

## **NOTICE**

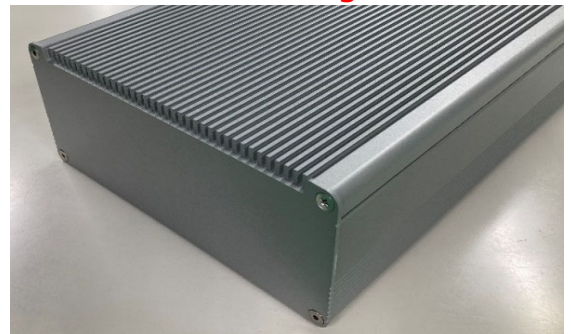
### **EXH, EXHF, EXHS, EF and EF-36 Series Changes to Surface Finish**

- Affected series/models : EXH, EXHF, and EXHS series ("SS" color type)  
EF, and EF-36 series ("S" color type)
- Changes : Surface Finish

**Current (Old) Design**



**New Design**



**Current (Old) Surface Finish**

- Silver Anodized

**New Surface Finish**

- Silver Metallic Painted (Unfinished Inside)

- BS and SB color types of EXH, EXHF, EXHS series will be discontinued. (\*Refer to a separate Notice)
- Purpose: To ensure consistent quality throughout via streamlined supply chain and materials.
- Effective date : Once present inventory has run out / been depleted.  
\*EXHS Series : Changes will take place from orders received after December 1, 2021.
- Note 1: No changes to product's dimensions.
- Note 2: No changes to item product number or pricing.

Thank you for your understanding.

For more information, kindly contact us at: [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)

## **NOTICE**

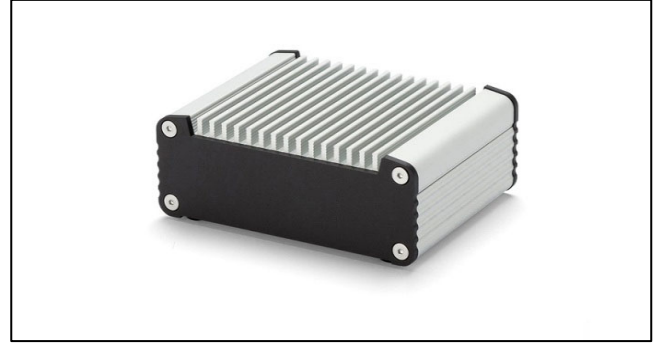
### **EXH, EXHF and EXHS Series Discontinuation of Color Types**

- Affected series / models : EXH, EXHF, EXHS series ("BS" and "SB" color types).

BS Color Type (Discontinued)



SB Color Type (Discontinued)



- Purpose: To ensure consistent quality throughout via streamlined supply chain and materials.
- Effective date : Once present inventory has run out / been depleted.
- Alternatives : "SS" or "BB" color types.
- EXH, EXHF, EXHS, EF, and EF-36 series will have changes to surface finish. (\*Refer to a separate Notice)

Thank you for your understanding.  
For more information, kindly contact us at: [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)

# EXH HEAT-SINK ALUMINIUM ENCLOSURE

EXH series is an aluminium enclosure with a highly efficient heat-sink top cover. Suitable to be used as fanless PC, power amplifier, and power supply box where heat dissipation is required. Wide range, 30 different sizes available.



## Waved surface heat-sink fins for maximum cooling performance!

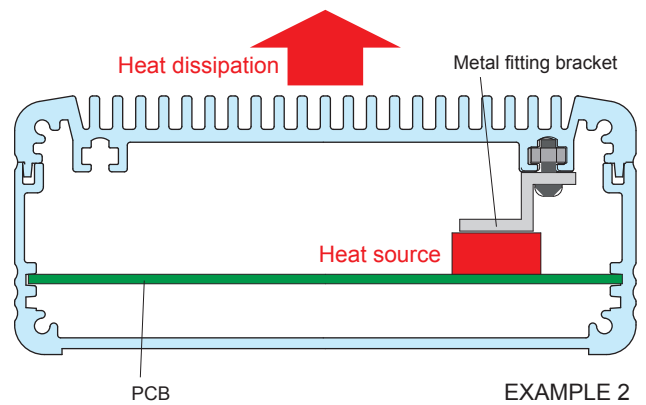
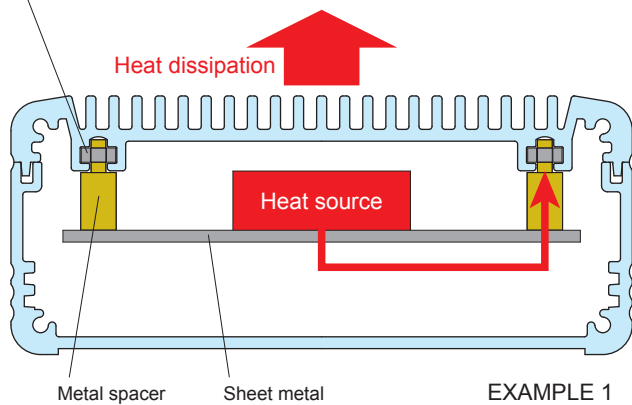
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

