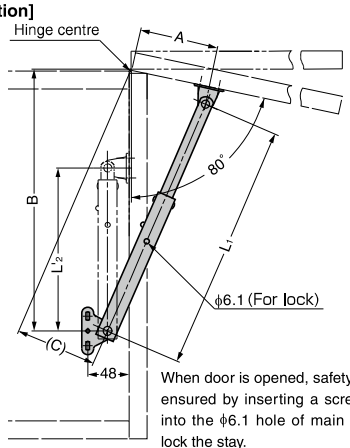
※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Locks the stay by passing a screwdriver or pin through the lock hole.

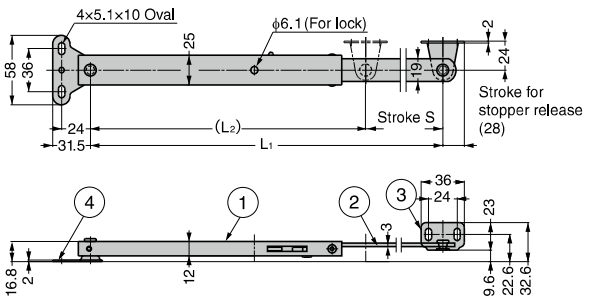
[Remarks]

- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L'2 of the installation example is larger than L2 shown in the figure below. (Or the hinge and stay may be damaged.)
- Release stopper while supporting the door.
- Calculate suitable door size with reference to LID STAY L SERIES 1.

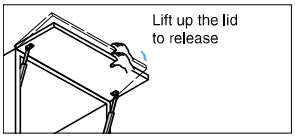
[Installation]



When door is opened, safety can be ensured by inserting a screwdriver into the ϕ6.1 hole of main body to lock the stay.



[Stopper Release]



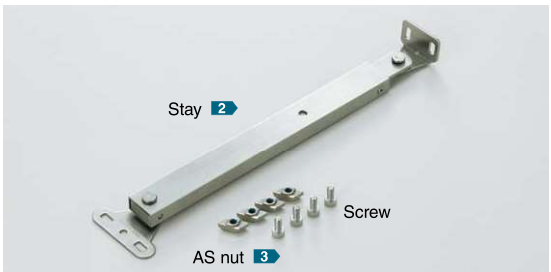
No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		
③	Arm Bracket		
④	Case Bracket		

RoHS	CAD	Item Code	Item Name	L1	L2	S	A	B	C	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-014-929	LB-200A	200	155	45	56	219	59.7	294	30	230	10	40
G	3D	180-100-122	LB-350A	350	230	120	128	364	129.9	245	25	314	10	40
G	3D	180-014-928	LB-500A	500	305	195	195	510	194.5	196	20	394	10	20

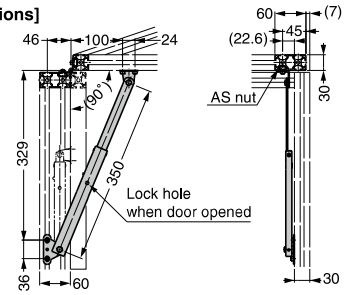
Refer to 1 : P.399

AS Parts Set for Installing to Aluminium Frame

Please refer to the series introduction page 1 for details about AS series.



[Dimensions]



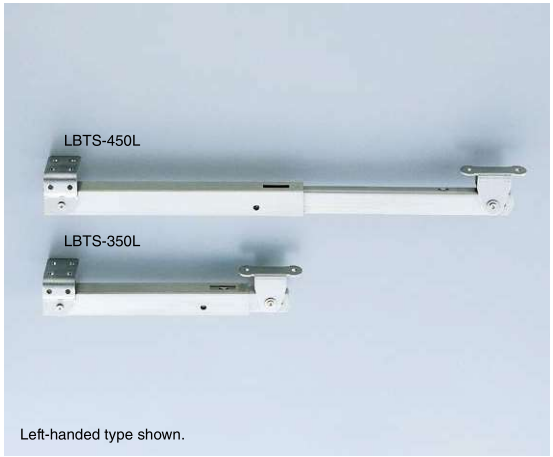
[AS Parts Set] Parts set of screws and AS nuts

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	–	180-041-627	AS-LB-350A-30-6	Groove Width 6 mm	LB-350A : 1 pc AS Nut AS-6M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs	–
G	–	180-041-628	AS-LB-350A-30-8	Groove Width 8 mm	LB-350A : 1 pc AS Nut AS-8M5 : 4 pcs Hexagon Socket Head Cap Screw M5×10 : 4 pcs	–

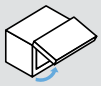
Refer to 1 : P.20, 2 : P.401, 3 : P.526

HEAVY DUTY MULTI-ANGLE LID STAY LBTS-350, LBTS-450

TEST METHOD 16 SUS



Left-handed type shown.

Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds at Multiple Angles	–	1 Pc Per Door	686 N/pc (70 kgf/pc)

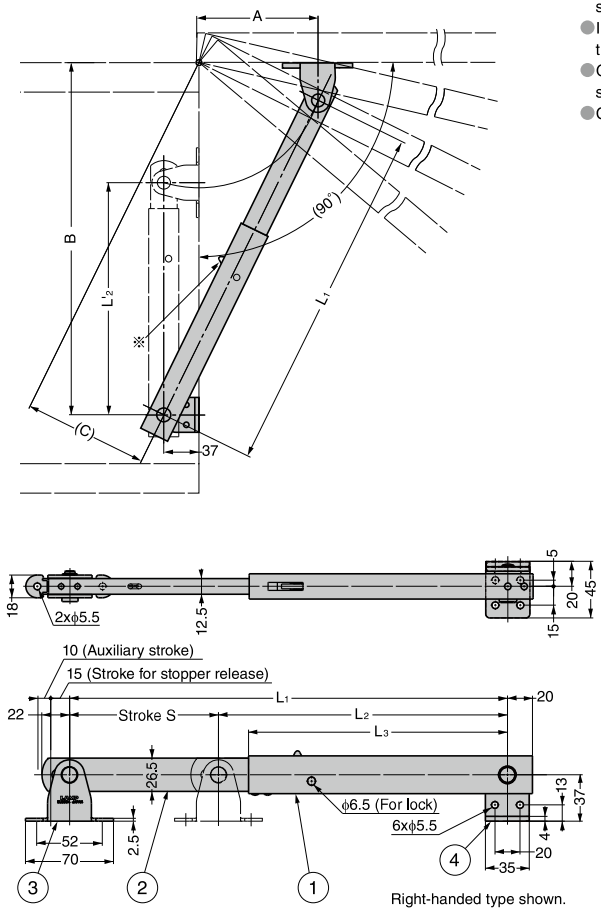
※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

- Ratchet stay holds the lid at multiple angles.
  Holding angles: LBTS-350…4 angles, LBTS-450…6 angles
- Lift up the lid in fully opened position to release stopper.
  When closing from the middle stop position, fully open the door first.
- Locks the stay in fully opened position by passing a pin through the lock hole.

[Remarks]

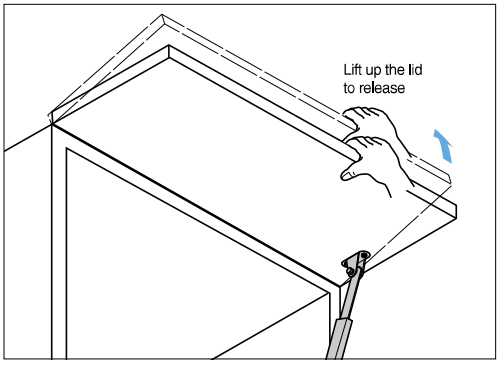
- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L_2 of the installation example is within the range of 234 to 242 mm (for LBTS-350) or 284 to 292 mm (for LBTS-450). (Or the hinge and stay may be damaged, or the stopper may not operate with the stay extended.)
- Install with the side (※ in the figure) where stay rotor is exposed from the main body facing upward. Or the rotor may not operate properly.
- Generally use 1 pc. If using 2 pcs, left and right operation may not be synchronised.
- Calculate suitable door size with reference to LID STAY L SERIES 1.

[Installation]

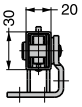


Right-handed type shown.

[Stopper Release]



No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		
③	Arm Bracket		Barrel Polished
④	Bracket		



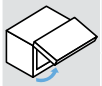
RoHS	CAD	Item Code	Item Name	Description	L_1	L_2	L_3	S	A	B	C	Stop Positions	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-404	LBTS-350R	Right-handed	350	230	206	120	115	352	119.6	4	686	70	715	5	20
G	3D	180-109-403	LBTS-350L	Left-handed												5	20
G	3D	180-109-406	LBTS-450R	Right-handed	450	280	256	170	155	442	155.5	6			820	5	20
G	3D	180-109-405	LBTS-450L	Left-handed												5	20

Refer to 1 : P.399

HEAVY DUTY LID STAY LB-S350, LB-S450

TEST METHOD 16 L=R SUS

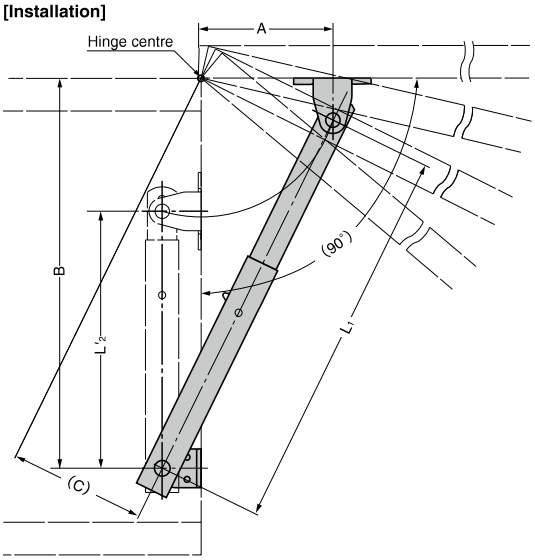


Opening Direction	Item Name	Description	Non-handed	Qty	Compression Load
 Upward-opening※	LB-S350	Holds When Fully Opened	Yes	1 Pc Per Door (More Consultation Needed for 2 Pcs per Door)	1307 N/pc (133 kgf/pc)
	LB-S450				953 N/pc (97 kgf/pc)

※ Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Dimension A can be within 300mm~550mm by made to order. For further details, please contact local representatives.
- Locks the stay in fully opened position by passing a pin through the lock hole.

