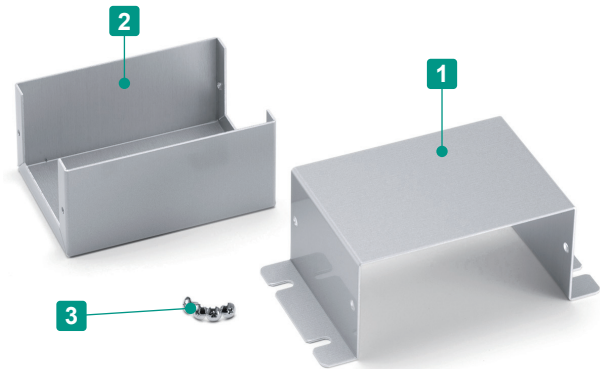


MBC series

FLANGED ALUMINIUM BOX



- Flanged aluminium case for wall mounting application.
- Suitable for use as a switch box or controller.
- The internal surface is unfinished, making conductive and grounding possible.
- Custom size available.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Aluminium A1100P	Metallic silver / Painted : Unfinished internal surface
2	Base	1	Aluminium A1100P	Metallic silver / Painted : Unfinished internal surface
3	Screw (Truss M3-5)	4	Brass	Nickel plated

Accessories (Optional parts)



Insert nut adhesive standoff AST series
See page 394



Conductive screw EV3-5S
See page EV-1



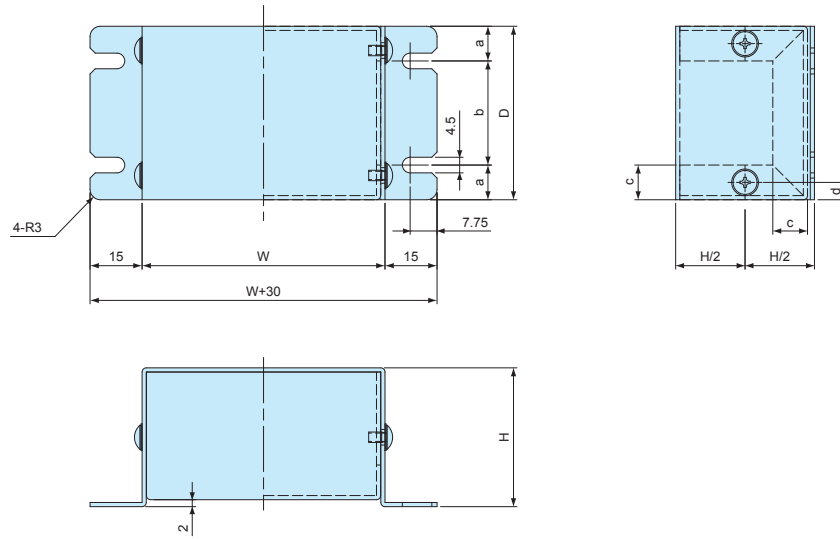
TORX screw MR3-5Z
See page MR-1

MBC dimensions

■ Detailed DXF/DWG drawings available online.

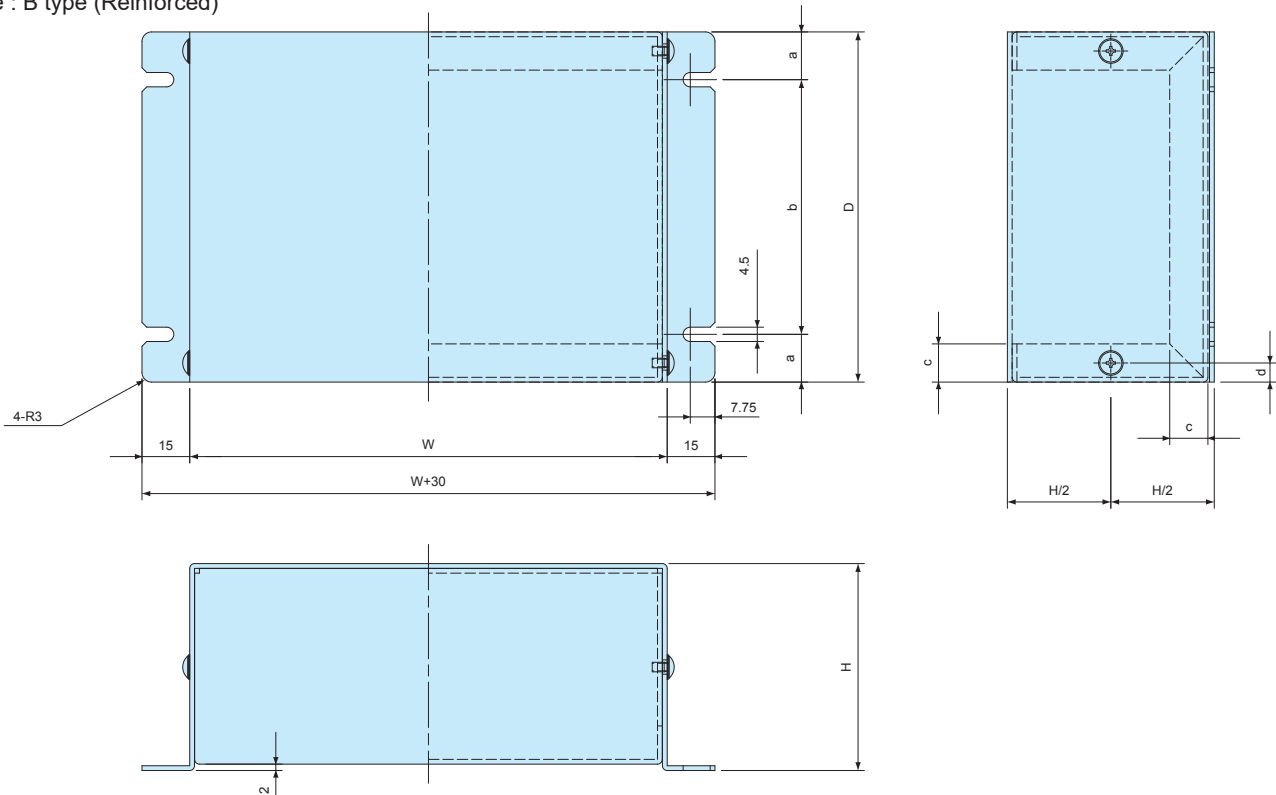
MBC5-4-7~MBC13-6-9

Base : A type (Standard)



MBC14-4-20~MBC20-8-15

Base : B type (Reinforced)