### Waved Surface



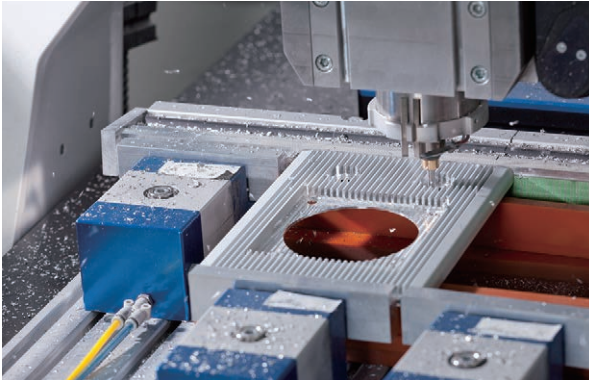
## HEAT DISSIPATION EXAMPLE

- EXH series has grooves to put M3 nuts inside its heat-sink cover. It is possible to construct a heat conduction route from your heat source to heat-sink cover easily for better heat dissipation performance.



# CUSTOMIZATION EXAMPLE

## CNC MACHINING on HEAT-SINK COVER



Heat-sink plates can be customized with our high speed CNC machines.



## PIN SHAPED FIN CUSTOMIZATION



Pin shaped heat-sink fin can be customized for better cooling performance.

## COLOR ANODIZING

Various colors, such as blue, red, orange, green or purple can be anodized as per your requirements.



■ Not all colors and shades of colors are possible.

## CUSTOM LENGTH AVAILABLE



# APPLICATION EXAMPLE

## STABILIZED DIODE LASER Product by Spectra Quest Lab. (Japan)

Controller



Laser Head



## IOT GATEWAY

Product by VNPT Technology (Vietnam)



## ULTRASONIC NOZZLE CLEANER

Product by ESER Corporation (Japan)



TAKACHI PF plastic enclosure is also adopted.

## ALL-IN-ONE EDGE NODE

Product by SHINWA (Japan)



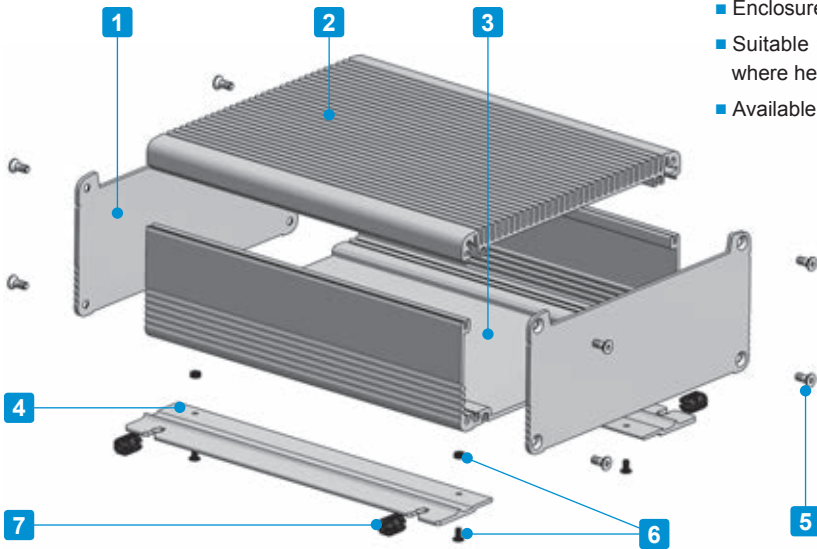
## 4 CHANNEL POWER SWITCHING EDGE NODE

Product by SHINWA (Japan)



## AUDIO AMPLIFIER





- Equipped with flanged bracket for easy wall mounting.
- Enclosure equipped with a highly efficient heat-sink top cover.
- Suitable to be used as a fanless PC, amplifier, power supply etc. where heat dissipation is required.
- Available in 28 different sizes and 4 different color combinations.

