

## 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**

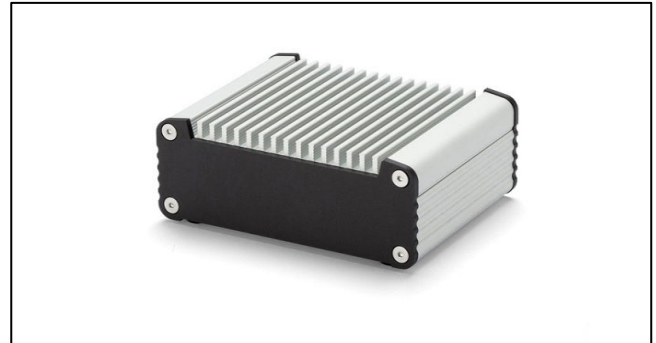
### **EXH, EXHF and EXHS Series Discontinuation of Color Types**

- 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!

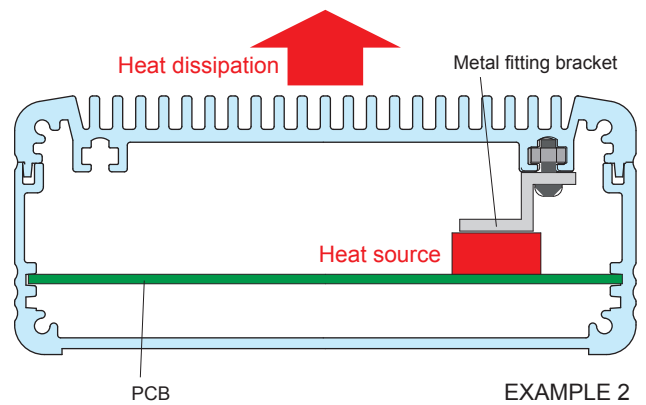
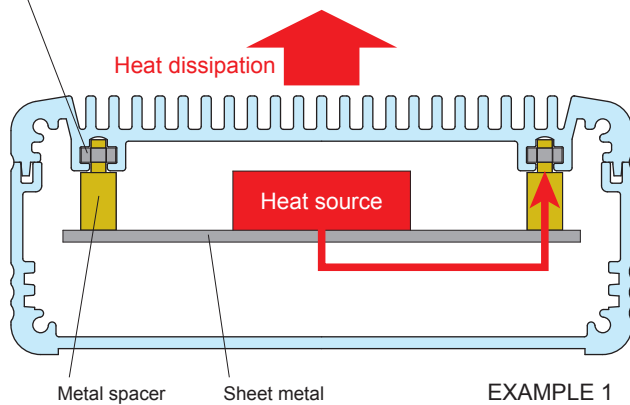
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

### Waved Surface



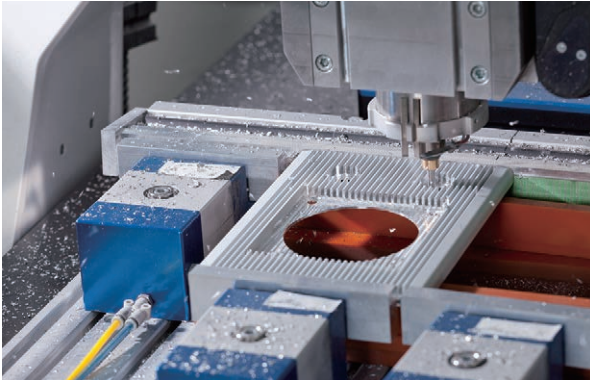
## HEAT DISSIPATION EXAMPLE

- 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)



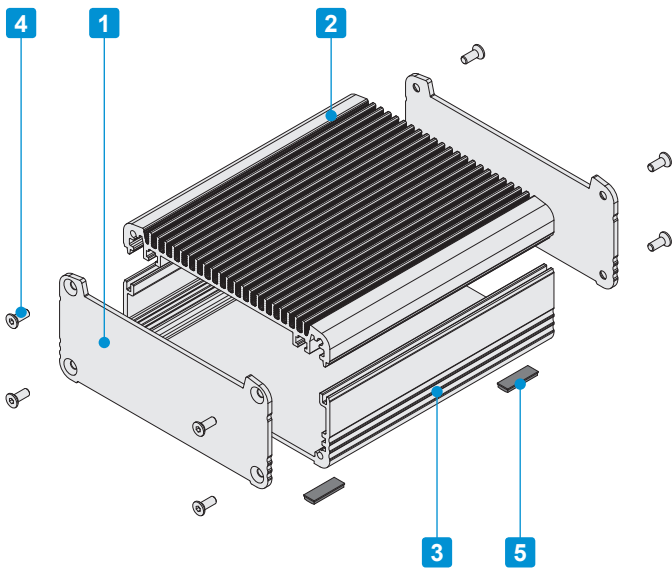
## 4 CHANNEL POWER SWITCHING EDGE NODE

Product by SHINWA (Japan)

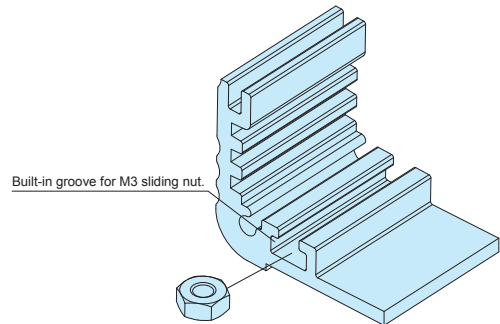


## AUDIO AMPLIFIER





- Aluminum enclosure equipped with a highly efficient heat-sink top cover.
- Suitable to be used as a fanless PC, power amplifier, power supply etc. where heat dissipation is required.
- Selectable in 58 different sizes and 4 different color combinations.
- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider).