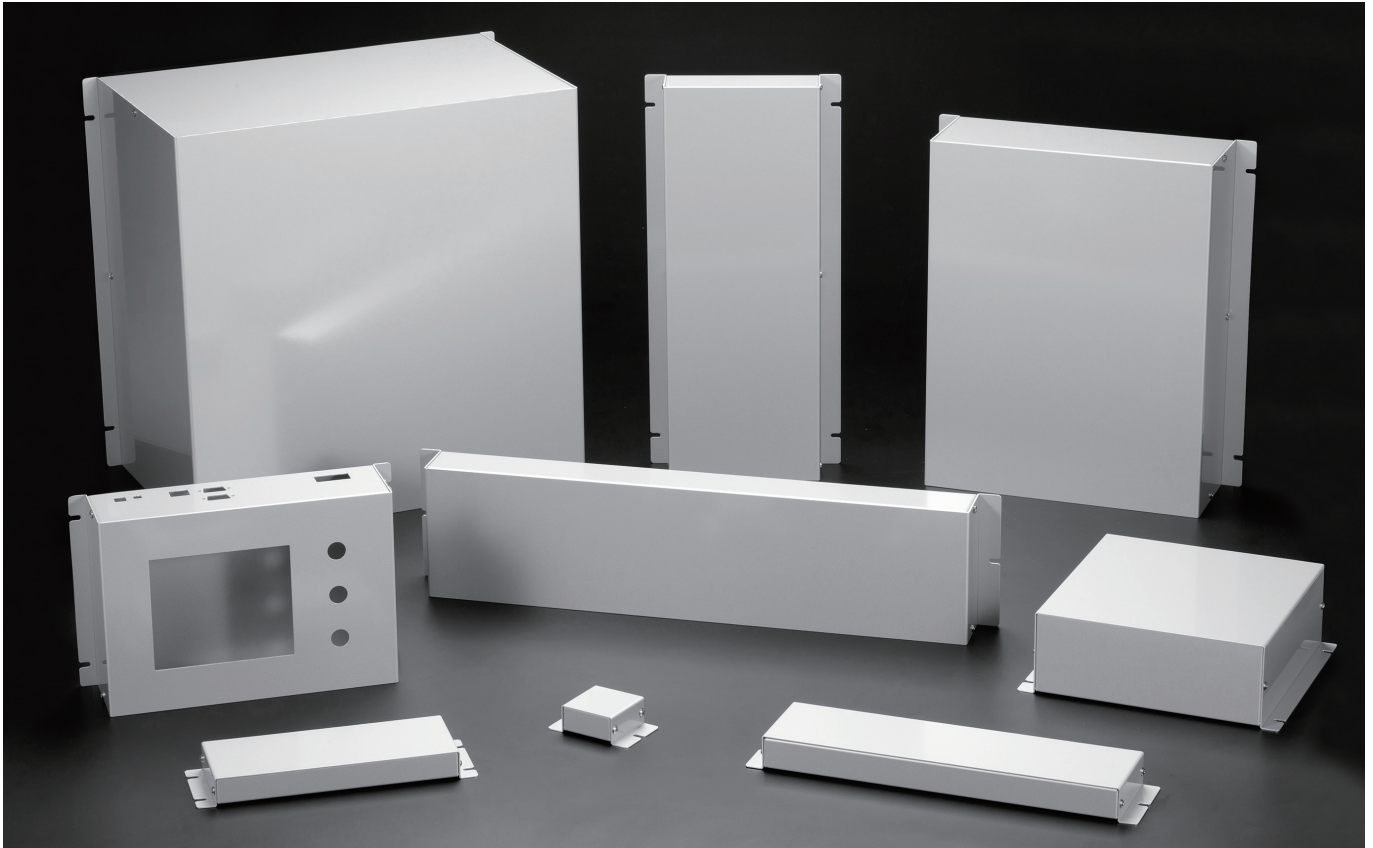


Product no. / Details

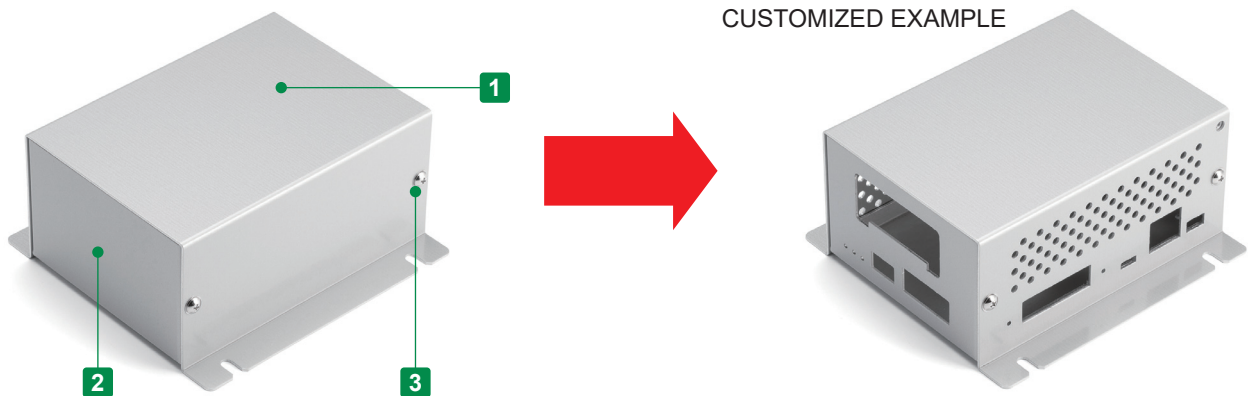
Product no.	W	H	D	a	b	c	d	Thickness	Base type	Weight (g)
MBC 5-4- 7	50	40	70	15	40	10	5	1.2	A	64
MBC 7-4- 5	70	40	50	10	30	10	5	1.2	A	62
MBC 7-4-10	70	40	100	15	70	10	5	1.2	A	102
MBC 8-5-12	80	50	120	15	90	12	6	1.5	A	180
MBC10-4-15	100	40	150	20	110	12	6	1.5	A	224
MBC10-5- 7	100	50	70	15	40	10	5	1.2	A	112
MBC10-7-15	100	65	150	20	110	12	6	1.5	A	280
MBC13-6- 9	125	60	90	15	60	12	6	1.5	A	210
MBC14-4-20	135	40	200	25	150	12	6	1.5	B	367
MBC15-7-11	150	65	110	15	80	12	6	1.5	B	298
MBC17-4-25	170	40	250	30	190	12	6	1.5	B	527
MBC18-7-13	175	70	130	15	100	12	6	1.5	B	389
MBC20-8-15	200	75	150	20	110	12	6	1.5	B	490

MBCF SERIES

CUSTOM SIZED EXTRUDED ALUMINIUM ENCLOSURE



- Adjustable sizes available in 1mm intervals, with W dimensions from 50 ~ 500mm, D dimensions from 50 ~ 400mm, and H dimensions from 25 ~ 200mm.
- Wall mount flange holes available in 2 models: 2-hole, and 4-hole types.
- A conductive coating is applied onto the internal surface, making earthing possible.

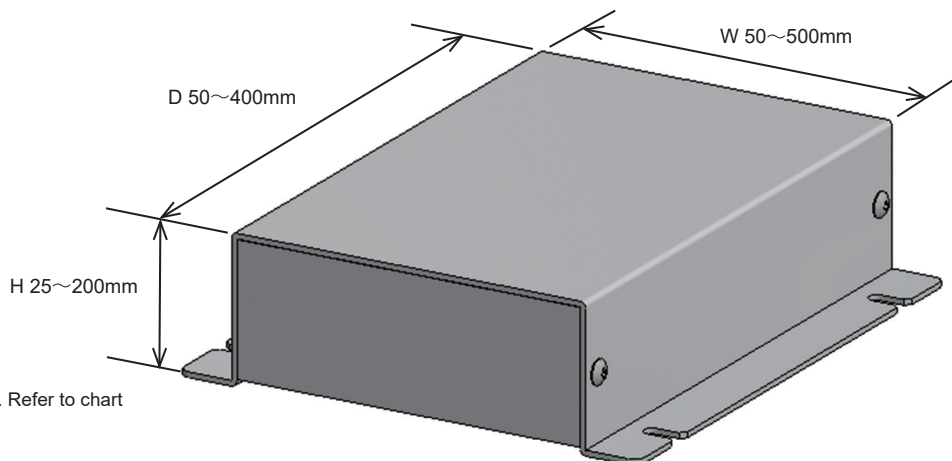


Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Aluminium A1100P	Metallic silver / Painted : Conductive coated internal surface
2	Base	1	Aluminium A1100P	Metallic silver / Painted : Conductive coated internal surface
3	Screw (Truss M3-5)	4 or 6	Brass	Nickel plated

1 Specify Dimensions

Specify dimensions in 1mm intervals.



Caution : Not all size combinations are possible. Refer to chart for more information.

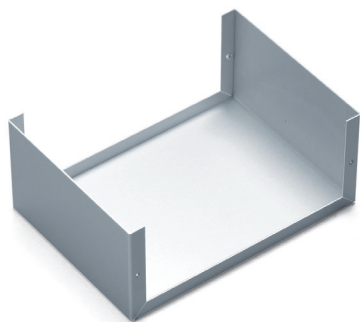
■ Panel thickness and base types vary by W / H / D dimensions.

Refer to the chart on page MBCF-3 for A12, B12 or B15 type selection by W, H & D dimensions.

Base Type A

[A12] Type

W : 200 • H : 100 • D : 400 or smaller
Type A : Standard • Panel thickness : 1.2mm



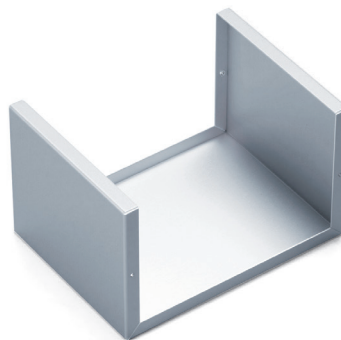
Base Type B

[B12] Type

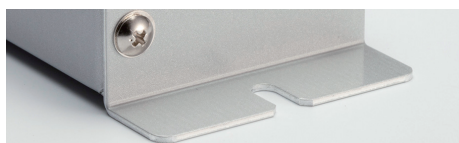
W : 300 • H : 200 • D : 400 or smaller
Type B : Reinforced • Panel thickness : 1.2mm

[B15] Type

W : 500 • H : 200 • D : 400 or smaller
Type B : Reinforced • Panel thickness : 1.5mm



2 Select Flange-hole Type



2 (1 on each side)



4 (2 on each side)

Confirm Product No.

Confirm an assigned product number in the following order format as below.

Product no. MBCF

155

-

80

-

200

Base
type

12

-

4

W

H

D

Base type Panel thickness

Flange hole

Example : W = 155 mm, H = 80 mm, D = 200 mm, B base type in panel thickness of 1.2mm, 4 flange holes

Lead time

Custom Size Only
Custom Size + Hole Milling

5 business days (1 ~ 3 pcs)
8 business days (1 ~ 3 pcs)

Order Inquiry

For more information, contact us here at sales@takachi-el.co.jp

MBCF Type Chart

Refer to the below chart for A12, B12 or B15 type selection by W, H & D dimensions.

[A12] Type

Standard • Panel thickness : 1.2mm

[B12] Type

Reinforced • Panel thickness : 1.2mm

[B15] Type

Reinforced • Panel thickness : 1.5mm

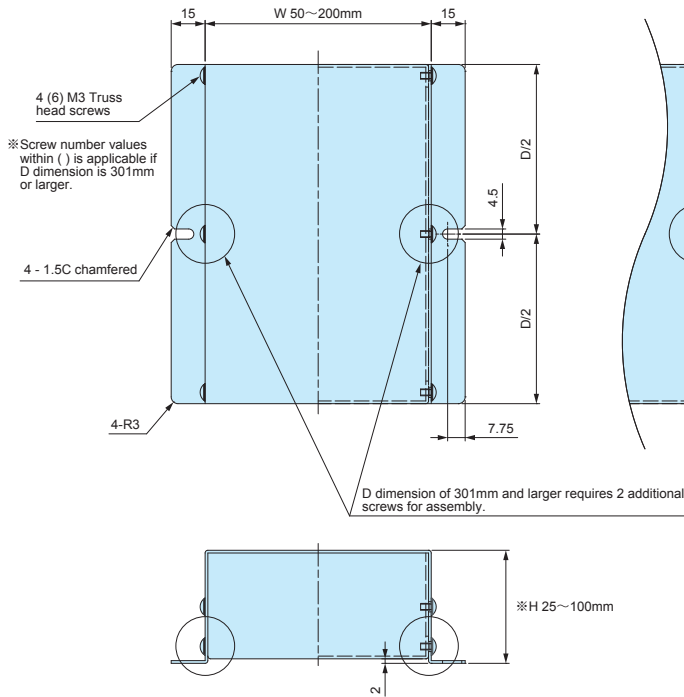
■ [—] sizes are not available.

W	H	D	4x fixing screw points										6x fixing screw points			
			50~74	75~99	100~125	126~150	151~175	176~200	201~225	226~250	251~275	276~300	301~325	326~350	351~375	376~400
50~99		25~35	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12	A12
		36~50	—	A12	A12	A12	A12	A12	A12	A12	A12	A12	B12	B12	B12	B12
100~150		25~29	—	A12	A12	A12	A12	A12	B12	B12	B12	B12	—	—	—	—
		30~50	—	A12	A12	A12	A12	A12	B12	B12	B12	B12	B15	B15	B15	B15
		51~75	—	—	A12	A12	A12	A12	B12	B12	B12	B12	B15	B15	B15	B15
		76~100	—	—	—	A12	A12	A12	B12	B12	B12	B12	B15	B15	B15	B15
151~200		25~29	—	A12	A12	A12	A12	A12	B12	B12	B12	B12	—	—	—	—
		30~50	—	A12	A12	A12	A12	A12	B12	B12	B12	B12	B15	B15	B15	B15
		51~75	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		76~100	—	—	—	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B15	B15	B15	B15
201~250		25~29	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	—	—	—	—
		30~50	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		51~75	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		76~100	—	—	—	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B15	B15	B15	B15
251~300		25~29	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	—	—	—	—
		30~50	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		51~75	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		76~100	—	—	—	B12	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B15	B15	B15	B15
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B15	B15	B15	B15
301~350		30~50	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		51~75	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		76~100	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		101~125	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		126~150	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B15	B15	B15	B15
351~400		30~50	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		51~75	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		76~100	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		101~125	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		126~150	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15
401~450		30~50	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		51~75	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		76~100	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		101~125	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		126~150	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15
451~500		30~50	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		51~75	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		76~100	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		101~125	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15	B15
		126~150	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15	B15
		151~175	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15
		176~200	—	—	—	—	—	—	—	B15	B15	B15	B15	B15	B15	B15

