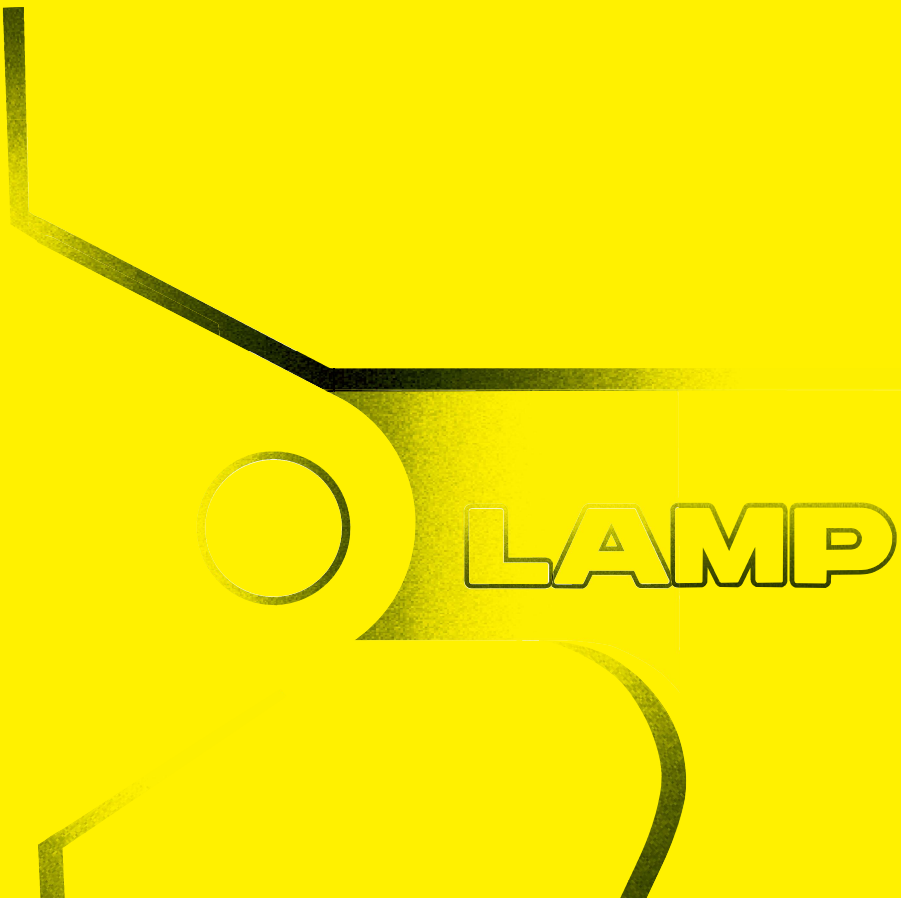
SUGATSUNE

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®

CABINET DOOR HARDWARE & SHUTTER DOORS

Cabinet door hardware & shutter doors are more complex parts than hinges used for opening and closing doors or lids.
We offer many Sugatsune unique “opening modes” superior to conventional swing doors and sliding doors with small door projection and no interference with the passage.

SUGATSUNE

June 2022

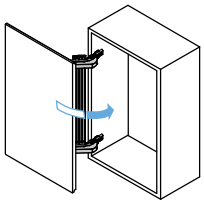
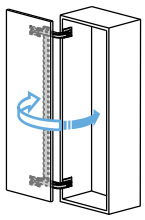
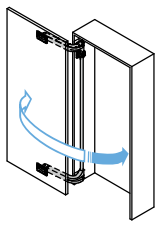
INDEX

Flush / Lateral Opening Door Systems

P.799~P.815

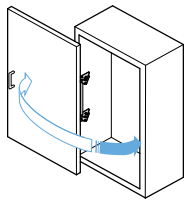
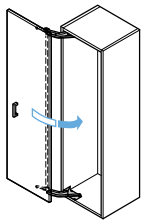
MonoFlat LIN-X Hinge

P.799, P.804~

Installation Image	Product Name	Size Per One Door				Page
		Door Weight	Door Width	Door Height	Door Thickness	
	MonoFlat LIN-X hinge. MonoFlat LIN-X Hinge LIN-X450, LIN-X600	LIN-X450 Max. 17 kg LIN-X600 Max. 24 kg	LIN-X450 400~500 mm LIN-X600 550~650 mm	600~2400 mm	15~24 mm	P.804
	MonoFlat LIN-X hinge. MonoFlat LIN-X Hinge LIN-X800	Max. 40 kg	750~850 mm	LIN-X800 1600~2400 mm LIN-X800H 1600~2980 mm	24~40 mm	P.812
	MonoFlat LIN-X hinge. MonoFlat LIN-X Hinge LIN-X1000 For Heavy Duty Door	Max. 90 kg	750~1100 mm	2400~2980 mm	24~40 mm	P.814

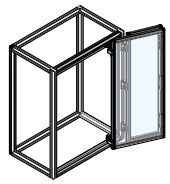
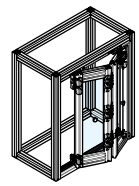
MonoFlat FAD

P.800~

Installation Image	Product Name	Size Per One Door				Page
		Door Weight	Door Width	Door Height	Door Thickness	
	MonoFlat FAD. MonoFlat FAD-5 For Small Size Cabinet	Max. 5 kg	270~350 mm	260~650 mm	15~20 mm	P.800
	MonoFlat FAD. MonoFlat FAD-20 For Medium Size Cabinet	Max. 20 kg	Cabinet Inside Width 500~550 mm	Cabinet Inside Height Max. 2420 mm	Max. 35 mm	P.802

Folding Door Systems

P.816~

Installation Image	Product Name	Size Per One Door				Aluminium Frame	Page
		Door Weight	Door Width	Door Height	Door Thickness		
	Folding Door System KF111-MH	Max. 10 kg	Max. 450 mm	Max. 2400 mm	30 mm	Size: Door 30×60 mm, Frame : 30×60 mm, 40×40 mm Groove Width: Door 8 mm, Frame 10 mm	P.816
	Slidable Folding Door System KF111-R	Max. 10 kg	Max. 450 mm	Max. 2400 mm	18~34 mm	Size: Door 30×60 mm, Frame 40×40 mm, Groove Width: 6 mm	P.820

Shutter Door Systems

P.824~

Installation Image	Product Name	Open/Close Direction	Cabinet Size			Cabinet Material		Page
			Inside Width	Inside Height	Inside Depth	Metal	Wood	
	Design Shutter DIS-M Surface Mount Type	Vertical Open/Close	300~1200 mm	300~900 mm	Min. 330mm	Yes	Yes	P.824
		Horizontal Open/Close	300~900 mm For Double Door 600~1800 mm	100~1200 mm				
	Design Shutter DIS-H Recessed Mount Type	Vertical Open/Close	300~900 mm	300~900 mm	200~600 mm	Yes	Yes	P.830
		Horizontal Open/Close	300~900 mm For Double Door 600~1800 mm	100~1188 mm				
	AS High Rigidity Cabinet Shutter	Vertical Open/Close	Aluminium Frame Inside Width Max. 840 mm	Aluminium Frame Inside Height Max. 640 mm	Aluminium Frame Inside Depth Max. 900 mm	Yes	Yes	P.836

Understandable! Selectable! Usable!

Sugatsune Website

https://global.sugatsune.com/

You can visit the website to

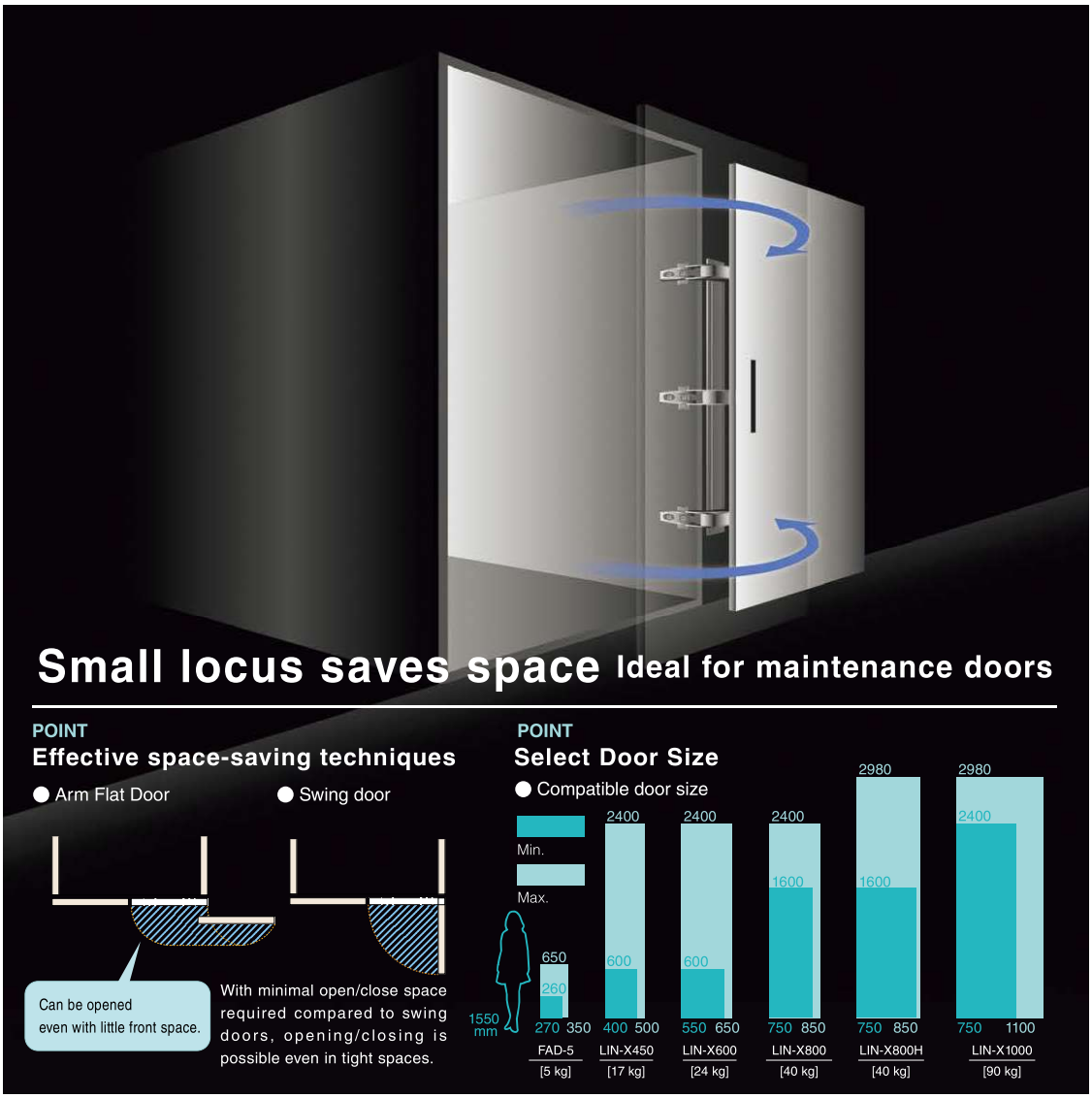
- Check new product information
- View product introduction video
- Browse digital web catalogue
  Refer to Back Cover
- Use product selection tool
  Refer to Back Cover
- Download installation instructions

SUGATSUNE **Search**

MONOFLAT ARM FLAT DOOR HARDWARE

MonoFlat LIN-X hinge®

Door opening radius saves space compared to swing doors.
An innovative swing door enabling effective use of space.



Small locus saves space Ideal for maintenance doors

POINT
Effective space-saving techniques

● Arm Flat Door ● Swing door

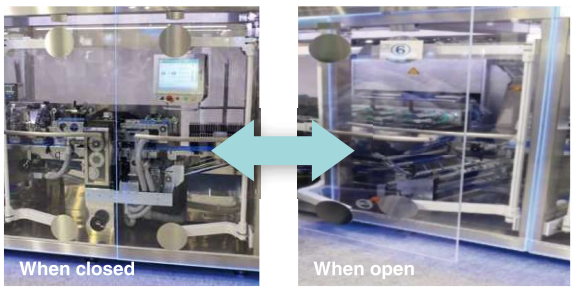
Can be opened even with little front space.

With minimal open/close space required compared to swing doors, opening/closing is possible even in tight spaces.

POINT
Select Door Size

● Compatible door size

Application Example



Use in food processing machinery door



Use in large kitchen door

MONOFLAT FAD-5 For Small Size Cabinet

INSTRUCTION

MonoFlat FAD®

Door Width	270~350 mm
Door Height	260~650 mm
Door Thickness	15~20 mm
Door Weight	Max. 5 kg/Door
Specification	☐ Single Door (Overlay)

Door does not get in the way when opened with small projection than swing door, suitable for small cabinets.

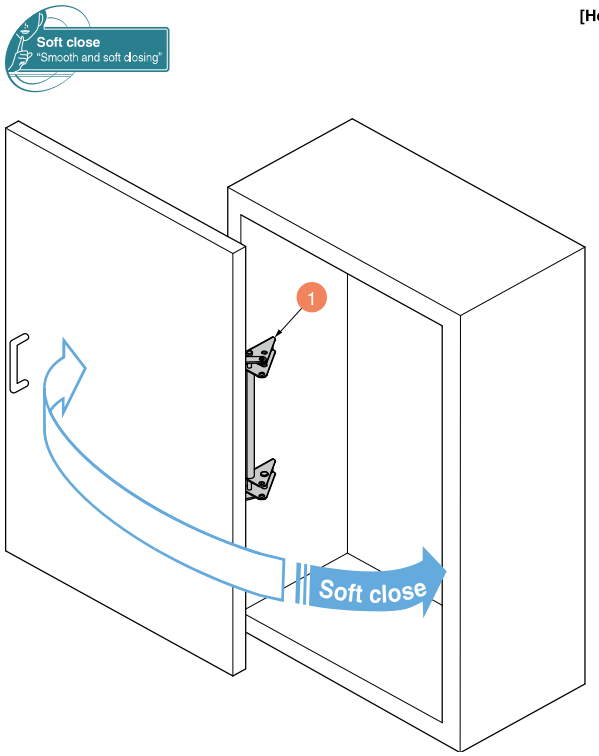
- Allows to swing out laterally in small radius, ideal for tight front space application.
- Possible to combine various opening modes such as single door and double door.
- Possible to stop door at any position as shown below. And can close door slowly and quietly.
- Door adjustable in vertical (±3mm), horizontal (±2.5mm) and parallel (approx. 5°) directions.
- Passed 40,000 open/close cycle test.
- Other "MonoFlat Series" are available.

・MonoFlat Unison Neo for door weight up to 70 kg
・MonoFlat FAD-20 for door weight up to 20 kg 1
・MonoFlat LIN-X hinge for door weight up to 90 kg 2

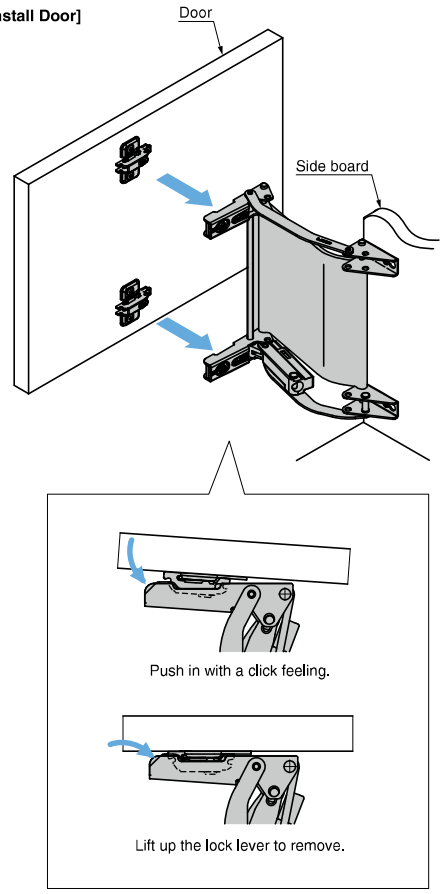
[Applications]
- Cupboards in toilet and kitchen, storage furniture like shoe boxes.

[Remarks]
- Door operation feeling varies depending on installation position. Please confirm by actual installation.
- For details when used for continuous door, please contact local representatives.

The circled numbers are part numbers.
Please check with the part list 3.



[How to Install Door]



Refer to 1 : P.802, 2 : P.814, 3 : P.801

When Ordering MonoFlat FAD-5

●Necessary Parts ..... **Parts Set (Per Door)**

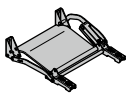
The circled numbers are part numbers. Please check with the drawings 1 .

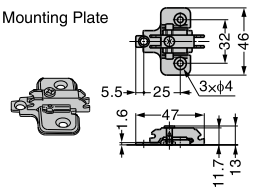
Parts Set (Per Door)

Necessary Parts.

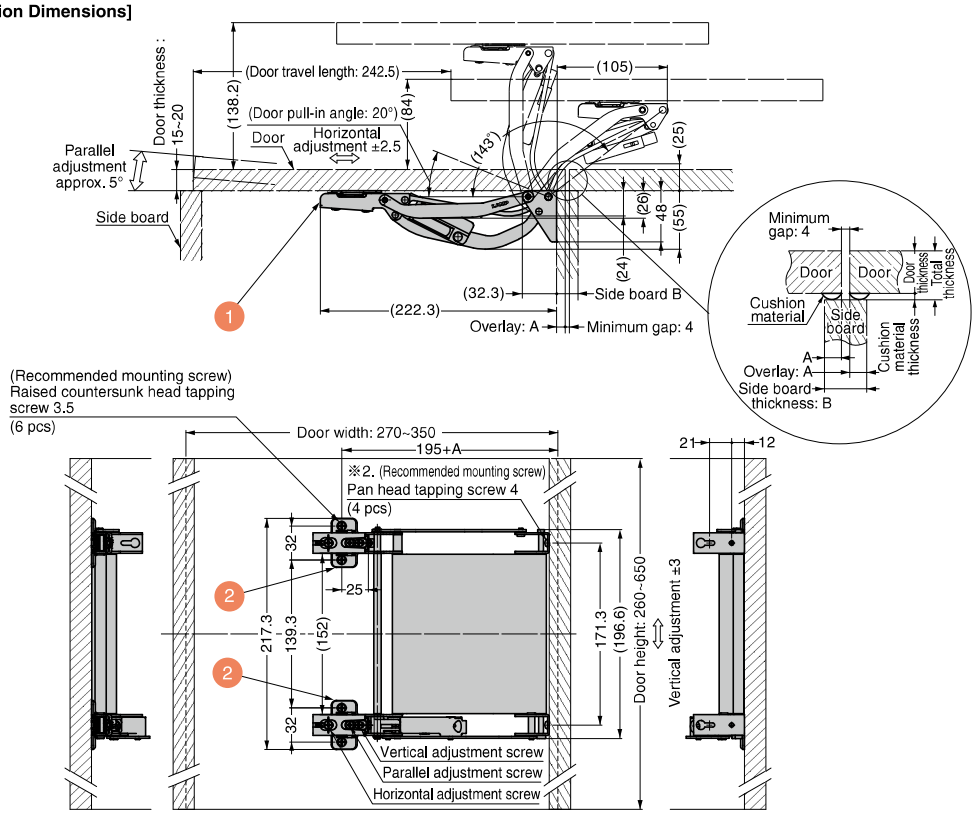
Set Name	RoHS	CAD	Item Code	Item Name	Weight (g)	Box (sets)	Carton (sets)
Parts Set	G	3D	250-016-605	FAD-5	781	1	15

Parts Included

No.	Qty	Dimensions	Description
1	1 pc	Hinge Body  Refer to the [Installation Dimensions] for details.	●Material Aluminium Alloy/POM/ Steel ●Finish Anodised Silver/Grey/ Nickel

No.	Qty	Dimensions	Description
2	2 pcs	Mounting Plate 	Item Code : 160-070-041 Item Name : 230-P4W-32T Weight (g) : 26 Box (pcs) : 400 ●Material Steel ●Finish Nickel

[Installation Dimensions]



※1 Pay attention to the thickness of cushion material (bumper etc.) when used for continuous door.
Hinge body may conflict with door depending on installation conditions. Confirm with drawings or actual item.
Design cabinet by reference to the installation conditions given in the table on the right.

Example: For side board thickness 20mm and 8mm overlay, the total thickness of door and cushion material is up to 23mm.
In this case, if the door thickness is 20mm, the thickness of cushion material will be:
・Available cushion material thickness = Total thickness – Door thickness
= 23 − 20 = 3
So the cushion material thickness shall be below 3mm.

※2 When installing this product on double door, pay attention to interference between mounting screws.

[Total thickness (Door+Cushion Material)]

Side board thickness B (mm)	Overlay A (mm)				
	5	6	7	8	Min. 8.5
15	21.5	–	–	–	–
16	22.5	21.5	–	–	–
17	23	22.5	–	–	–
18	23		22.5	–	–
19	23			–	–
20	23				–
Min. 21	23				

※For side board thickness above 21mm, set arbitrary overlay with minimum gap 4mm.

Refer to 1 : P.800~P.801

MONOFLAT FAD-20 For Medium Size Cabinet

INSTRUCTION

MonoFlat FAD®

Cabinet Inside Width	500~550 mm
Cabinet Inside Height	Max. 2420 mm
Door Thickness	Max. 35 mm
Door Weight	Max. 20 kg/Door
Specification	☐ Single Door (Overlay)

Door does not get in the way when opened with smaller projection than a swing door.