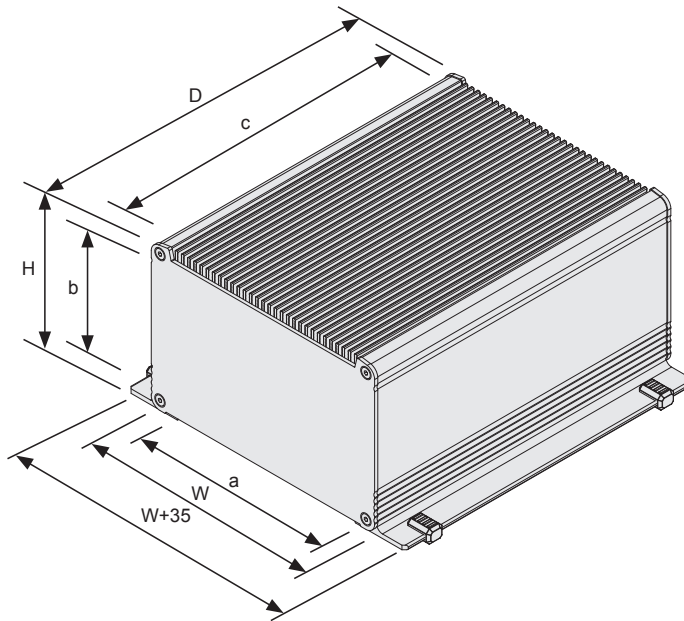
Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Flange bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
5	Panel screw (Hexagonal)	8	Stainless steel	Unfinished
6	Flange screw	4	Steel	Trivalent chromate
7	Rubber feet	4	Silicone	Black

Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

DXF/DWG/PDF drawings available on our website.



Included screws  
 EXHF19-□ models : M4-10 x 8 pcs  
 EXHF23-□ models : M5-10 x 8 pcs  
 ※Hexagonal wrench included.

- ※Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminum extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

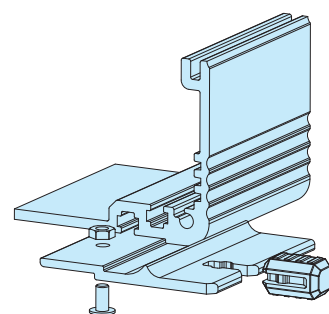
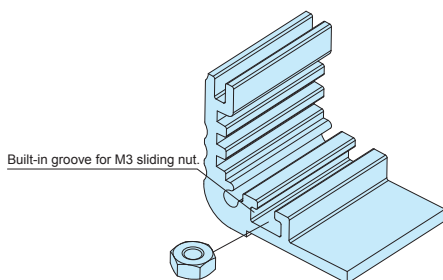
Product no. / Dimensions

Please suffix color code at the end of the product number.