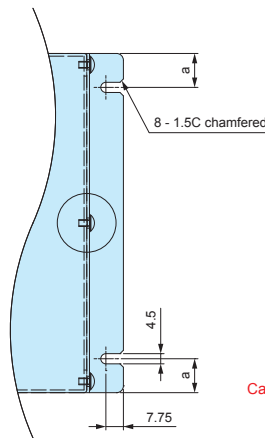
MBCF dimensions

[A12] Type Standard • Panel thickness : 1.2mm

2-hole flange type

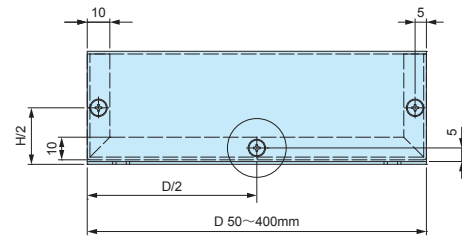


4-hole flange type



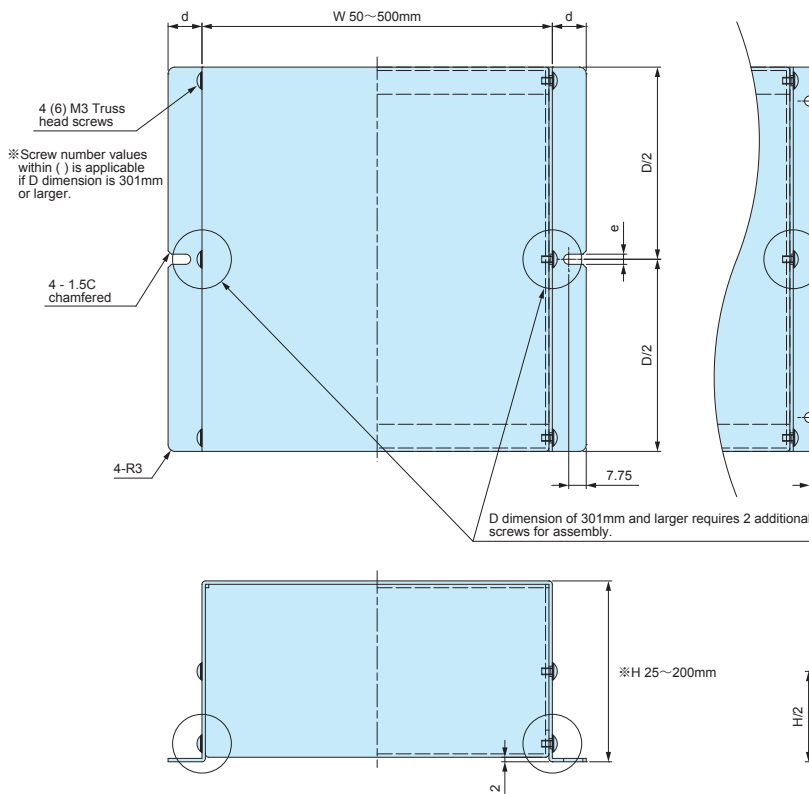
D dimension	a
50 ~ 60	10
61 ~ 140	15
141 ~ 240	20
241 ~ 400	30

Caution : Refer to the available dimensions on the chart.

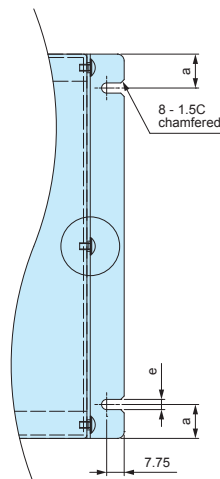


[B12] Type Reinforced • Panel thickness : 1.2mm

2-hole flange type



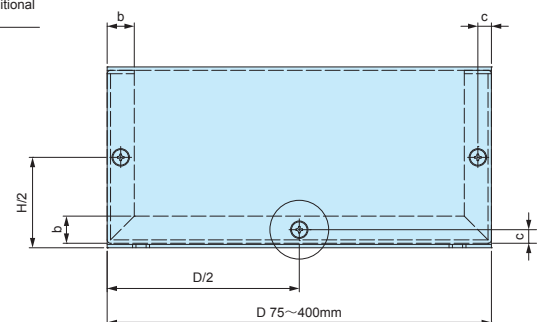
4-hole flange type



D dimension	a
50 ~ 60	10
61 ~ 140	15
141 ~ 240	20
241 ~ 400	30

Base Type	b	c	d	e
[B12]	10	5	15	4.5
[B15]	12	6	20	5.5

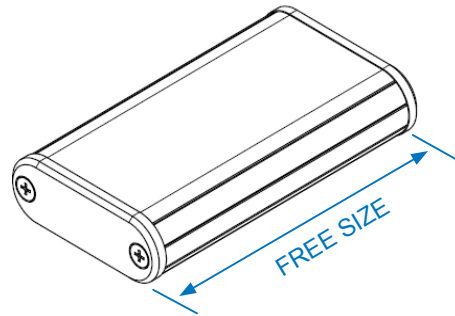
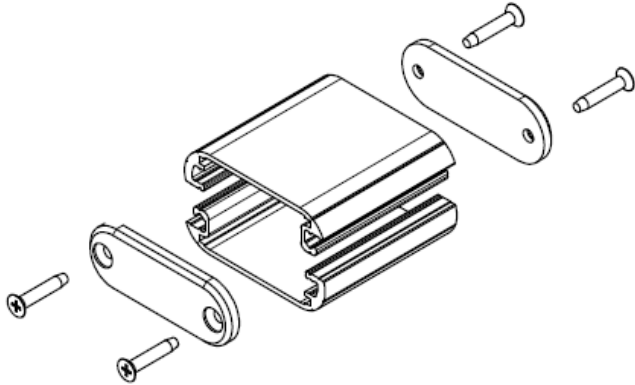
Caution : Refer to the available dimensions on the chart.



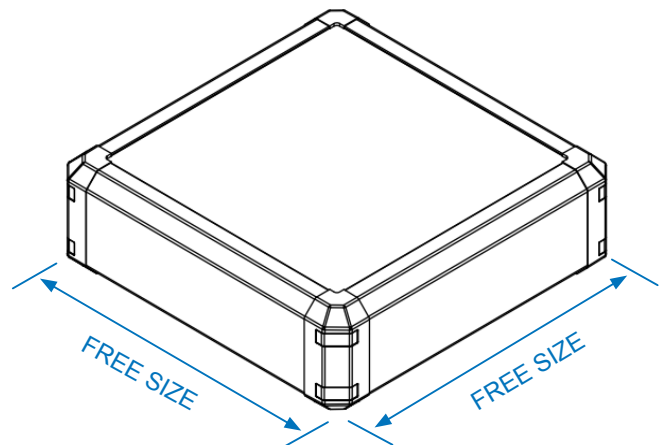
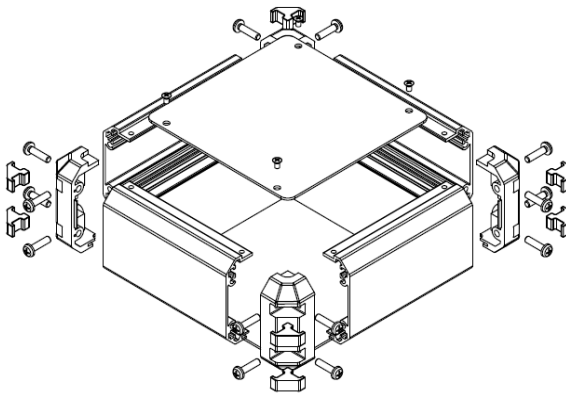
VARIETY OF CUSTOM SIZED ENCLOSURES

Extruded models are adjustable in extrusion length (depth) in 0.1mm or 1.0mm intervals.
Sheet-metal models are adjustable in W/D/H dimensions in 1.0mm intervals.

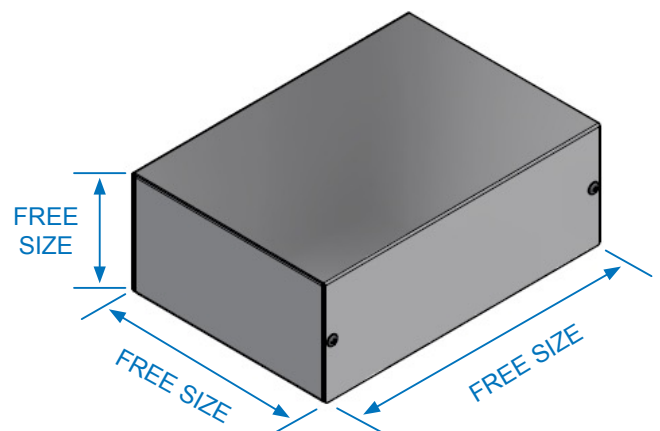
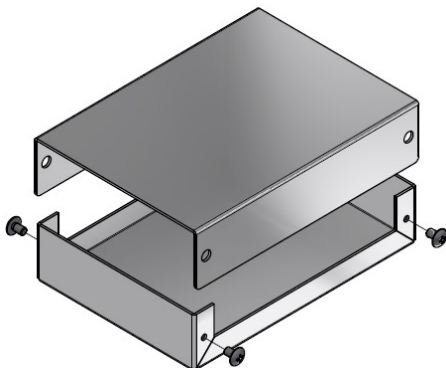
EXTRUDED ALUMINIUM MODEL



4 SIDE-EXTRUDED ALUMINIUM MODEL



SHEET METAL MODEL



More custom sized models are available.

https://www.takachi-enclosure.com/cat/flexible_size

INQUIRING CUSTOM SIZED ENCLOSURES

- 1 Navigate to the free-size product page you wish to inquire on our website and click on the button indicated by the  arrow.



Custom sized shock-proof design instrument enclosure.
Corner guards are designed to be both aesthetically pleasing, and impact resistant.

Selectable 22 different Width/Height profiles and specified length (depth) from 40 to 500mm in 1mm intervals.
16 different color combinations can be specified.

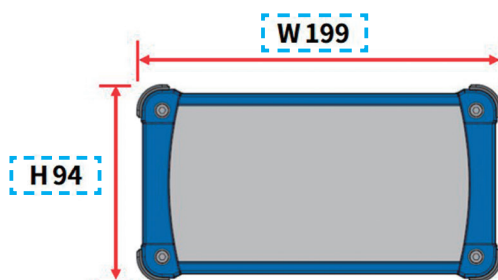


CUSTOM SIZE WEB QUOTATION	3D View - Silver/Navy	3D View - 16 color types
3D View - With tilt legs	Exploded view	Color code

■ If there is no "WEB QUOTATION" click button, please send us your inquiry from the "INQUIRY FORM" on the CONTACT tab on our website.

- 2 Go to the CUSTOM SIZE WEB QUOTATION page and enter your preferred dimensions.