- Door will be flush with surrounding walls when closed.
- Smaller locus maximises space in front of door.
- Possible to combine various opening modes such as single door and double door.
- Door can be operated smoothly and held in fully opened and closed position.
- Passed 40,000 open/close cycle test
- Other "MonoFlat Series" are available. Refer to the following for details.
  - MonoFlat Unison Neo for door weight up to 70 kg
  - MonoFlat FAD-5 for door weight up to 5 kg 1
  - MonoFlat LIN-X hinge for door weight up to 90 kg 2

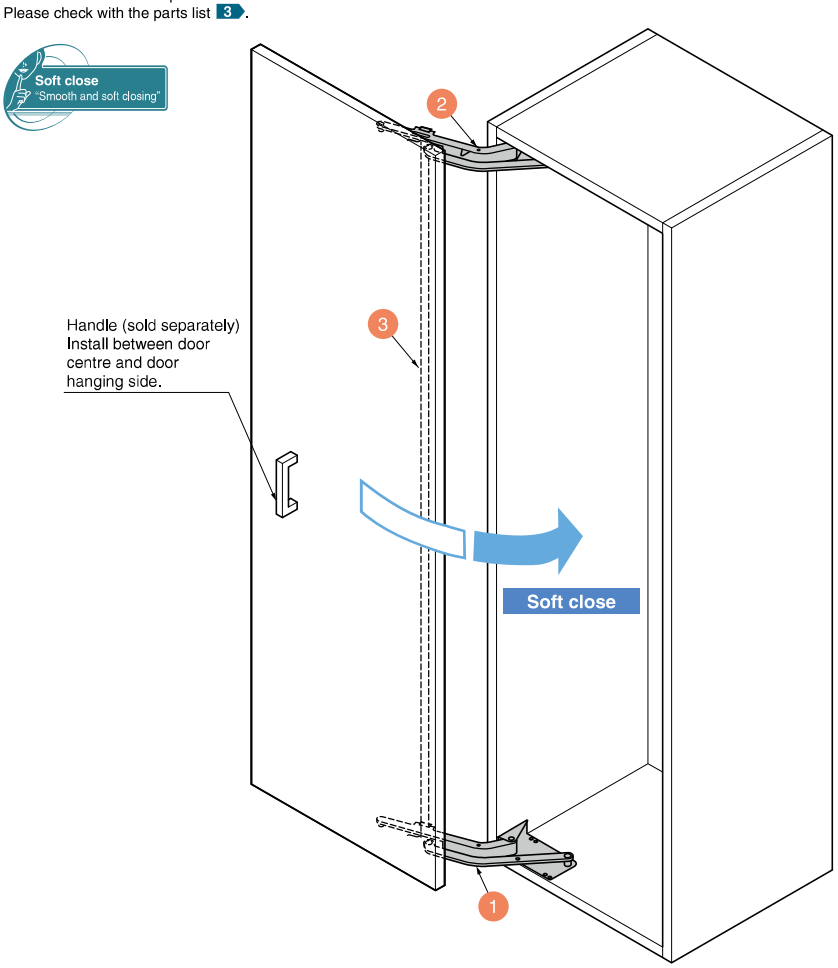
[Remarks]

- Door opening and closing speed varies depending on products.

[Parts Included]

- Binding head tapping screw 4.5×20.....22 pcs
- Binding head screw M5×8..... 4 pcs
- Hexagon socket head cap screw M4×8 ..... 4 pcs
- Countersunk head tapping screw 4.5×20 ..... 2 pcs

The circled numbers are part numbers.
Please check with the parts list 3.



Video Link

Refer to 1 : P.800, 2 : P.814, 3 : P.803

When Ordering MonoFlat FAD-20

● Necessary Parts ..... Parts Set (Per Door)

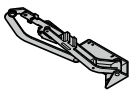
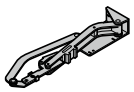
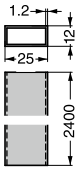
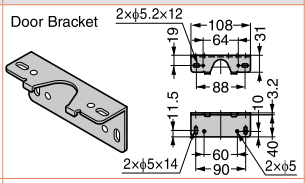
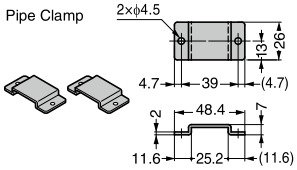
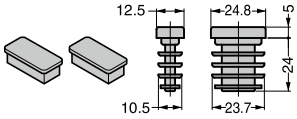
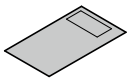
The circled numbers are part numbers. Please check with the drawings 1 .

Parts Set (Per Door)

Necessary Parts.

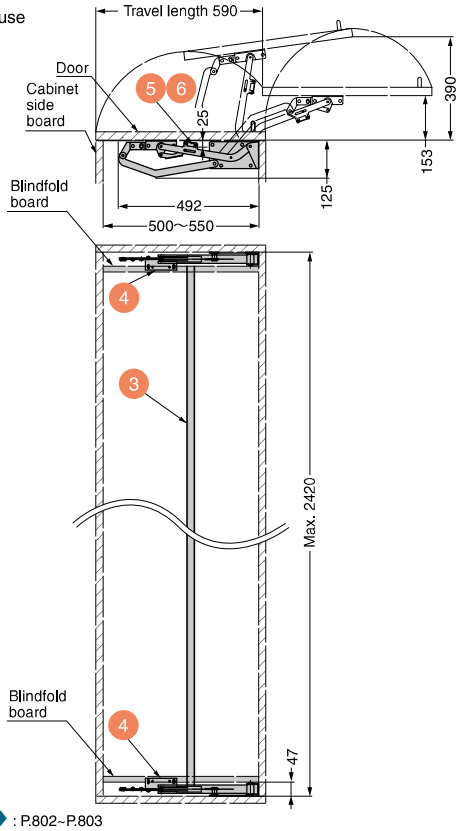
Set Name	RoHS	CAD	Item Code	Item Name	Weight (g)	Carton (sets)
Parts Set	–	3D	250-180-908	FAD-20	7500	1

Parts Included

No.	Qty	Dimensions	Description
1	1 pc	Arm A  See below	●Material Aluminium Alloy / Steel ●Finish / Colour Paint / Silver
2	1 pc	Arm B  See below	●Material Aluminium Alloy / Steel ●Finish / Colour Paint / Silver
3	1 pc	Connecting Pipe  	●Material Steel ●Finish / Colour Paint / Silver
4	2 pcs	Door Bracket 	●Material Steel ●Finish / Colour Paint / Silver
5	2 pcs	Pipe Clamp 	●Material Steel ●Finish / Colour Paint / Silver
6	2 pcs	Cap 	●Material PE ●Colour Black
7	1 pc	Sticker 	–

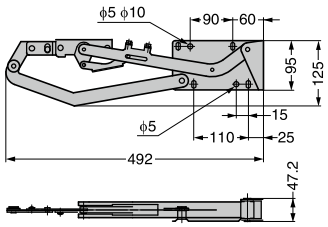
[Installation Example]

Left hand use



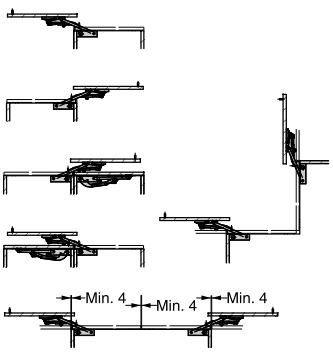
Refer to 1 : P.802~P.803

[Arm 1 2 Dimensions]



Shown is arm A 1. Arm B 2 is upside-down.

[Opening Variations]



MONOFLAT LIN-X HINGE LIN-X450, LIN-X600

INSTRUCTION

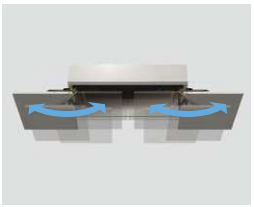
MonoFlat LIN-X hinge®

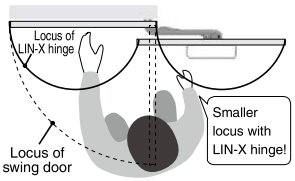


Door does not get in the way even when fully opened

- Door will be flush with left and right doors when closed.
  - Door does not get in the way during and after being opened.
    Swings out laterally in small radius, ideal for tight front space application.
  - Full access to cabinet! Maximising inside space.
    Installed to cabinet side board, maximising space inside of cabinet.
  - Smooth operation
    Door can be opened and closed smoothly from any position.
  - Soft close
    Door closes smoothly and softly with damper.
  - Easy installation
    Arms are clipped or base.
  - 4-way adjustable
    Adjustable in vertical, horizontal, depth and parallel directions.
  - Various applications
    Allows to combine single door and double door, suitable for various cabinets. L-shaped corner use also possible.

	LIN-X450 1	LIN-X600 2
Door Width	400~500 mm	550~650 mm
Door Height	600~2400 mm	
Door Thickness	15~24 mm	
Door Weight	Max. 17 kg/Door	Max. 24 kg/Door
Overlay	19 mm	
Specification	☐ Single Door (Overlay)	





Allows to swing out laterally in small radius, ideal for tight front space application.



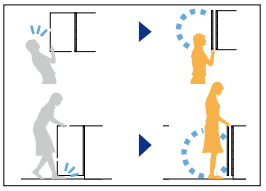


Installed to side board, not interfering with taking in/out of articles. Suitable for hanging doors and floor cabinets.

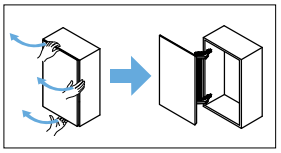


Easy installation and removal.

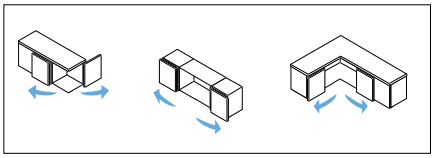




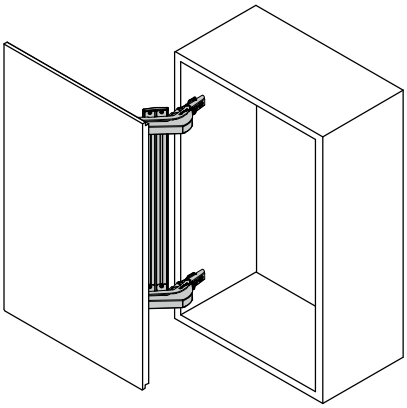
Door does not get in the way when opening and closing.



Door can be opened and closed smoothly from any position.



Suitable for various cabinets.



2 hinges per door shown.

Video Link

Video Link

Video Link

Refer to 1 : P.805, 2 : P.808

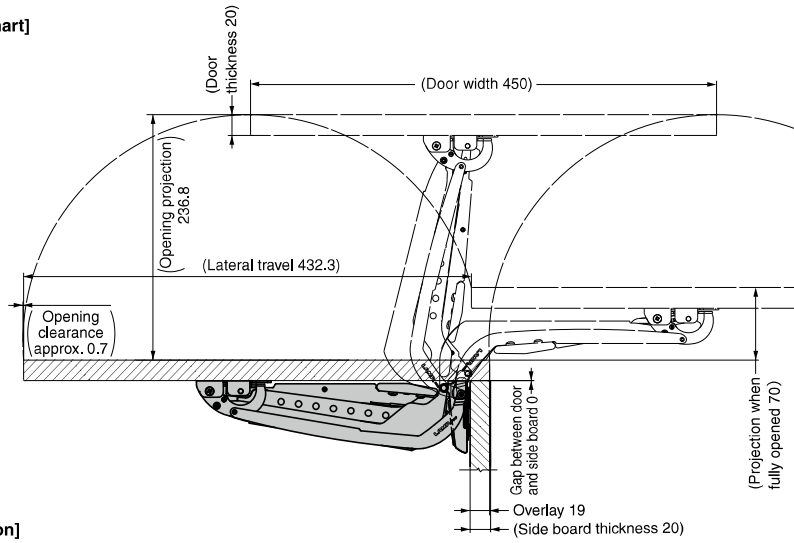
■LIN-X450 Installation Example

INSTRUCTION

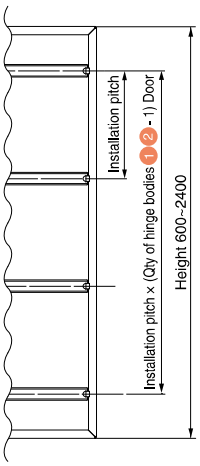
Door specifications [Width: 400~500mm] [Thickness: 15~24mm] [Height: 600~2400mm] [Weight: Max. 17kg/door] [Overlay: 19mm for standard type]

The circled numbers are part numbers. Please check with the parts list ①. For LIN-X600, refer to ②.

[Locus Chart]

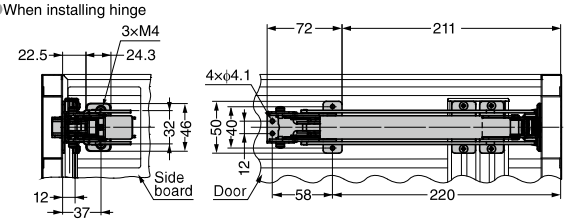


[Installation Pitch]

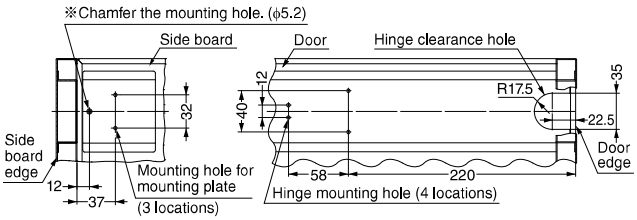


[Installation]

●When installing hinge



●Before installing hinge

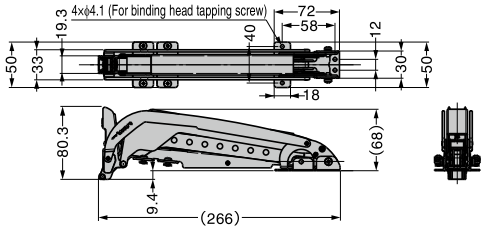


Qty of Hinge Bodies (① + ②)	Item Name Suffix of Parts Set					
	09XX	12XX	15XX	18XX	21XX	24XX
	Connecting Bar ③ Length L					
	540	840	1140	1440	1740	2040
2 Hinges per Door	490	790	1090	–	–	–
3 Hinges per Door	245	395	545	695	845	–
4 Hinges per Door	–	263	363	463	563	663
5 Hinges per Door	–	–	272.5	347.5	422.5	497.5

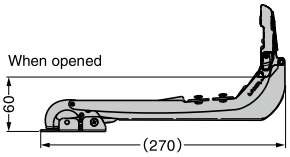
[Parts Drawings]

●Hinge body

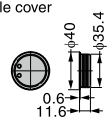
When closed



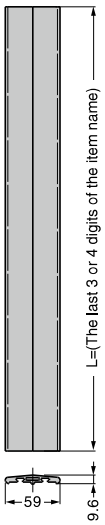
When opened



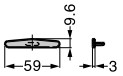
●Hole cover



●Connecting bar



●End cap for connecting bar



Refer to ① : P.806~P.807, ② : P.810

When Ordering MonoFlat LIN-X Hinge LIN-X450

●Necessary Parts..... Parts Set (Per Door) + Mounting Plate

●Standard kit 1 including mounting plates also available, suitable for door height 600~900mm and door weight 7kg or less.

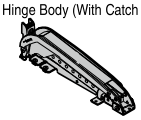
Parts Set (Per Door)

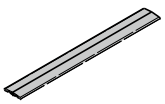
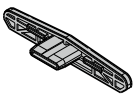
Necessary Parts
Choose based on applicable door height and door weight.
(Refer to 2 for details on dimensions and descriptions of parts included in the set.)

RoHS	CAD	Item Code	Item Name	Door Height mm	Door Weight kg	Parts Included (For LIN-X450)					Weight (g)
						1 Hinge Set (With Catch & Damper)	2 Hinge Set (Without Catch & Damper)	3 Connecting Bar		4 End Cap For Connecting Bar	
						Qty/set	Qty/set	Connecting Bar Item Name	Qty/pc	Qty/pc	
G	3D	250-016-701	LIN-X450S-0907	600~900	Max. 7	2	–	LIN-X45-L540	1	2	4046
G	3D	250-016-702	LIN-X450S-0910		7.1~10.5	3					4812
G	3D	250-016-703	LIN-X450S-1207	901~1200	Max. 7	2		LIN-X45-L840			4193
G	3D	250-016-704	LIN-X450S-1210		7.1~10.5	3					4959
G	3D	250-016-705	※1 LIN-X450S-1214		10.6~14		1				5661
G	3D	250-016-706	LIN-X450S-1507	1201~1500	Max. 7	2	–	LIN-X45-L1140			4416
G	3D	250-016-707	LIN-X450S-1510		7.1~10.5	3					5182
G	3D	250-016-708	※1 LIN-X450S-1514		10.6~14		1				5884
G	3D	250-016-709	※2 LIN-X450S-1517		14.1~17		2				6586
G	3D	250-016-710	LIN-X450S-1807	1501~1800	Max. 7		–	LIN-X45-L1440			5512
G	3D	250-016-711	LIN-X450S-1810		7.1~10.5						5512
G	3D	250-016-712	※1 LIN-X450S-1814		10.6~14		1				6214
G	3D	250-016-713	※2 LIN-X450S-1817		14.1~17		2				6916
G	3D	250-016-715	LIN-X450S-2107	1801~2100	Max. 7		–	LIN-X45-L1740			5648
G	3D	250-016-716	LIN-X450S-2110		7.1~10.5						5648
G	3D	250-016-717	※1 LIN-X450S-2114		10.6~14		1				6350
G	3D	250-016-718	※2 LIN-X450S-2117		14.1~17		2				7052
G	3D	250-016-721	※1 LIN-X450S-2407	2101~2400	Max. 7		1	LIN-X45-L2040			6669
G	3D	250-016-722	※1 LIN-X450S-2410		7.1~10.5						6669
G	3D	250-016-723	※1 LIN-X450S-2414		10.6~14						6669
G	3D	250-016-724	※2 LIN-X450S-2417		14.1~17		2				–

※1: 4 hinges per door. If installing hinge set (without catch & damper) 2, please use it as the second one from the bottom.
※2: 5 hinges per door. If installing hinge set (without catch & damper) 2, please use it as the second and third ones from the bottom.

[Parts Set Details] Refer to page 2 for the dimensions.

No.	Part Name	Description
1	**Hinge Set (With Catch & Damper)** Parts Included in 1 Set Hinge Body (With Catch & Damper)  ×1 Hole Cover  ×1 Binding Head Tapping Screw  ×4	G 3D Item Code : 250-016-240 Item Name : LIN-X450ACD Weight (g) : 766 ●Material Steel ●Finish Nickel
2	**Hinge Set (Without Catch & Damper)** Parts Included in 1 Set Hinge Body (With Catch & Damper)  ×1 Hole Cover  ×1 Binding Head Tapping Screw  ×4	G 3D Item Code : 250-016-242 Item Name : LIN-X450A Weight (g) : 702 ●Material Steel ●Finish Nickel

No.	Part Name	Description
3	**Connecting Bar** 	G 3D Item Code : 250-016-250 Item Name : LIN-X45-L540 Weight (g) : 481 G 3D Item Code : 250-016-252 Item Name : LIN-X45-L840 Weight (g) : 647 G 3D Item Code : 250-016-254 Item Name : LIN-X45-L1140 Weight (g) : 870 G 3D Item Code : 250-016-255 Item Name : LIN-X45-L1440 Weight (g) : 1200 G 3D Item Code : 250-016-256 Item Name : LIN-X45-L1740 Weight (g) : 1336 G 3D Item Code : 250-016-259 Item Name : LIN-X45-L2040 Weight (g) : 1655 ●Material Aluminium Alloy ●Finish Anodised
4	**End Cap for Connecting Bar** 	G – Item Code : 250-016-260 Item Name : LIN-X45C Weight (g) : 2 ●Material POM ●Colour Grey

Refer to 1 : P.807, 2 : P.805

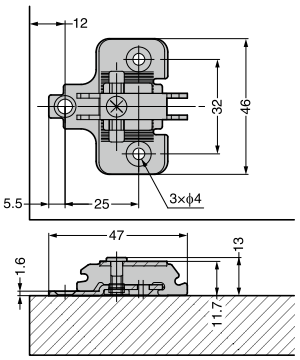
Mounting Plate

Necessary Parts
Mounting Plate 5 : Same qty as hinge (1 + 2) is necessary.
Countersunk Head Tapping Screw 6 : 3 pcs are necessary per 1 mounting plate.

No.	RoHS	CAD	Item Code	Dimensions
5	G	3D	160-070-041	Mounting Plate

Item Name :
230-P4W-32T
Weight (g) : 26





●Material Steel
●Finish Nickel

No.	RoHS	CAD	Item Code	Dimensions
6	G	–	160-070-030	Raised Countersunk Head Tapping Screw 3.5×15

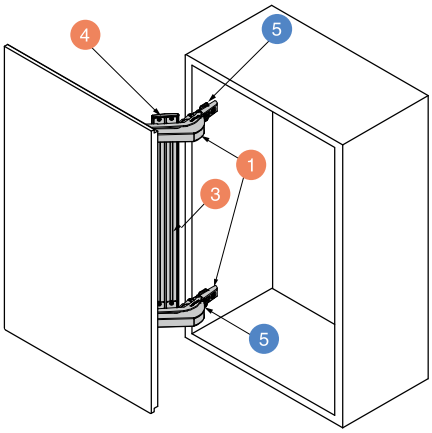
Item Name :
TAP3515NI
Weight (g) : 1



For Mounting Plate

●Material Steel
●Finish Nickel

The circled numbers are part numbers. Please check with the parts list 1. For LIN-X600, refer to 2.



Refer to 1 : P.806~P.807, 2 : P.810

STANDARD KIT With Mounting Plate



Kit for LIN-X450

●Includes parts set and mounting plates.
●Suitable for door size (width 400~500mm, height 600~900mm, thickness 15~24mm) and door weight 7kg or less.