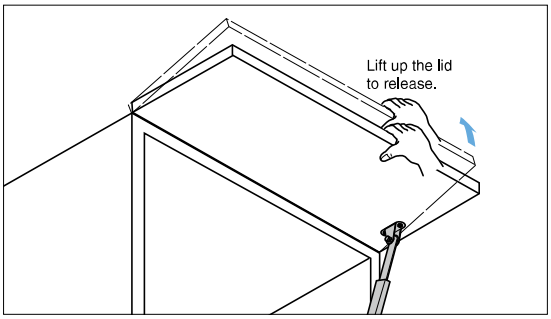
[Installation]

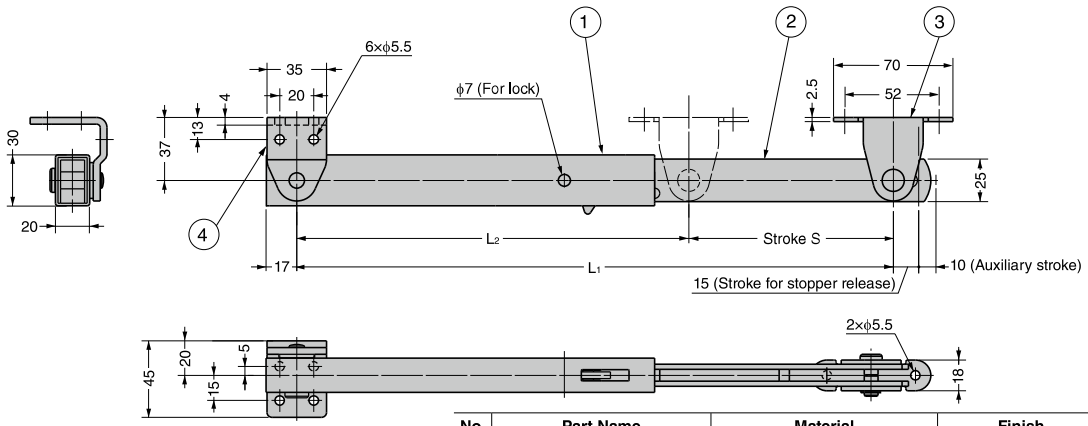


[Remarks]

- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L2 of the installation example is above 235mm (for LB-S350) or above 285mm (for LB-S450). (Or the hinge and stay may be damaged, or the stopper may not operate with the stay extended.)
- Can be used singly or in pairs, depending on door width and door weight.For further details, please contact local representatives.
- Calculate suitable door size with reference to LID STAY L SERIES 1.

[Stopper Release]





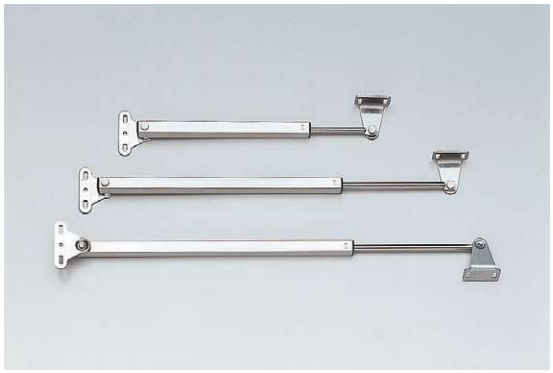
No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		
③	Arm Bracket		Barrel Polished
④	Bracket		

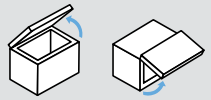
RoHS	CAD	Item Code	Item Name	L1	L2	S	A	B	C	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-168	LB-S350	350	230	120	115	352	119.6	1307	133	745	5	20
G	3D	180-100-169	LB-S450	450	280	170	155	442	155.5	953	97	865	5	20

Refer to 1 : P.399

LID STAY LK-222, LK-335, LK-380

NSF L=R SUS



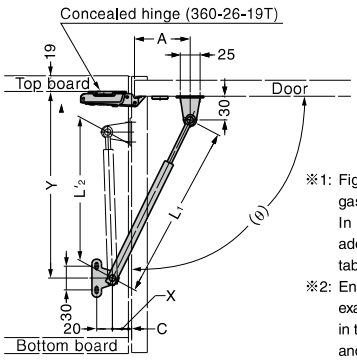
Opening Direction	Description	Non-handed	Qty	Compression Load
 Top-opening Upward-opening	Holds When Fully Opened	Yes	2 Pcs Per Door	–

●Spring mechanism assists lifting the door and holds in opened position and additional catch not required both for in opened position and closed position.

[Remarks]

●Never open more than the angle where the stay has completely extended. Otherwise, it may be damaged. Install a stopper to restrict the opening of the door. Use two units per door. (1 unit per door not allowed)

[Installation LK-222 and LK-335]



※1: Figure left shows when using gasket (gasket thickness C=4). In case of no gasket (C=0), add 4mm to dimension X in the table below.

※2: Ensure that L'2 of the installation example is larger than L 2 shown in the figure below. (Or the hinge and stay may be damaged.)

Item Name	Opening Angle θ	L1	A	X	Y	Door Weight kg
LK-222	90°	222	70	20	235	Max. 2.5
	85°		75		240	Max. 2.7
	75°		85		251	Max. 3.0
LK-335	90°	335	104		344	Max. 3.1
	85°		112		351	Max. 3.3
	75°		127		368	Max. 3.8

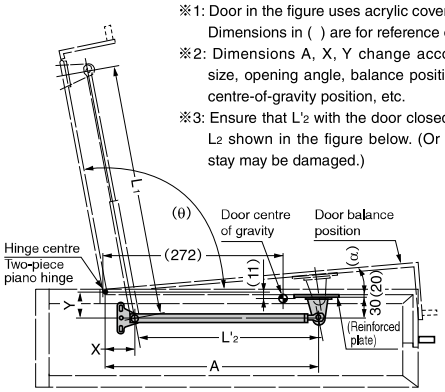
LK222: In case door height 350mm
LK335: In case door height 500mm

[Installation LK-335 and LK-380]

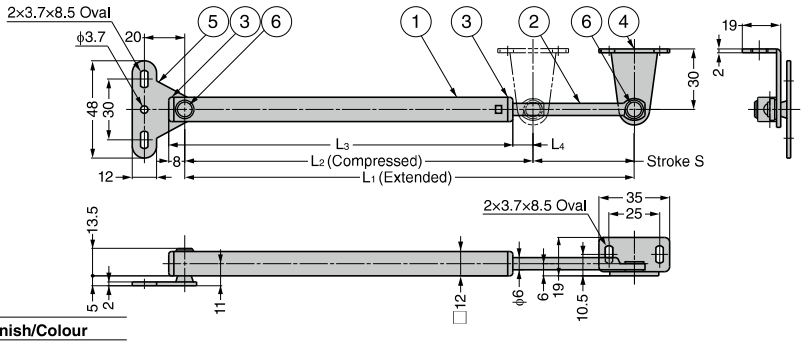
※1: Door in the figure uses acrylic cover (5mm thick). Dimensions in ( ) are for reference only.

※2: Dimensions A, X, Y change according to door size, opening angle, balance position setting and centre-of-gravity position, etc.

※3: Ensure that L'2 with the door closed is larger than L2 shown in the figure below. (Or the hinge and stay may be damaged.)



Item Name	Opening Angle θ	Door Balance Angle α	L1	A	X	Y	Door Weight kg
LK-335	90°	0.5°	335	295	45	38	2.5
		14°					3.0
	85°	12°				44	3.3
LK-380	110°	8°	380	330	40	36	2.5
	90°	3.5°		335	55	44	3.0
		4°		320	41	59	4.0
	80°	7.5°		335	56	60	4.3



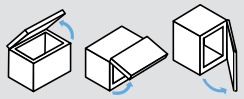
No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Satin
②	Stay		Polished
③	Cover	PA	Black
④	Arm Bracket	Stainless Steel (SUS304)	Satin
⑤	Case Bracket		
⑥	Shaft		–
–	Spring	Piano Wire	Coloured Zinc Chromate

RoHS	CAD	Item Code	Item Name	L1	L2	L3	L4	S	Spring Tension/pc				Weight (g)	Box (pcs)	Carton (pcs)
									Extended N	Extended kgf	Compressed N	Compressed kgf			
G	3D	180-100-045	LK-222	222	172	170	10	50	31	3.2	68	7.0	145	25	150
G	3D	180-100-046	LK-335	335	250	238	20	85	37	3.8	83	8.5	185	25	150
G	3D	180-100-047	LK-380	380	280	269	19	100	35	3.6			205	25	150

MULTI-ANGLE LID STAY (W/ LOCK) L-FS350A Slide release

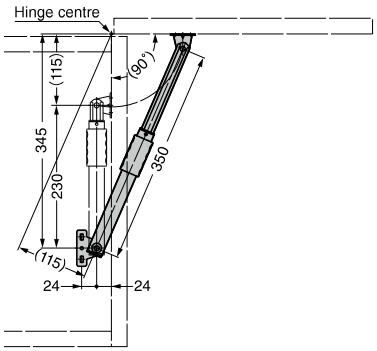
AS L=R SUS



Opening Direction	Description	Non-handed	Qty	Compression Load
 Top-opening Upward-opening Swing Door	Multi-angle Lock	Yes	1 Pc Per Door 2 Pcs Per Door	294 N/pc (30 kgf/pc)

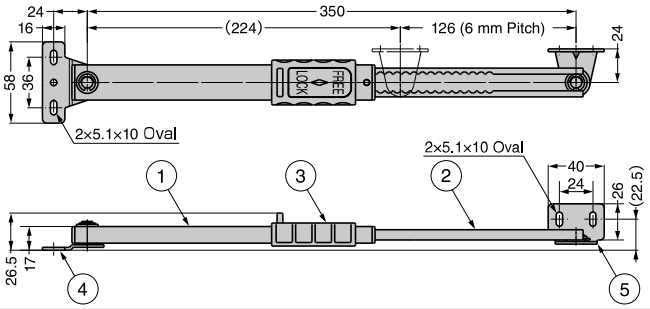
- Locks the lid at multiple angles with the lock lever. Slide the lock lever in any position to lock the extension direction and compression direction.
- Installation pitch is identical to LB-350A 1.
- Plastic parts and metal parts can be separated.

[Installation]

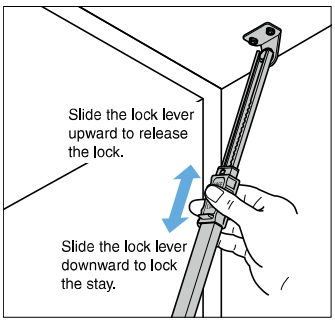


[Remarks]

- When using this product as a stopper, please use on doors only.
- Allow room for stroke when installing.
- Opening angle and installation position change depending on the position of hinge centre. Determine the installation position based on the hinges used and cabinet shape.
- Release the lock while supporting the door.
- Calculate suitable door size with reference to LID STAY L SERIES 2.



[Lock and Release]



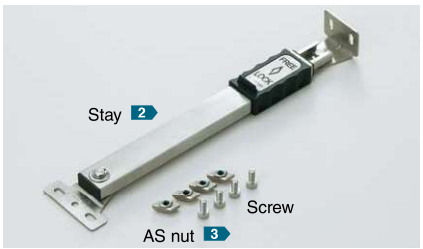
No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		
③	Lock Lever	POM	Dark Grey
④	Case Bracket	Stainless Steel (SUS304)	Satin
⑤	Arm Bracket		

RoHS	CAD	Item Code	Item Name	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-617	L-FS350A	294	30	326	5	50

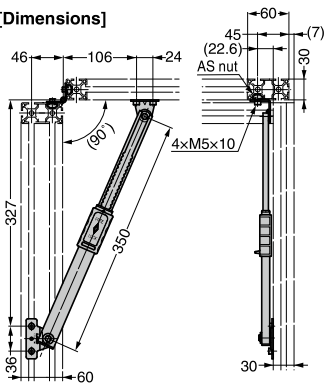
Refer to 1 : P.401, 2 : P.399

AS Parts Set for Installing to Aluminium Frame

Please refer to the series introduction page 1 for details about AS series.