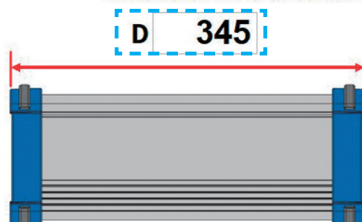
STEP1 Select required width / height.



Select	W	H	Select	W	H
☐	69	34	☐	151	81
☐	69	44	☐	151	101
☐	69	59	☐	199	56
☐	89	39	☐	199	74
☐	89	49	☒	199	94
☐	89	64	☐	199	119
☐	116	41	☐	244	64
☐	116	56	☐	244	89
☐	116	71	☐	244	114
☐	151	46	☐	300	90
☐	151	61	☐	300	140

STEP2 Specify size D(depth) ... Enter dimensions in 1mm intervals.

Available from 40 to 500mm



*NOTE: Specified size D(depth) $\neq$ available internal dimension

Available internal dimension = **D dimension - 20mm**

Please take caution when calculating required D dimension.

- 3 After entering the quantity, click on the button indicated by the → arrow to generate a Product No.

STEP4 **Quantity** ※Quantity can be specified up to 5 slots.

10 pcs

▶Add quantity



▶ **GENERATE PRODUCT NO.**

Product No. **EXPS199 – 94 – 345SN** ※Please use this model number when ordering.

- 4 After entering your details and the message in our INQUIRY FORM, click on the CONFIRM button.

STEP5 **INQUIRY FORM**

Fill out the inquiry form and send it. We will give you quotation by Email.
Inquiry from the country where the distributor is located will be answered by the distributor.

Fields marked with ★ are required

Product No. **EXPS199-94-345SN** Quantity ★ 10

E-mail ★ jiro@takachi-el.co.jp

Company ★ TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

Your name ★ ☐ Mr. ☒ Ms. First name Jiro Last name Takachi

Country ★

Message
I would like a quote for 10 pieces of EXPS199-94-345SN.



▶ **CONFIRM**

Our privacy policy have been designed to ensure that personal information is not misused or used for purposes other than it is intended for.
[PRIVACY POLICY](#)

- 5 A TAKACHI sales representative will get in touch with you with a quote via e-mail.



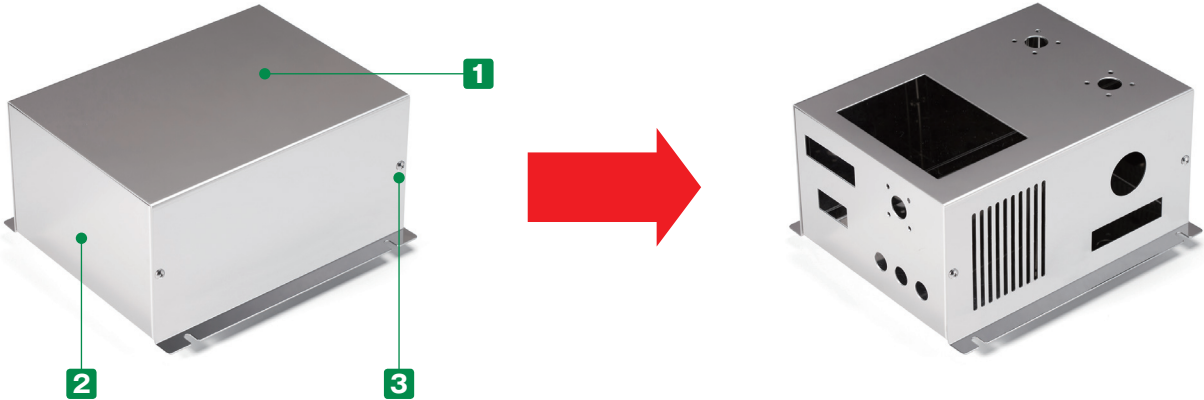
MBSF SERIES

CUSTOM SIZED FLANGED STAINLESS STEEL ENCLOSURE



- Adjustable sizes available in 1mm intervals, with W dimensions from 50 ~ 500mm, D dimensions from 50 ~ 400mm, and H dimensions from 20 ~ 250mm.
- Wall mount flange holes available in 2 models: 2-hole, and 4-hole types.
- SUS304 stainless steel allows the enclosure to be conductive.

CUSTOMIZED EXAMPLE

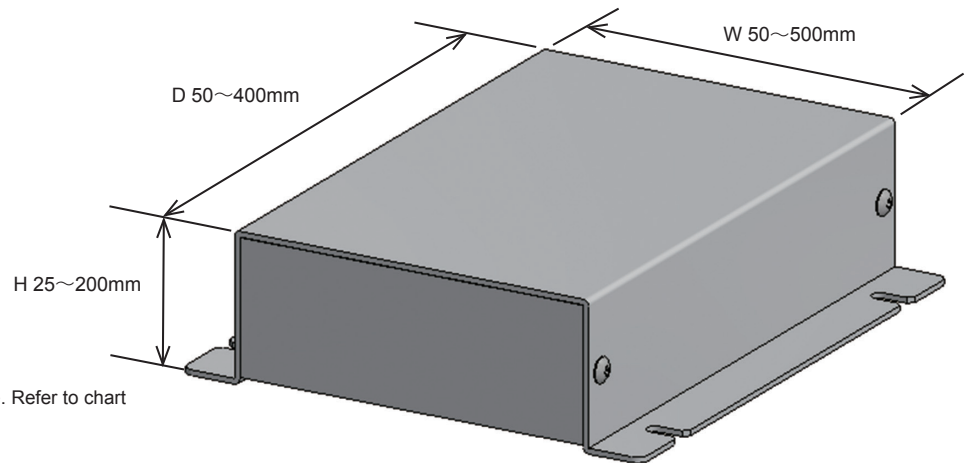


Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Stainless steel SUS304	Bright annealed (BA)
2	Base	1	Stainless steel SUS304	Bright annealed (BA)
3	Screw (Truss M3-5)	4 or 6	Stainless steel	Unfinished

1 Specify Dimensions

Specify dimensions in 1mm intervals.



Caution : Not all size combinations are possible. Refer to chart for more information.

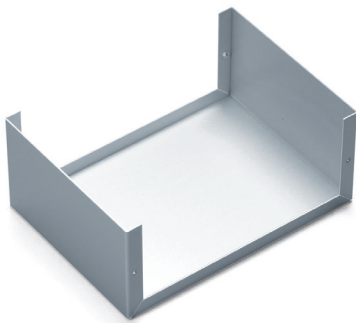
■ Panel thickness and base types vary by W / H / D dimensions.

Refer to the chart on page MBS-3 for A08, B10 or B12 type selection by W, H & D dimensions.

Base Type A

[A10] Type

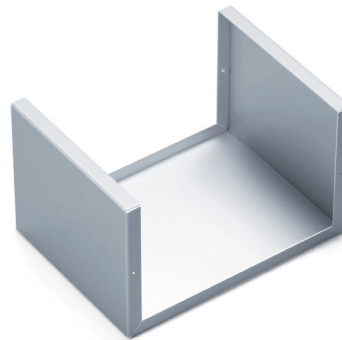
W : 200 • H : 100 • D : 400 or smaller
Type A : Standard • Panel thickness : 1.0mm



Base Type B

[B10] Type

W : 300 • H : 200 • D : 400 or smaller
Type B : Reinforced • Panel thickness : 1.0mm



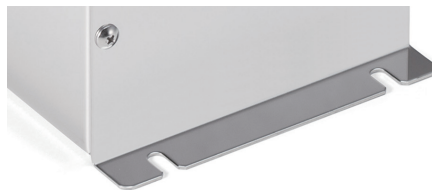
[B12] Type

W : 500 • H : 200 • D : 400 or smaller
Type B : Reinforced • Panel thickness : 1.2mm

2 Select Flange-hole Type



2 (1 on each side)



4 (2 on each side)

Confirm Product No.

Confirm an assigned product number in the following order format as below.

Product no. MBSF

155

W

80

H

200

D

A

Base type

10

Panel thickness

4

Flange hole

Example : W = 155 mm, H = 80 mm, D = 200 mm, A base type in panel thickness of 1.0mm, 4 flange holes

Lead time

Custom Size Only

9 business days (1 ~ 3 pcs)

Custom Size + Hole Milling

10 business days (1 ~ 3 pcs)

Order Inquiry

For more information, contact us here at sales@takachi-el.co.jp

MBSF Type Chart

Refer to the below chart for A10, B10 or B12 type selection by W, H & D dimensions.

[A10]Type

Standard • Panel thickness : 1.0mm

[B10]Type

Reinforced • Panel thickness : 1.0mm

[B12]Type

Reinforced • Panel thickness : 1.2mm

■ [—] sizes are not available.

W	H	D	4x fixing screw points										6x fixing screw points			
			50~74	75~99	100~125	126~150	151~175	176~200	201~225	226~250	251~275	276~300	301~325	326~350	351~375	376~400
50~99	25~35	25~35	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10	A10
		36~50	—	A10	A10	A10	A10	A10	A10	A10	A10	A10	B10	B10	B10	B10
100~150	25~29	25~29	—	A10	A10	A10	A10	A10	B10	B10	B10	B10	—	—	—	—
		30~50	—	A10	A10	A10	A10	A10	B10	B10	B10	B10	B12	B12	B12	B12
		51~75	—	—	A10	A10	A10	A10	B10	B10	B10	B10	B12	B12	B12	B12
		76~100	—	—	—	A10	A10	A10	B10	B10	B10	B10	B12	B12	B12	B12
151~200	25~29	25~29	—	A10	A10	A10	A10	A10	B10	B10	B10	B10	—	—	—	—
		30~50	—	A10	A10	A10	A10	A10	B10	B10	B10	B10	B12	B12	B12	B12
		51~75	—	—	B10	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		76~100	—	—	—	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		101~125	—	—	—	—	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		126~150	—	—	—	—	—	B10	B10	B10	B10	B10	B12	B12	B12	B12
201~250	25~29	25~29	—	B10	B10	B10	B10	B10	B10	B10	B10	B10	—	—	—	—
		30~50	—	B10	B10	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		51~75	—	—	B10	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		76~100	—	—	—	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		101~125	—	—	—	—	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		126~150	—	—	—	—	—	B10	B10	B10	B10	B10	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B10	B10	B10	B10	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B10	B10	B10	B12	B12	B12	B12
251~300	25~29	25~29	—	B10	B10	B10	B10	B10	B10	B10	B10	B10	—	—	—	—
		30~50	—	B10	B10	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		51~75	—	—	B10	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		76~100	—	—	—	B10	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		101~125	—	—	—	—	B10	B10	B10	B10	B10	B10	B12	B12	B12	B12
		126~150	—	—	—	—	—	B10	B10	B10	B10	B10	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B10	B10	B10	B10	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B10	B10	B10	B12	B12	B12	B12
301~350	30~50	30~50	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		51~75	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		76~100	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
351~400	30~50	30~50	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		51~75	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		76~100	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
401~450	30~50	30~50	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		51~75	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		76~100	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
451~500	30~50	30~50	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		51~75	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		76~100	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		101~125	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12	B12
		126~150	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12	B12
		151~175	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12	B12
		176~200	—	—	—	—	—	—	—	B12	B12	B12	B12	B12	B12	B12
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