[Parts Included]
Hinge body ..... 2 pcs
Mounting plate ..... 2 pcs
Connecting bar ..... 1 pc
End cap for connecting bar ..... 2 pcs
Hole cover ..... 2 pcs
Raised countersunk head tapping screw 3.5×15 ..... 6 pcs
Binding head tapping screw 3.5×15 ..... 8 pcs

RoHS	CAD	Item Code	Item Name	Overlay mm	Door Height mm	Door Weight kg	Mounting Plate (Included)	Weight (g)	Box (sets)	Carton (sets)
G	3D	250-014-240	LIN-X450	19	600~900	Max. 7	230-P4W-32T	2162	1	6
G	3D	250-014-553	LIN-X450 + 5	14			230-P4W-32T+5	2200	1	6

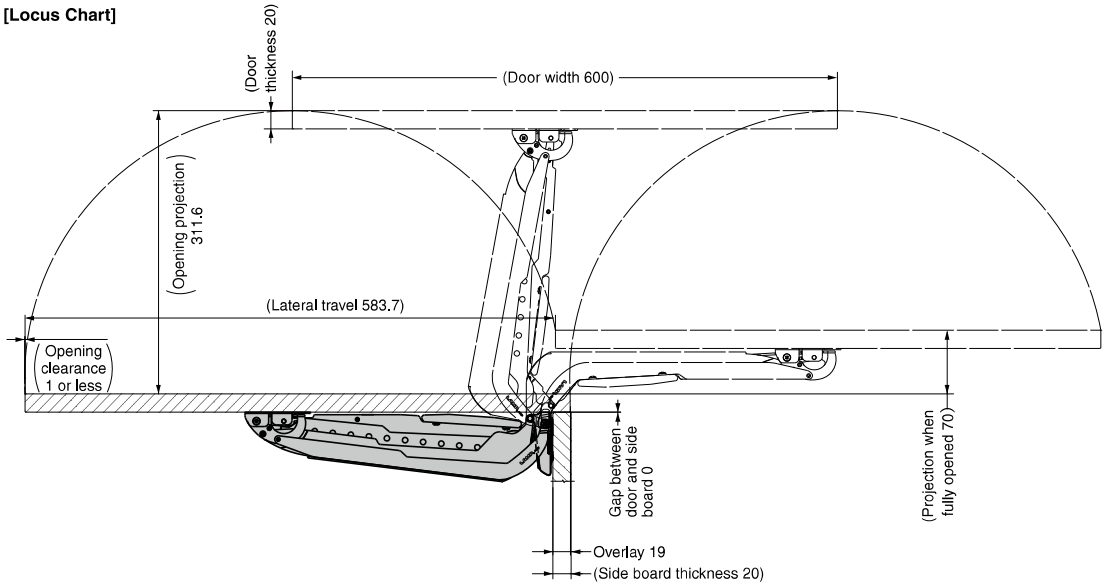
■LIN-X600 Installation Example

INSTRUCTION

Door specifications [Width: 550~650 mm] [Thickness: 15~24 mm] [Height: 600~2400 mm] [Weight: Max. 24 kg/door] [Overlay: 19 mm for standard type]

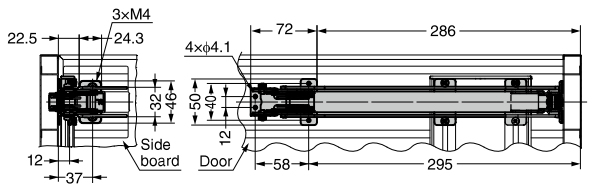
The circled numbers are part numbers. Please check with the parts list ①. For LIN-X450, refer to ②.

[Locus Chart]

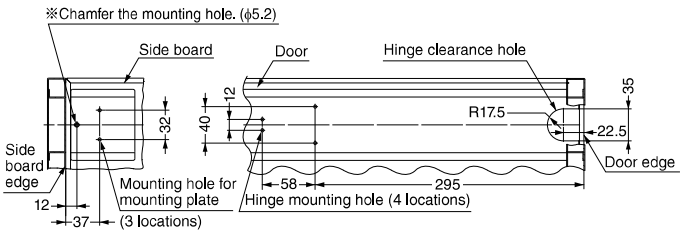


[Installation]

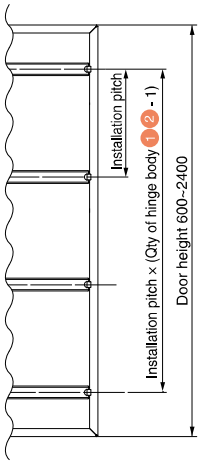
●When installing hinge



●Before installing hinge



[Installation Pitch]



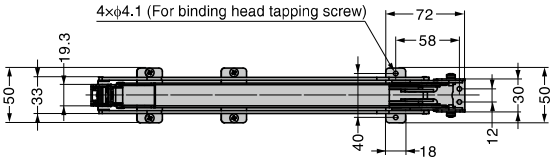
Qty of hinge bodies (①+②)	Item Name Suffix of Parts Set					
	09XX	12XX	15XX	18XX	21XX	24XX
	Connecting Bar ③ Length L					
	540	840	1140	1440	1740	2040
2 Hinges per Door	490	790	–	–	–	–
3 Hinges per Door	245	395	545	695	845	–
4 Hinges per Door	–	–	363	463	563	663
5 Hinges per Door	–	–	–	347.5	422.5	497.5

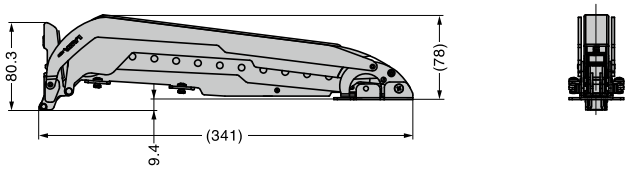
Refer to ① : P.810, ② : P.806

[Parts Drawings]

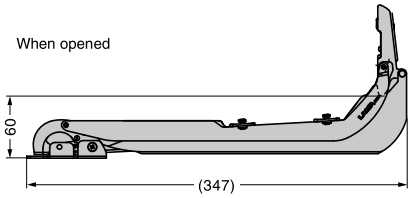
●Hinge body

When closed

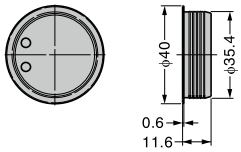




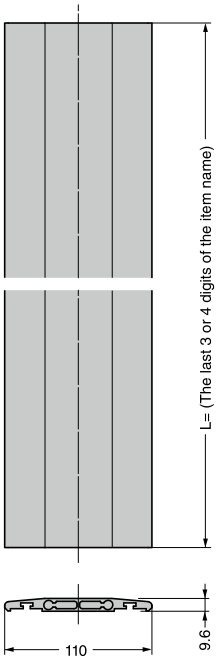
When opened



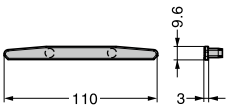
●Hole cover



●Connecting bar



●End cap for connecting bar



When Ordering MonoFlat LIN-X Hinge LIN-X600

●Necessary Parts..... **Parts Set (Per Door)** + **Mounting Plate**

●Standard kit 1 including mounting plates also available, suitable for door height 600~900mm and door weight 9kg or less.

Parts Set (Per Door)

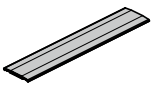
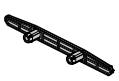
Necessary Parts.
Choose based on applicable door height and door weight.
(Refer to 2 for details on dimensions and descriptions of parts included in the set.

RoHS	CAD	Item Code	Item Name	Door Height mm	Door Weight kg	Parts Included (For LIN-X600) ① Hinge Set (With Catch & Damper) Qty/set	② Hinge Set (Without Catch & Damper) Qty/set	③ Connecting Bar Qty/pc	④ End Cap For Connecting Bar Qty/pc	Weight (g)
G	3D	250-017-492	LIN-X600S-0909	600~	Max. 9	2	–	1	2	4913
G	3D	250-017-067	LIN-X600S-0912	900	9.1~12	3				5930
G	3D	250-017-068	LIN-X600S-1212	901~	Max. 12	2				5232
G	3D	250-017-069	LIN-X600S-1216	1200	12.1~16	3				6270
G	3D	250-017-070	LIN-X600S-1512	1201~	Max. 12					6752
G	3D	250-017-071	LIN-X600S-1516	1500	12.1~16					6752
G	3D	250-017-072	※1 LIN-X600S-1520		16.1~20		1			7748
G	3D	250-017-073	LIN-X600S-1812		Max. 12		–			7070
G	3D	250-017-074	LIN-X600S-1816	1501~	12.1~16					7070
G	3D	250-017-075	※1 LIN-X600S-1820	1800	16.1~20		1			8066
G	3D	250-017-493	※2 LIN-X600S-1824		20.1~24		2			9062
G	3D	250-017-076	LIN-X600S-2112		Max. 12		–			7608
G	3D	250-017-077	LIN-X600S-2116	1801~	12.1~16					7608
G	3D	250-017-078	※1 LIN-X600S-2120	2100	16.1~20		1			8604
G	3D	250-017-079	※2 LIN-X600S-2124		20.1~24		2			9600
G	3D	250-017-080	※1 LIN-X600S-2412		Max. 12		1			9066
G	3D	250-017-081	※1 LIN-X600S-2416	2101~	12.1~16					9066
G	3D	250-017-082	※1 LIN-X600S-2420	2400	16.1~20					9066
G	3D	250-017-083	※2 LIN-X600S-2424		20.1~24		2			

※1: 4 hinges per door. If installing hinge set (without catch & damper) 2, please use it as the second one from the bottom.
※2: 5 hinges per door. If installing hinge set (without catch & damper) 2, please use it as the second and third ones from the bottom.

[Parts Set Details] Refer to page 2 for the dimensions.

No.	Part Name	Description
1	**Hinge Set (With Catch & Damper)** Parts Included in 1 Set Hinge Body (With Catch & Damper)  ×1 Hole Cover  ×1 Binding Head Tapping Screw  ×4	G 3D Item Code : 250-016-962 Item Name : LIN-X600ACD Weight (g) : 1017 ●Material Steel ●Finish Nickel
2	**Hinge Set (Without Catch & Damper)** Parts Included in 1 Set Hinge Body (Without Catch & Damper)  ×1 Hole Cover  ×1 Binding Head Tapping Screw  ×4	G 3D Item Code : 250-016-963 Item Name : LIN-X600A Weight (g) : 996 ●Material Steel ●Finish Nickel

No.	Part Name	Description
3	**Connecting Bar** 	G 3D Item Code : 250-016-964 Item Name : LIN-X60-L540 Weight (g) : 860 G 3D Item Code : 250-016-965 Item Name : LIN-X60-L840 Weight (g) : 1200 G 3D Item Code : 250-016-966 Item Name : LIN-X60-L1140 Weight (g) : 1682 G 3D Item Code : 250-016-967 Item Name : LIN-X60-L1440 Weight (g) : 2000 G 3D Item Code : 250-016-968 Item Name : LIN-X60-L1740 Weight (g) : 2538 G 3D Item Code : 250-016-969 Item Name : LIN-X60-L2040 Weight (g) : 3000 ●Material Aluminium Alloy ●Finish Anodised
4	**End Cap for Connecting Bar** 	G – Item Code : 250-016-970 Item Name : LIN-X60C Weight (g) : 4 ●Material POM ●Colour Grey

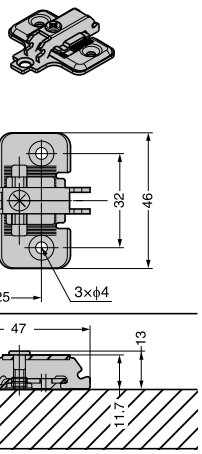
Refer to 1 : P.811, 2 : P.808~P.809

Mounting Plate

Necessary Parts.
Mounting Plate 5 : Same qty as hinge (1+2) is necessary.
Countersunk Head Tapping Screw 6 : 3 pcs are necessary per 1 mounting plate.

No.	RoHS	CAD	Item Code	Dimensions
5	G	3D	160-070-041	Mounting Plate

Item Name :
230-P4W-32T
Weight (g) : 26



●Material Steel
●Finish Nickel

No.	RoHS	CAD	Item Code	Dimensions
6	G	–	160-070-030	Raised Countersunk Head Tapping Screw 3.5×15

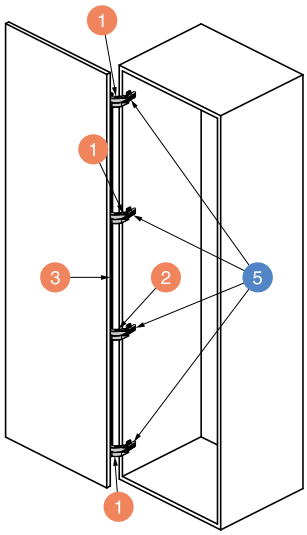
Item Name :
TAP3515NI
Weight (g) : 1



For Mounting Plate

●Material Steel
●Finish Nickel

The circled numbers are part numbers. Please check with the parts list 1. For LIN-X450, refer to 2.



4 hinges per door shown.

Refer to 1 : P.810~P.811, 2 : P.806

STANDARD KIT With Mounting Plate

[Parts Included]
Hinge body ..... 2 pcs
Mounting plate ..... 2 pcs
Connecting bar ..... 1 pc
Raised countersunk head tapping screw 3.5×15 ..... 6 pcs
Binding head tapping screw 3.5×15 ..... 8 pcs
End cap for connecting bar ..... 2 pcs
Hole cover ..... 2 pcs

●Includes parts set and mounting plates.
●Suitable for door size (width 550~650mm, height 600~900mm, thickness 15~24mm) and door weight 9kg or less.

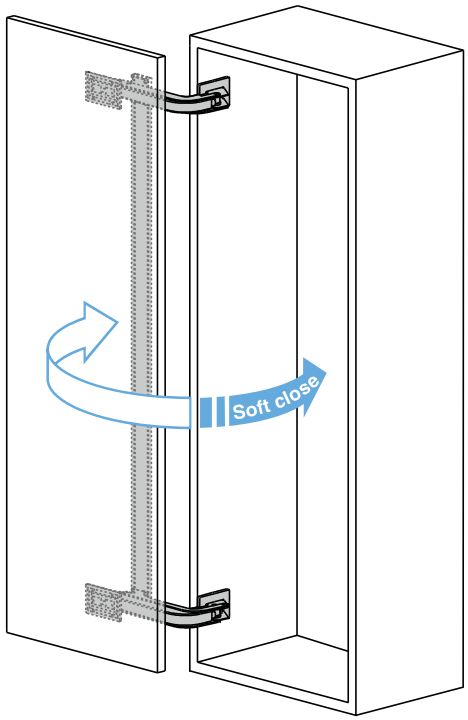
RoHS	CAD	Item Code	Item Name	Overlay mm	Door Height mm	Door Weight kg	Mounting Plate (Included)	Weight (g)	Box (sets)	Carton (sets)
G	–	250-017-590	LIN-X600	19	600~900	Max. 9	230-P4W-32T	3210	1	4

MONOFLAT LIN-X HINGE LIN-X800

Lapcon L=R INSTRUCTION

Soft close
"Smooth and soft closing"

Passed 100,000 open/close private cycle test

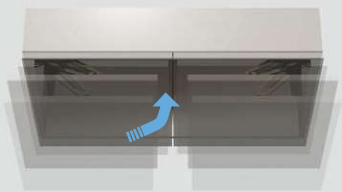


MonoFlat LIN-X hinge®

	LIN-X800	LIN-X800H
Door Width	750 - 850 mm	
Door Height	1600※ - 2400 mm	1600※ - 2980 mm
Door Thickness	24 - 40 mm	
Door Weight	Max. 40 kg per door	
Usage	1 per door (Overlay)	

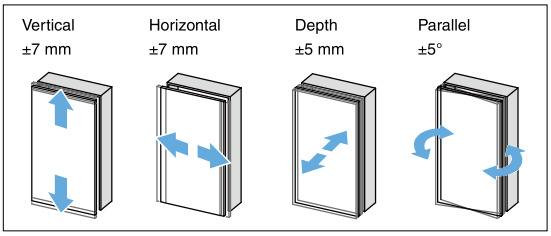
※ Please use by cutting the connecting rod.
For details, refer to the formula in the detailed drawing on P.813.

- Innovative movement keeps doors discretely out of the way.
  Door closes flush with surrounding walls for a sleek and clean design.
  No need to do special processing on any wall for grooves or rails.
  Can be used on aluminium frames (if the frame has a thickness over 120 mm).
- Whether open or closed, door stays out of the way
  Compared to regular swing doors, has a small radius allowing the space in front of the door to be used effectively.
- Opens fully for access to entire cabinet.
  Whether installing cabinets or just getting access, the entire cabinet interior is easily accessible.
- Built-in soft close mechanism
  When the door closes, the internal damper will cause the door to close softly, preventing slamming.
- 4 Way adjustment post installation
  Can be adjusted vertically, horizontally, depth or paralel.
- Wide amount of applicable cabinets
  Can be used on dual opening, single opening cabinets. Can also be used on L shaped corner spaces.



Damper causes doors to close softly.

[Parts Included]
- OTruss head tapping screw 6*25
- Truss head screw M5 × 10
- M5 Square Nut
- One end mouth wrench



•Vertical, Horizontal, Depth and Parallel adjustment possible post-installation.

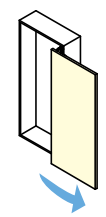
[Colour Variation]



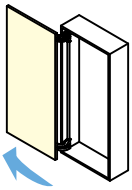
Black



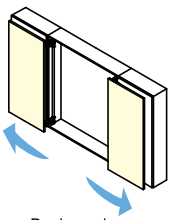
White



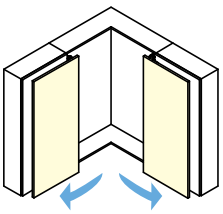
Right opening



Left opening



Dual opening



L Shaped corner space

Video Link

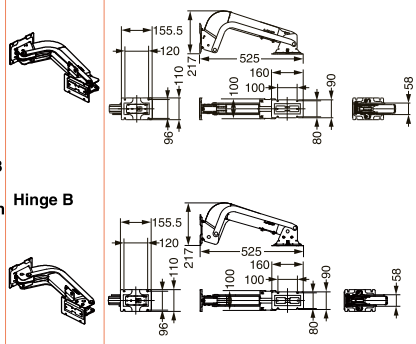
MONO FLAT LIN-X HINGE
If ordering LIN-X800

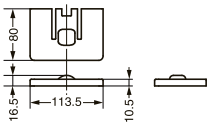
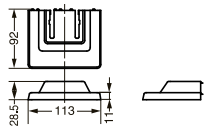
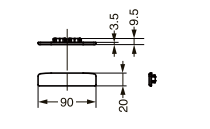
• Be sure to order..... **Part Set (per door)**

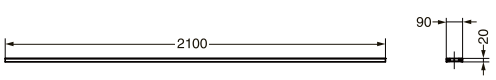
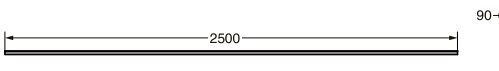
Part Set (per door) This set must be ordered. Select a suitable set according to the door height.

RoHS	CAD	Item Code	Item Name	Door Height	Colour	Set Content (for LIN-X800)			
						①Hinge + ②③Washer Cover + ④Rod Cover		⑤Connecting Rod	
						Item Code	Item Name	Item Code	Item Name
G	3D	250-043-897	LIN-X800-BL-S	2400 mm or Less	Black	250-043-834	LIN-X800-BL	250-043-842	LIN-X80-L2100-BL
G	3D	250-043-898	LIN-X800-WT-S		White	250-043-835	LIN-X800-WT	250-043-843	LIN-X80-L2100-SL
G	3D	250-043-899	LIN-X800H-BL-S	2980 mm or Less	Black	250-043-834	LIN-X800-BL	250-043-844	LIN-X80-L2500-BL
G	3D	250-043-900	LIN-X800H-WT-S		White	250-043-835	LIN-X800-WT	250-043-845	LIN-X80-L2500-SL

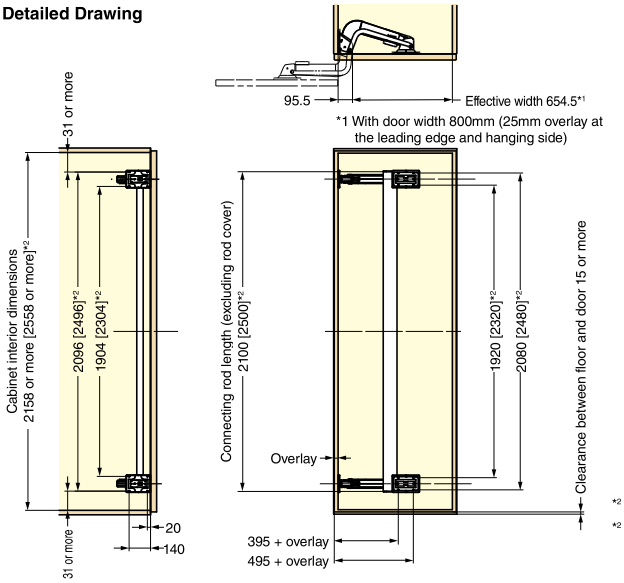
Part Set Contents

No.	Quantity	Parts in Set	Dimensions	Specifications
①	A· B 1 each	Hinge A Hinge B		●Material Steel (SPCC)/ Polyacetal (POM) ●Finish Nickel Plating Baked enamel finish

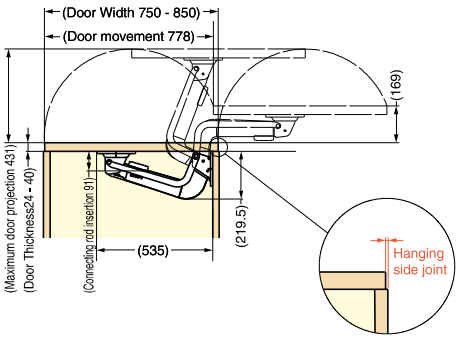
No.	Quantity	Parts in Set	Dimensions	Specifications
②	4 pcs	Washer cover (hanging side)		●Material ABS resin
③	4 pcs	Washer cover (leading edge)		●Material ABS resin
④	2 pcs	Rod cover		●Material Polyacetal (POM)

No.	Quantity	Parts in Set	Dimensions	Specifications
⑤	Either part	Connecting rod		●Material: Aluminium alloy ●Finish: Anodised: Black/silver
				●Material: Aluminium alloy ●Finish: Anodised: Black/silver

Detailed Drawing



Range of Motion



*2 The dimensions in [ ] indicate LIN-X800H specifications.

*2 For cabinet interior dimensions smaller than the minimum value, reduce the other dimensions marked with *2 by an equivalent amount. The connecting rod must be cut by the customer. Max length of connecting rod = Cabinet inner height - 58mm.

MONOFLAT LIN-X HINGE LIN-X1000 For Heavy Duty Door

INSTRUCTION



MonoFlat LIN-X hinge®

	LIN-X1000 For Heavy Duty
Door Width	750~1100 mm
Door Height	2400※1~2980 mm
Door Thickness	24~40 mm
Door Weight	Max. 90 kg/Door ※2
Overlay	19 mm
Specification	☐ Single Door (Overlay)

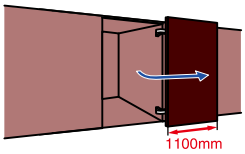
※1 Height may be 2400mm or less if cutting the connecting bar. For further details, please contact local representatives.
※2 Set the clearance between floor and door according to door weight. For details, refer to the drawings on P.815.