[Dimensions]



[AS Parts Set] Parts set of screws and AS nuts

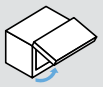
RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	Weight (g)
G	3D	180-041-633	AS-L-FS350A-30-6	Groove Width 6 mm	L-FS350A : 1 pc AS Nut AS-6M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs	–
G	3D	180-041-634	AS-L-FS350A-30-8	Groove Width 8 mm	L-FS350A : 1 pc AS Nut AS-8M5 : 4 pcs Hexagon Socket Head Cap Screw M5×10 : 4 pcs	–

Refer to 1 : P.20, 2 : P.405, 3 : P.526

LID STAY LB-215, LB-290

TEST METHOD 16 | L=R | SUS



Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds When Fully Opened	Yes	1 Pc Per Door 2 Pcs Per Door	147 N/pc (15 kgf/pc)

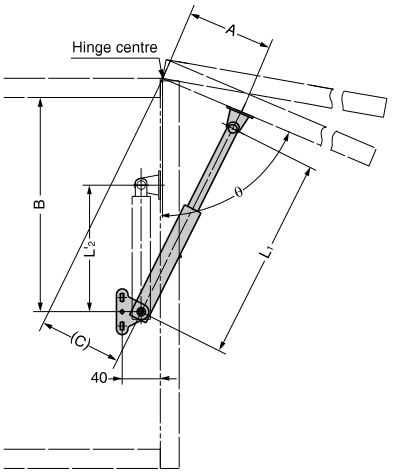
※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

●Holds the lid in fully opened position. Slightly lift up the lid to release stopper.

[Specifications]

●Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L'2 of the installation example is larger than L2 shown in the figure below. (Or the hinge and stay may be damaged.)
●Release stopper while supporting the door.
●Calculate suitable door size with reference to LID STAY L SERIES 1.

[Installation]



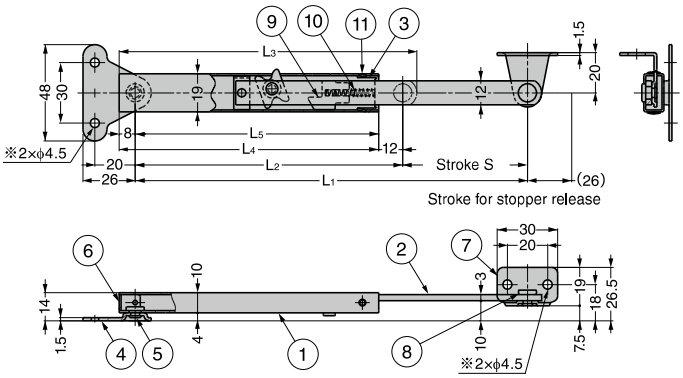
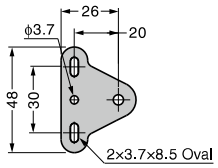
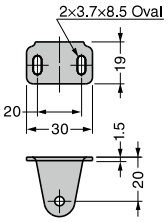


Figure above shows LB-215B or LB-290B.

Type A Case bracket

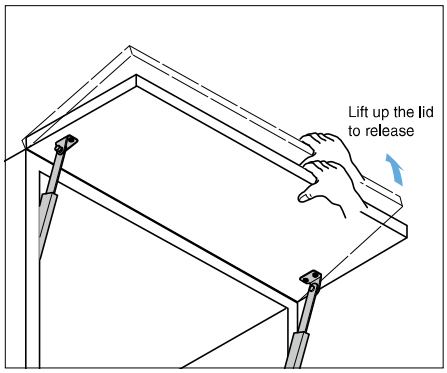


Type A Arm bracket



※Mounting hole shape of LB-215A and LB-290A shown above.

[Stopper Release]



No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		–
③	End Cap		Satin
④	Case Bracket		
⑤	Bottom Shaft	Stainless Steel	–
⑥	Bottom Cap	Stainless Steel (SUS304)	Satin
⑦	Arm Bracket		
⑧	Top Shaft	Stainless Steel	–
⑨	Slide Parts	Zinc Alloy (ZDC)	
⑩	Spring	Stainless Steel (SUS304)	
⑪	Blind Rivet	Stainless Steel	

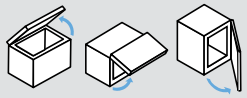
RoHS	CAD	Item Code	Item Name	Installation hole	L1	L2	L3	L4	L5	S	A	B	C	θ	Approx. Door Height	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
–	3D	180-100-110	LB-215A	Long hole	215	153	168	149	141	62	90	225	91.8	67°	260~350	147	15	140	10	100
–	3D	180-100-112	LB-215B	Round hole														140	10	100
–	3D	180-100-120	LB-290A	Long hole	290	190	205	186	178	100	105	280	102.9	80°	340~500			166	10	100
–	3D	180-100-121	LB-290B	Round hole														166	10	100

Refer to 1 : P.400

LID STAY (W/ LOCK) LSP-195B, LSP-270B

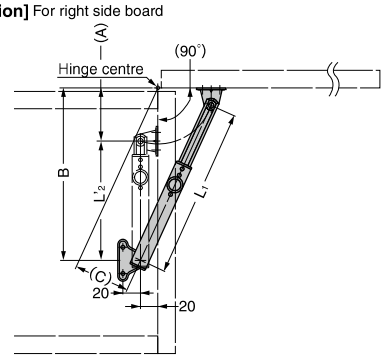
TEST METHOD 16 | AS | L=R | SUS



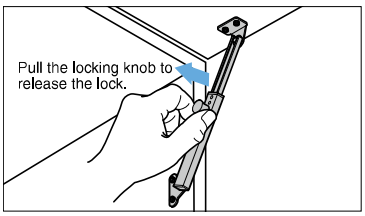
Opening Direction	Description	Non-handed	Qty	Compression Load
 Top-opening Upward-opening Swing Door	Locks When Fully Opened	Yes	1 Pc Per Door	294 N/pc (30 kgf/pc)

- Can be locked automatically at the door position fully opened.Pull the locking knob to release the lock.
- Installation pitch is identical to L-195B and L-270B 1.
- Plastic parts and metal parts can be separated.

[Installation] For right side board

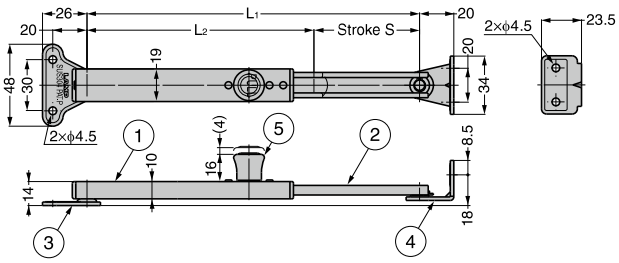


[Lock Release]



[Remarks]

- Do not use this product as a stopper other than for a door.
- Allow room for stroke depending on installation location and purpose.
- Use 1 pc for 1 door.
- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L'2 of the installation example is larger than L2. (Or the hinge and stay may be damaged.)
- Release the lock while supporting the door.
- Calculate suitable door size with reference to LID STAY L SERIES 2.



No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Satin
②	Arm		
③	Case Bracket		
④	Arm Bracket		
⑤	Locking Knob	POM	Dark Grey

RoHS	CAD	Item Code	Item Name	L_1	L_2	S	A	B	C	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-358	LSP-195B	195	133	62	61	197	63.8	294	30	127	6	60
G	3D	180-100-357	LSP-270B	270	170	100	92	265	91.9			147	6	60

Refer to 1 : P.408, 2 : P.399

AS Parts Set for Installing to Aluminium Frame

Please refer to the series introduction page 1 for details about AS series.

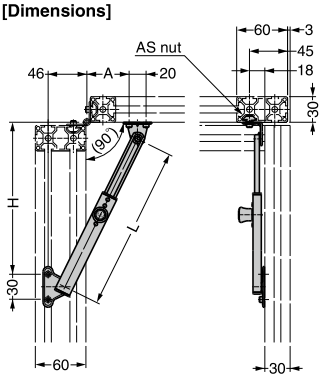


[AS Parts Set] Parts set of screws and AS nuts

RoHS	CAD	Item Code	Item Name	Aluminium Frame	Parts	A	Weight (g)
G	–	180-041-629	AS-LSP-195B-30-6	Groove Width 6 mm	LSP-195B : 1 pc AS Nut AS-6M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs	50	–
G	–	180-041-630	AS-LSP-195B-30-8	Groove Width 8 mm	LSP-195B : 1 pc AS Nut AS-8M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs		–
G	–	180-041-631	AS-LSP-270B-30-6	Groove Width 6 mm	LSP-270B : 1 pc AS Nut AS-6M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs	80	–
G	–	180-041-632	AS-LSP-270B-30-8	Groove Width 8 mm	LSP-270B : 1 pc AS Nut AS-8M4 : 4 pcs Hexagon Socket Head Cap Screw M4×10 : 4 pcs		–

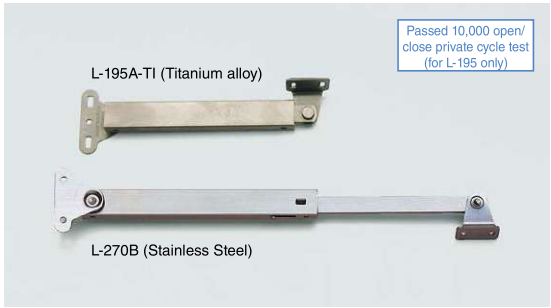
Refer to 1 : P.20, 2 : P.407, 3 : P.526

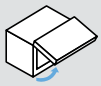
[Dimensions]



LID STAY L-195, L-270

TEST METHOD 16 | L=R | TITANIUM | SUS



Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds When Fully Opened	Yes	1 Pc Per Door	147 N/pc (15 kgf/pc)

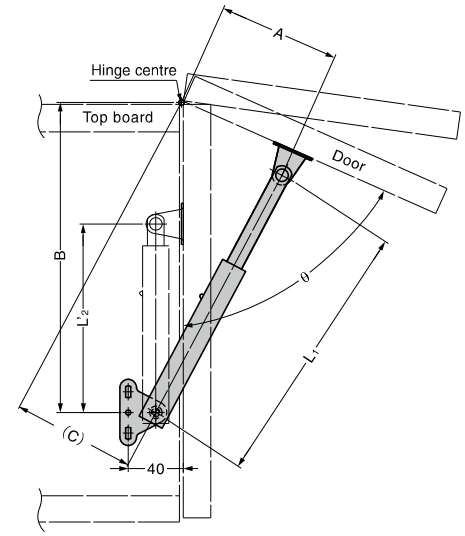
※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

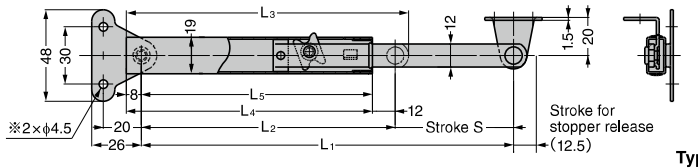
- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.