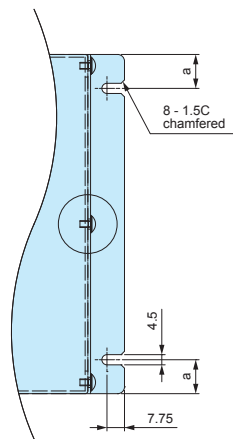
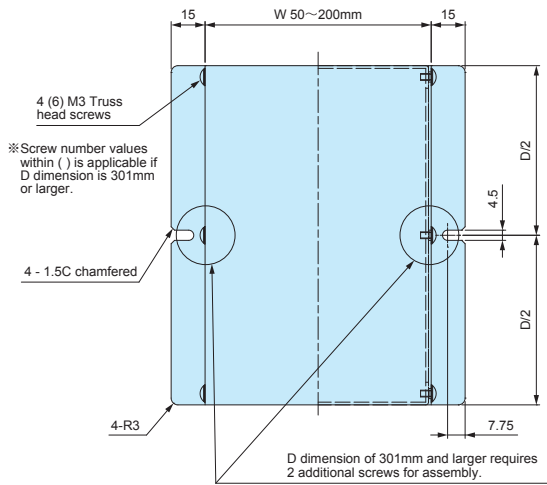
MBSF dimensions

[A10] Type

Standard • Panel thickness : 1.0mm

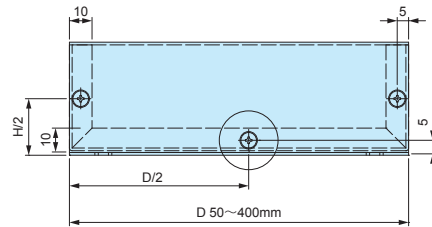
2-hole flange type

4-hole flange type



D dimension	a
50 ~ 60	10
61 ~ 140	15
141 ~ 240	20
241 ~ 400	30

Caution : Refer to the available dimensions on the chart.



[B10] Type

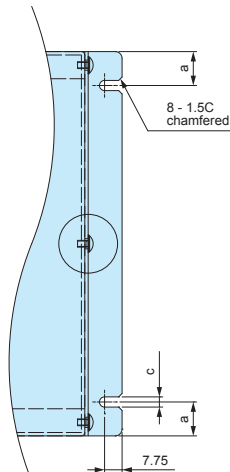
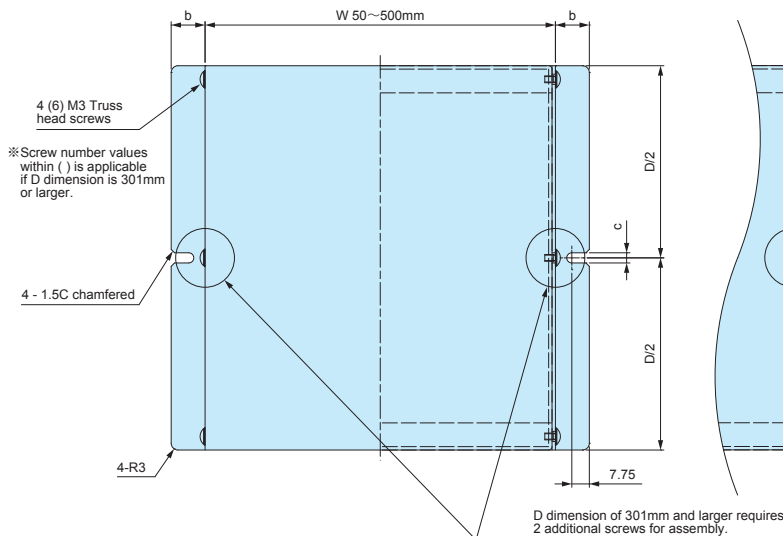
Reinforced • Panel thickness : 1.0mm

[B12] Type

Reinforced • Panel thickness : 1.2mm

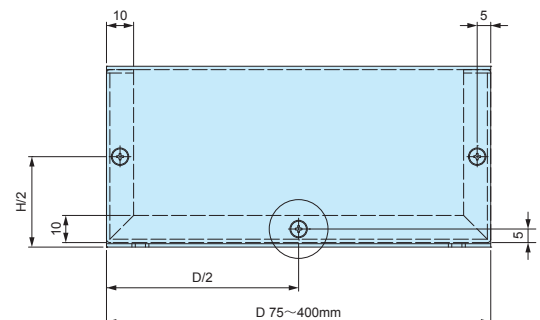
2-hole flange type

4-hole flange type



D dimension	a	b	c
50 ~ 60	10	15	4.5
61 ~ 140	15	15	4.5
141 ~ 240	20	15	4.5
241 ~ 400	30	20	5.5

Caution : Refer to the available dimensions on the chart.



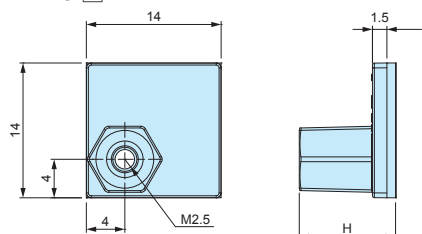
AST series**INSERT NUT ADHESIVE STANDOFF**

- Double-sided adhesive tape allows the standoff to be mounted quickly and easily; allows PCB mounting in non-boss enclosures.
- Convenient for installing PCBs into enclosures without the need for customization.
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.

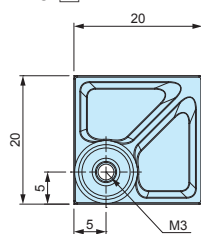
AST dimensions

■ DXF/DWG/PDF/STP drawings available on our website.

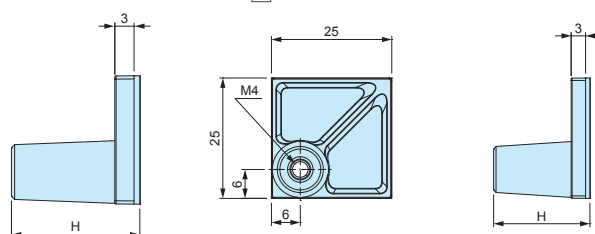
AST2.5-□



AST3-□



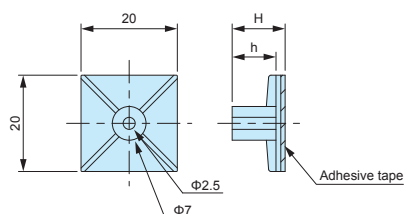
AST4-□

**Product no. / Details****Bulk package**

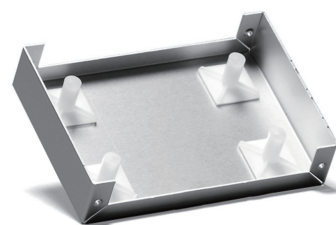
Product no	H dimension	Included screw	Recommended PCB thickness (mm)	Recommended torque (N · m)	Weight (g)	Pack of	Product no	Pack of
AST2.5-5B	5	M2.5-5 pan head	1.0 ~ 2.0	0.3	0.6 (1 piece)	4	AST2.5-5B-P	100
AST2.5-10B	10	M2.5-5 pan head	1.0 ~ 2.0	0.3	0.8 (1 piece)	4	AST2.5-10B-P	100
AST3-6B	6	M3-6 pan head	1.0 ~ 3.0	0.4	1.5 (1 piece)	4	AST3-6B-P	100
AST3-10B	10	M3-6 pan head	1.0 ~ 3.0	0.4	1.6 (1 piece)	4	AST3-10B-P	100
AST3-15B	15	M3-6 pan head	1.0 ~ 3.0	0.4	1.8 (1 piece)	4	AST3-15B-P	100
AST3-20B	20	M3-6 pan head	1.0 ~ 3.0	0.4	2.1 (1 piece)	4	AST3-20B-P	100
AST4-10.5B	10.5	M4-8 pan head	1.0 ~ 3.5	0.8	2.6 (1 piece)	4	AST4-10.5B-P	50
AST4-20B	20	M4-8 pan head	1.0 ~ 3.5	0.8	3.2 (1 piece)	4	AST4-20B-P	50

- Base material / color : Nylon 66 (UL94V-2) / Black
- Nut • screw material / finish : Steel / Trivalent chromate

- Bulk packaging is available. See "Bulk package" column above.
- Screws are not included for bulk packages.

ASR series**ADHESIVE PCB STANDOFF****ASR dimensions**

■ DXF/DWG/PDF drawings available on our website.

**Product no. / Details**

■ Material / Color: Nylon 66 (UL94V-2) / Natural

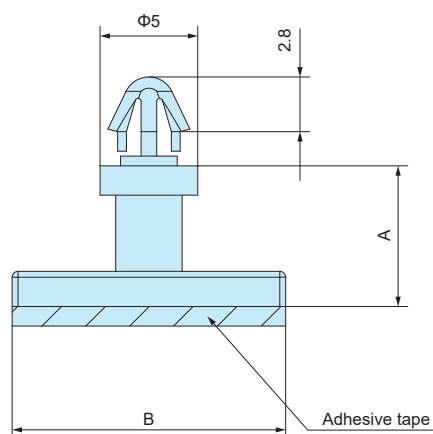
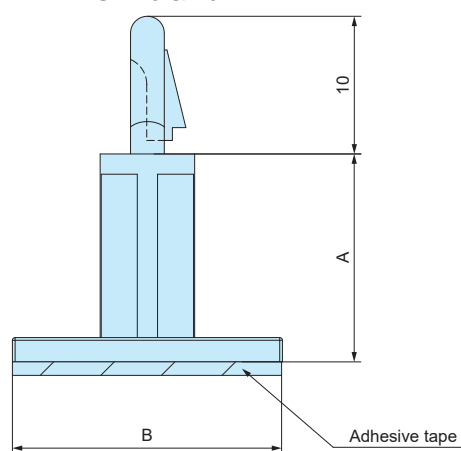
Product no	H	h	Weight (g)	Pack of
ASR- 5	5.1	3.1	0.9 (1 piece)	10
ASR- 6	6.4	4.4	1.0 (1 piece)	10
ASR- 7	7.2	5.1	0.9 (1 piece)	10
ASR- 8	8.1	6.3	0.9 (1 piece)	10
ASR- 9	9	7	1.0 (1 piece)	10
ASR-11	11	9	1.0 (1 piece)	10
ASR-13	12.7	10.7	1.2 (1 piece)	10
ASR-14.5	14.7	12.8	1.1 (1 piece)	10
ASR-16	15.9	13.9	1.3 (1 piece)	10
ASR-19	19.1	17.1	1.4 (1 piece)	10

- M3 tapping screw use adhesive standoff.
Recommended to be used with EM-3 or EM-3-6 self-tapping screws (See page 398).
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.