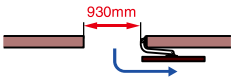
Video Link Video Link Video Link

POINT 1

Max. door width 1100mm (effective opening width 930 mm)

Installed to side wall, not interfering with taking in/out of articles.





Wide access possible

POINT 2

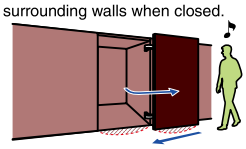
Max. door weight 90kg

Recommended for storage doors and walk-in closets.

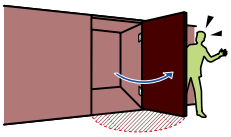
POINT 3

Door does not get in the way when opening and closing.

Opening projection is about half of swing door. Door will be flush with surrounding walls when closed.



In case of LIN-X1000

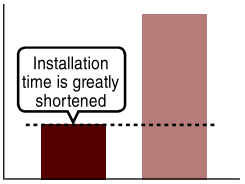


In case of swing door

POINT 4

Greatly shortened installation time

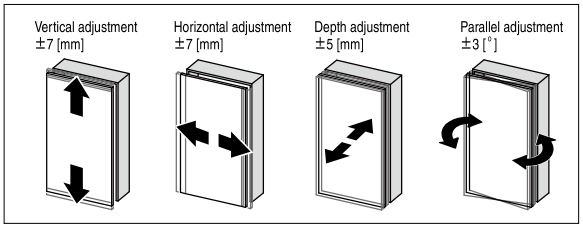
Sub-arm is unnecessary at the upper/lower part of door, remarkably shortening installation time.



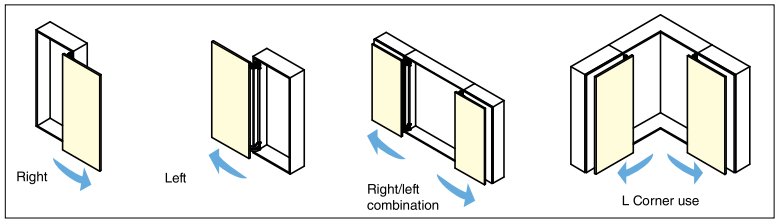
Other Features



Door closes smoothly and softly with damper.
(Damping force 5-step adjustable)



●Adjustable in vertical, horizontal, depth and parallel directions.



●Suitable for various cabinets.



●Available in white and black colours.

When ordering MonoFlat LIN-X Hinge LIN-X1000 For Heavy Duty Door

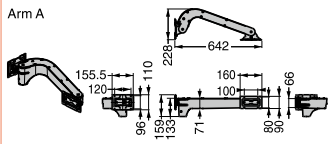
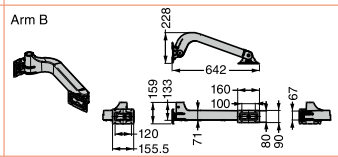
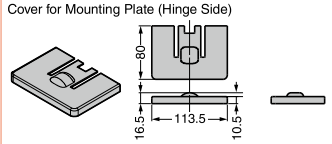
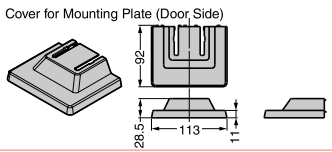
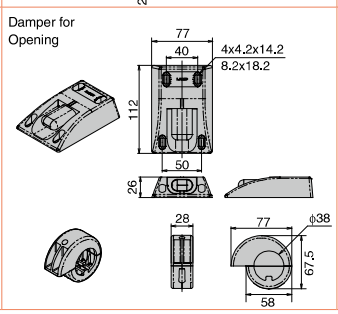
●Necessary Parts..... Parts Set (Per Door) + Connecting Bar

The circled numbers are part numbers. Please check with the drawings on the bottom.

Parts Set (Per Door) — Necessary Parts.

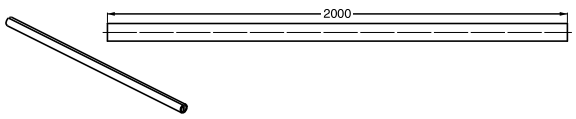
Set Name	RoHS	CAD	Item Code	Item Name	Weight (g)
Parts Set	G	3D	250-034-706	LIN-X1000-WT	12000
	G	3D	250-042-288	LIN-X1000-BL	12000

Parts Included

No.	Qty	Dimensions	Description
1	1 pc	Arm A 	●Material Aluminium Alloy Die-casting ●Finish Powder Coating/ White/Black
2	1 pc	Arm B 	●Material Aluminium Alloy Die-casting ●Finish Powder Coating/ White/Black
3	4 pcs	Cover for Mounting Plate (Hinge Side) 	●Material ABS ●Colour White/Black
4	4 pcs	Cover for Mounting Plate (Door Side) 	●Material ABS ●Colour White/Black
5	1 pc	Damper for Opening 	●Material PBT ●Colour White/Black

Connecting Bar

Necessary Parts1 pc is necessary for 1 door.

No.	Qty	RoHS	CAD	Item Code	Dimensions	Description
6	1 pc	G	3D	250-034-707		●Material:Aluminium Alloy ●Finish:White Anodised
				●Item Name:LIN-X100-L2000-WT ●Weight (g) : 3300		
		G	3D	250-042-289		●Material:Aluminium Alloy ●Finish:Black Anodised
				●Item Name:LIN-X100-L2000-BL ●Weight (g) : 3300		

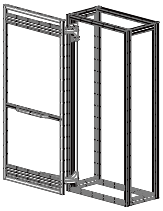
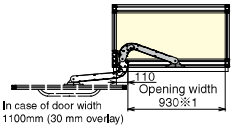


Table 1: Handle position area

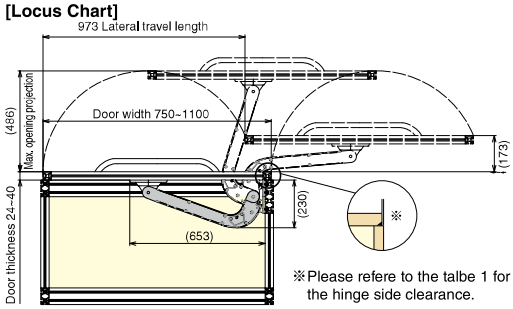
Door width \ Hinge side clearance	10mm	15mm	20mm
750mm~ 900mm	Max. 300mm	Max. 350mm	Max. 500mm
900mm~1000mm	Max. 200mm	Max. 250mm	Max. 400mm
1000mm~1100mm	Max. 100mm	Max. 150mm	Max. 300mm

[Installation Example]

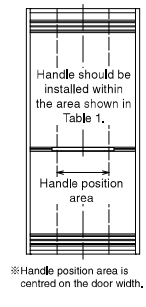


※1 In case of door width 1100mm (30 mm overlay)

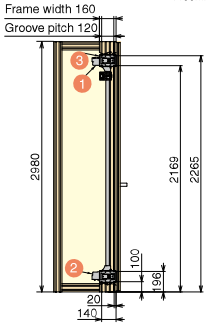
[Locus Chart]

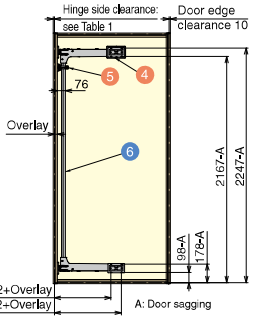


※Please refere to the talbe 1 for the hinge side clearance.



※Handle position area is centred on the door width.





Please set door sagging A based on the following table so that the door will not contact the floor.

Door weight	A: Door sagging
20kg	2mm
30kg	3.5mm
40kg	5mm
50kg	6.5mm
60kg	8mm
70kg	9.5mm
80kg	11mm
90kg	12.5mm

・For carpeted floor, add the carpet thickness to the "door sagging" shown above.
・This product is vertically adjustable by ±7mm after installation. For adjustment method, please refer to the installation instruction.

FOLDING DOOR SYSTEM KF111-MH



Door opened



Folding door system with catch function.

- Holding rollers at the top and bottom achieve smooth opening and closing.
- For aluminium frame support system only.
- Centre hinge has catch function to hold the door at closed position.

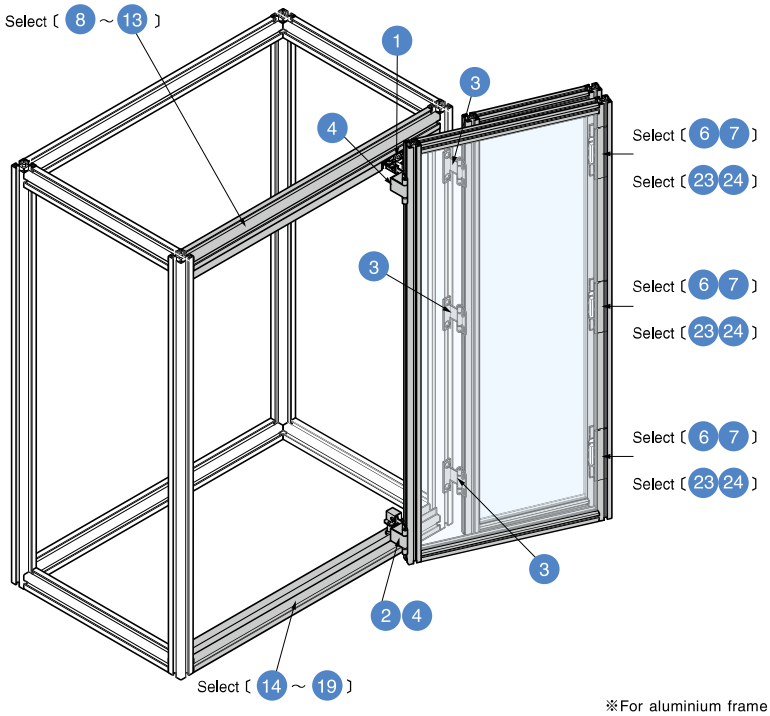
[Remarks]

- Opening and closing of overweight doors may become heavy. Do not exceed 10kg for large doors.
- Aluminium frame not included.

Door Width	Max. 450 mm
Door Height	Max. 2400 mm
Door Thickness	30 mm
Door Weight	Max. 10 kg/Door
Max. Overlay	24 mm
Aluminium Frame	Size: Door 30×60 mm, Frame 30×60 mm, 40×40 mm Groove Width: Door 8 mm, Frame 10 mm

※Please make or prepare door and aluminium frame within the range above.

The circled numbers are part numbers.
Please check with the part list 1 .



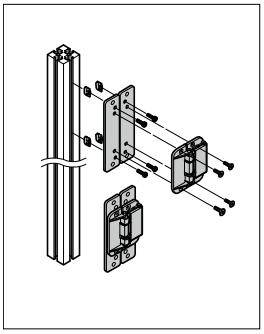
※For aluminium frame support system only. Figure above is for installing to existing aluminium frame.

Refer to 1 : P.818~P.819

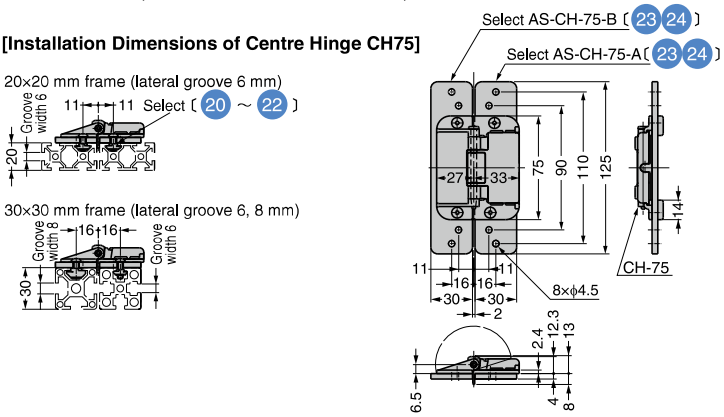
[Installation Example]

The circled numbers are part numbers. Please check with the part list 1 .

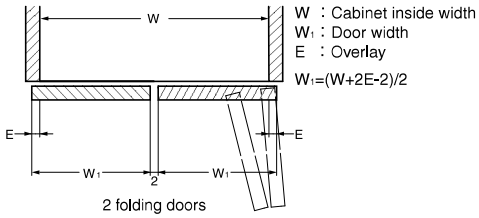
[Centre Hinge Installation]



[Installation Dimensions of Centre Hinge CH75]

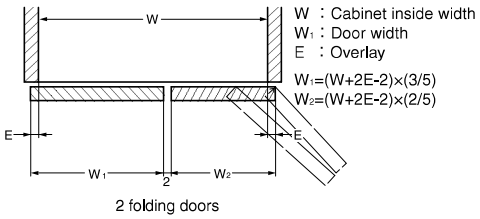


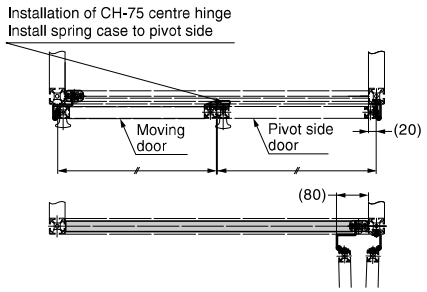
[Door Width Ratio1: 1]

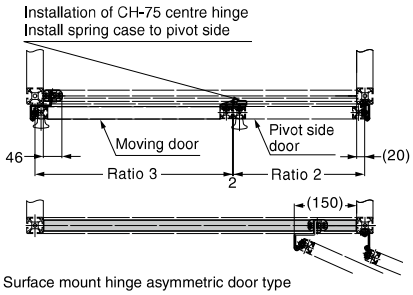


[Door Width Ratio 3: 2]

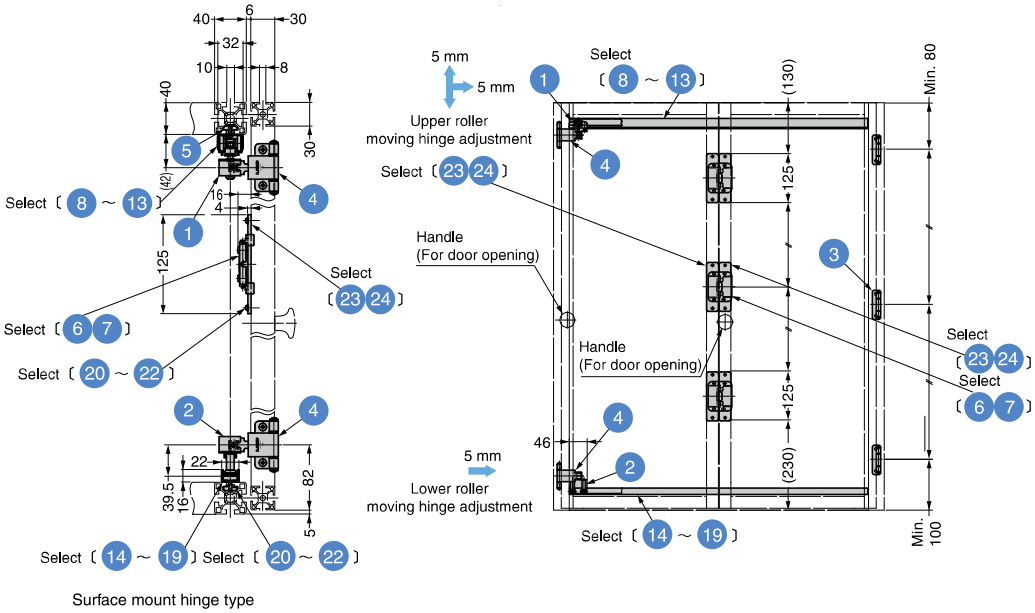
Minimum door projection when fully opened.







Surface mount hinge asymmetric door type



Surface mount hinge type

Refer to 1 : P.818~P.819

※ For aluminium frame support system only. Figure above is for installing to existing aluminium frame.

When Ordering Folding Door System KF111-MH

●Necessary Parts… Roller, Hinge + AS Nut for Upper Track Installation + Centre Hinge, Upper Track + Bottom Guide Track + AS Nut + Centre Hinge Bracket

The circled numbers are part numbers. Please check with the drawings 1 .

Roller, Hinge

Necessary Parts.

No.	RoHS	CAD	Item Code	Dimensions
1	–	3D	250-120-021	Upper Roller Item Name : FD111-TRH Weight (g) : 154 ●Material Roller : POM Roller Guide : POM Roller Support : Steel Hinge Bracket : Steel Hinge: Zinc Alloy (ZDC) ●Finish Plastic Parts: Natural Steel Parts : Coloured Zinc Chromate Hinge : Nickel [Qty for 2 Doors] 1 set
2	–	3D	250-120-028	Lower Roller L Item Name : FD111-BRLH Weight (g) : 159 ●Material Roller : POM (With Synthetic Rubber Ring) Hinge Bracket: Steel Hinge: Zinc Alloy (ZDC) ●Finish Plastic Parts: Natural Steel Parts: Coloured Zinc Chromate Hinge: Nickel [Qty for 2 Doors] 1 set

No.	RoHS	CAD	Item Code	Dimensions
3	G	3D	170-090-689	Hanging Side Hinge Item Name : AS-OHT-68 Weight (g) : 99 ●Material Stainless Steel ●Finish Barrel Polished [Qty for 2 Doors] Door Height 900 mm or Less: 2 pcs Door Height 1600 mm or Less: 3 pcs Door Height 2000 mm or Less: 4 pcs Door Height 2400 mm or Less: 5 pcs
4	G	3D	170-090-688	Door End Side Hinge Item Name : AS-OHS-68 Weight (g) : 110 ●Material Stainless Steel ●Finish Barrel Polished [Qty for 2 Doors] Door Height 2400 mm or Less:2 pcs

AS Nut for Upper Track Installation

Necessary Parts. M4 screws not included.

No.	RoHS	CAD	Item Code	Part Name
5	G	3D	120-040-678	AS Nut (For Groove Width 10 mm) Item Name : AS-10M4 Weight (g) : 7 ●Material Stainless Steel (SUS316) ●Finish Barrel Polished [Necessary Qty] FD111-910 Upper Track: 5 pcs FD111-1220 Upper Track: 6 pcs FD111-1820 Upper Track: 7 pcs FD2216-910 Bottom Guide Track: 4 pcs FD2216-1220 Bottom Guide Track: 5 pcs FD2216-1820 Bottom Guide Track: 7 pcs

Centre Hinge, Upper Track

Necessary Parts.
Please order necessary qty of centre hinges based on door size and qty.
Please order necessary qty of upper tracks based on track length.

No.	Type	RoHS	CAD	Item Code	Dimensions
6	Nickel	–	3D	250-129-208	Centre Hinge Item Name : CH-75NI Weight (g) : 101
7	Bronze	–	3D	250-120-031	Item Name : CH-75GB Weight (g) : 99
					●Material Zinc Alloy (ZDC) / POM [Qty for 2 Doors] Door Height 1600 mm or Less:3 pcs Door Height 2400 mm or Less:4 pcs

No.	Type	RoHS	CAD	Item Code	Dimensions
8	Silver Length 910 mm	G	3D	250-120-006	Upper Track Item Name : FD111-910-SIL Weight (g) : 335
9	Silver Length 1220 mm	G	3D	250-120-004	Item Name : FD111-1220-SIL Weight (g) : 409
10	Silver Length 1820 mm	G	3D	250-120-002	Item Name : FD111-1820-SIL Weight (g) : 600
11	Bronze Length 910 mm	G	3D	250-120-005	Item Name : FD111-910-GB Weight (g) : 307
12	Bronze Length 1220 mm	G	3D	250-120-003	Item Name : FD111-1220-GB Weight (g) : 387
13	Bronze Length 1820 mm	G	3D	250-120-001	Item Name : FD111-1820-GB Weight (g) : 600
					●Material Aluminium Alloy ●Finish Anodised ※Convex R-shaped travel surface is effective for dust removing . Pitch End 15 mm

Refer to 1 : P.816~P.817

The circled numbers are part numbers. Please check with the drawings 1 .

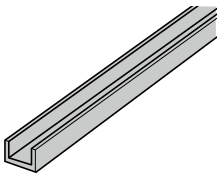
Bottom Guide Track

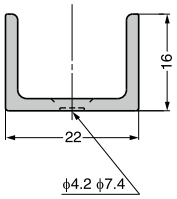
Necessary Parts. Please order necessary qty based on track length.

No.	Type	RoHS	CAD	Item Code
14	Silver Length 910 mm	G	3D	250-120-015 Item Name : FD2216-910-SIL Weight (g) : 240
15	Silver Length 1220 mm	G	3D	250-120-013 Item Name : FD2216-1220-SIL Weight (g) : 325
16	Silver Length 1820 mm	G	3D	250-120-011 Item Name : FD2216-1820-SIL Weight (g) : 500
17	Bronze Length 910 mm	G	3D	250-120-014 Item Name : FD2216-910-GB Weight (g) : 238
18	Bronze Length 1220 mm	G	3D	250-120-012 Item Name : FD2216-1220-GB Weight (g) : 324
19	Bronze Length 1820 mm	G	3D	250-120-010 Item Name : FD2216-1820-GB Weight (g) : 400

●Material Aluminium Alloy
●Finish Anodised Clear

Bottom Guide Track





Pitch End 15 mm

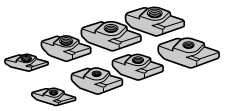
AS Nut

Necessary Parts. M4, M5 screws not included.

No.	Type	RoHS	CAD	Item Code
20	Aluminium Frame Groove Width 8 mm M4	G	3D	120-040-685 Item Name : AS-8M4 Weight (g) : 4
21	Aluminium Frame Groove Width 8 mm M5	G	3D	120-040-686 Item Name : AS-8M5 Weight (g) : 4
22	Aluminium Frame Groove Width 10 mm M5	G	3D	120-040-687 Item Name : AS-10M5 Weight (g) : 7

●Material Stainless Steel (SUS316)
●Finish Barrel Polished

AS Nut



[Qty for 2 Doors]

	AS-8M4	AS-8M5	AS-10M5
Door Height 900 mm or Less:	12 pcs,	8 pcs,	4 pcs
Door Height 1600 mm or Less:	12 pcs,	12 pcs,	6 pcs
Door Height 2000 mm or Less:	16 pcs,	16 pcs,	8 pcs
Door Height 2400 mm or Less:	16 pcs,	20 pcs,	10 pcs

Centre Hinge Bracket

Necessary Parts.