[Remarks]

- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that L'2 of the installation example is larger than L2 shown in the figure below. (Or the hinge and stay may be damaged.)
- Use 1 pc for 1 door. If using 2 pcs, left and right operation may not be synchronised.
- Do not use this product as a stopper other than for a door.
- Allow room for stroke depending on installation location and purpose.
- Securely fix the mounting screws with screw adhesive.
- Calculate suitable door size with reference to LID STAY L SERIES 1.

[Installation] For right side board





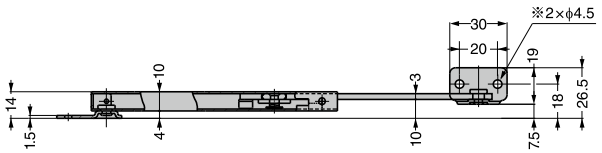
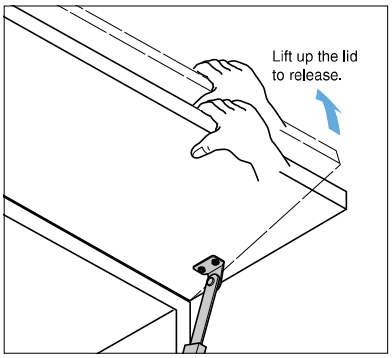
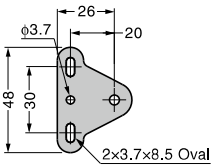


Figure above shows L-195B or L-270B.

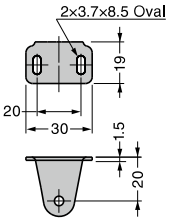
[Stopper Release]



Type A Case bracket



Type A Arm bracket

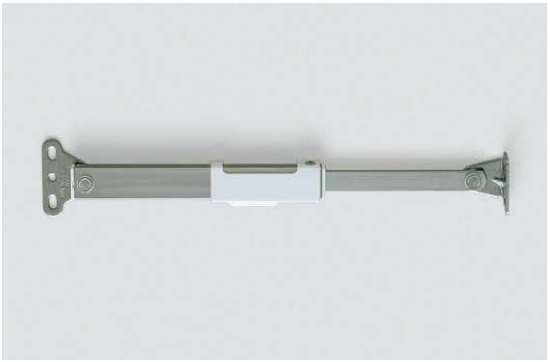


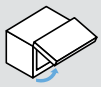
RoHS	CAD	Item Code	Item Name	Installation hole	Material	Finish	L1	L2	L3	L4	L5	S	A	B	C	θ	Approx. Door Height	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-114	L-195A	Long hole	Stainless Steel (SUS304)	Satin	195	133	148	129	121	62	90	225	86.2	66°	250~350	147	15	120	10	100
G	3D	180-100-115	L-195B	Round hole																124	10	100
–	3D	180-100-118	L-195A-TI	Long hole	Titanium	Satin														71	10	100
G	3D	180-100-116	L-270A	Long hole	Stainless Steel (SUS304)	Satin	270	170	185	166	158	100	105	275	105.8	82°	320~500			150	10	100
G	3D	180-100-117	L-270B	Round hole																183	10	100
–	3D	180-100-119	L-270A-TI	Long hole	Titanium	Satin														87	10	100

Refer to 1 : P.399

LID STAY (CLEAN ROOM) LB-CV215A

L=R SUS



Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds When Fully Opened	Yes	1 Pc Per Door 2 Pcs Per Door	147 N/pc (15 kgf/pc)

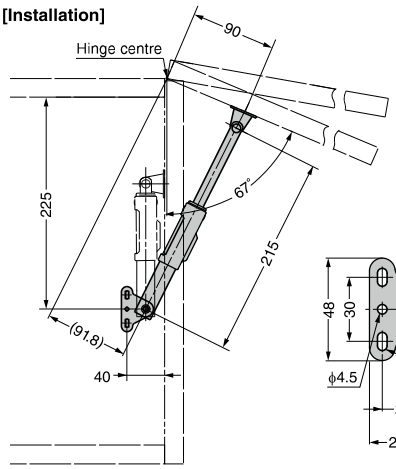
※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

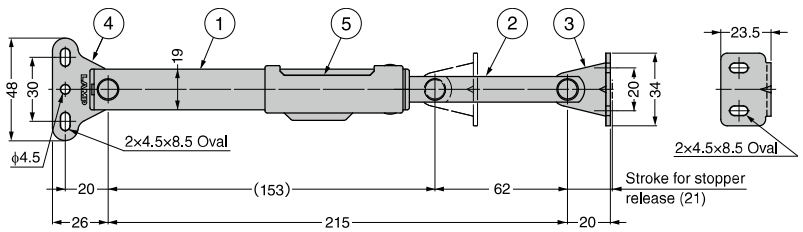
- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Using plastic parts and plastic cover at the sliding part prevent metal powder scattering due to metal-to-metal wear.

[Remarks]

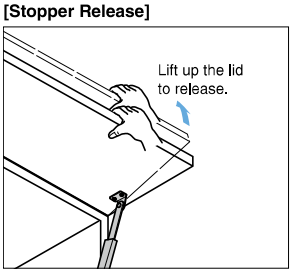
- Do not use this product as a stopper.
- Allow room for stroke depending on installation location and purpose.
- Securely fix the mounting screws with screw adhesive.
- Can be used singly or in pairs.
- Opening angle and installation position change depending on the position of hinge centre. Determine the installation position based on the hinges used and cabinet shape.
- Calculate suitable door size with reference to LID STAY SERIES 1.

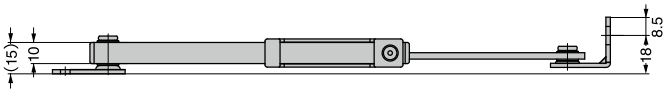
[Installation]





[Stopper Release]





No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Polished
②	Arm		
③	Arm Bracket		
④	Case Bracket		
⑤	Cover	ABS	White

RoHS	CAD	Item Code	Item Name	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-197	LB-CV215A	147	15	149	10	–

Refer to 1 : P.399

CLEAN ROOM MAGNETIC CATCH・CLEAN ROOM HINGE DIGEST

- The magnet is covered with resin, preventing metal powder scattering and rusting.



MC-JM45 1

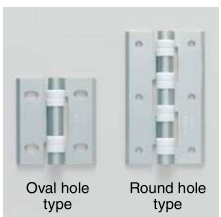


MC-JMS45WT 2

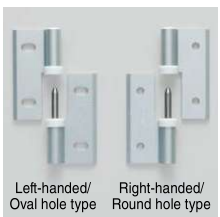


MC-JM63G 3

- Plastic cap at rotating part prevents metal powder scattering due to metal-to-metal wear.



HG-CV 4

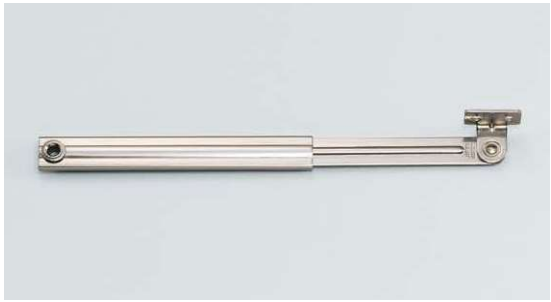


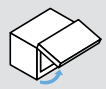
HG-CV-65N 5

Refer to 1 : P.448, 2 : P.451, 3 : P.452, 4 : P.262, 5 : P.263

LOW PROFILE LID STAY L-200P

TEST METHOD 16 | L=R | SUS



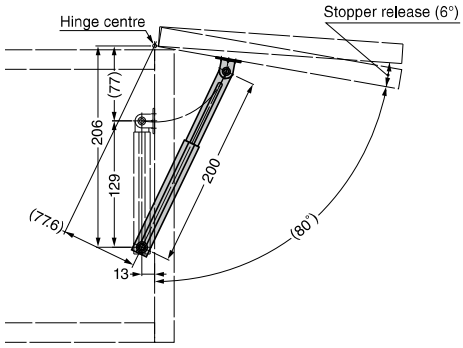
Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds When Fully Opened	Yes	1 Pc Per Door	147 N/pc (15 kgf/pc)

※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

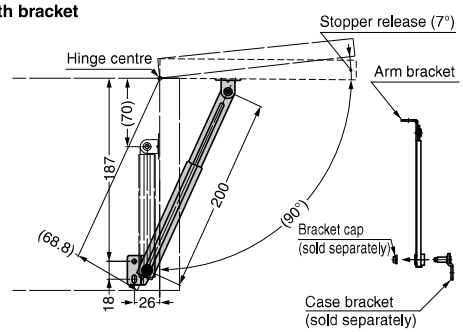
- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Can be installed in a small space due to compact design.
- Used for opening and closing of device or door.

[Installation]

Without bracket



With bracket

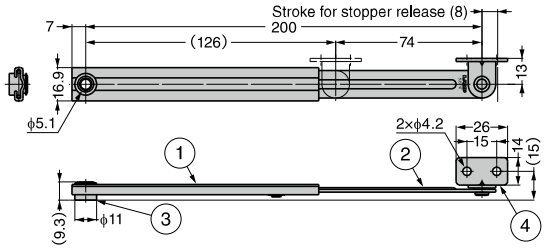


[Remarks]

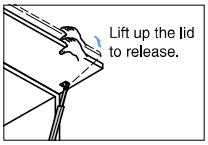
- Do not use this product as a stopper.
- Allow room for stroke when installing.
- Securely fix the mounting screws with screw adhesive.
- Use 1 pc for 1 door.
- Opening angle and installation position change depending on the position of hinge centre.Determine the installation position based on the hinges used and cabinet shape.
- For wooden door, use BRACKET L-200P-BT (sold separately) 1.
- Calculate suitable door size with reference to LID STAY List 2.

[Sold Separately]

- Mounting bracket L-200P-BT 1



[Stopper Release]



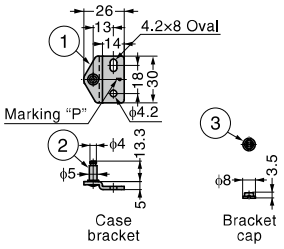
No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Case Bracket	Stainless Steel (SUS304)	–
④	Arm Bracket (Plate)	Stainless Steel (SUS304)	Barrel Polished

RoHS	CAD	Item Code	Item Name	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-104	L-200P	147	15	68	30	300

Refer to 1 : P.410, 2 : P.399

BRACKET L-200P-BT For L-200P





- Bracket for L-200P 1.
- One-touch installation with the bracket cap.
- Refer to L-200P 1 for installation details.

[Remarks]

- For L-200P only.
- Do not apply excessive force in the direction of removing the cap.