Technical Data
Recommended torque : 0.4N · m

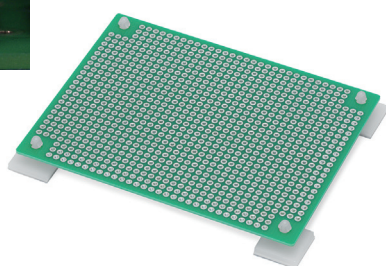
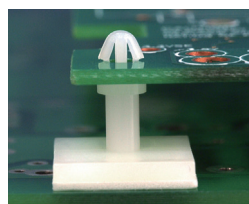
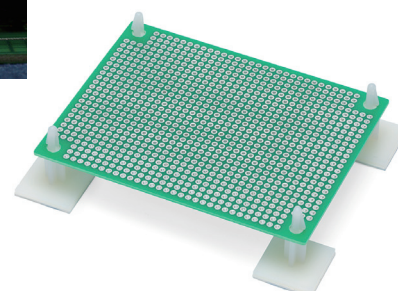
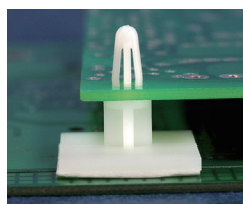
ASL series**LOCKING PCB ADHESIVE STANDOFF**

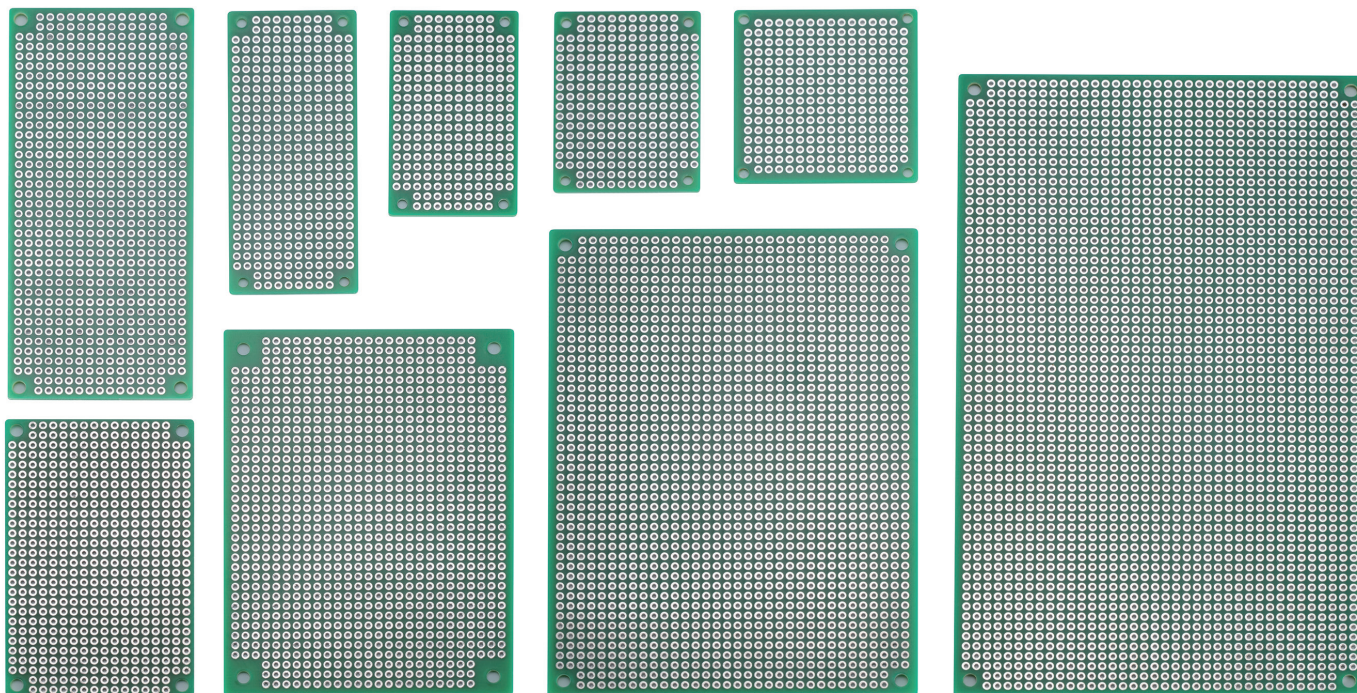
- Standoff for securing PCB by simply snapping it in.
- Adhesive standoff can be freely and easily affixed on.
- Once removed, it cannot be adhered on again.

ASL-3 ~ 12**ASL-15 & 19****Product no. / Details**

■ Material / Color : PA66 / Natural

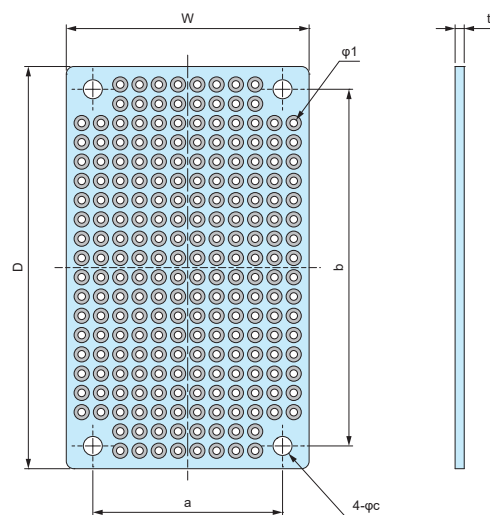
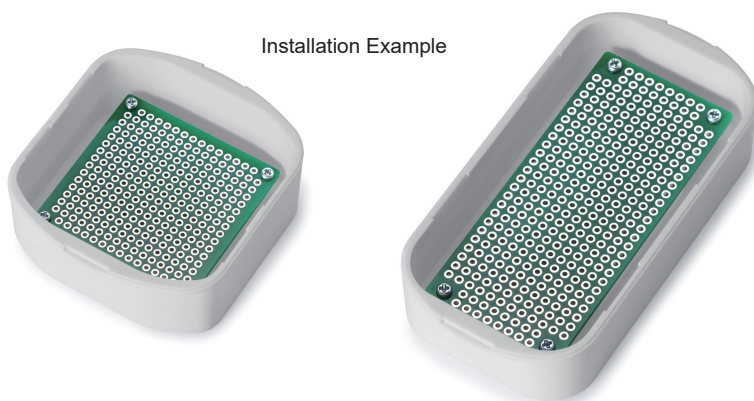
Product no.	A	B	Mounting hole	Mounting thickness	Weight (g)	Pack of
ASL- 3	2.7	□14	Φ3	1.2 ~ 1.6	0.5 (1 piece)	10
ASL- 4	4	□14	Φ3	1.2 ~ 1.6	0.5 (1 piece)	10
ASL- 6	5.6	□14	Φ3	1.2 ~ 1.6	0.6 (1 piece)	10
ASL- 7	7.2	□14	Φ3	1.2 ~ 1.6	0.6 (1 piece)	10
ASL- 9	9.2	□14	Φ3	1.2 ~ 1.6	0.6 (1 piece)	10
ASL-10	9.7	□14	Φ3	1.2 ~ 1.6	0.6 (1 piece)	10
ASL-12	11.9	□14	Φ3	1.2 ~ 1.6	0.6 (1 piece)	10
ASL-15	15.4	□20	Φ4	1.2 ~ 1.7	1.3 (1 piece)	10
ASL-19	18.5	□18	Φ4	1.2 ~ 2.0	1.4 (1 piece)	10

APPLICATION EXAMPLE : ASL-3 ~ 12**APPLICATION EXAMPLE : ASL-15 & 19**



- Plated Through Hole (PTH) type PCB with a 2.54mm hole-to-hole pitch.
Inexpensive and economical PCB made with robust, heat-resistant and non-conductive glass epoxy material.
- Easily mounted onto bosses or standoffs with the mounting holes at each corner.
- Made with environmentally friendly lead-free solder. RoHS3 compliant.
- 4 new sizes added to extend the lineup to a total of 9 sizes. PCB100-160 is Eurocard (3U) format size.
- 3 new SIC and SIM plastic case series compatible sizes have been released, now with 4 compatible sizes available.
- DXF/DWG/PDF drawings available on our website.

Installation Example



Material / Finish : Glass epoxy (FR-4) / Through-hole - Lead-free solder resist

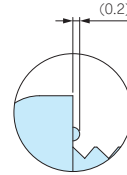
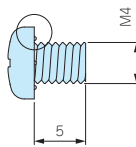
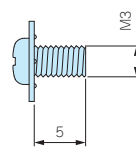
*When installing PCB46-101 with M2 mounting screws, use EM-B2 (see page 398).

Product no. / Details

Product no.	W	D	a	b	c	t	Mounting screw	Weight (g)	Compatible SIC & SIM size
PCB 32- 53	32	53	25	47	2.5	1.2	M2 / M2.5	3.9	SIC • SIM5- 7-□
NEW PCB 32- 73	32	73	25	67	2.5	1.2	M2 / M2.5	5.2	SIC • SIM5- 9-□
NEW PCB 36- 47	36	47	30	41	2.5	1.2	M2 / M2.5	3.7	—
NEW PCB 45- 45	45	45	40	40	2.5	1.2	M2 / M2.5	4.6	SIC • SIM6- 7-□
NEW PCB 46-101	46	101	40	95	3.2	1.6	M2 / M2.5 / M3	13.2	SIC • SIM6-12-□
PCB 47- 72	47	72	41	66	3.2	1.2	M3	7.4	—
PCB 72- 95	72	95	62	85	3.2	1.2	M3	15.7	—
PCB 90-120	90	120	82	112	3.2	1.6	M3	32.5	—
PCB100-160	100	160	92	152	3.2	1.6	M3	49.2	—

EV series**CONDUCTIVE SCREW**

Conductive



Base material exposed after being shaved.



Example: Internal grounding use.



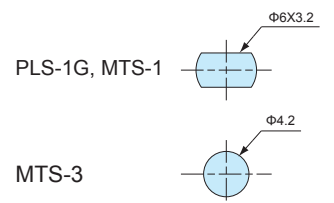
- When tightened, protrusions on the underside of the screw head will shave away at the painted or anodized surface to expose the base material for achieving conductivity.