No.	RoHS	CAD	Item Code
23	G	3D	170-090-694 Item Name : AS-CH-75-A Weight (g) : 110
24	G	3D	170-090-695 Item Name : AS-CH-75-B Weight (g) : 109

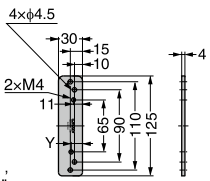
●Material
Stainless Steel (SUS430)
●Finish Barrel Polished

Bracket for Centre Hinge



[Qty for 2 Doors]
Door Height 1600 mm or Less:
23 3 pcs, 24 3 pcs
Door Height 2400 mm or Less:
23 4 pcs, 24 4 pcs

Y = 14 (AS-CH-75-A)
Y = 11 (AS-CH-75-B)
※AS-CH-75-A is marked with “R” , and AS-CH-75-B marked with “L” .



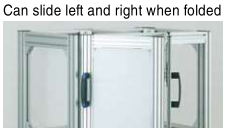
Refer to 1 : P.816~P.817

SLIDABLE FOLDING DOOR SYSTEM KF111-R

AS INSTRUCTION



Can slide left and right when folded





Folded doors can slide for easy access.

- Can fold door to the left or right side and then slide it.
- Ball bearing used in upper roller achieves smooth opening and closing.
- Centre hinge has catch to hold the door at closed position.

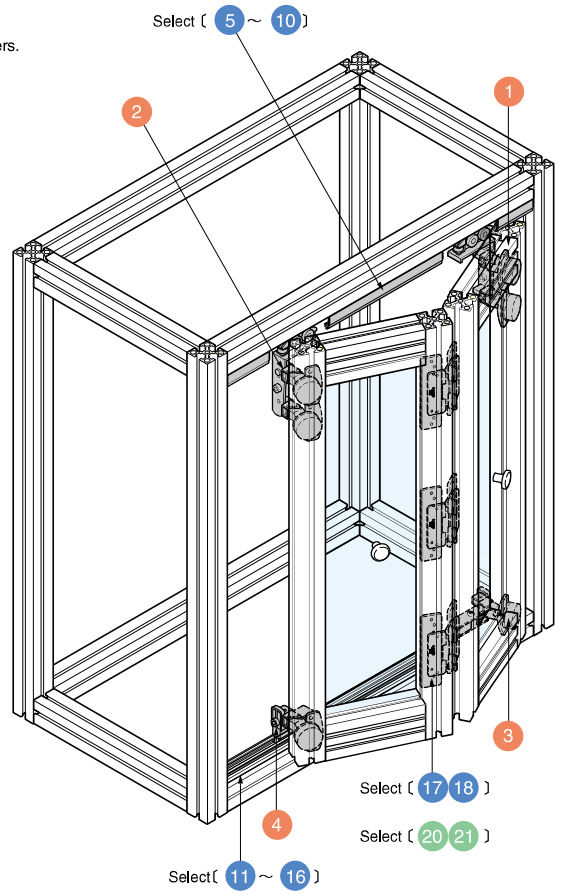
[Remarks]

- Opening and closing of overweight doors may become heavy. Do not exceed 10kg for large doors.
- Use AS nuts and centre hinge brackets when installing to aluminium frame.
- Aluminium frame not included.

Door Width	Max. 450 mm
Door Height	Max. 2400 mm
Door Thickness	18~34 mm
Door Weight	Max. 10 kg/Door
Max. Overlay	23 mm
Aluminium Frame	Size : Door 30×60 mm, Frame 40×40 mm, Groove Width : 6 mm

※Please make or prepare door and aluminium frame within the range above.

The circled numbers are part numbers.
Please check with the part list 1.

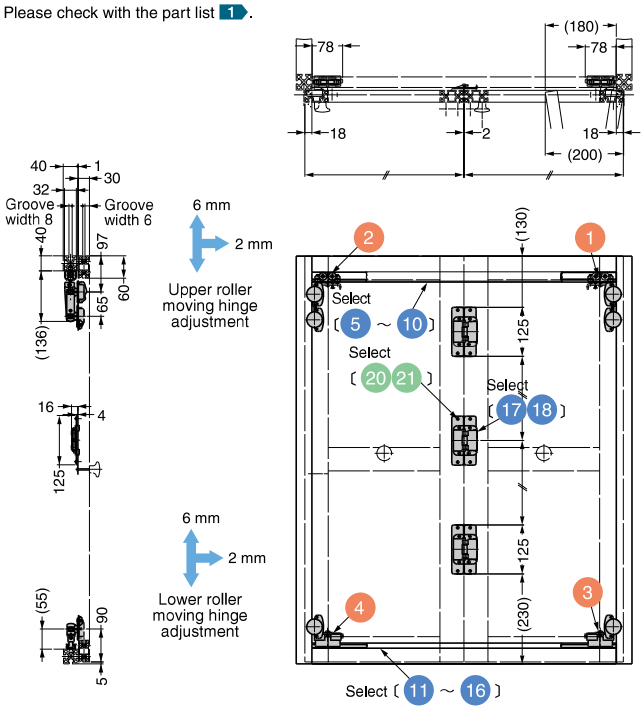


※Dimensions when installed to existing aluminium frame shown. When installed to sheet metal, please contact local representatives.

Refer to 1 : P.822~P.823

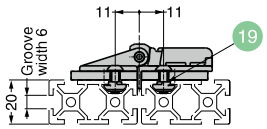
[Installation Example]

The circled numbers are part numbers.
Please check with the part list 1.

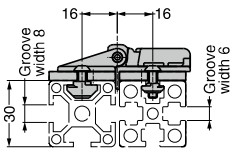


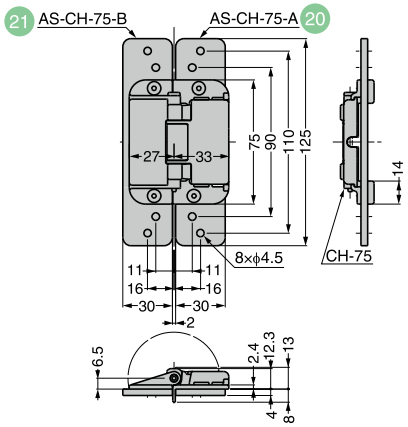
[Installation Dimensions of Centre Hinge CH75]

20×20 mm frame (lateral groove 6 mm)

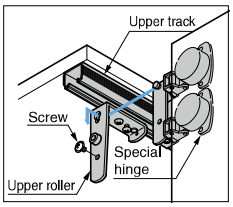


30×30 mm frame (lateral groove 6, 8 mm)



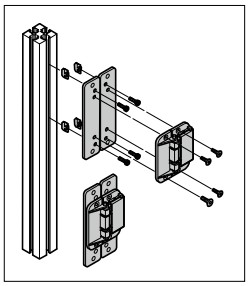


[Door installation]

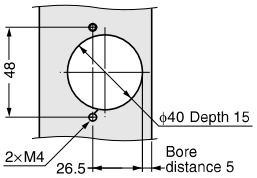


- Fold the door connected with centre hinges in half. As shown above, hook the hinge base shafts to the key holders of left and right upper rollers, and then temporarily fix with supplied mounting screws.

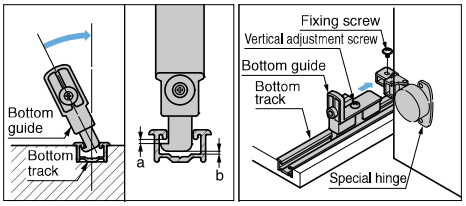
[Centre Hinge Installation]



[Cut Out Dimensions]



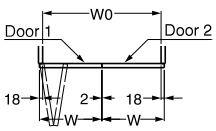
[Installation of Bottom Guide]



- Insert the bottom guide into the bottom track as shown above.
- Next, insert the special hinge into the bottom guide and temporarily fasten with the fixing screws.
- As shown above, adjust with the vertical adjustment screw, so that the upper and lower clearances a and b of the plastic part of bottom guide with respect to the bottom guide track are nearly equal.
- Temporarily tighten all screws, and adjust the door to ensure smooth movement. Finally tighten all screws securely.

[Door Opening Size] For 18 mm overlay

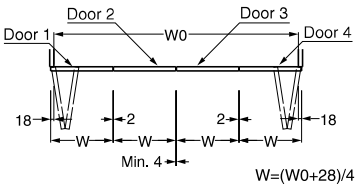
2 folding doors



W0 : Cabinet inside width
W : Door width

W=(W0+34)/2

4 folding doors



W=(W0+28)/4

※ Dimensions when installed to existing aluminium frame shown. When installed to sheet metal, please contact local representatives.

Refer to 1 : P.822~P.823

When Ordering Slidable Folding Door System KF111-R

●Necessary Parts... Parts Set + Track + Centre Hinge

●Please order according to application ... Optional Parts

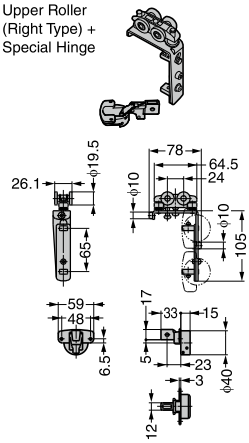
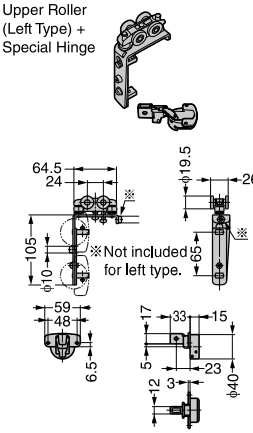
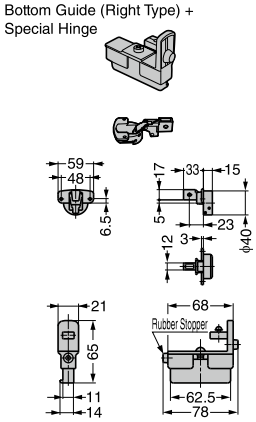
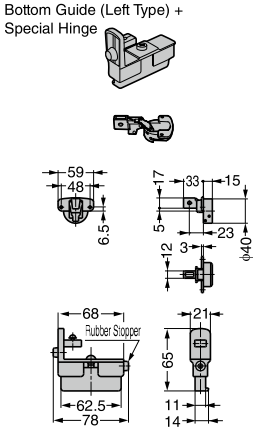
The circled numbers are part numbers. Please check with the drawings 1 .

Parts Set (Per Door)

Necessary Parts.

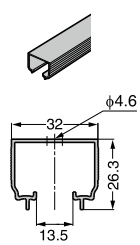
Set Name	RoHS	CAD	Item Code	Item Name	Weight (g)
Parts Set	–	3D	250-122-119	KF111RP	1044

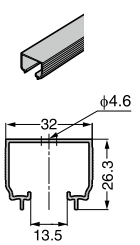
Parts Included

No.	Qty	Dimensions	Description
1	1 pc	Upper Roller (Right Type) + Special Hinge 	Item Code : – 3D 250-120-086 Item Name : R111-T-R Weight (g) : 359 ●Material Roller: POM (With Bearing) Bracket: Steel Hinge Base: Zinc Alloy (ZDC) Hinge: Zinc Alloy (ZDC) ●Finish Plastic Parts: Natural Bracket: Nickel Hinge Base: Nickel Hinge: Nickel
2	1 pc	Upper Roller (Left Type) + Special Hinge 	Item Code : – 3D 250-120-087 Item Name : R111-T-L Weight (g) : 347 ●Material Roller: POM (With Bearing) Bracket: Steel Hinge Base: Zinc Alloy (ZDC) Hinge: Zinc Alloy (ZDC) ●Finish Plastic Parts: Natural Bracket: Nickel Hinge Base: Nickel Hinge: Nickel
3	1 pc	Bottom Guide (Right Type) + Special Hinge 	Item Code : – – 250-120-088 Item Name : R111-S-R Weight (g) : 169 ●Material Body: Zinc Alloy (ZDC) Guide: POM Hinge: Zinc Alloy (ZDC) ●Finish Body: Nickel Guide: Natural Hinge: Nickel
4	1 pc	Bottom Guide (Left Type) + Special Hinge 	Item Code : – – 250-120-089 Item Name : R111-S-L Weight (g) : 169 ●Material Body: Zinc Alloy (ZDC) Guide: POM Hinge: Zinc Alloy (ZDC) ●Finish Body: Nickel Guide: Natural Hinge: Nickel

Tracks

Necessary Parts. Please specify necessary length, qty and finish of 5 ~ 10 based on cabinet width.

No.	Type	RoHS	CAD	Item Code	Dimensions
5	Silver Length 910 mm	G	3D	250-120-006	Upper Track  Pitch End 15 mm
				Item Name : FD111-910-SIL Weight (g) : 335	
6	Silver Length 1220 mm	G	3D	250-120-004	
				Item Name : FD111-1220-SIL Weight (g) : 409	
				●Material Aluminium Alloy ●Finish Anodised ※Convex R-shaped travel surface is effective for dust removing.	

No.	Type	RoHS	CAD	Item Code	Dimensions
7	Silver Length 1820 mm	G	3D	250-120-002	Upper Track  Pitch End 15 mm
				Item Name : FD111-1820-SIL Weight (g) : 600	
8	Bronze Length 910 mm	G	3D	250-120-005	
				Item Name : FD111-910-GB Weight (g) : 307	
				●Material Aluminium Alloy ●Finish Anodised ※Convex R-shaped travel surface is effective for dust removing.	

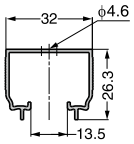
Refer to 1 : P.820~P.821

The circled numbers are part numbers. Please check with the drawings 1 .

No.	Type	RoHS	CAD	Item Code	Dimensions
9	Bronze Length 1220 mm	G	3D	250-120-003	Item Name : FD111-1220-GB Weight (g) : 387
10	Bronze Length 1820 mm	G	3D	250-120-001	Item Name : FD111-1820-GB Weight (g) : 600
					●Material Aluminium Alloy ●Finish Anodised ※Convex R-shaped travel surface is effective for dust removing.
11	Silver Length 910 mm	G	3D	250-120-090	Item Name : FD2612-910-SIL Weight (g) : 232
12	Silver Length 1820 mm	G	3D	250-120-092	Item Name : FD2612-1820-SIL Weight (g) : 1000
					●Material Aluminium Alloy ●Finish Anodised

Upper Track

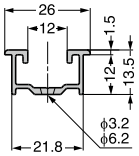




Pitch End 15 mm

Bottom Track



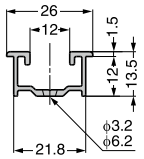


Pitch End 25 mm

No.	Type	RoHS	CAD	Item Code	Dimensions
13	Silver Length 2730 mm	G	3D	250-120-094	Item Name : FD2612-2730-SIL Weight (g) : 600
14	Bronze Length 910 mm	G	3D	250-120-091	Item Name : FD2612-910-GB Weight (g) : 212
15	Bronze Length 1820 mm	G	3D	250-120-093	Item Name : FD2612-1820-GB Weight (g) : 400
16	Bronze Length 2730 mm	G	3D	250-120-095	Item Name : FD2612-2730-GB Weight (g) : 600
					●Material Aluminium Alloy ●Finish Anodised

Bottom Track





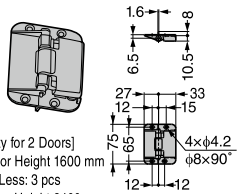
Pitch End 25 mm

Centre Hinge

Necessary Parts. Please specify necessary finish and qty of 17 18 based on door size and qty.

No.	Type	RoHS	CAD	Item Code	Dimensions
17	Nickel	–	3D	250-129-208	Item Name : CH-75NI Weight (g) : 101 ●Material Zinc Alloy (ZDC) / POM

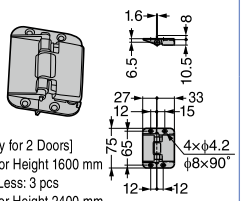
Centre Hinge



[Qty for 2 Doors]
Door Height 1600 mm or Less: 3 pcs
Door Height 2400 mm or Less: 4 pcs

No.	Type	RoHS	CAD	Item Code	Dimensions
18	Bronze	–	3D	250-120-031	Item Name : CH-75GB Weight (g) : 99 ●Material Zinc Alloy (ZDC) / POM

Centre Hinge



[Qty for 2 Doors]
Door Height 1600 mm or Less: 3 pcs
Door Height 2400 mm or Less: 4 pcs

Optional Parts

Please order according to application.

No.	RoHS	CAD	Item Code	Dimensions
19	G	3D	120-040-684	Item Name : AS-6M4 Weight (g) : 1 ●Material Stainless Steel (SUS316) ●Finish Barrel Polished [Application] For installing track to existing aluminium frame. AS nuts and M4 screws for rail mounting holes are required.

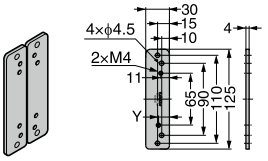
AS Nut (For Groove Width 6 mm)



[Necessary Qty]
Door Height 1600 mm or Less: 12 pcs
Door Height 2400 mm or Less: 16 pcs

No.	RoHS	CAD	Item Code	Dimensions
20	G	3D	170-090-694	Item Name : AS-CH-75-A Weight (g) : 110
21	G	3D	170-090-695	Item Name : AS-CH-75-B Weight (g) : 109
				●Material Stainless Steel (SUS430) ●Finish Barrel Polished [Application] For installing centre hinge to existing aluminium frame.

Centre Hinge Bracket



[Qty for 2 Doors]
Door Height 1600 mm or Less: 20 3 pcs, 21 3 pcs
Door Height 2400 mm or Less: 20 4 pcs, 21 4 pcs

Y=14 (AS-CH-75-A)
Y=11 (AS-CH-75-B)
※AS-CH-75-A is marked with "R", and AS-CH-75-B marked with "L".

Refer to 1 : P.820~P.821

DESIGN SHUTTER DIS-M Surface Mount Type

Refer to 1 for quotation request.

INSTRUCTION



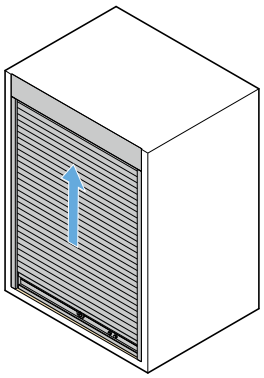
- Guide rail is installed inside the cabinet, without cabinet processing.
- Slats with only R20 for clean appearance.
- Can be used for both vertical and horizontal types.

[Remarks]

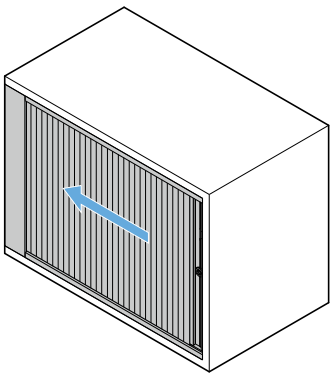
- Do not lean against or apply body weight to the shutter. Damage, personal injury or accident may occur.

	Vertical Type	Horizontal Type	Horizontal Type (Double Door)
Cabinet Inside Width	300~1200 mm	300~900 mm	600~1800 mm
Cabinet Inside Height	300~900 mm	100~1200 mm	100~1200 mm
Cabinet Inside Depth	Min. 330 mm	Min. 330 mm	Min. 330 mm

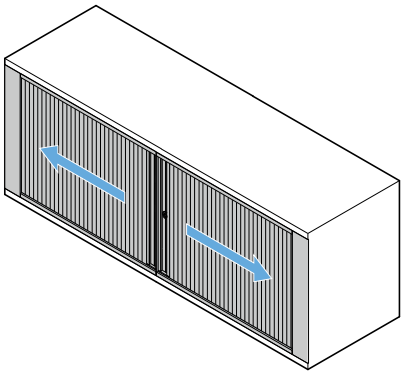
[Example for Vertical Type]



[Example for Horizontal Type, Left-opening]



[Example for Horizontal Type, Double Door]

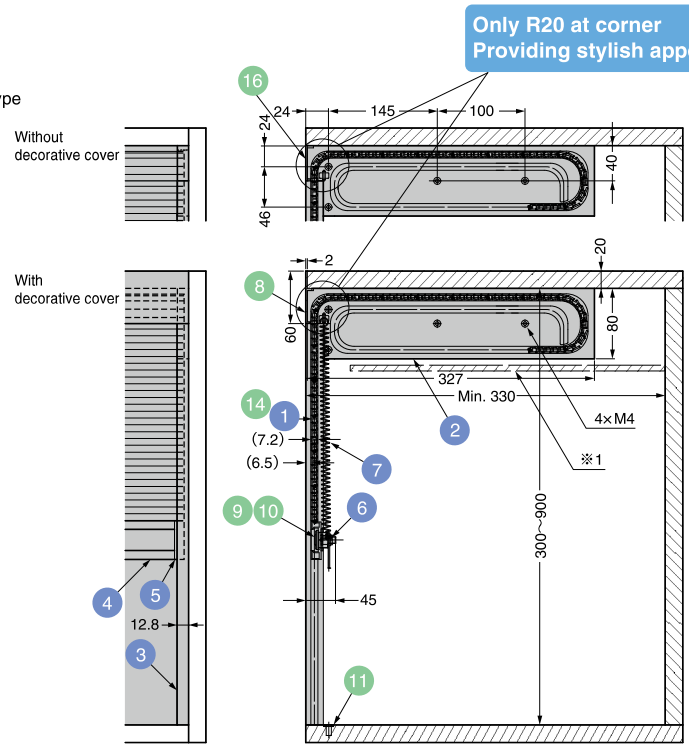


Refer to 1 : P.843

[Installation Example]

The circled numbers are part numbers.
Please check with the part list 1 .