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-028-721	L-200P-BT	14	30	300

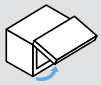
Refer to 1 : P.410

No.	Part Name	Material	Finish/Colour
①	Case Bracket	Stainless Steel (SUS304)	Barrel Polished
②	Shaft of Case Bracket	Stainless Steel (SUS303)	Plain
③	Bracket Cap	POM	Black

LID STAY L-195-JC

TEST METHOD 16 | L=R | INSTRUCTION | SUS



Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening※	Holds When Fully Opened	Yes	1 Pc Per Door	147 N/pc (15 kgf/pc)

※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

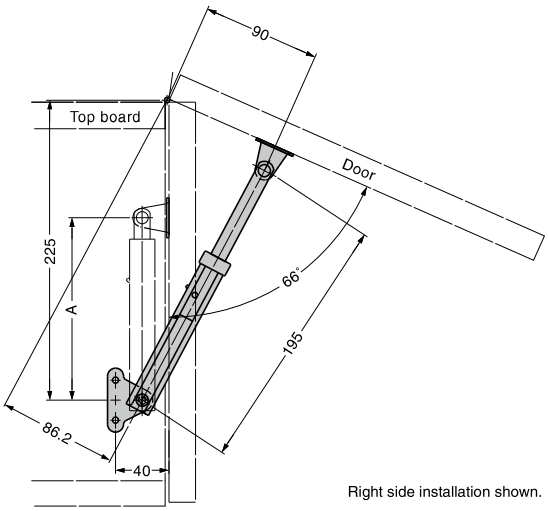
- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Simplified version of the same size as L-195 type 1 with excellent cost performance.

[Remarks]

- Appropriate bracket position can be determined depending on door height and opening angle. In this case, ensure that the dimension A when door closed is larger than the minimum dimension when extending and compressing.
  Or the hinge and lid stay may be damaged.
- Use 1 pc for 1 door.If using 2 pcs, left and right operation may not be synchronised.
- Do not use this product as a stopper.
- Allow room for stroke depending on installation location and purpose.
- Securely fix the mounting screws with screw adhesive.
- Calculate suitable door size with reference to LID STAY SERIES 2.

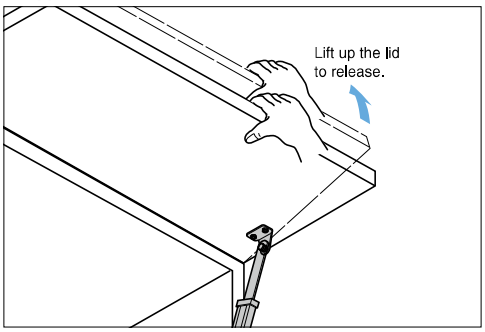
[Installation]

With single knuckle hinge



Right side installation shown.

[Stopper Release]



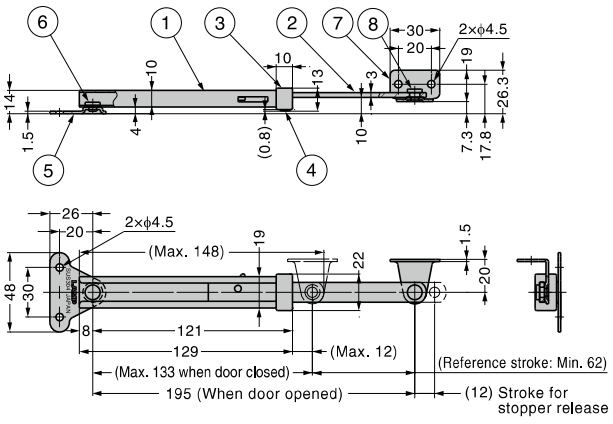
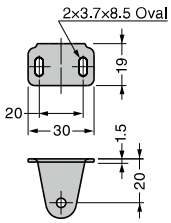
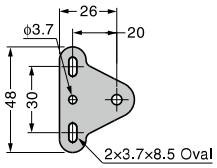


Figure above shows L-195-JC-B.

Type A Arm bracket



Type A Case bracket



※Mounting hole shape of L-195-JC-A shown above.

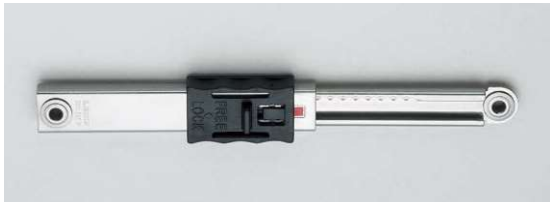
No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm	Stainless Steel	–
③	Cover	POM	Plain
④	Blind Rivet	Aluminium Alloy	–
⑤	Case Bracket	Stainless Steel (SUS304)	Barrel Polished
⑥	Shaft	Stainless Steel	Plain
⑦	Arm Bracket	Stainless Steel (SUS304)	Barrel Polished
⑧	Top Shaft	Stainless Steel	Plain

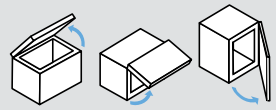
RoHS	CAD	Item Code	Item Name	Installation hole	Approx. Door Height	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-017-977	L-195-JC-A	Long hole	250~350	147	15	100	10	100
G	3D	180-017-976	L-195-JC-B	Round hole					10	100

Refer to 1 : P.408, 2 : P.399

MINI LID STAY (W/ LOCK) L-FS140 Slide release

TEST METHOD 16 | L=R | SUS

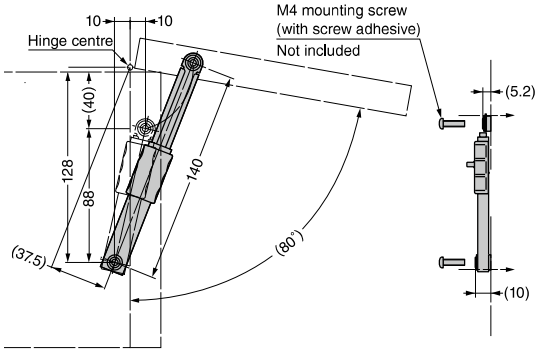


Opening Direction	Description	Non-handed	Qty	Compression Load
 Top-opening Upward-opening Swing Door	Multi-angle Lock	Yes	1 Pc Per Door 2 Pcs Per Door	58.8 N/pc (6 kgf/pc)

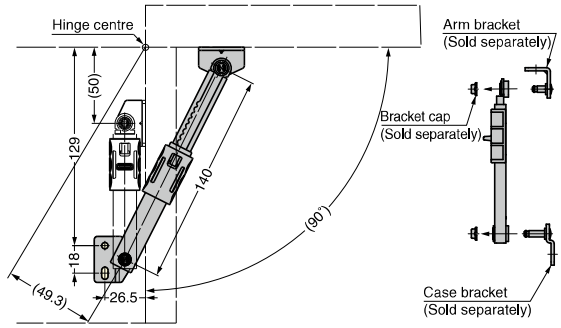
- Locks the lid at multiple angles.
  Sliding the lock lever in any position simultaneously locks the extension direction and compression direction.
- Installation pitch is identical to L-140S 1.
- Plastic parts and metal parts can be separated.

[Installation]

Without bracket



With bracket

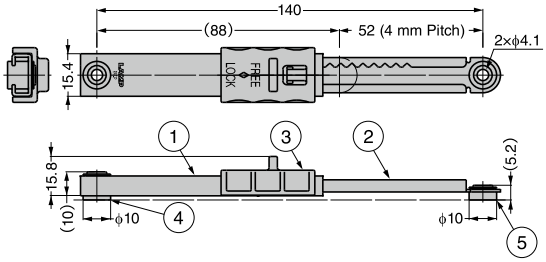


[Remarks]

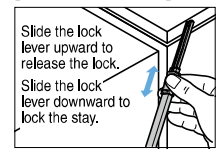
- Do not use this product as a stopper.
- Allow room for stroke when installing.
- Securely fix the mounting screws with screw adhesive.
- Opening angle and installation position change depending on the position of hinge centre.Determine the installation position based on the hinges used and cabinet shape.
- For wooden door, use BRACKET L-FS140-BT (sold separately) 2.
- Calculate suitable door size with reference to LID STAY SERIES 3.

[Sold Separately]

- Mounting bracket L-FS140-BT 2



[Lock and Release]



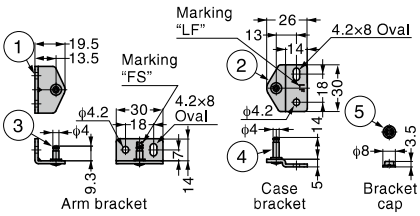
No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Lock Lever	POM	Dark Grey
④	Case Bracket	Stainless Steel (SUS304)	–
⑤	Arm Bracket		

RoHS	CAD	Item Code	Item Name	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-108	L-FS140	58.8	6	50	20	200

Refer to 1 : P.414, 2 :P.412, 3 : P.399

BRACKET L-FS140-BT For L-FS140





- Bracket for L-FS140 1.
- One-touch installation with the bracket cap.
- Refer to the stay page 1 for installation details.

[Remarks]

- For L-FS140 only.
- Do not apply excessive force in the direction of removing the cap.

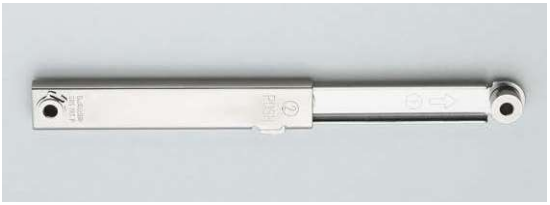
RoHS	CAD	Item Code	Item Name	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-028-720	L-FS140-BT	27	40	400

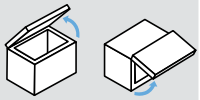
Refer to 1 : P.412

No.	Part Name	Material	Finish/Colour
①	Arm Bracket	Stainless Steel (SUS304)	Barrel Polished
②	Case Bracket		
③	Shaft of Arm Bracket	Stainless Steel (SUS303)	Plain
④	Shaft of Case Bracket		
⑤	Bracket Cap	POM	Black

MINI LID STAY (W/ LOCK) L-SL140 Safety Lock Release

L=R SUS

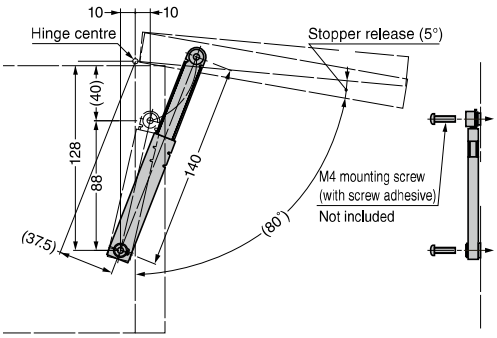


Opening Direction	Description	Non-handed	Qty	Compression Load
 Top-opening Upward-opening	Locks When Fully Opened	Yes	1 Pc Per Door	147 N/pc (15 kgf/pc)

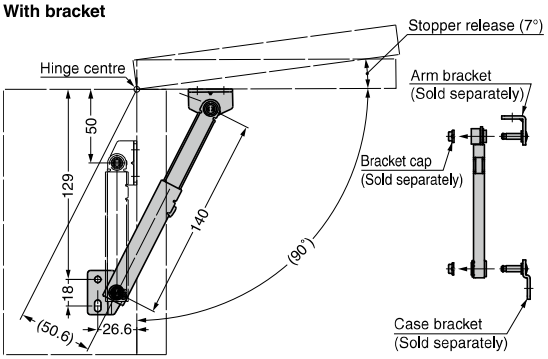
- Can be locked automatically at the door position fully opened. Releases by pushing the release button with the door opened and arm extended. (Safety lock release)
- Installation pitch is identical to L-140S 1.
- Can be installed in a small space due to compact design.
- Used for opening and closing of small device or door.