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
NEW EXHF19- 4-13□□	186.5	45.25	125	170	26.85	120	1.92
NEW EXHF19- 4-18□□	186.5	45.25	177	170	26.85	172	1.56
NEW EXHF19- 4-23□□	186.5	45.25	230	170	26.85	225	1.32
NEW EXHF19- 4-29□□	186.5	45.25	285	170	26.85	280	1.15
NEW EXHF19- 6-13□□	186.5	63.25	125	170	44.85	120	1.92
NEW EXHF19- 6-18□□	186.5	63.25	177	170	44.85	172	1.56
NEW EXHF19- 6-23□□	186.5	63.25	230	170	44.85	225	1.32
NEW EXHF19- 6-29□□	186.5	63.25	285	170	44.85	280	1.15
NEW EXHF19- 8-13□□	186.5	83.25	125	170	64.85	120	1.92
NEW EXHF19- 8-18□□	186.5	83.25	177	170	64.85	172	1.56
NEW EXHF19- 8-23□□	186.5	83.25	230	170	64.85	225	1.32
NEW EXHF19- 8-29□□	186.5	83.25	285	170	64.85	280	1.15
NEW EXHF19-11-13□□	186.5	108.25	125	170	89.85	120	1.92
NEW EXHF19-11-18□□	186.5	108.25	177	170	89.85	172	1.56
NEW EXHF19-11-23□□	186.5	108.25	230	170	89.85	225	1.32
NEW EXHF19-11-29□□	186.5	108.25	285	170	89.85	280	1.15
NEW EXHF23- 5-15□□	232	53.5	153	215	34.85	147	1.47
NEW EXHF23- 5-21□□	232	53.5	213	215	34.85	207	1.2
NEW EXHF23- 5-27□□	232	53.5	273	215	34.85	267	1.03
NEW EXHF23- 5-33□□	232	53.5	333	215	34.85	327	0.91
NEW EXHF23- 8-15□□	232	78.5	153	215	59.85	147	1.47
NEW EXHF23- 8-21□□	232	78.5	213	215	59.85	207	1.2
NEW EXHF23- 8-27□□	232	78.5	273	215	59.85	267	1.03
NEW EXHF23- 8-33□□	232	78.5	333	215	59.85	327	0.91
NEW EXHF23-10-15□□	232	103.5	153	215	84.85	147	1.47
NEW EXHF23-10-21□□	232	103.5	213	215	84.85	207	1.2
NEW EXHF23-10-27□□	232	103.5	273	215	84.85	267	1.03
NEW EXHF23-10-33□□	232	103.5	333	215	84.85	327	0.91

Grooves for M3 sliding nut are found on the heat-sink top cover and bottom frame (140mm or wider).

Flange bracket is installed as per the diagram below.

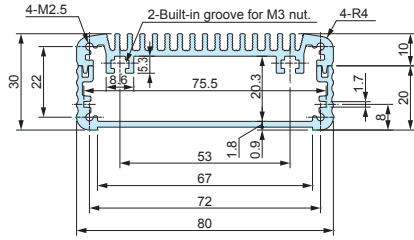




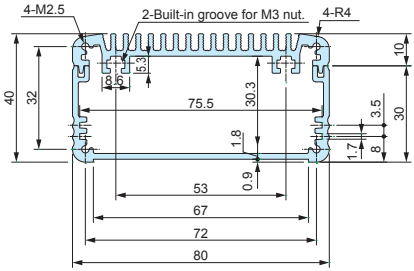
**EXH • EXHF heat-sink top cover / bottom frame**