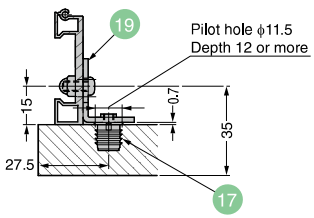
In case of vertical type



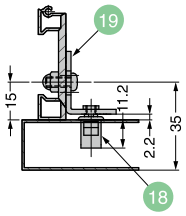
※1 When storing objects apt to fall in horizontal type, the wrapped shutter may contact the stored objects.
If necessary, install a mullion next to the surface mount parking.
Please use detachable mullion for easy installation and maintenance.

[Installation of Magnetic Catch and Middle Bracket]

(For vertical type and cabinet inside width 600mm or less.)

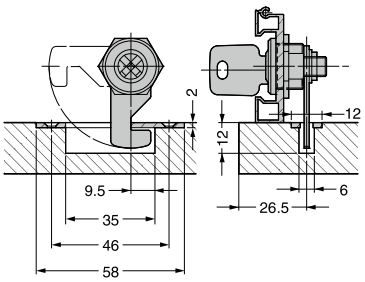


In case of wooden cabinet



In case of metal cabinet

[Installation of Cylinder Lock and Cam]



Refer to 1 : P.826~P.827

■Design Shutter DIS-M (Surface Mount Type) Parts List

Refer to 1 for quotation request.

The circled numbers are part numbers. Please check with the drawings 2.

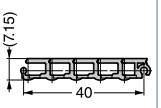
Basic Parts

Necessary Parts. Please specify necessary qty.

No.	RoHS	CAD	Item Code	Dimensions
1	–	3D	180-018-588	Slat (1200 mm)

Item Name : DIS-001-1200
Weight (g) : 263

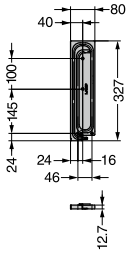
●Material PVC
●Colour Grey

2	G	3D	180-018-592	Surface Mount Parking

Item Name : DIS-004-R
Weight (g) : 112

Right Type
●Materia POM
●Colour Grey

2	G	3D	180-018-591

Item Name : DIS-004-L
Weight (g) : 112

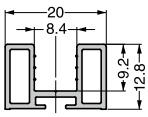
Left Type
●Material POM
●Colour Grey

Left type shown.

3	G	3D	180-018-593	Surface Mount Guide Rail (860 mm)

Item Name : DIS-005-860
Weight (g) : 64

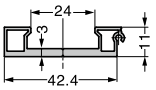
●Material PP
●Colour
Grey
With Double-sided Tape

No.	RoHS	CAD	Item Code	Dimensions
4	G	3D	180-018-595	End Slat (Large) (1200 mm)

Item Name : DIS-007-1200
Weight (g) : 500

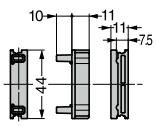
●Material
Aluminium Alloy
●Finish
Matte Anodised Silver

5	G	3D	180-018-597	End Slider

Item Name : DIS-009
Weight (g) : 4

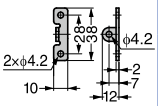
●Material POM
●Colour Grey

6	–	3D	180-018-600	Balance Holder (For Vertical Type Only)

Item Name : DIS-012
Weight (g) : 55

●Material
Stainless Steel (SUS304)
●Finish Barrel Polished

7	–	–	–	Balance Spring (For Vertical Type Only)

Made to Order

●Material Steel
Designed to customer's specifications.



–

Refer to 1 : P.843, 2 : P.825

The circled numbers are part numbers. Please check with the drawings 1.

Optional Parts

Please order according to application.

No.	RoHS	CAD	Item Code	Dimensions
⑧	–	3D	180-018-594	Decorative Cover (1200 mm) Item Name : DIS-006-1200 Weight (g) : 248 ●Material PVC ●Colour Grey With Double-sided Tape
⑨	G	3D	150-001-374	Cylinder Lock Item Name : DIS-022R-D Weight (g) : 50 ●Material Brass ●Finish Chrome/Coloured Zinc Chromate (Trivalent)/ Nickel
⑩	–	3D	180-018-598	Cam Item Name : DIS-010 Weight (g) : 7 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
⑪	–	3D	180-018-599	Strike Item Name : DIS-011 Weight (g) : 7 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
⑫	–	3D	180-018-602	Surface Mount Centre Stopper (For Horizontal Type and Double Door) Item Name : DIS-017 Weight (g) : 4 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
⑬	–	3D	180-018-605	Strike for Double Door (For Horizontal Type and Double Door) Item Name : DIS-021 Weight (g) : 15 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
⑭	G	3D	180-018-604	Intermediate Slat (1198 mm) Item Name : DIS-019 Weight (g) : 149 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
⑮	G	3D	180-018-942	Handle Slat (1198 mm) Item Name : DIS-023 Weight (g) : 149 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
⑯	G	3D	180-018-943	Surface Mount Parking Cover Item Name : DIS-024 Weight (g) : 1 ●Material ABS ●Colour Grey With Double-sided Tape
⑰	G	3D	140-050-189	Magnetic Catch (For Vertical Type Only For Wooden Cabinets) Item Name : IND10-WT Weight (g) : 4 ●Material PP ●Colour White
⑱	G	3D	140-050-086	Magnetic Catch (For Vertical Type Only For Metal Cabinets) Item Name : MC-FP5W Weight (g) : 9 ●Material ABS ●Colour White
⑲	G	3D	210-010-541	Middle Bracket (For Vertical Type Only) Item Name : AS-PTB Weight (g) : 20 ●Material Stainless Steel (SUS430) ●Finish Barrel Polished

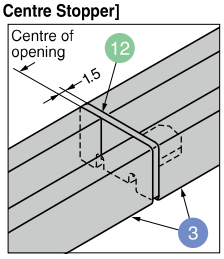
●Optional parts Purpose

⑧ Decorative cover … For shutter winding portion.
⑨ Cylinder lock, ⑩ Cam … For shutter locking.
⑪ Strike … Strike plate of ⑩.
⑫ Surface mount centre stopper … Stops shutter at the centre of opening in case of double door.
⑬ Strike for double door … Strike plate for cylinder lock installed to ④ in case of double door.
⑭ Intermediate slat … Reinforcing slat for vertical type above W600 (horizontal type above H600).
⑮ Handle slat … Slat integrated to handle.
⑯ Surface mount parking cover … Used without ⑧.
⑰⑱ Magnetic catch … For vertical type below W600.
⑲ Middle bracket…Bracket of ⑰ and ⑱.

●Recommended Screws

Pan head screw 4×10 (for ⑥⑬⑲)
Binding head tapping screw 4×20 (for ②) M4 cap nut (for ⑲)

[Installation Position of Surface Mount Centre Stopper]

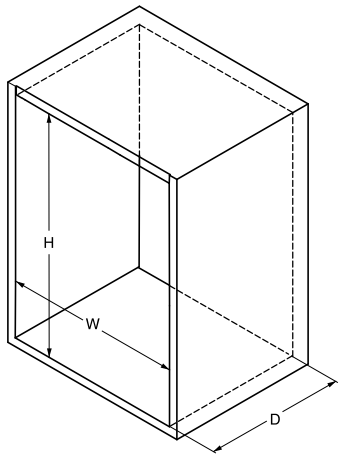


Refer to 1 : P.825

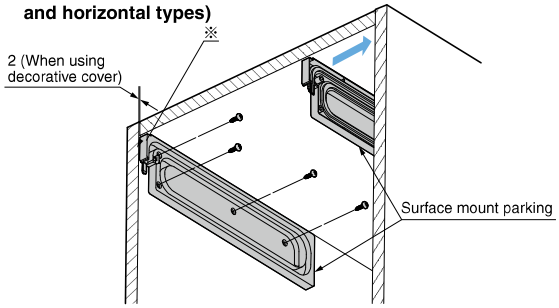
■Design Shutter DIS-M (Surface Mount Type) Installation Outline

[Parts Requiring to be Processed]

Part Name	Vertical Type W=300~1200 H=300~900 D=330 or More		Horizontal Type (Single Door) W=300~900 H=100~1200 D=330 or More		Horizontal Type (Double Door) W=600~1800 H=100~1200 D=330 or More	
	Necessary Qty	Cutting Size	Necessary Qty	Cutting Size	Necessary Qty	Cutting Size
Slat	Below W600 H/40 pcs Above W600 H/48 pcs (Round Up)	W–10	Below W600 W/40 pcs Above W600 W/48 pcs (Round Up)	H–10	Below W600 {(W/2)/40×2 (Round Up)} ×2 pcs Below W600 {(W/2)/48×2 (Round Up)} ×2 pcs	H–10
Surface Mount Guide Rail	2 pcs	H–40	2 pcs	W–40	2 pcs 2 pcs	(W/2)–40 (W/2)–41.5
End Slat (Large)	1 pc	W–30	1 pc	H–30	2 pcs	H–30
Decorative Cover (Optional)	1 pc For Below W600	W	1 pc For Below H600	H	2 pcs For Below H600	H
Intermediate Slat (Optional)	H/48 pc (Round Up) For Above W600	W–12	W/48 pc (Round Up) For Above H600	H–12	{(W/2)/48 (Round Up)} ×2 pcs For Below H600	H–12
Handle Slat (Optional)	1 pc	W–12	1 pc	H–12	1 pc	H–12

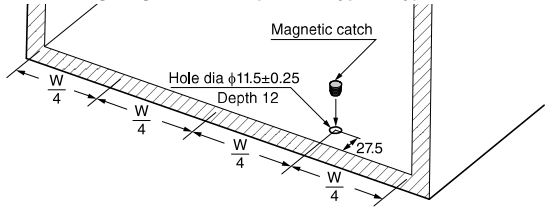


1. Assembling surface mount parking (common to vertical and horizontal types)

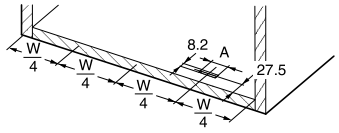


Fix the surface mount parking. Press it tightly against the back side of top board. When using decorative cover, recess the ※ surface by 2mm from left and right side boards, and fix there with screws. Noted that surface mount parking may be left-handed and right-handed.

2. Installing magnetic catch (vertical type only)



For vertical type below W600, please use magnetic catch and middle bracket. For wooden cabinet, drill a hole at the position of W/4 as shown above.



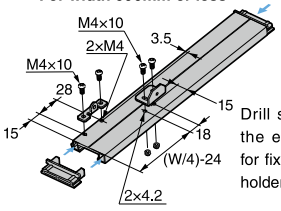
Thickness	A +0.1 0
0.8	34.1
1.0	34.1
1.2	34.5
1.4	34.5
1.6	35
1.8	35.5
2.0	36.5

For metal cabinet, drill a hole at the position of W/4 as shown above.

3. Processing and assembling end slat (common to vertical and horizontal types)

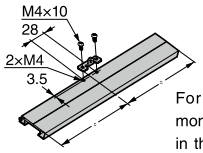
●In case of vertical type

For width 600mm or less



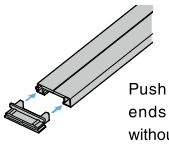
Drill screw holes on the end slat (large) for fixing the balance holder.

For width 600mm or more



For width 600mm or more, drill screw holes in the middle for fixing the balance holder.

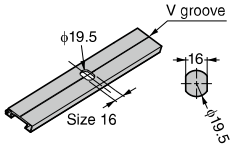
●In case of horizontal type



Push end sliders to both ends of end slat (large) without clearance. Note the direction with reference to the figure.

●When using cylinder lock (optional)

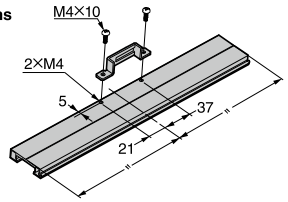
(Common to vertical and horizontal types)



When using cylinder lock, drill additional hole in the longitudinal centre part as shown left. The V groove is at the centre position of width.

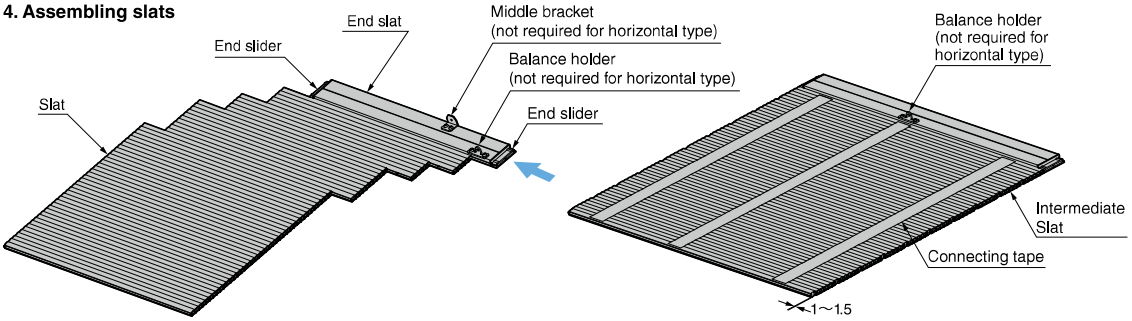
●Bracket side in case of horizontal type and double door

The specifications and processing methods of end slat at the key side and the bracket side are different.



Also drill screw holes with reference to the longitudinal centre part as shown. Install the strike for double door. Note the direction and position of the end slat (large).

4. Assembling slats

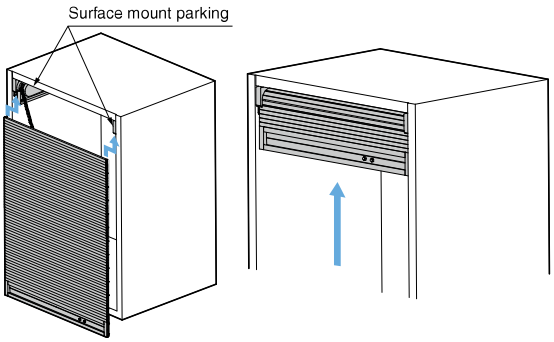


Connect the required number of slats by using multi-purpose elastic adhesive or connecting tape.
Use multi-purpose elastic adhesive for vertical type below W600 (horizontal type below H600).
Use multi-purpose elastic adhesive or connecting tape for vertical type above W600 (horizontal type above H600).Adhesive is used for preventing dislocation. Please use a very small amount at a pitch of 100mm ~150mm.
Proceed to the next step after the adhesive is completely solid.

For easy opening and closing, install handle slat (optional) if necessary.
In this case, be sure to install handle slat between main slats. Do not connect handle slat with intermediate slats. Like intermediate slat, cut its width 2~3mm shorter than that of main slats, so that both ends retract 1~1.5mm after fixing.

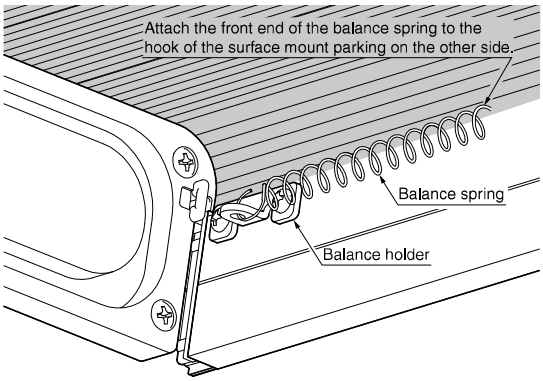
In case of vertical type above W600 (horizontal type above H600), insert the intermediate slats between the main slats. As liquid adhesive for PVC pipes can not be bonded to aluminium alloy, please fix with multi-purpose elastic adhesive. Or attach the connecting tape to the back side (cabinet inside) of slats and fix them so that no dislocation occur.
For intermediate slat, cut its width 2~3mm shorter than that of main slats, so that both ends retract 1~1.5mm after fixing.

5. Incorporating in a cabinet



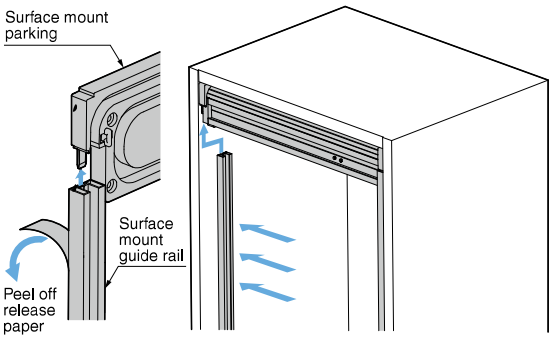
Slowly incorporate the assembled slats into the surface mount parking.
Then wind them up to the top.

6. Installing balance spring (vertical type only)



Hook the balance spring on the balance holder.
Hook 1 spring on the balance holder below W600, while 2 springs above W600.
※Balance springs with optimum strength based on shutter size are available.

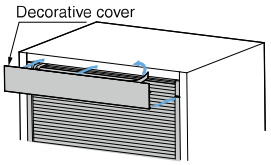
7. Installing surface mount guide rail



Peel off the release paper of the double-sided tape affixed to the surface mount guide rail, stick it to the cabinet inside while inserting the surface mount parking.
For double door type, cut surface mount guide rails by a length equal to the stopper thickness, i.e., 1.5mm at one side.

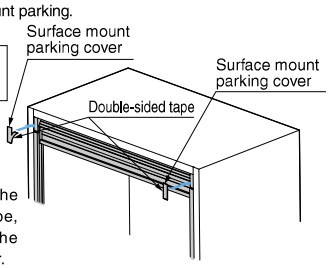
8. Installing decorative cover and surface mount parking cover (optional)

For vertical type below W600
(For vertical type below H600)



Peel off the release paper of the double-sided tape affixed to the decorative cover, stick it to the edge of cabinet top board while paying attention to claws to be fitted with the surface mount parking.

For vertical type above W600
(For vertical type above H600)



As shown right, peel off the supplied double-sided tape, and attach 2 pieces to the surface mount parking cover.

DESIGN SHUTTER DIS-H Recessed Mount Type

Refer to 1 for quotation request.

INSTRUCTION



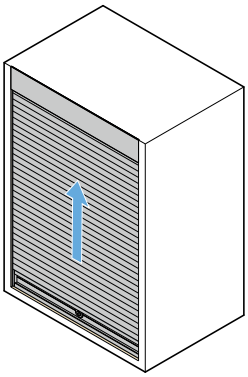
- Guide rail is recessed in cabinet inside.
- Slats with only R20 for clean appearance.
- Can be used for both vertical and horizontal types.

[Remarks]

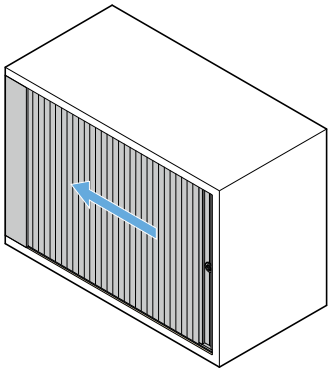
- Do not lean against or apply body weight to the shutter. Damage, personal injury or accident may occur.
- Recommended Screws
  Binding head tapping screw 4×20 (for ⑦)
  Pan head screw 4×10 (for ⑭)

	Vertical Type	Horizontal Type	Horizontal Type (Double Door)
Cabinet Inside Width	300~900 mm	300~ 900 mm	600~1800 mm
Cabinet Inside Height	300~900 mm	100~1188 mm	100~1188 mm
Cabinet Inside Depth	200~600 mm	200~ 600 mm	200~ 600 mm

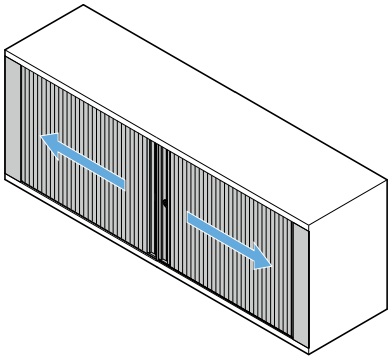
[Example for Vertical Type]



[Example for Horizontal Type, Left-opening]



[Example for Horizontal Type, Double Door]

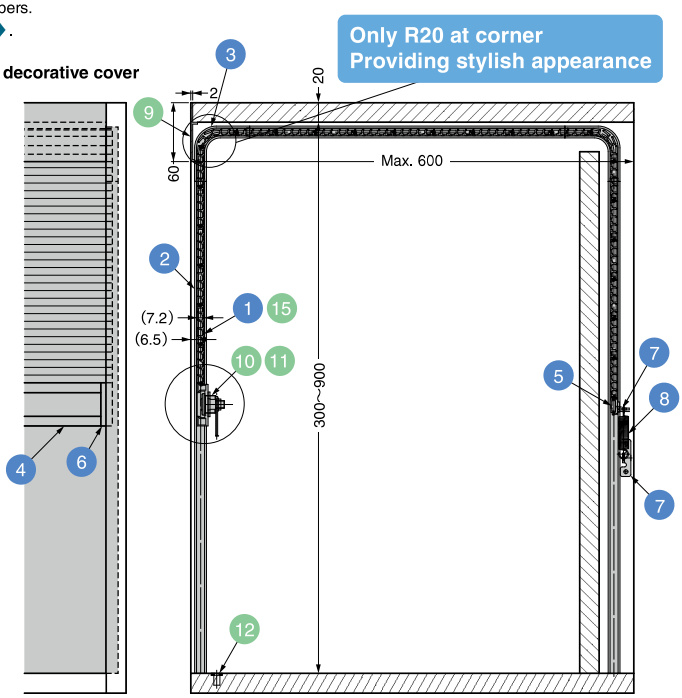


Refer to 1 : P.844

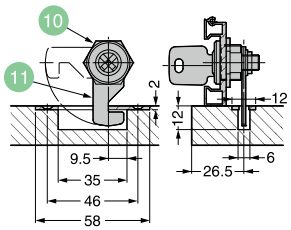
■Installation Example

The circled numbers are part numbers.
Please check with the part list 1 .