[Installation]

Without bracket



With bracket

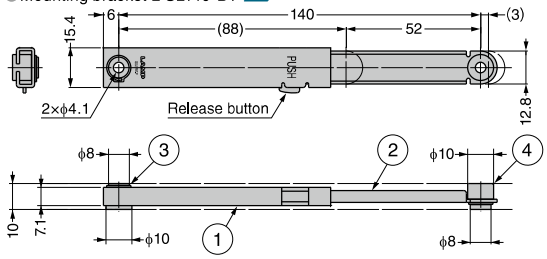


[Remarks]

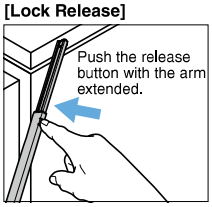
- Do not use this product as a stopper.
- Allow room for stroke when installing.
- Securely fix the mounting screws with screw adhesive.
- Use 1 pc for 1 door.
- Opening angle and installation position change depending on the position of hinge centre.Determine the installation position based on the hinges used and cabinet shape.
- For wooden door, use BRACKET L-SL140-BT (sold separately) 2.
- Calculate suitable door size with reference to LID STAY SERIES 3.

[Sold Separately]

- Mounting bracket L-SL140-BT 2



[Lock Release]



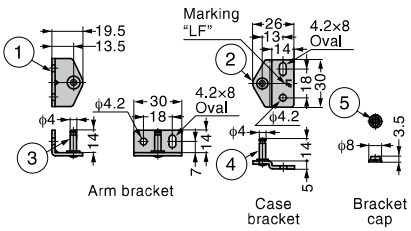
No.	Part Name	Material	Finish/Colour
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Arm		
③	Case Bracket		–
④	Arm Bracket		

RoHS	CAD	Item Code	Item Name	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-354	L-SL140	147	15	51	30	300

Refer to 1 : P.414, 2 : P.413, 3 : P.399

BRACKET L-SL140-BT For L-SL140





- Bracket for L-SL140 1.
- One-touch installation with the bracket cap.
- Refer to L-SL140 1 for installation details.

[Remarks]

- For L-SL140 only.
- Do not apply excessive force in the direction of removing the cap.

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-028-719	L-SL140-BT	27	30	300

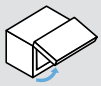
Refer to 1 : P.413

No.	Part Name	Material	Finish/Colour
①	Arm Bracket	Stainless Steel (SUS304)	Barrel Polished
②	Case Bracket		
③	Shaft of Arm Bracket	Stainless Steel (SUS303)	Plain
④	Shaft of Case Bracket		
⑤	Bracket Cap	POM	Black

MINI LID STAY L-100S, L-140S

TEST METHOD 16 | L=R | SUS



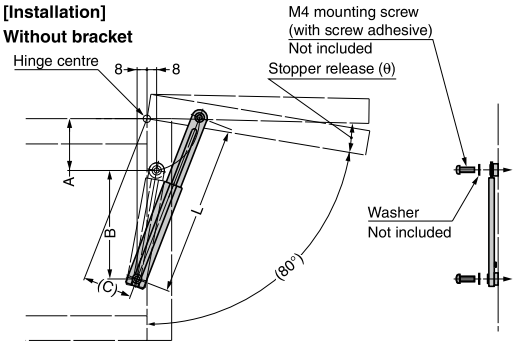
Opening Direction	Description	Non-handed	Qty	Compression Load
 Upward-opening	Holds When Fully Opened	Yes	1 Pc Per Door	58.8 N/pc (6 kgf/pc)

※Can also be used for top-opening lid, depending on installation conditions. Please confirm with actual item in detail.

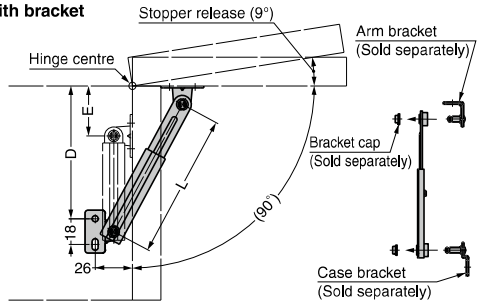
- Holds the lid in fully opened position. Slightly lift up the lid to release stopper.
- Can be installed in a small space due to compact design.
- Used for opening and closing of small device or door.

[Installation]

Without bracket



With bracket



No.	Part Name	Material	Finish
①	Body	Stainless Steel (SUS304)	Barrel Polished
②	Washer	PA	–
③	Bracket	Stainless Steel (SUS304)	–
④	Roter		Barrel Polished

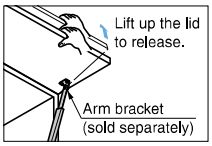
[Remarks]

- Do not use this product as a stopper.
- Allow room for stroke depending on installation location and purpose.
- Securely fix the mounting screws with screw adhesive.
- Use 1 pc for 1 door.
- Opening angle and installation position change depending on the position of hinge centre. Determine the installation position based on the hinges used and cabinet shape.
- For wooden door, use BRACKET L-S-BT (sold separately) 1.
- Calculate suitable door size with reference to LID STAY SERIES 2.

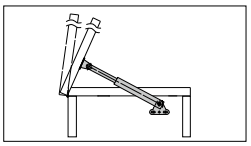
[Sold Separately]

- Mounting bracket L-S-BT 1

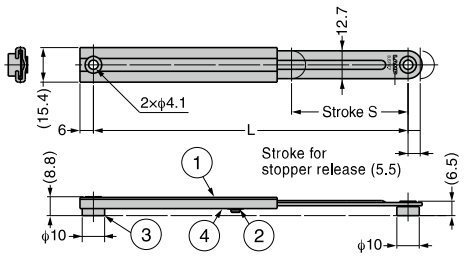
[Stopper Release]



[Use on Top-opening Lids]



Maximum angle of top-opening lids must be less than 90 degrees.

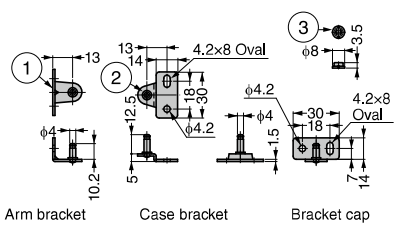


RoHS	CAD	Item Code	Item Name	L	S	A	B	C	D	E	θ	Compression Load N/pc	Compression Load kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-109-118	L-100S	100	32	24	67	22.5	93	35	15°	58.8	6	31	30	300
G	3D	180-100-105	L-140S	140	52	42	88	39.7	131	48	9°			38	30	300

Refer to 1 : P.414, 2 : P.399

BRACKET L-S-BT For L-100S, L-140S





- Bracket for installing L-100S, L-140S 1 to wooden door.
- Can be easily fixed by fitting the cap.

[Remarks]

- For L-100S, L-140S only.
- Do not apply excessive force in the direction of removing the stay.

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (sets)	Carton (sets)
G	3D	180-100-620	L-S-BT	17	40	400

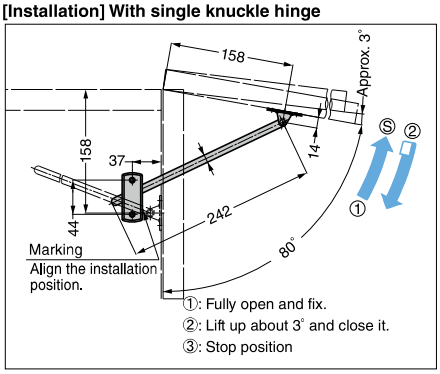
Refer to 1 : P.414

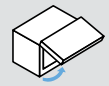
No.	Part Name	Material	Finish/Colour
①	Arm Bracket	Stainless Steel (SUS304)	Barrel Polished
②	Case Bracket		
③	Bracket Cap	POM	White

LID STAY KLS



[Installation] With single knuckle hinge

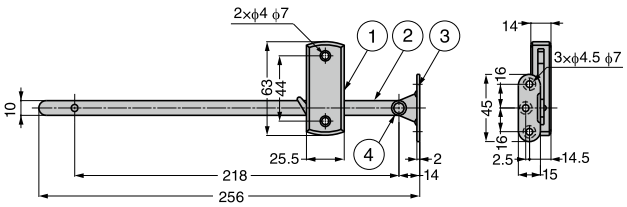


Opening Direction	Description
 Upward-opening	Stops When Fully Opened, Right-handed Only

- Holds the door in fully opened position. Lift up the door to release the stopper.
- Easy installation with a marking on the body for indicating installation position.

[Remarks]

- Right side installation only.
- Max. door height is 300mm.
- Height more than 300mm or applying force to the front end may cause deformation and damage.



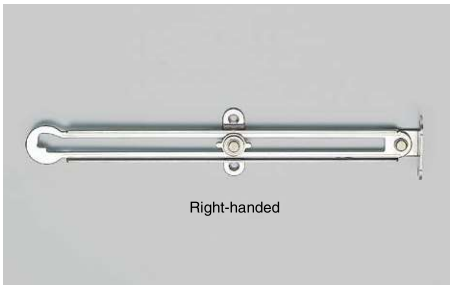
No.	Part Name	Material	Finish/Colour
①	Body	PA	White
②	Arm	Steel (SS)	Nickel
③	Bracket	Steel (SPCC)	
④	Spring	Steel	–

RoHS	CAD	Item Code	Item Name	Door Weight kg/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-052	KLS	Max. 8	85	20	200

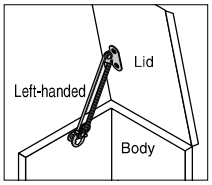
※Limited stock available. Please contact your local agent or your nearest Sugatsune subsidiary for detail/availability.

LID STAY S-91, S-92, S-93

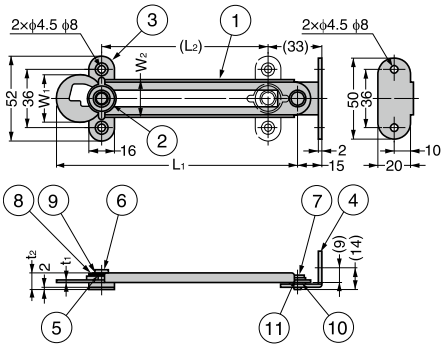
SUS



[Installation]



Opening Direction	Description
 Top-opening	–



Right-handed type shown.