■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

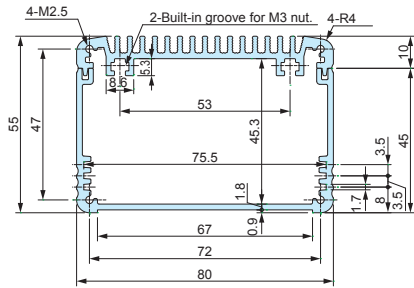
EXH8-3-□



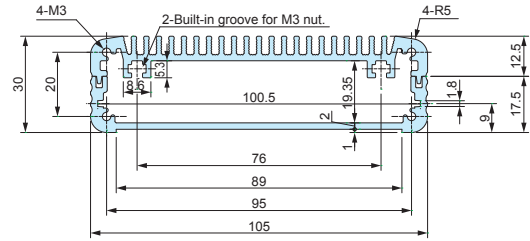
EXH8-4-□



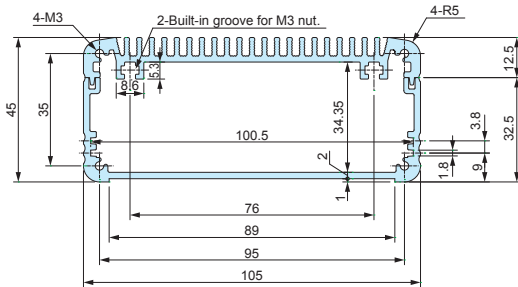
EXH8-6-□



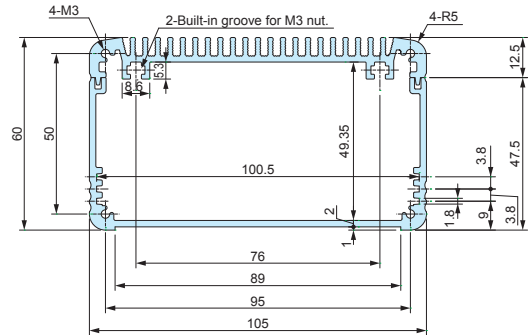
EXH11-3-□



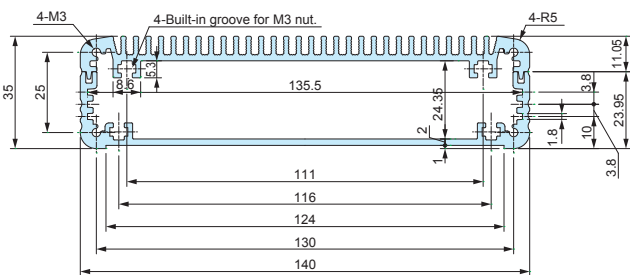
EXH11-5-□



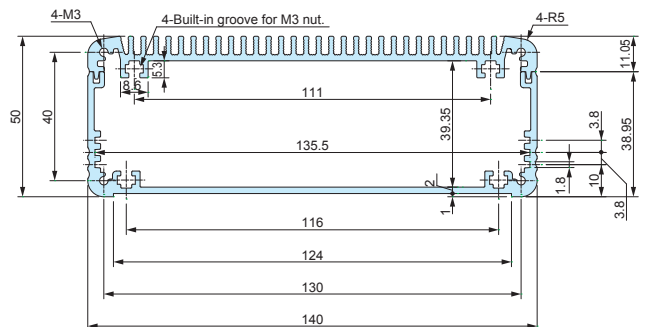
EXH11-6-□



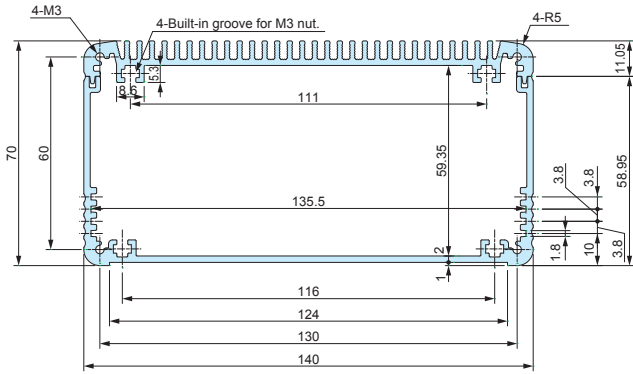
EXH14-4-□



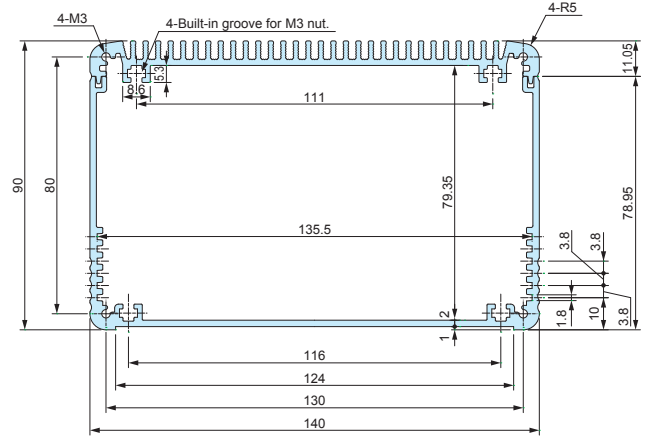
EXH14-5-□



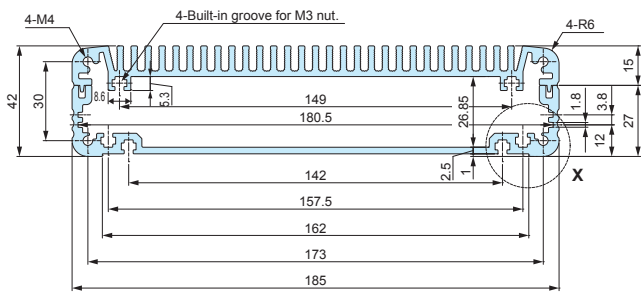