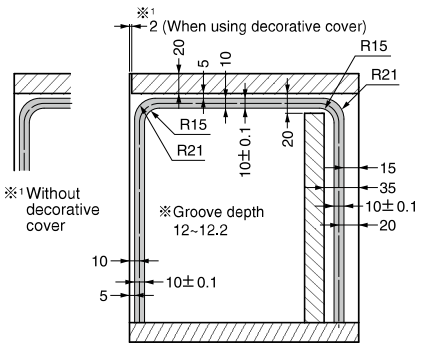
When using vertical type and decorative cover



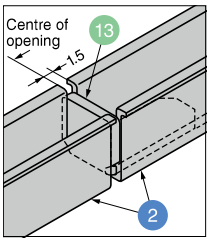
[Installation of Cylinder Lock and Cam]



[Cut Out Dimensions] Vertical Type



[Installation Position of Recessed Mount Centre Stopper]



Refer to 1 : P.832~P.833

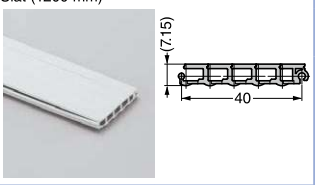
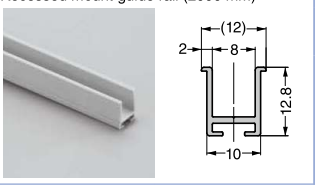
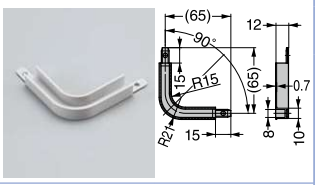
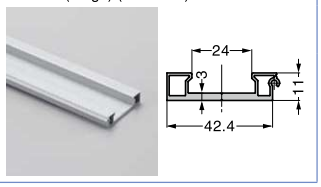
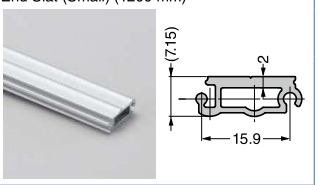
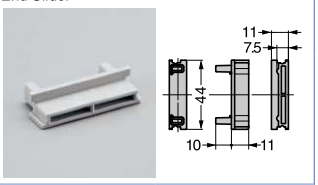
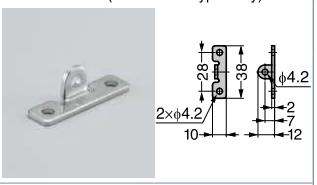
■Design Shutter DIS-H (Recessed Mount Type) Parts List

Refer to 1 for quotation request.

The circled numbers are part numbers. Please check with the drawings 2.

Basic Parts

Necessary Parts. Please specify necessary qty.

No.	RoHS	CAD	Item Code	Dimensions
1	–	3D	180-018-588	Slat (1200 mm) Item Name : DIS-001-1200 Weight (g) : 263 ●Material PVC ●Colour Grey 
2	G	3D	180-018-589	Recessed mount guide rail (2000 mm) Item Name : DIS-002-2000 Weight (g) : 62 ●Material PP ●Colour Grey 
3	G	3D	180-018-590	90 Guide rail Item Name : DIS-003-90 Weight (g) : 5 ●Material POM ●Colour Grey 
4	G	3D	180-018-595	End Slat (Large) (1200 mm) Item Name : DIS-007-1200 Weight (g) : 500 ●Material Aluminium Alloy ●Finish Matte Anodised Silver 
5	G	3D	180-018-596	End Slat (Small) (1200 mm) Item Name : DIS-008-1200 Weight (g) : 200 ●Material Aluminium Alloy ●Finish Matte Anodised Silver 
6	G	3D	180-018-597	End Slider Item Name : DIS-009 Weight (g) : 4 ●Material POM ●Colour Grey 
7	–	3D	180-018-600	Balance Holder (For Vertical Type Only) Item Name : DIS-012 Weight (g) : 55 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished 
8	–	–	–	Balance Spring (For Vertical Type Only) Made to order ●Material Steel Designed to customer's specifications.  –

Refer to 1 : P.844, 2 : P.831

The circled numbers are part numbers. Please check with the drawings 1.

Optional Parts

Please order according to application.

No.	RoHS	CAD	Item Code	Dimensions
9	–	3D	180-018-594	Decorative Cover (1200 mm) Item Name : DIS-006-1200 Weight (g) : 248 ●Material PVC ●Colour Grey With Double-sided Tape
10	G	3D	150-001-374	Cylinder Lock Item Name : DIS-022R-D Weight (g) : 50 ●Material Brass ●Finish Chrome / Zinc Chromate (Trivalent) / Nickel
11	–	3D	180-018-598	Cam Item Name : DIS-010 Weight (g) : 7 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
12	–	3D	180-018-599	Strike Item Name : DIS-011 Weight (g) : 7 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished

No.	RoHS	CAD	Item Code	Dimensions
13	–	3D	180-018-601	Recessed Mount Centre Stopper (For Horizontal Type and Double Door) Item Name : DIS-016 Weight (g) : 3 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
14	–	3D	180-018-605	Strike for Double Door (For Horizontal Type and Double Door) Item Name : DIS-021 Weight (g) : 15 ●Material Stainless Steel (SUS304) ●Finish Barrel Polished
15	G	3D	180-018-604	Intermediate Slat (1198 mm) Item Name : DIS-019 Weight (g) : 149 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
16	G	3D	180-018-942	Handle Slat (1198 mm) Item Name : DIS-023 Weight (g) : 149 ●Material Aluminium Alloy ●Finish Matte Anodised Silver

●Optional parts Purpose

⑨ Decorative cover … For shutter winding portion.

⑩ Cylinder lock, ⑪ Cam … For shutter locking.

⑫ Strike … Strike plate of ⑪.

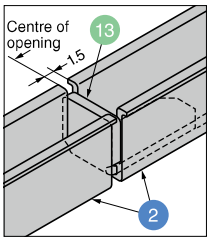
⑬ Recessed mount centre stopper … Stops shutter at the centre of opening in case of double door.

⑭ Strike for double door … Strike plate for cylinder lock installed to ④ in case of double door.

⑮ Intermediate slat … Reinforcing slat for vertical type above W586 (horizontal type above H586).

⑯ Handle slat … Slat integrated to handle.

[Installation Position of Recessed Mount Centre Stopper]



●Recommended Screws

Binding head tapping screw 4×20 (for ⑦)

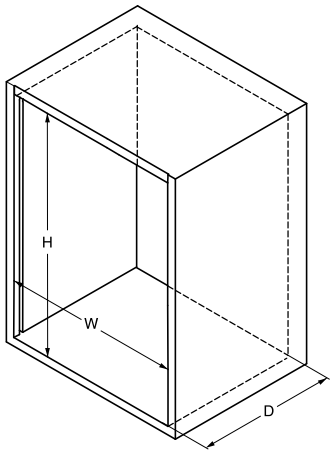
Pan head screw 4×10 (for ⑭)

Refer to 1 : P.831

■Design Shutter DIS-H (Recessed Mount Type) Installation Outline

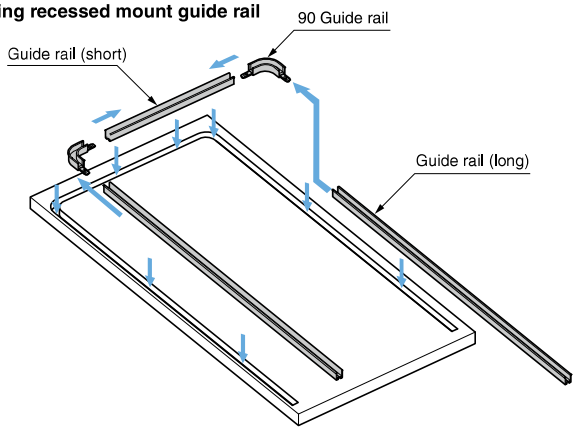
[Parts Requiring to be Processed]

Part Name	Vertical Type W=300~900 H=300~900 D = 200 or More		Horizontal Type (Single Door) W=300~900 H=100~1188 D = 200 or More		Horizontal Type (Double Door) W=600~1800 H=100~1188 D = 200 or More	
	Necessary Qty	Cutting Size	Necessary Qty	Cutting Size	Necessary Qty	Cutting Size
Slat	Below W586 (H+D–43)/40 pcs	W+12	Below W586 W/40 pcs	H+12	Below W586 {(W/2)/40×2 (Round Up)} × 2 pcs	H+12
	Above W586 (H+D–43)/48 pcs (Round Off)		Above W586 W/48 pcs (Round Up)		Above W586 {(W/2)/48×2 (Round Up)} × 2 pcs	
Guide Rail (Long)	4 pcs	H–60	4 pcs	W–60	2 pcs (Front Side) 2 pcs (Back Side) 2 pcs (Back Side)	(W/2)–60 (W/2)–61.5※1 W–120
Guide Rail (Short)	2 pcs	H–130	2 pcs	W–130	4 pcs	(W/2)–130
End Slat (Large)	2 pcs	W–10	1 pc	H–10	2 pcs	H–10
End Slat (Small)	1 pc	W+10	Not Used		Not Used	
Decorative Cover (Optional)	1 pc For Below W586	W	1 pc For Below H586	H	2 pcs For Below H586	H
Intermediate Slat (Optional)	(H+D–43)/48 pcs (Round Off) For Above W586	W+10	W/48 pcs (Round Up) For Above H586	H+10	{(W/2)/48 (Round Up)} × 2 pcs For Below H586	H+10
Handle Slat (Optional)	1 pc	W+10	1 pc	H+10	2 pcs	H+10



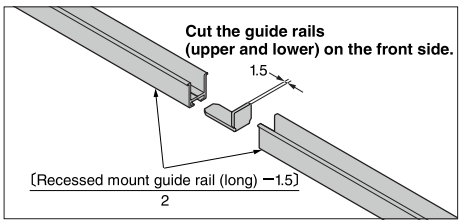
※1 For horizontal type (double door), cut guide rails (2/4 pcs) by 1.5mm at one side for installing recessed mount centre stopper on the front side.

1. Installing recessed mount guide rail



Connect recessed mount guide rails and 90 guide rails as shown, then drive them into the groove processed on the side board. Remove burrs and dust in the groove in advance to avoid poor slat movement.
Install them for left and right.

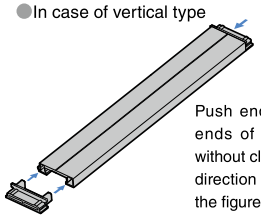
For horizontal type (double door), cut the guide rails (long) on the front side by 1.5mm and insert the recessed mount centre stopper at the end.



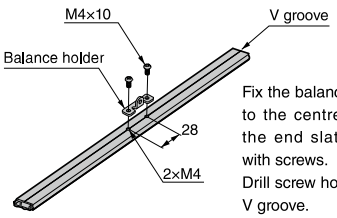
2. Processing end slat

[Processing and Assembling End Slat]

●In case of vertical type

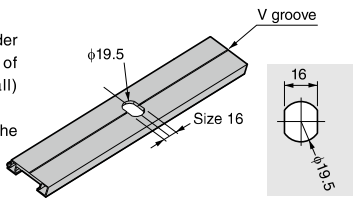


Push end sliders to both ends of end slat (large) without clearance. Note the direction with reference to the figure.



Fix the balance holder to the centre part of the end slat (small) with screws.
Drill screw hole on the V groove.

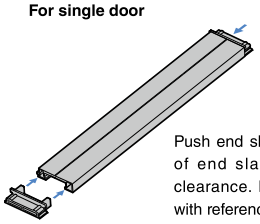
●When using cylinder lock
(Common to vertical and horizontal types)



When using cylinder lock, drill additional hole in the longitudinal centre part as shown above. The V groove is at the centre position of width.

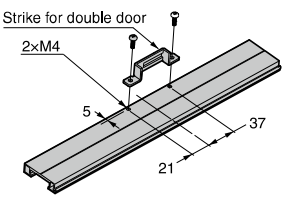
●In case of horizontal type

For single door



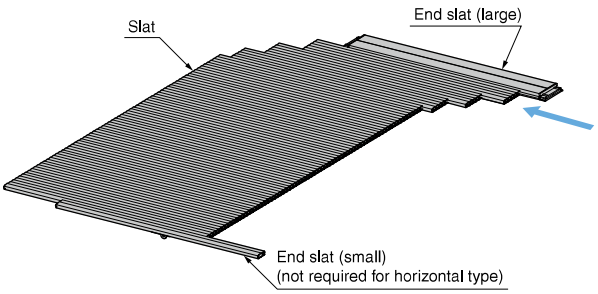
Push end sliders to both ends of end slat (large) without clearance. Note the direction with reference to the figure.

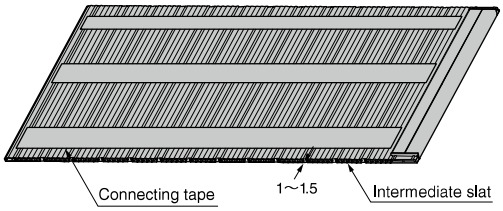
For double door



For double door type with a lock, as shown, drill screw holes with reference to the longitudinal centre part, and then install a strike for double door type. Note the direction and position of the end slat (large).

3. Assembling slats





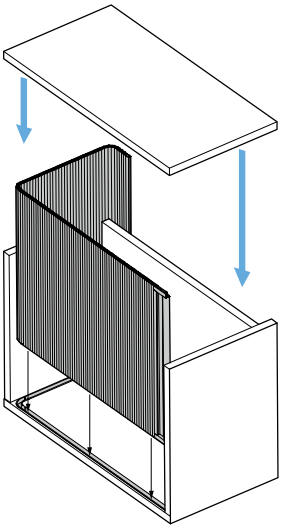
Connect the required number of slats by using multi-purpose elastic adhesive or connecting tape.
Adhesive is used for preventing dislocation. Please use a very small amount at a pitch of 100mm ~150mm.
Proceed to the next step after the adhesive is completely solid.

For easy opening and closing, install handle slat if necessary. In this case, be sure to install handle slat between main slats and be careful not to connect with intermediate slat. Like intermediate slat, its width should be 2 mm shorter than that of main slats. Ensure that both ends retract 1mm after fixing.

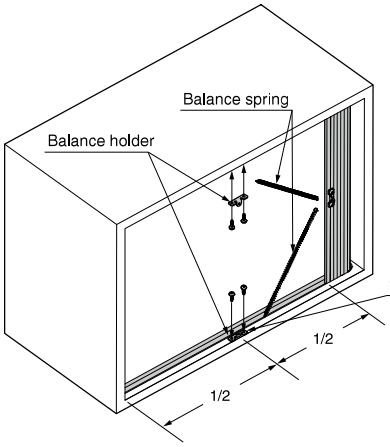
In case of vertical type above W586 (horizontal type above H586), insert the intermediate slats between the main slats alternately one by one. As liquid adhesive for PVC pipes can not be bonded to aluminium alloy, please fix with multi-purpose elastic adhesive. Or attach the connecting tape to the back side (cabinet inside) of slats and fix them so that no dislocation occur.(Use within 72 hours may not achieve adequate adhesion.

The intermediate slats are set 2mm shorter in width than the main slats. Ensure that both ends retract 1mm after fixing.

4. Incorporating in a cabinet



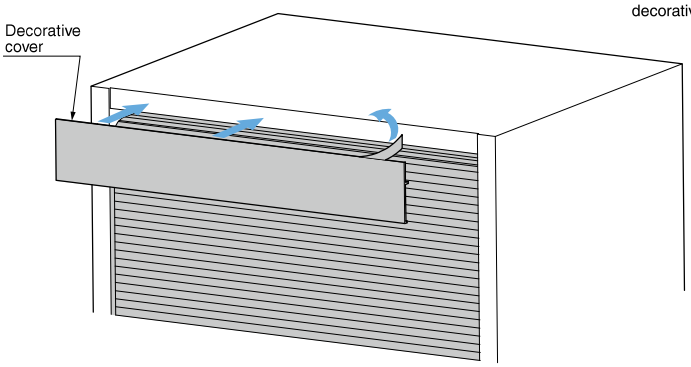
It is recommended to apply lubricant such as our “Teflodry” to groove inside recessed mount guide rails and 90 guide rails. Regular application may maintain smooth movement.
Also, applying Teflon grease can realise long-term smooth movement. Recommended for high frequency use.



For wooden cabinets, fix with wood screws (nominal 4).
For metal cabinets, fix with M4 screws.

Install balance holders when the shutter is fully opened. As shown above, seen from front of the cabinet, install to the position half the distance from the back slat end to the bottom board. After that, hook 2 balance springs in a V shape as shown.

5. Installing decorative cover (optional)



Peel off the release paper of the double-sided tape affixed to the decorative cover, stick it to the edge of cabinet top board.

If using the decorative cover for width or height above 600mm, warped slat or decorative cover may touch each other and be damaged.

AS HIGH RIGIDITY CABINET SHUTTER

Refer to 1 for quotation request.

INSTRUCTION



- Suitable for 30×30mm and 8mm groove width aluminium frame.
- High rigidity by connecting slat panel with aluminium slat frame.
- By replacing slat panel, suitable for various applications. For further details, please contact local representatives.
- Aluminium alloy material, light weight and excellent design.
- Shock absorbing damper keeps shutter from slamming shut
- Slat panel also available. For further details, please contact local representatives.
- Besides optional DL-150S 2, handle can also be selected from the handle item INDEX 3.

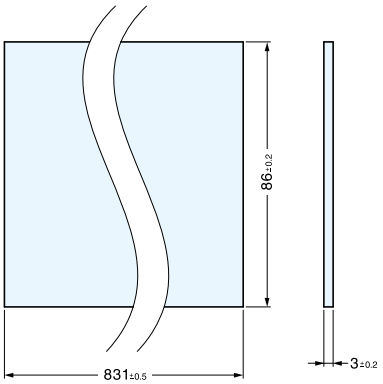
	Vertical Type (L-shaped type)
Aluminium Frame Inside Width	Max. 840 mm
Aluminium Frame Inside Height	Max. 640 mm
Aluminium Frame Inside Depth	Max. 900 mm

[Remarks]

- For vertical use only.
- Aluminium frame not included.
- When installing aluminium frame, confirm that frames are horizontal or vertical each other and free from distortion.

[Cut Out Dimensions of Slat Panel]

※Slat panel not included.
(Or supplied by us on request. For further details, please contact local representatives.)





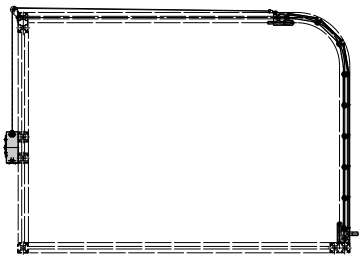


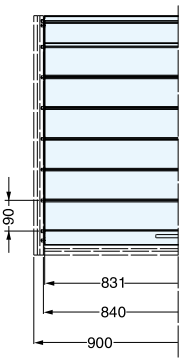
Refer to 1 : P.845, 2 : P.659, 3 : P.608

[Dimensions] For Width 900 mm, Height 700 mm, Depth 970 mm

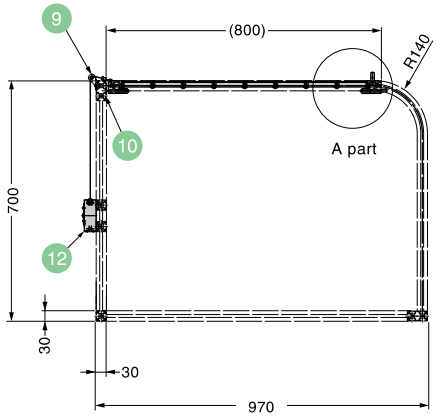
The circled numbers are part numbers. Please check with the part list 1.

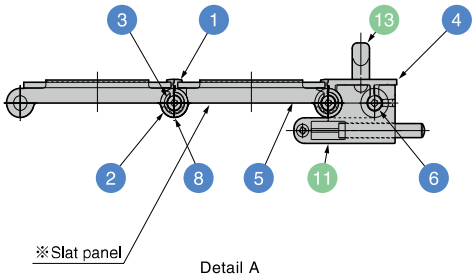
Shutter closed





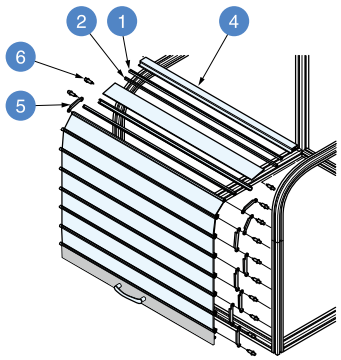
Shutter opened

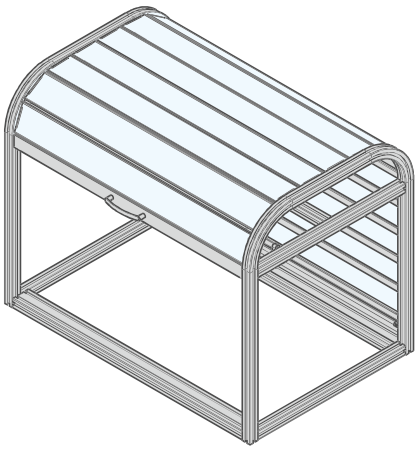


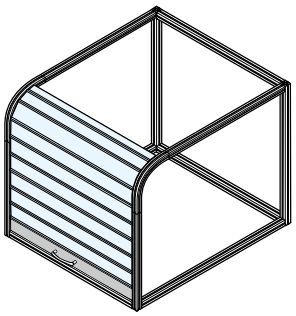


Detail A

※Slat panel not included.
(Or supplied by us on request. For further details, please contact local representatives.)







Can also be used for U-shaped aluminium frame.
For further details, please contact local representatives. (Made to order)

Refer to 1 : P.838~P.839

■AS High Rigidity Cabinet Shutter Parts List

Refer to 1 for quotation request.

The circled numbers are part numbers. Please check with the drawings 2.

Basic Parts

Necessary Parts. Please specify necessary qty.