No.	Part Name	Material	Finish
①	Rail Arm	Stainless Steel (SUS304)	Barrel Polished
②	Rotary		
③	Base Plate		
④	Bracket		
⑤	Spring	Stainless Steel (SUS301)	–
⑥	Shaft A	Stainless Steel (SUS303)	
⑦	Shaft B		
⑧	Washer	Stainless Steel (SUS304)	
⑨	N Washer	PA	
⑩	N Washer		
⑪	N Washer		

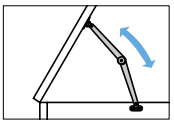
RoHS	CAD	Item Code	Item Name	Type	L_1	L_2	W_1	W_2	t_1	t_2	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-055	S-91R	Right-handed	277	231	30	24	2	11	120	100	–
G	3D	180-103-001	S-91L	Left-handed								100	–
G	3D	180-100-056	S-92R	Right-handed	198	153	28	23	1.5	10.5	85	30	180
G	3D	180-103-002	S-92L	Left-handed								30	180
G	3D	180-100-057	S-93R	Right-handed	150	105					75	60	240
G	3D	180-100-070	S-93L	Left-handed								60	240

LID STAY F-300

L=R SUS



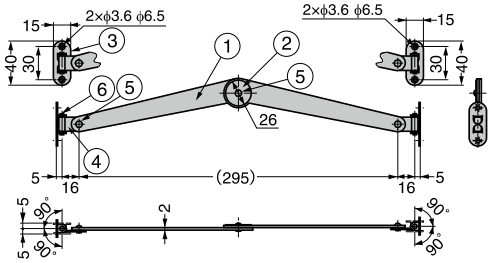
[Installation]



Opening Direction	Description
 Top-opening	Non-handed

[Remarks]

●When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.

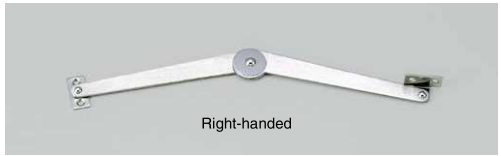


No.	Part Name	Material	Finish
①	Arm	Stainless Steel (SUS304)	Satin
②	Cover		BA
③	Plain Washer		
④	Bracket		
⑤	Rivet	Copper	Nickel
⑥	Rivet	Brass	

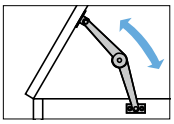
RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)
G	3D	180-100-064	F-300	113	10

LID STAY F-150, F-200, F-250

SUS



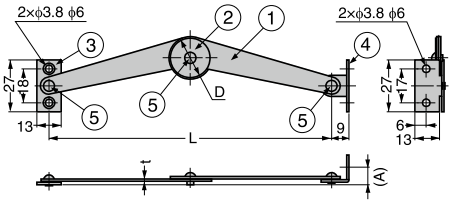
[Installation]



Opening Direction	Description
 Top-opening	–

[Remarks]

●When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.



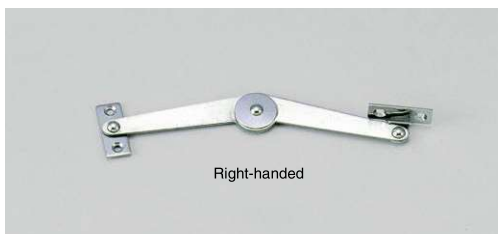
Right-handed type shown.

No.	Part Name	Material	Finish
①	Arm	Stainless Steel (SUS304)	Satin
②	Cover		BA
③	Plain Washer		
④	Bracket		
⑤	Rivet	Copper	Nickel

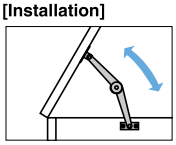
RoHS	CAD	Item Code	Item Name	Type	L	D	A	t	Weight (g)	Box (pcs)
G	3D	180-100-061	F-150R	Right-handed	150	22	9	1.2	30	40
G	3D	180-100-067	F-150L	Left-handed						40
G	3D	180-100-062	F-200R	Right-handed	198	22.5			37	30
G	3D	180-100-068	F-200L	Left-handed						30
G	3D	180-100-063	F-250R	Right-handed	250	25.5		1.5	65	30
G	3D	180-100-069	F-250L	Left-handed						30

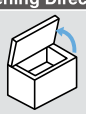
LID STAY F-100

SUS



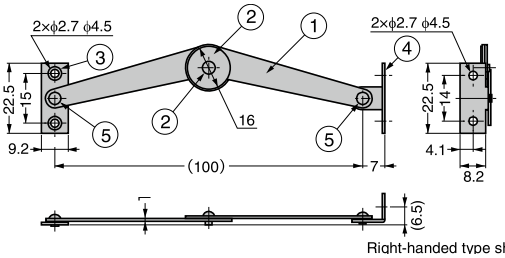
[Installation]



Opening Direction	Description
 Top-opening	–

[Remarks]

●When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.



Right-handed type shown.

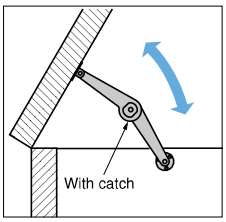
No.	Part Name	Material	Finish
①	Arm	Stainless Steel (SUS304)	Satin
②	Cover		BA
③	Plain Washer		
④	Bracket		
⑤	Rivet	Copper	Nickel

RoHS	CAD	Item Code	Item Name	Type	Weight (g)	Box (pcs)
G	3D	180-100-060	F-100R	Right-handed	13	50
G	3D	180-100-066	F-100L	Left-handed		50

LID STAY S-20 With Catch


S-20L (left-handed)

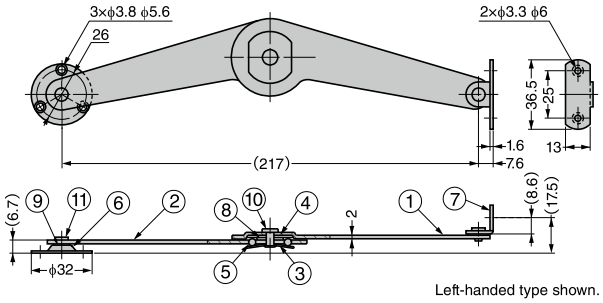
[Installation] Right-handed



Opening Direction	Description
 Top-opening	With Catch

[Remarks]
- Catch mechanism may not work, depending on door weight.
- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.

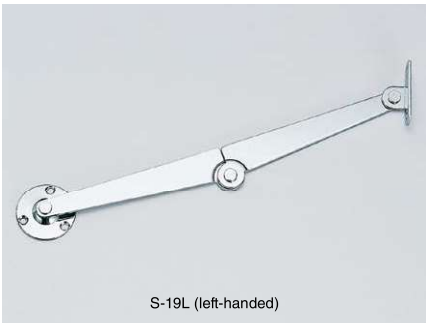
No.	Part Name	Material	Finish
①	Body A	Steel (SPCC)	Chrome
②	Body B		
③	Spring A	Steel (SK)	–
④	Spring B		
⑤	Ball	Steel (SWRCH)	
⑥	Bracket	Steel (SPCC)	Chrome
⑦	Bracket		
⑧	Washer		Nickel
⑨	Washer	PA	–
⑩	Centre Shaft	Steel (SWRM)	Chrome
⑪	Shaft	Brass	Tin Cobalt Plating



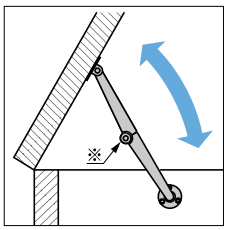
Left-handed type shown.

RoHS	CAD	Item Code	Item Name	Type	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
GT	3D	180-100-138	S-20R	Right-handed	410	41.8	122	40	160
GT	3D	180-100-139	S-20L	Left-handed				40	160

LID STAY S-19


S-19L (left-handed)

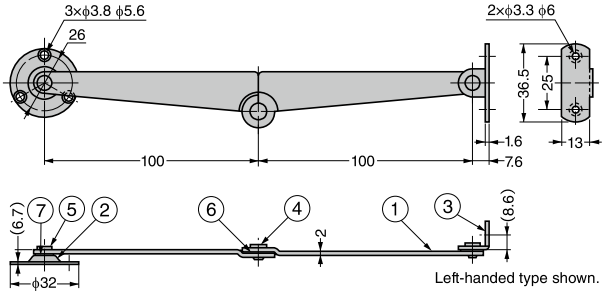
[Installation] Right-handed



Opening Direction	Description
 Top-opening	–

[Remarks]
- When closing the door, operate while pulling the centre rivet (※ in left figure) toward you.
- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.

No.	Part Name	Material	Finish
①	Body	Steel (SPCC)	Chrome
②	Bracket		
③	Bracket		
④	Centre Shaft	Brass	Tin Cobalt Plating
⑤	Shaft		
⑥	Washer A	PA	Natural
⑦	Washer B		



Left-handed type shown.

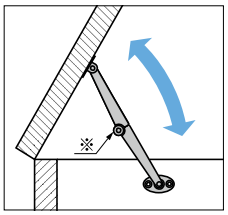
RoHS	CAD	Item Code	Item Name	Type	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
GT	3D	180-100-136	S-19R	Right-handed	425	43.4	66	50	300
GT	3D	180-100-137	S-19L	Left-handed				50	300

LID STAY S-6, S-16



S-6L (left-handed)

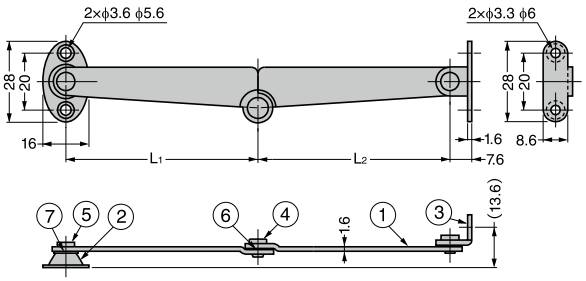
[Installation] Right-handed



Opening Direction	Description
 Top-opening	–

[Remarks]

- When closing the door, operate while pulling the centre rivet (※ in left figure) toward you.
- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.



Left-handed type shown.

No.	Part Name	Material	Finish
①	Body	Steel (SPCC)	Chrome
②	Mounting Plate		
③	Bracket		
④	Centre Shaft	Brass	Tin Cobalt Plating
⑤	Shaft		
⑥	Washer A	PA	Natural
⑦	Washer B		

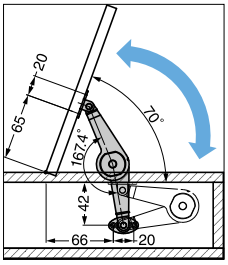
RoHS	CAD	Item Code	Item Name	Type	L1	L2	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-132	S-6R	Right-handed	53	53	318	32.4	20	100	1000
G	3D	180-100-133	S-6L	Left-handed						100	1000
G	3D	180-100-134	S-16R	Right-handed	67	67	336	34.3	31	60	600
G	3D	180-100-135	S-16L	Left-handed						60	600

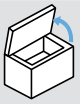
LID STAY S-21 With catch



S-21L (left-handed)

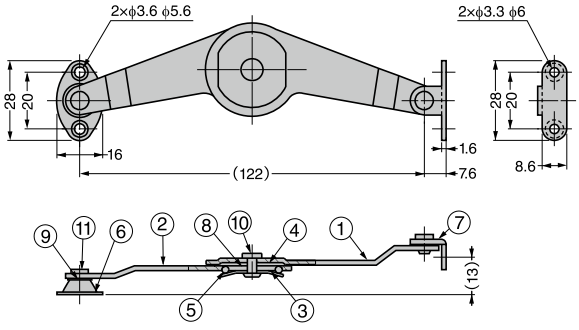
[Installation] Right-handed



Opening Direction	Description
 Top-opening	With catch

[Remarks]

- Catch mechanism may not work, depending on door weight.
- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.



Left-handed type shown.