EXH14-7-□



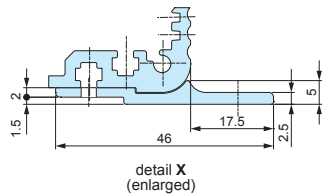
EXH14-9-□



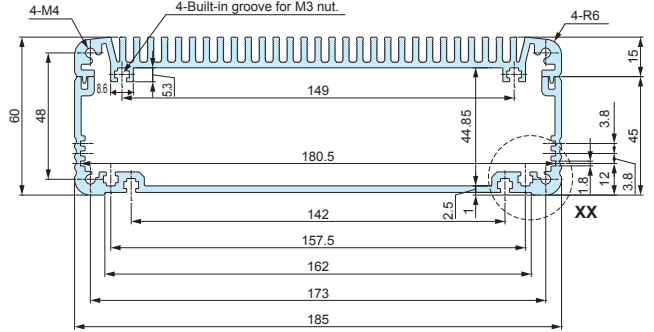
EXH • EXHF19-4-□



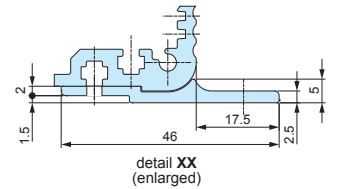
Flange bracket dimensions for EXHF series.



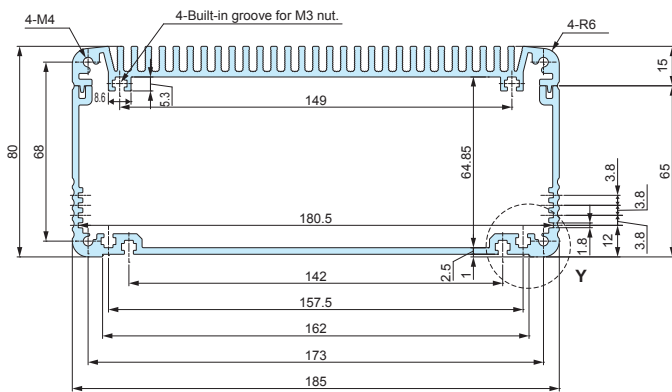
EXH • EXHF19-6-□



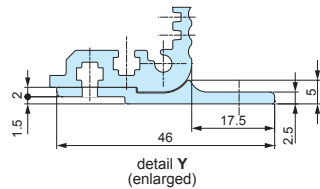
Flange bracket dimensions for EXHF series.



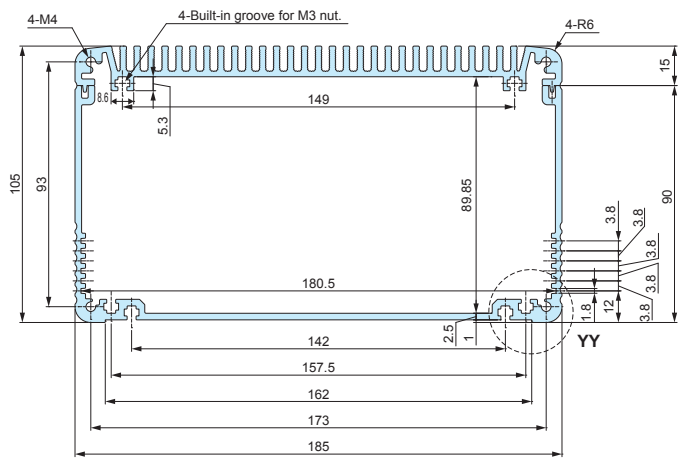
EXH • EXHF19-8-□



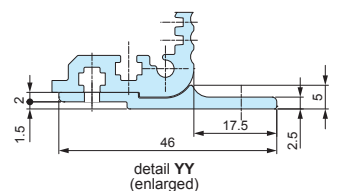
Flange bracket dimensions for EXHF series.