No.	RoHS	CAD	Item Code	Dimensions
1	G	3D	270-011-615	Horizontal Frame (Male) (831 mm) Item Name : AS-S900-FO Weight (g) : 174 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
2	G	3D	270-011-616	Horizontal Frame (Female) (831 mm) Item Name : AS-S900-FM Weight (g) : 186 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
3	G	3D	270-011-614	Horizontal Frame (Ring) (790 mm) Item Name : AS-S900-FR Weight (g) : 48 ●Material POM ●Colour Natural
4	G	3D	270-011-617	Horizontal Frame (End) (831 mm) Item Name : AS-S900-FS Weight (g) : 533 ●Material Aluminium Alloy ●Finish Matte Anodised Silver
5	G	3D	270-014-985	Slat Joint Item Name : AS-S900-SJ Weight (g) : 10 ●Material Stainless Steel (SUS430) ●Finish Barrel Polished

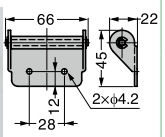
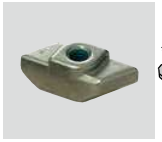
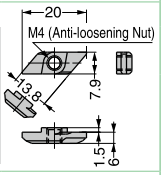
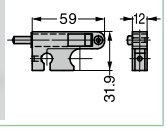
No.	RoHS	CAD	Item Code	Dimensions
6	G	3D	270-014-986	Guide Pin Item Name : AS-S900-GP-R Weight (g) : 2 Right Type ●Material POM ●Colour Natural
	G	3D	270-014-987	Item Name : AS-S900-GP-L Weight (g) : 2 Left Type ●Material POM ●Colour Natural
7	G	–	270-014-988	Double-sided Tape (For Fixing Slat Panel and Horizontal Frame) Item Name : AS-S900-RT Weight (g) : 3 1 Sheet : 48 pcs (Width 3 mm×50 mm) For Fixing 8 pcs of Slats
8	G	3D	270-014-989	Slider Washer Item Name : AS-S900-SW Weight (g) : 1 ●Material POM ●Colour Natural

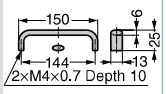
Refer to 1 : P.845, 2 : P.837

The circled numbers are part numbers. Please check with the drawings 1.

Optional Parts

Please order according to application.

No.	RoHS	CAD	Item Code	Dimensions
9	G	3D	270-010-644	Reaction Force Roller
			Item Name : AS-S900-HR Weight (g) : 58 ●Material Stainless Steel (SUS430)/ POM ●Finish Barrel Polished/Plain	 
10	G	3D	120-040-685	AS Nut
			Item Name : AS-8M4 Weight (g) : 4 ●Material Stainless Steel (SUS316) ●Finish Barrel Polished	 
11	G	–	270-011-989	Damper
			Item Name : AS-S900-DP Weight (g) : 28 ●Material Aluminium Alloy / ABS ●Finish / Colour Paint Silver	 

No.	RoHS	CAD	Item Code	Dimensions
12	–	–	–	Flat Spiral Spring
			–	 –
			–	
13	G	3D	100-011-110	Handle
			Item Name : DL-150S Weight (g) : 93 ●Material Stainless Steel (SUS303) ●Finish Satin	 

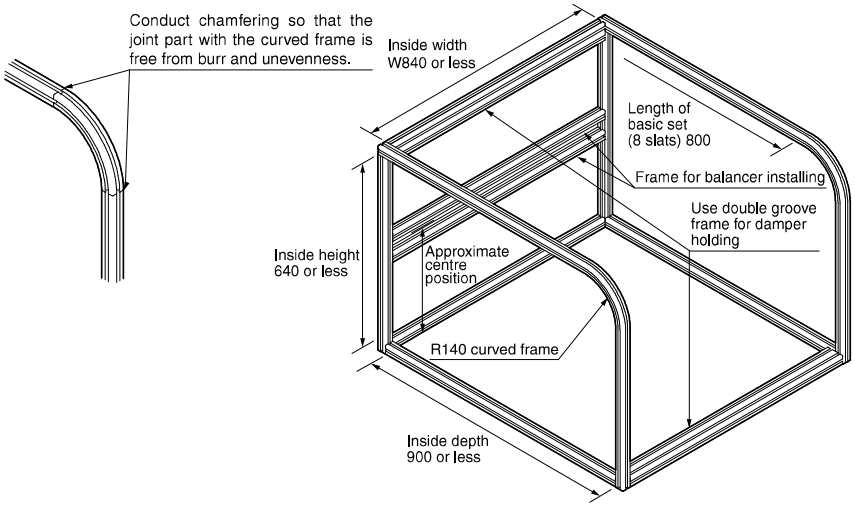
●Optional parts Purpose

⑨ Reaction force roller … For hooking ⑫ wire. For L-shaped type only.
⑩ AS nut … Used for installing ⑨ and ⑫.
⑪ Damper … For reducing the shock caused by contact with aluminium frame when closing shutter.
⑫ Flat spiral spring … For relieving the weight feeling during opening and closing of the shutter.
⑬ Handle … Installed to ④. (A handle other than ⑬ can also be selected.)

Refer to 1 : P.837

AS High Rigidity Cabinet Shutter Installation Outline

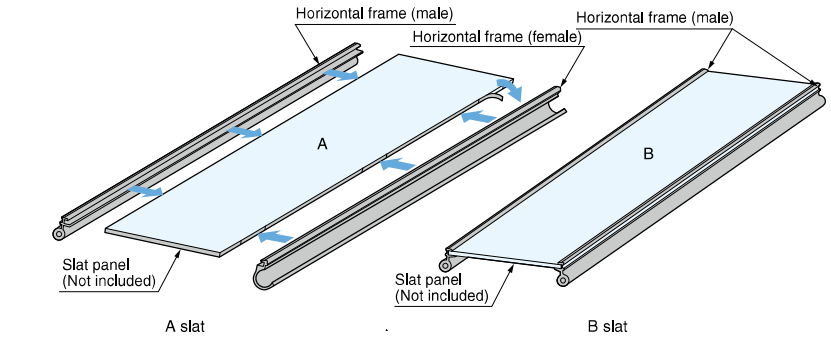
1. Preparing the frame





Our PJ joint system 1 can reduce work time and provides clean appearance.

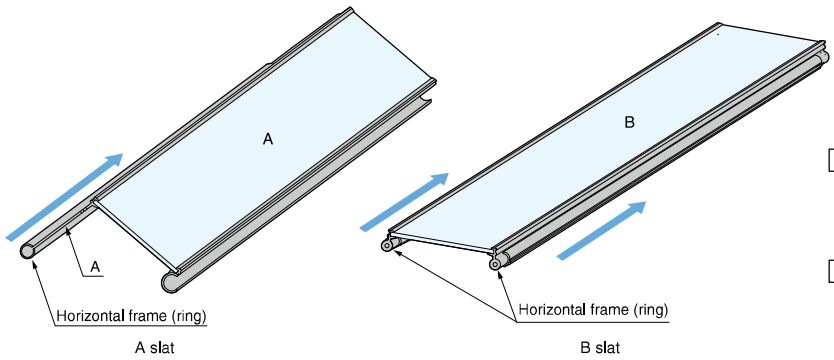
2. Assembling slats

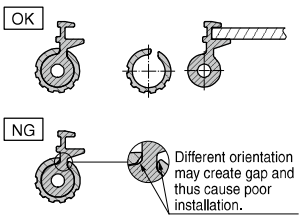


Prepare 7 pcs of A slats with slat panel (with double-sided tape adhesive at edge) affixed with horizontal frame (male) and horizontal frame (female) and 1 piece of B slat with only horizontal frame (male).
When assembling, press the slat panel firmly into the groove of the horizontal frame and pay attention to avoid longitudinal dislocation.

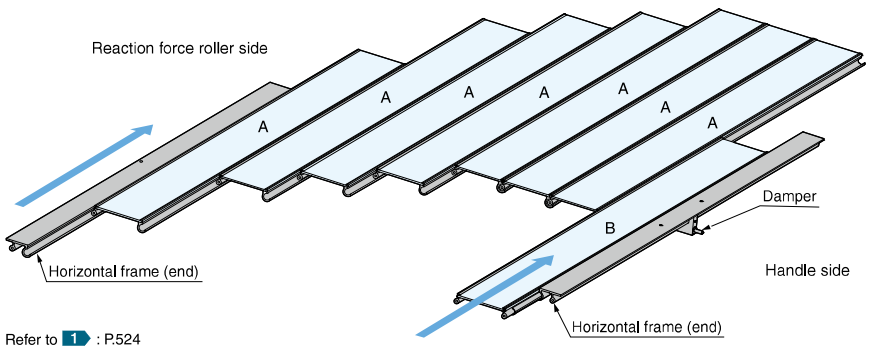
Install the horizontal frame (ring) to the horizontal frame (male). Use 1 pc for A slat and 2 pcs for B slat.

[Remarks]
Install the sectional shape of the horizontal frame (ring) and that of the horizontal frame (male) in the direction shown below.





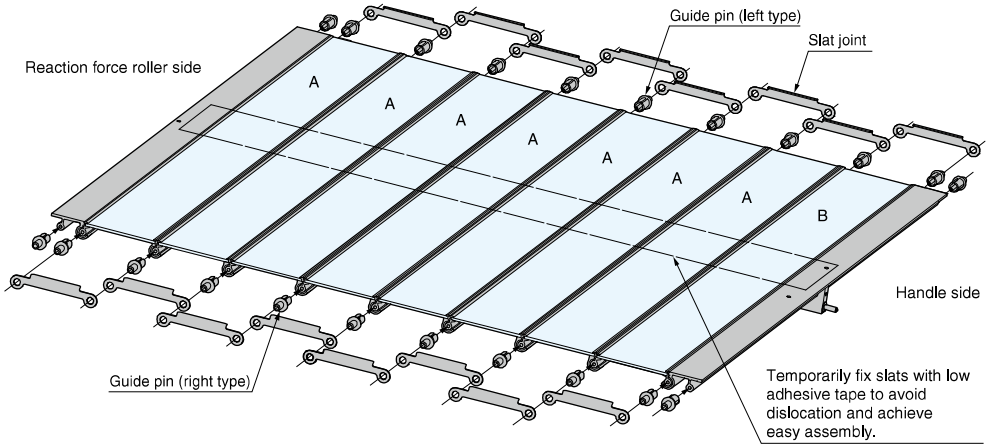
3. Connecting slats 1



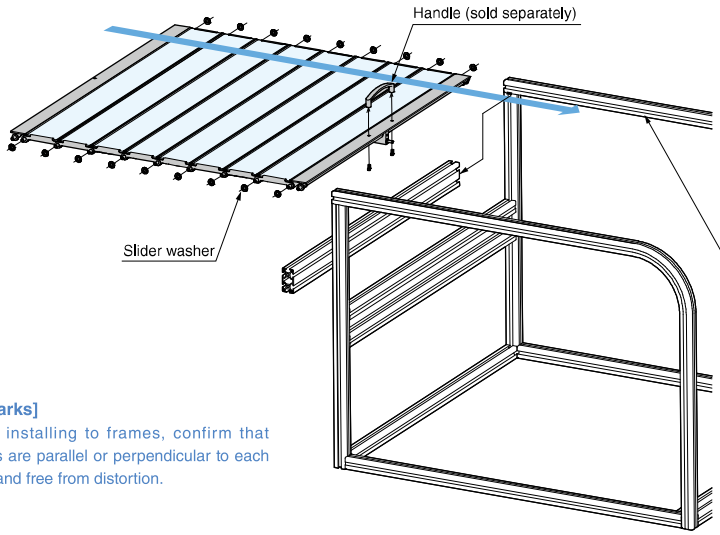
When assembling, slide each slat from the side as shown left.

Refer to 1 : P.524

4. Connecting slats 2

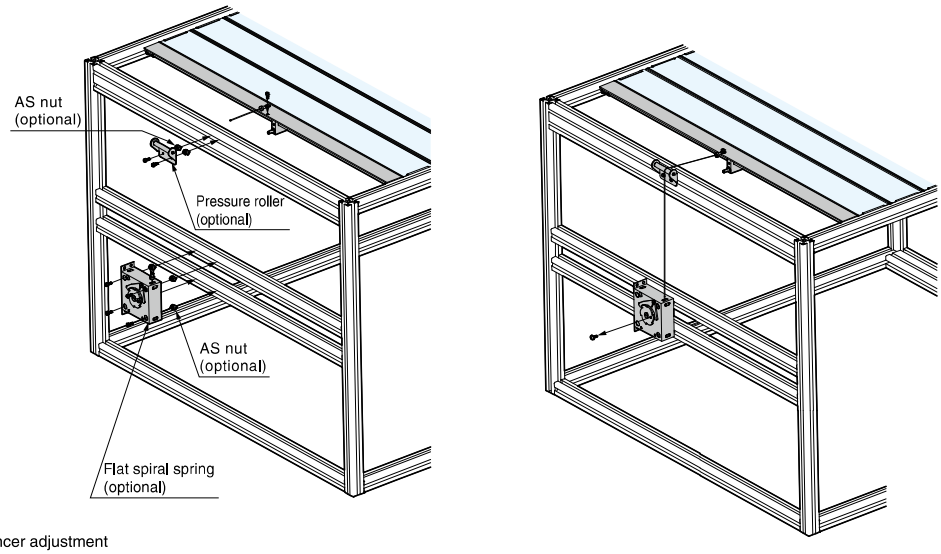


5. Installing to the frame



[Remarks]
When installing to frames, confirm that frames are parallel or perpendicular to each other and free from distortion.

6. Assembling in flat spiral spring



●Balancer adjustment
Remove the fixing screws, and adjust the wire pull-in force according to the balancer adjusting method.
As a guide, adjust to the extent that shutter fully closed can be lifted up with a force of 30N (3kgf) or less.

How to Use the Shutter Quotation Request Sheet (P.843~P.845)

Please copy the quotation request page where the relevant product is included, complete all necessary items and then send back by FAX or E-mail. We will give a reply according to the content of the quotation request.

■Example

Confirm the cabinet type

Fill in the shutter opening direction and cabinet dimensions

Select the optional parts as necessary

Fill in the necessary quantity and the desired delivery date

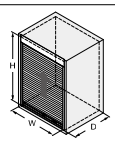
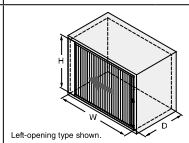
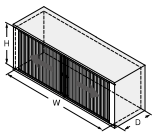
Fill in your contact information

Shutter Quotation Request

Design Shutter DIS-M (Surface Mount Type) P.824

Cabinet Type	☑ Metal ☐ Wood

Shutter Opening Direction

☐ Vertical Type	☑ Horizontal Type (Right-opening) ☐ Horizontal Type (Left-opening)	☐ Horizontal Type (Double Door)
	 Left-opening type shown.	
Cabinet Inside Width W (300~1200mm) mm	Cabinet Inside Width W (300~900mm) 700 mm	Cabinet Inside Width W (600~1800mm) mm
Cabinet Inside Height H (300~900mm) mm	Cabinet Inside Height H (100~1200mm) 950 mm	Cabinet Inside Height H (100~1200mm) mm
Cabinet Inside Depth D (Min. 330mm) mm	Cabinet Inside Depth D (Min. 330mm) 500 mm	Cabinet Inside Depth D (Min. 330mm) mm

Optional Parts (Please select the following parts as necessary.)

Part Name	Yes	No	
Key	☑	☐	Used when a key is necessary. Key Alike ☑ Key Different ☐
Decorative Cover (1200mm)	☑	☐	Used for shutter winding portion. Used for vertical type below W600 (horizontal type below H600).
Balance Spring	☑	☐	Stops the shutter in any position. Used for vertical type only. (Made to order)
Handle Slat (1198mm)	☑	☐	Installed in the centre of shutter for easy opening/closing.
Connecting Tape	☐	☑	Used for temporarily fixing slats and intermediate slats.
Surface Mount Parking Cover	☐	☑	Used for vertical type above W600 (horizontal type above H600).

Cutting of Parts	☑ Yes ☐ No (Delivery in Standard Size)		
Necessary Qty.	3 unit(s)	Desired Delivery Date	Day / Month / Year: 15/12/2016

●Your Contact Information

Company	○○ Kogyo Co., Ltd.	Name	John Smith
Division	Purchasing Department	TEL	03-1234-xxxx
E-mail	xxxx.x@xxx.co.jp	FAX	03-5678-xxxx
Address	Postcode 1000000 (Number, Street): 5F KANAMONO Building, 1-2 No. 000, △△△ Street		
	(City, State/ Prefecture): Chiyoda-ku, Tokyo, Japan		

SUGATSUNE

To: Sugatsune Kogyo Co., Ltd.

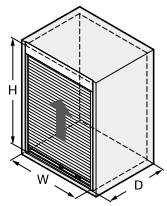
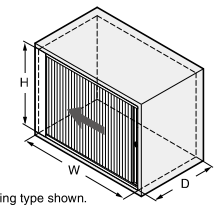
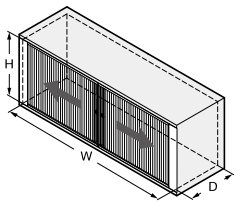
Shutter Quotation Request Sheet

Design Shutter DIS-M (Surface Mount Type)

P.824

Cabinet Type	☐ Metal ☐ Wood

Shutter Opening Direction

☐ Vertical Type		☐ Horizontal Type (Right-opening) ☐ Horizontal Type (Left-opening)		☐ Horizontal Type (Double Door)	
		 Left-opening type shown.			
Cabinet Inside Width W (300~1200mm)	mm	Cabinet Inside Width W (300~900mm)	mm	Cabinet Inside Width W (600~1800mm)	mm
Cabinet Inside Height H (300~900mm)	mm	Cabinet Inside Height H (100~1200mm)	mm	Cabinet Inside Height H (100~1200mm)	mm
Cabinet Inside Depth D (Min. 330mm)	mm	Cabinet Inside Depth D (Min. 330mm)	mm	Cabinet Inside Depth D (Min. 330mm)	mm

Optional Parts (Please select the following parts as necessary.)

Part Name	Yes	No	
Key	☐	☐	Used when a key is necessary. Key Alike ☐ Key Different ☐
Decorative Cover (1200mm)	☐	☐	Used for shutter winding portion. Used for vertical type below W600 (horizontal type below H600).
Balance Spring	☐	☐	Stops the shutter in any position. Used for vertical type only. (Made to order)
Handle Slat (1198mm)	☐	☐	Installed in the centre of shutter for easy opening/closing.
Connecting Tape	☐	☐	Used for temporarily fixing slats and intermediate slats.
Surface Mount Parking Cover	☐	☐	Used for vertical type above W600 (horizontal type above H600).

Cutting of Parts	☐ Yes ☐ No (Delivery in Standard Size)

Necessary Qty.	unit(s)	Desired Delivery Date	Day / Month / Year:

●Your Contact Information

Company		Name	
Division		TEL	
E-mail		FAX	
Address	Postcode (Number, Street):		
	(City, State/ Prefecture):		

To: Sugatsune Kogyo Co., Ltd.

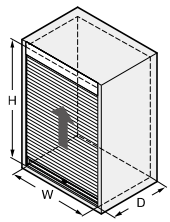
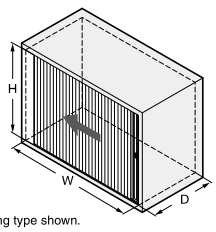
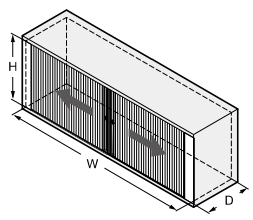
Shutter Quotation Request Sheet

Design Shutter DIS-H (Recessed Mount Type)

P.830

Cabinet Type	☐ Metal ☐ Wood

Shutter Opening Direction

☐ Vertical Type		☐ Horizontal Type (Right-opening) ☐ Horizontal Type (Left-opening)		☐ Horizontal Type (Double Door)	
		 Left-opening type shown.			
Cabinet Inside Width W (300~900mm)	mm	Cabinet Inside Width W (300~900mm)	mm	Cabinet Inside Width W (600~1800mm)	mm
Cabinet Inside Height H (300~900mm)	mm	Cabinet Inside Height H (100~1188mm)	mm	Cabinet Inside Height H (100~1188mm)	mm
Cabinet Inside Depth D (200~600mm)	mm	Cabinet Inside Depth D (200~600mm)	mm	Cabinet Inside Depth D (200~600mm)	mm

Optional Parts (Please select the following parts as necessary.)

Part Name	Yes	No	
Key	☐	☐	Used when a key is necessary. Key Alike ☐ Key Different ☐
Decorative Cover (1200mm)	☐	☐	Used for shutter winding portion. Used for vertical type below W586 (horizontal type below H586).
Balance Spring	☐	☐	Stops the shutter in any position. Used for vertical type only. (Made to order)
Handle Slat (1198mm)	☐	☐	Installed in the centre of shutter for easy opening/closing.
Connecting Tape	☐	☐	Used for temporarily fixing slats and intermediate slats.

Cutting of Parts	☐ Yes ☐ No (Delivery in Standard Size)

Necessary Qty.	unit(s)	Desired Delivery Date	Day / Month / Year:

●Your Contact Information

Company		Name	
Division		TEL	
E-mail		FAX	
Address	Postcode (Number, Street):		
	(City, State/ Prefecture):		

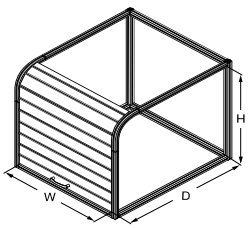
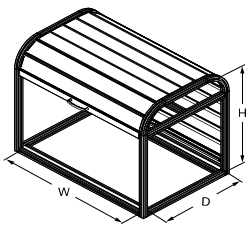
To: Sugatsune Kogyo Co., Ltd.

Shutter Quotation Request Sheet

AS High Rigidity Cabinet Shutter

P.836

Shutter Opening Direction

☐ L-shaped Type		☐ U-shaped Type	
			
Opening Inside Width W (Max. 840mm)	mm	Opening Inside Width W (Max. 840mm)	mm
Inside Height H (Max. 640mm)	mm	Opening Inside Height H	mm
Effective Inside Depth D (Max. 900mm)	mm	Effective Inside Depth D	mm

Slat Panel	☐ Prepared by yourself ☐ Prepared by us (For details, please contact our sales representative.)

Optional Parts (Please select the following parts as necessary.)

Part Name	Yes	No	
Reaction Force Roller	☐	☐	Used for L-shaped type only.
Damper	☐	☐	For reducing the shock caused by contact with aluminium frame when closing shutter.
Handle	☐	☐	Installed at the horizontal frame end.
Flat Spiral Spring	☐	☐	For relieving the weight feeling during opening and closing of the shutter. Used for L-shaped type only.
Balance Spring	☐	☐	Used for U-shaped type only. (Made to order)

Cutting of Parts	☐ Yes ☐ No (Delivery in Standard Size)

Necessary Qty.	unit(s)	Desired Delivery Date	Day / Month / Year:

●Your Contact Information

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E-mail		FAX	
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