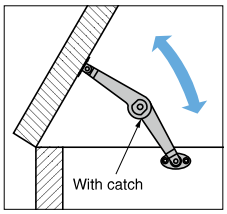
No.	Part Name	Material	Finish
①	Body A	Steel (SPCC)	Chrome
②	Body B		
③	Spring A	Steel (SK)	–
④	Spring B		
⑤	Balls	Steel (SWRCH)	
⑥	Mounting Plate	Steel (SPCC)	Chrome
⑦	Bracket		
⑧	Washer		Coloured Zinc Chromate (Trivalent)
⑨	Washer	PA	Natural
⑩	Centre Shaft	Brass	Tin Cobalt Plating
⑪	Shaft		

RoHS	CAD	Item Code	Item Name	Type	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-140	S-21R	Right-handed	309	31.5	49	50	500
G	3D	180-100-141	S-21L	Left-handed				50	500

LID STAY S-23 With catch


S-23L (left-handed)

[Installation] Right-handed

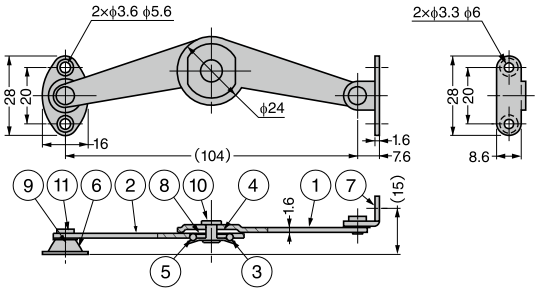


Opening Direction	Description
 Top-opening	With catch

[Remarks]

- Catch mechanism may not work, depending on door weight.
- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.

No.	Part Name	Material	Finish
①	Body A	Steel (SPCC)	Chrome
②	Body B		
③	Spring A	Stainless Steel (SUS301)	–
④	Spring B		
⑤	Balls	Steel (SWRCH)	
⑥	Mounting Plate	Steel (SPCC)	Chrome
⑦	Bracket		
⑧	Washer		Coloured Zinc Chromate (Trivalent)
⑨	Washer	PA	Natural
⑩	Centre Shaft	Brass	Tin Cobalt Plating
⑪	Shaft		



Left-handed type shown.

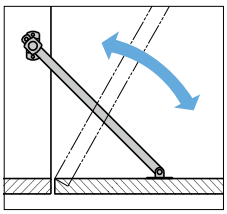
RoHS	CAD	Item Code	Item Name	Type	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-142	S-23R	Right-handed	298	30.4	33	50	500
G	3D	180-100-143	S-23L	Left-handed				50	500

LID STAY HS

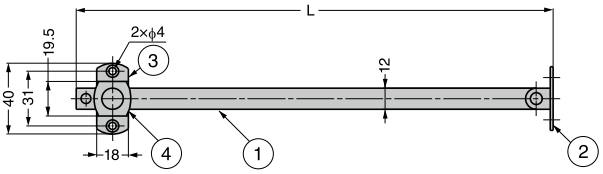
NSF L=R SUS

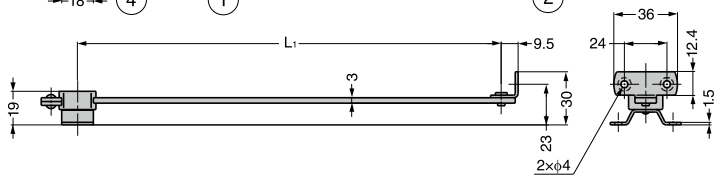


[Installation]



Opening Direction	Description
 Downward-opening	Non-handed





No.	Part Name	Material	Finish/Colour
①	Arm	Stainless Steel (SUS304)	Satin
②	Bracket		
③	Mounting Plate		
④	Body	PA	White

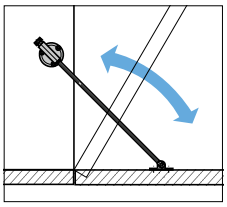
RoHS	CAD	Item Code	Item Name	L	L1	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-020	HS-180	210	180	80	20	220
G	3D	180-100-021	HS-210	240	210	90	20	220
G	3D	180-100-022	HS-240	270	240	100	20	220

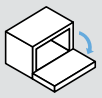
LID STAY S-35

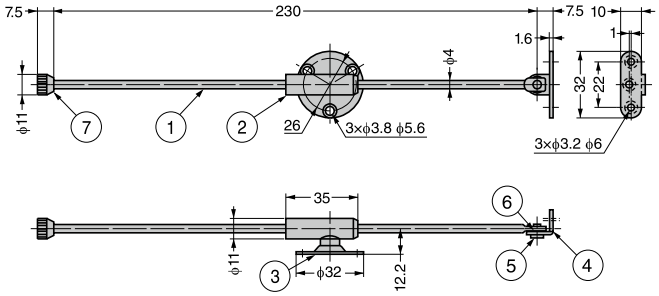
L=R



[Installation]



Opening Direction	Description
 Downward-opening	Non-handed



No.	Part Name	Material	Finish/Colour
①	Arm	Steel (SWRM)	Chrome
②	Arm Guide	PA	Brown
③	Bracket	Steel (SPCC)	Chrome
④	Bracket		
⑤	Shaft	Brass	Tin Cobalt Plating
⑥	N Washer	PA	Natural
⑦	Nut	Brass	Nickel

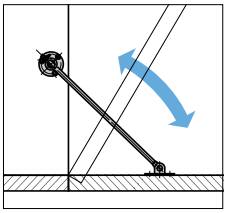
RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-151	S-35	44	60	300

LID STAY S-34

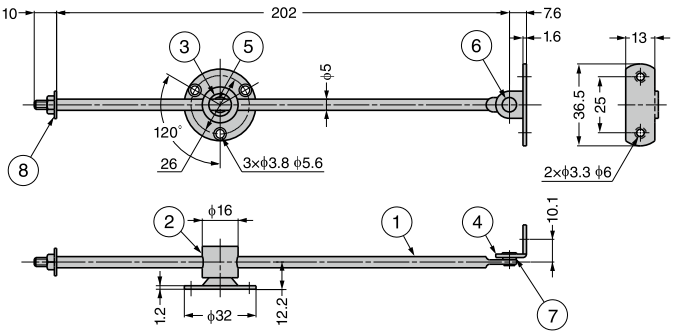
L=R



[Installation]



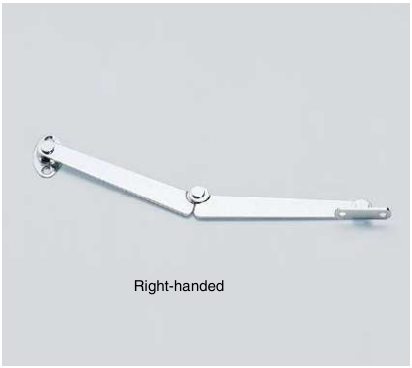
Opening Direction	Description
 Downward-opening	Non-handed



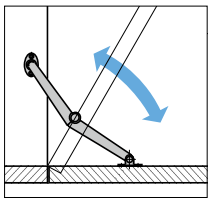
No.	Part Name	Material	Finish/Colour
①	Arm	Steel (SWRM)	Chrome
②	Arm Guide	PA	Natural
③	Bracket	Steel (SPCC)	Chrome
④	Bracket		
⑤	Shaft A	Steel (SWCH)	Coloured Zinc Chromate (Trivalent)
⑥	Shaft B	Brass	Tin Cobalt Plating
⑦	Washer	PA	Natural
⑧	Flanged Hexagon Nut	Steel (SWCH)	Nickel

RoHS	CAD	Item Code	Item Name	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-150	S-34	52	60	300

LID STAY S-24, S-27, S-25


Right-handed

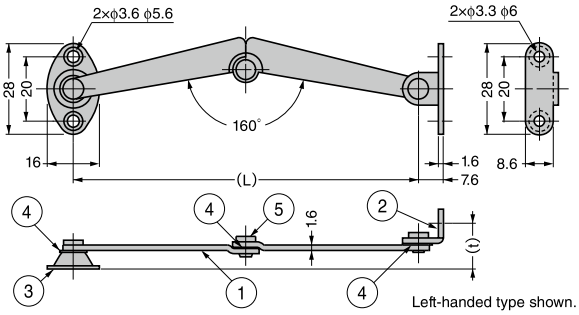
[Installation] Right-handed



Opening Direction	Description
 Downward-opening	–

[Remarks]

- When installing this stay to sheet metal, be sure to perform thread relief processing (chamfering) on the mounting surface side (cabinet side). In this way, screw head will not protrude when the stay is fixed.



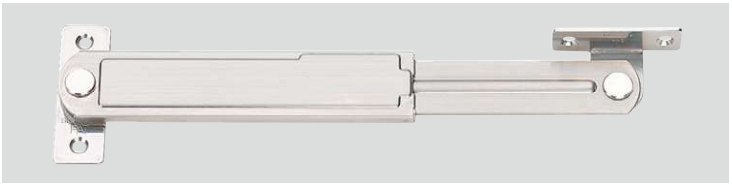
Left-handed type shown.

No.	Part Name	Material	Finish
①	Body	Steel (SPCC)	Chrome
②	Bracket		
③	Washer		
④	Washer	PA	Natural
⑤	Shaft	Brass	Tin Cobalt Plating

RoHS	CAD	Item Code	Item Name	Type	L	t	Tension Force N/pc	Tension Force kgf/pc	Weight (g)	Box (pcs)	Carton (pcs)
G	3D	180-100-144	S-24R	Right-handed	105.5	13.6	326	33.3	21	100	1000
G	3D	180-100-145	S-24L	Left-handed						100	1000
G	3D	180-100-148	S-27R	Right-handed	133		325	33.2	31	60	600
G	3D	180-100-149	S-27L	Left-handed		13.4				60	600
G	3D	180-100-146	S-25R	Right-handed	163	13.6	287	29.3	35	60	600
G	3D	180-100-147	S-25L	Left-handed		13.4				60	600

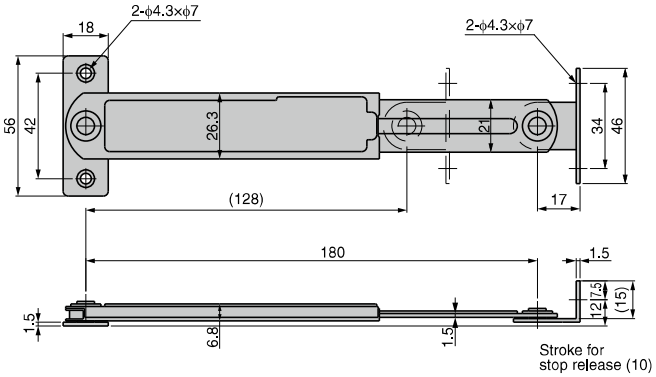
MULTI-ANGLE LID STAY U-3031HL

L=R SUS





- Ratchet stay holds flap lid at multiple angles.
- Non-handed.
- Thin and compact design.
- Completely open the door to release lock.
- Completely close the door to re-engage the lock.



Material	Finish
Stainless Steel (304)	Satin

RoHS	CAD	Item Code	Item Name	Stop Positions	Load Capacity (kg)	Weight (g)	Box (pcs)	Carton (pcs)
–	–	180-109-200	U-3031HL	15	7	127	10	100

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