EXH • EXHF19-11-□



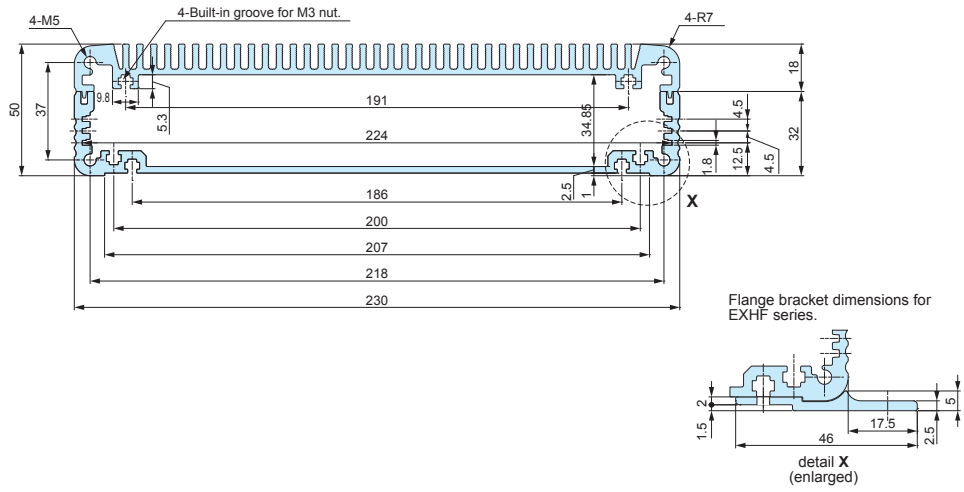
Flange bracket dimensions for EXHF series.



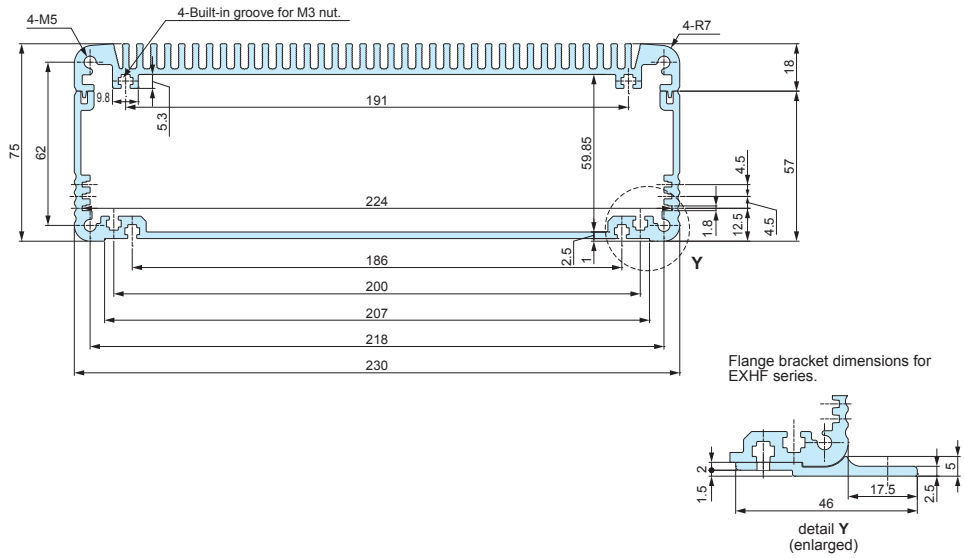
EXH • EXHF heat-sink top cover / bottom frame

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DXF/DWG/PDF drawings available on our website.