Product no. / Dimensions

Product no.	M	L	Material	Finish	Suitable series	Pack of
EV3-5S	3	5	Steel	Nickel plated	YM • MB • others	20
NEW EV-4S	4	5	Steel	Nickel plated	BDN • others	20

PLS • MTS • PM series**CAPTIVE FASTENER • CAPTIVE SCREW**PLS-1G
Plastic fastenerMTS-1
Metal fastenerMTS-3
Metal fastener

Hole layout for mounting

**Product no. / Dimensions Fastener**

Product no.	M	Material	Color / Finish	Pack of
PLS-1G	2.5	POM	White gray	50
MTS-1	2.5	Steel	Zinc plated	8
NEW MTS-3	2.5	Steel	Nickel plated	10

Conductive

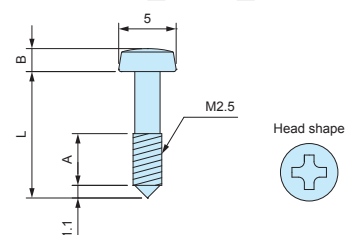
PM-1□

PM-2□

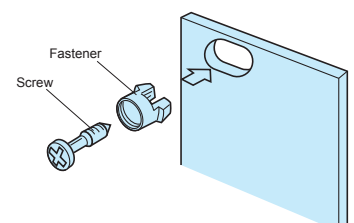
PM-3

**PM dimensions**

PM-1□ • PM-2□

**Product no. / Dimensions Screw**

Product no.	Material	Finish	L	A	B	Suitable screw driver	Pack of
PM-1B	Steel	Black trivalent chromate	10	4	1.5	#1	50
PM-1S	Steel	Chrome plated	10	4	1.5	#1	50
PM-2B	Steel	Black trivalent chromate	11	5	2	#2	50
PM-2S	Steel	Nickel plated	11	5	2	#2	50
NEW PM-3	Steel	Nickel plated	7	2.5	2	#2	50

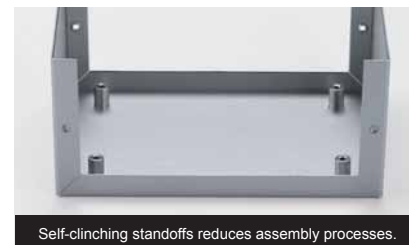
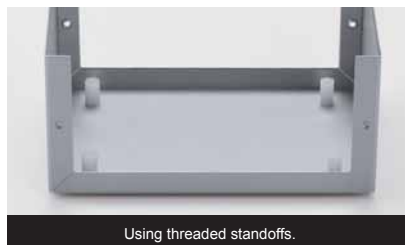


Clinching Fastener

Self-clinching Standoff / Stud / Nut

Easy attaching of self-clinching fasteners into simple through-holes.

Need standoffs for mounting PCB/ Components in metallic enclosures.



Need studs in/on aluminium enclosures.



Need tough thread hole(s) on 1.0mm thick aluminium.



● A wide variety of self-clinching fasteners are available for selection.

**ST · STS series**

Self-clinching Standoffs
(Through-hole type)

**SB · SBS series**

Self-clinching Standoffs
(Blind type)

**NM · NS series**

Self-clinching nuts
(Round type)

**NR series**

Self-clinching nuts
(Hex type)

**CS series**

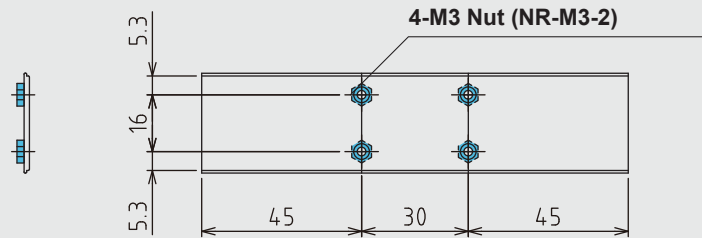
Self-clinching studs

**BN series**

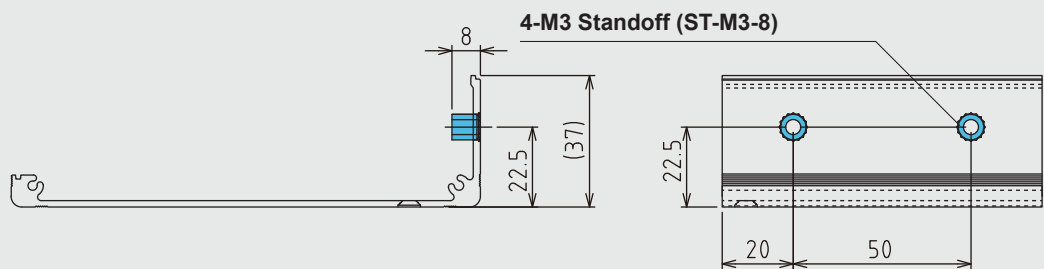
Self-clinching nuts
(Blind type)

- See "Thread and length size chart" on page clinching-3 to clinching-6. Kindly specify and put the relevant "Part #" in your drawings.

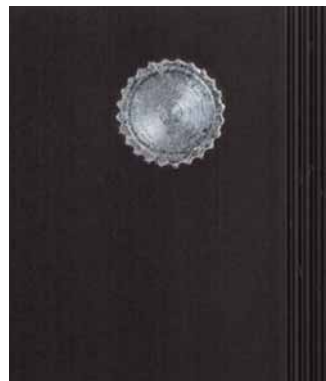
Example



Example



EXAMPLE



ST • STS Through-hole type

SB • SBS Blind type



Thread and length size chart

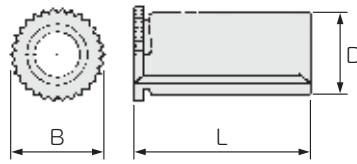


ST·STS series

Standoffs (Through-hole type)



Drawing



Material : Steel / Trivalent zinc plated
Stainless steel / Passivated

For length (L) up to 12mm, it will be fully threaded.
For length (L) 13mm or longer, threading is only up to 10mm.

Stainless steel models are BTO (built-to-order) . New sizes.

All dimensions are in mm

Part # (Steel)	Part # (Stainless steel) for use with panel thickness t=1.0mm+	Part # (Stainless steel) for use with panel thickness t=0.8mm	Thread code	Thread pitch	D -0.08	B +/-0.2	L +/-0.1	Minimum sheet thickness	Hole size +0.08 / -0	*Minimum distance
ST-M2-6			M2	0.4	4.18	5.2	6	1.0	4.2	6.0
ST-M2-8							8			
ST-M2-10							10			
ST-M2-12							12			
ST-M2.5-6			M2.5	0.45	4.18	5.2	6	1.0	4.2	6.0
ST-M2.5-8							8			
ST-M2.5-10							10			
ST-M2.5-12							12			
ST-M3-3	STS-M3-3		M3	0.5	6.18	7.2	3	0.8-1.0	6.2	7.0
ST-M3-4	STS-M3-4						4			
ST-M3-5	STS-M3-5						5			
ST-M3-6	STS-M3-6	STS-M3-6-0.8					6			
ST-M3-7	STS-M3-7						7			
ST-M3-8	STS-M3-8	STS-M3-8-0.8					8			
ST-M3-9	STS-M3-9						9			
ST-M3-10	STS-M3-10	STS-M3-10-0.8					10			
ST-M3-11	STS-M3-11						11			
ST-M3-12	STS-M3-12	STS-M3-12-0.8					12			
ST-M3-13							13			
ST-M3-14							14			
ST-M3-15							15			
ST-M3-16							16			
ST-M3-17							17			
ST-M3-18							18			
ST-M3-20							20			
ST-M4-6	STS-M4-6		M4	0.7	7.18	8.2	6	1.0	7.2	8.0
ST-M4-7							7			
ST-M4-8	STS-M4-8						8			
ST-M4-9	STS-M4-9						9			
ST-M4-10	STS-M4-10						10			
ST-M4-12							12			
ST-M4-14							14			
ST-M4-16							16			
ST-M5-6			M5	0.8	7.18	8.2	6	1.0	7.2	8.0
ST-M5-8							8			
ST-M5-10							10			
ST-M5-12							12			

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

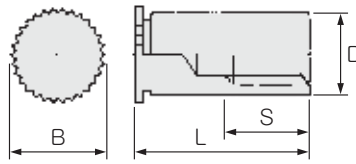
Thread and length size chart

SB·SBS series

Standoffs (Blind type)



Drawing



Material : Steel / Trivalent zinc plated
Stainless steel / Passivated

All dimensions are in mm

Part # (Steel)	Part # (Stainless steel)	Thread code	Thread pitch	D -0.08	B +/-0.2	L +/-0.1	Minimum S	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
SB-M2-6		M2	0.4	4.18	5.2	6	3	1.0	4.2	6.0
SB-M2-8						8	4			
SB-M2-10						10	4			
SB-M2-12						12	5			
SB-M2.5-6		M2.5	0.45	4.18	5.2	6	3	1.0	4.2	6.0
SB-M2.5-8						8	4			
SB-M2.5-10						10	4			
SB-M2.5-12						12	5			
SB-M3-6	SBS-M3-6	M3	0.5	6.18	7.2	6	3	1.0	6.2	7.0
SB-M3-7	SBS-M3-7					7	3			
SB-M3-8	SBS-M3-8					8	4			
SB-M3-9	SBS-M3-9					9	4			
SB-M3-10	SBS-M3-10					10	4			
SB-M3-11						11	4			
SB-M3-12	SBS-M3-12					12	5			
SB-M3-13						13	5			
SB-M3-14	SBS-M3-14					14	6.5			
SB-M3-15						15	6.5			
SB-M3-16	SBS-M3-16					16	6.5			
SB-M3-17						17	6.5			
SB-M3-18						18	9.5			
SB-M3-20						20	9.5			
SB-M4-6	SBS-M4-6	M4	0.7	7.18	8.2	6	3	1.0	7.2	8.0
SB-M4-7						7	3			
SB-M4-8	SBS-M4-8					8	4			
SB-M4-9						9	4			
SB-M4-10	SBS-M4-10					10	4			
SB-M4-12						12	5			
SB-M4-14						14	6.5			
SB-M4-16						16	6.5			
SB-M5-8		M5	0.8	7.18	8.2	8	4	1.0	7.2	8.0
SB-M5-10						10	4			
SB-M5-12						12	5			

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

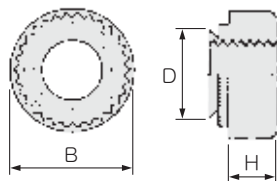
Thread and length size chart

NM·NS series

Nuts (Round through-hole type)