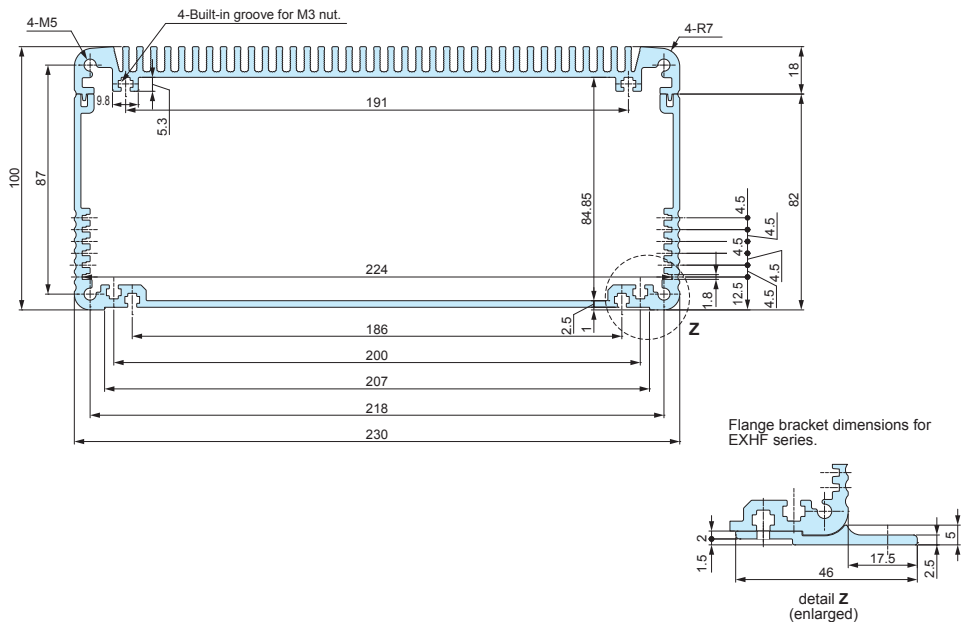
EXH • EXHF23-5-□



EXH • EXHF23-8-□



EXH • EXHF23-10-□



EF SERIES

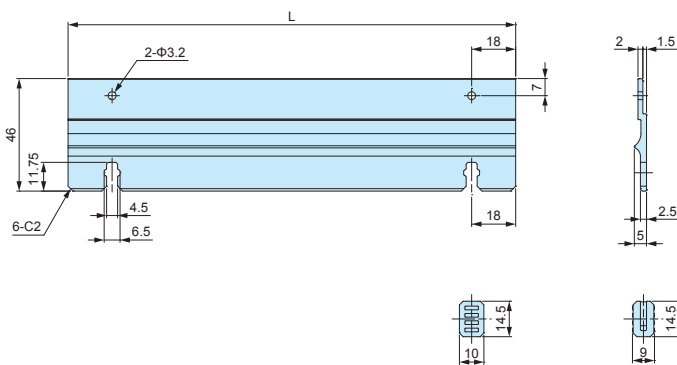
WALL MOUNTING BRACKET for EX • EXH



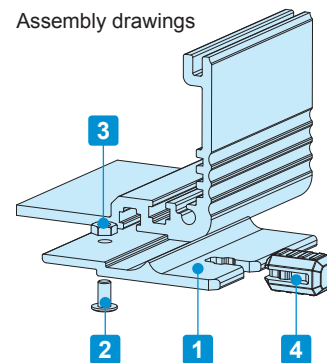
APPLICATION EXAMPLE



- Wall mounting bracket for EX • EXH series. Applicable only for width 185 and 225mm bottom covers.
- Easy installation by inserting the nuts into built-in grooves on EX • EXH bottom cover.
- Rubber feet are included to mask the mounting cutouts when not used for wall mounting.



Assembly drawings



Components

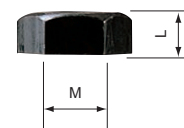
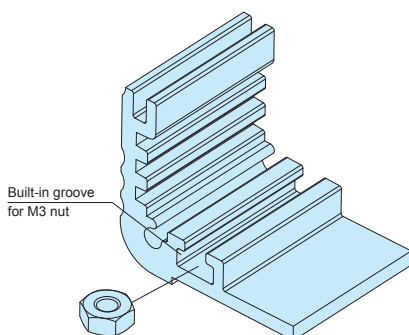
No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Screw	4	Steel M3-6	Black trivalent chromate
3	Nut	4	Steel	Black trivalent chromate
4	Rubber feet	4	Silicone	Black

Product no. / Dimensions

Product no.		L	Suitable enclosure
● Silver	● Black		
NEW EF19-13S	NEW EF19-13B	119.5	EX • EXH19-○-13□□
NEW EF19-18S	NEW EF19-18B	171.5	EX • EXH19-○-18□□
NEW EF19-23S	NEW EF19-23B	224.5	EX • EXH19-○-23□□
NEW EF19-29S	NEW EF19-29B	279.5	EX • EXH19-○-29□□
NEW EF23-15S	NEW EF23-15B	146.5	EX • EXH23-○-15□□
NEW EF23-21S	NEW EF23-21B	206.5	EX • EXH23-○-21□□
NEW EF23-27S	NEW EF23-27B	266.5	EX • EXH23-○-27□□
NEW EF23-33S	NEW EF23-33B	326.5	EX • EXH23-○-33□□

MT-3N

SLIDING NUT for EXH • EXHF



Product no. / Dimensions

Product no.	M	L	Material	Finish	Pack of
MT-3N	3	2.4	Steel	Black trivalent chromate	50

- Sliding nut can be used on all EXH • EXHF heat-sink top covers, as well as with width 140mm or larger bottom covers.