Drawing



Material : Steel / Trivalent zinc plated
Stainless steel / Passivated

All dimensions are in mm

Part # (Steel)	Part # (Stainless steel)	Thread code	Thread pitch	Maximum D	B +/-0.2	H +/-0.1	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
NM-M2-1		M2	0.4	4.22	6.3	1.5	1.0	4.25	4.8
NM-M2.5-1		M 2.5	0.45	4.22	6.3	1.5	1.0	4.25	4.8
NM-M2.5-2							1.4		
NM-M3-1	NS-M3-1	M3	0.5	4.22	6.3	1.5	1.0	4.25	4.8
NM-M3-2							1.4		
NM-M4-1	NS-M4-1	M4	0.7	5.38	7.9	2.0	1.0	5.4	6.9
NM-M4-2							1.4		
NM-M5-1	NS-M5-1	M5	0.8	6.38	8.7	2.0	1.0	6.4	7.1
NM-M5-2							1.4		

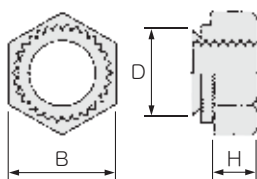
*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

NR series

Nuts (Hex through-hole type)



Drawing



Material : Steel / Trivalent zinc plated

All dimensions are in mm

Part #	Thread code	Thread pitch	Maximum D	B -0.2	H +/-0.1	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
NR-M2-1	M2	0.4	4.45	5.5	2.0	1.0	4.5	4.5
NR-M2.5-1	M 2.5	0.45	4.45	5.5	2.0	1.0	4.5	4.5
NR-M3-1	M3	0.5	4.45	5.5	2.0	1.0	4.5	4.5
NR-M3-2						1.4		
NR-M4-1	M4	0.7	5.45	7.0	2.2	1.0	5.5	5.5
NR-M4-2						1.4		
NR-M5-1	M5	0.8	6.45	8.0	3.0	1.0	6.5	6.5
NR-M5-2						1.4		

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

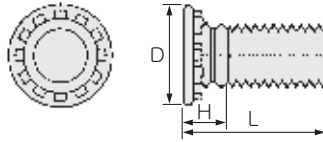
Thread and length size chart

CS series

Studs (Flush-head type)



Drawing



Material : Steel / Trivalent zinc plated

All dimensions are in mm

Part #	Thread code	Thread pitch	D +/-0.4	Maximum H	L +/-0.4	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
CS-M3-8	M3	0.5	4.6	2.1	8	t1.0	3.0	5.6
CS-M3-10					10			
CS-M3-12					12			
CS-M3-15					15			
CS-M4-8	M4	0.7	5.9	2.4	8	t1.0	4.0	7.2
CS-M4-10					10			
CS-M4-12					12			
CS-M4-15					15			

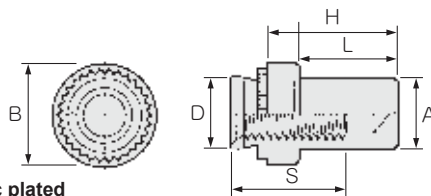
*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

BN series

Nuts (Blind type)



Drawing



Material : Steel / Trivalent zinc plated



A specialized press machine for clinching is utilized to ensure that the standoffs / studs / nuts are securely attached.

All dimensions are in mm

Part #	Thread code	Thread pitch	Maximum D	Maximum A	B +/-0.25	Minimum S	H +/-0.25	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
BN-M3-1	M3	0.5	4.22	3.8	6.35	5.3	9.6	1.0	4.25	4.8
BN-M3-2								1.4		
BN-M4-1	M4	0.7	5.38	5.2	7.95	6.8	11.2	1.0	5.4	6.9
BN-M4-2								1.4		

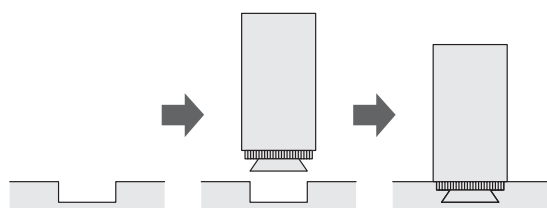
*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

Clinching fastener

Concealed-head Self-clinching Standoffs (Non-through-hole type)

Installed into recessed pockets so that one side of the panel remains unmarred. Standoffs can be mounted onto 1.5mm or thicker material without requiring a through-hole to be milled.

Concealed-head standoffs/studs ensure that the IP rating (if the enclosure is a waterproof series) is maintained.



Concealed-head standoffs/studs give an aesthetically better finish on the enclosure. A recess cut is made on the internal side, and the standoffs are press-inserted in.

● Mounting Mark Visibility

板厚	取付跡	
	M3	M4
1.5mm	△	×
2.0mm	○	○
2.5mm	○	○
3.0mm~	○	○



Example : Clinching M4 standoff on 1.5mm thick material.
Mounting is possible on 1.5mm thick material. Mounting mark would be almost invisible on 2.5mm or thicker material.

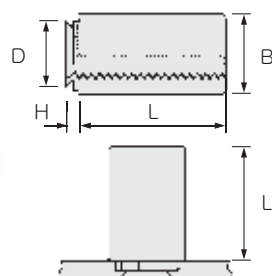
○ Almost invisible
○ Barely visible
△ Somewhat visible
× Very visible

All dimensions are in mm

MK series

Concealed-head Clinching Standoffs

Drawing



Material : Steel / Nickel plated

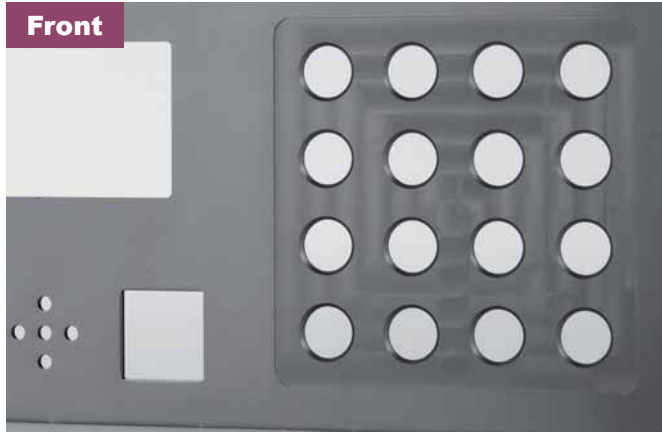
Part #	Thread code	Thread pitch	Maximum D	B +/-0.1	H +0 -0.1	L +/-0.1	Min. sheet thickness	Hole size +0.08 / -0	*Minimum distance
MK-M3-3	M 3	0.5	4.45	6.0	0.95	3	1.5	4.5	4.5
MK-M3-4						4			
MK-M3-5						5			
MK-M3-6						6			
MK-M3-7						7			
MK-M3-8						8			
MK-M3-9						9			
MK-M3-10						10			
MK-M3-11						11			
MK-M3-12						12			
MK-M4-3	M 4	0.7	5.45	8.0	0.95	3	1.5	5.5	5.5
MK-M4-4						4			
MK-M4-5						5			
MK-M4-6						6			
MK-M4-7						7			
MK-M4-8						8			
MK-M4-10						10			
MK-M4-12						12			
MK-M4-14						14			

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.
Only available together with installation services. Not available separately.

Aluminium stud welding

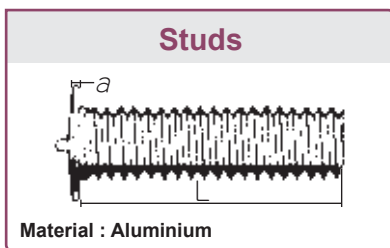
Welded Fasteners

Welded fasteners on aluminium objects.
Standoffs and studs with little surface weld marks can be achieved.



Weld marks may be more visible on plates thinner than 2.0mm.

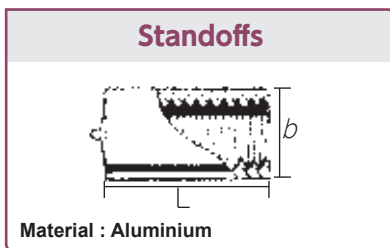
All dimensions are in mm



Part #	Thread code	Thread pitch	a	L +/-0.2	*Minimum distance
AMS-M3-8	M3	0.5	0.8 ± 0.1	8	7.0
AMS-M3-10				10	
AMS-M3-12				12	
AMS-M3-15				15	
AMS-M4-8	M4	0.7	0.8 ± 0.1	8	7.0
AMS-M4-10				10	
AMS-M4-12				12	
AMS-M4-15				15	

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.

All dimensions are in mm



Part #	Thread code	Thread pitch	b	L +/-0.2	Available screw length	*Minimum distance
AFS-M3-5	M3	0.5	6	5	2.0	7.0
AFS-M3-6				6	2.5	
AFS-M3-7				7	3.5	
AFS-M3-8				8	4.5	
AFS-M3-9				9	5.5	
AFS-M4-8	M4	0.7	8	8	3.5	7.0
AFS-M4-10				10	5.5	
AFS-M4-12				12	7.5	

*Minimum distance = Minimum distance from hole center to edge. Installation requirements vary.

Welding



Example



Stainless steel and steel weld fasteners are also available. Please inquire for more details.

Only available together with installation services. Not available separately.

Insert Nuts and Heliserts (for plastic)

Inserts for plastic

Simple and easy way for stable fastening.
Simply insert the nuts into the bosses, and it will be refastenable.

LINE-UP

Press-in inserts



Material : Brass / Unfinished

Part #	Size	Hole size in bosses	Length (mm)
SP-M3	M3×0.5P	8 ~ 10	5.3
SP-M4	M4×0.7P	9.5 ~ 12	7.4
SP-M5	M5×0.8P	12 ~ 14	8.3

Threaded inserts



Material : Brass / Nickel plated

Part #	Size	Hole size in bosses	Length (mm)
IRB-2603S	M2.6×0.45P	5.5 ~ 6	3.0
IRB-304S	M3×0.5P	5.5 ~ 6	4.0
IRB-404S	M4×0.7P	6 ~ 10	4.0

Heliserts



Material : Stainless steel / Unfinished

Part #	Size	Hole size in bosses	Length (mm)
2TNM-M2	M2×0.4P	4 ~ 5	2.0
2TMN-M2.6	M2.6×0.45P	4.8 ~ 6	2.6
2TMN-M3	M3×0.5P	4.8 ~ 6	3.0

Comparison chart

Point \ Method	Press-in inserts	Threaded inserts	Heliserts
Strength	○	◎	◎
Cost	◎	▲	▲
Boss size	▲	○	◎

◎ : Excellent ○ : Good ▲ : Average

EXAMPLE

Press-in inserts



Threaded inserts



Heliserts