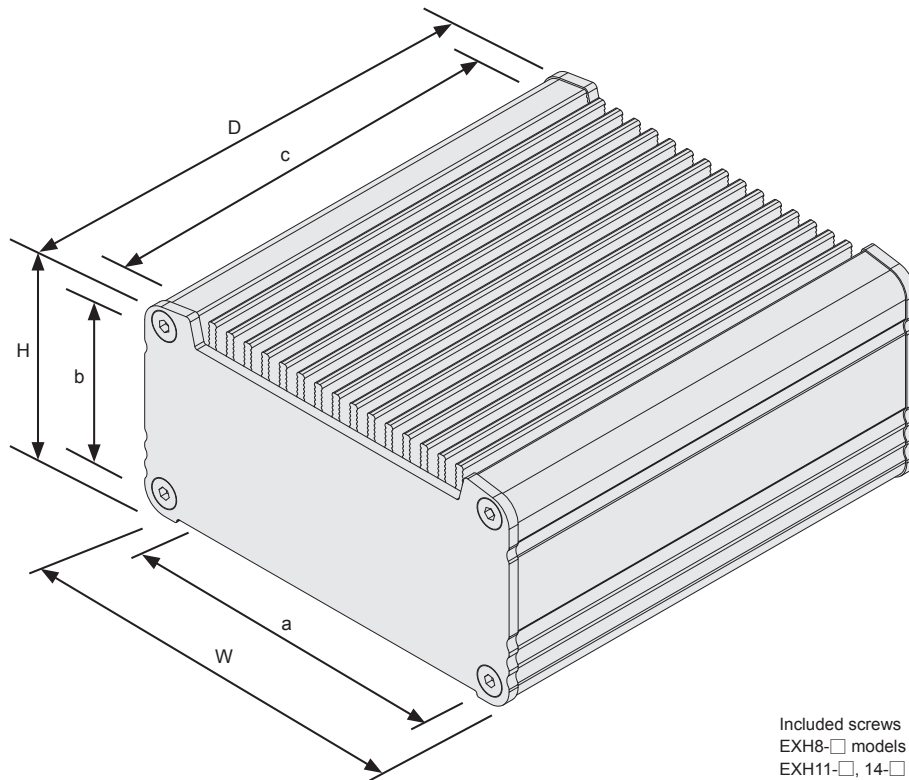
Components

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	Screw (Hexagonal)	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	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  
 EXH8-□ models : M2.5-8 x 8 pcs  
 EXH11-□, 14-□ models : M3-8 x 8 pcs  
 EXH19-□ models : M4-10 x 8 pcs  
 EXH23-□ models : M5-10 x 8 pcs  
 ※Hexagonal wrench included.

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	
EXH 8-3- 6□□	80.6	30.7	60	69.6	20.3	56	7.32
EXH 8-3- 9□□	80.6	30.7	90	69.6	20.3	86	5.65
EXH 8-3-12□□	80.6	30.7	120	69.6	20.3	116	4.72
EXH 8-4- 6□□	80.6	40.7	60	69.6	30.3	56	7.32
EXH 8-4- 9□□	80.6	40.7	90	69.6	30.3	86	5.65
EXH 8-4-12□□	80.6	40.7	120	69.6	30.3	116	4.72
EXH 8-6- 6□□	80.6	55.7	60	69.6	45.3	56	7.32
EXH 8-6- 9□□	80.6	55.7	90	69.6	45.3	86	5.65
EXH 8-6-12□□	80.6	55.7	120	69.6	45.3	116	4.72
EXH11-3- 8□□	106	31.1	78	94.6	19.3	74	4.82
EXH11-3-12□□	106	31.1	118	94.6	19.3	114	3.72
EXH11-3-16□□	106	31.1	164	94.6	19.3	160	3.03
EXH11-5- 8□□	106	46.1	78	94.6	34.3	74	4.82
EXH11-5-12□□	106	46.1	118	94.6	34.3	114	3.72
EXH11-5-16□□	106	46.1	164	94.6	34.3	160	3.03
EXH11-6- 8□□	106	61.1	78	94.6	49.3	74	4.82
EXH11-6-12□□	106	61.1	118	94.6	49.3	114	3.72
EXH11-6-16□□	106	61.1	164	94.6	49.3	160	3.03
EXH14-4-10□□	141	36.1	97	129.6	24.3	93	3.4
EXH14-4-14□□	141	36.1	137	129.6	24.3	133	2.75
EXH14-4-19□□	141	36.1	187	129.6	24.3	183	2.27
EXH14-5-10□□	141	51.1	97	129.6	39.3	93	3.4
EXH14-5-14□□	141	51.1	137	129.6	39.3	133	2.75
EXH14-5-19□□	141	51.1	187	129.6	39.3	183	2.27
EXH14-7-10□□	141	71.1	97	129.6	59.3	93	3.4
EXH14-7-14□□	141	71.1	137	129.6	59.3	133	2.75
EXH14-7-19□□	141	71.1	187	129.6	59.3	183	2.27
EXH14-9-10□□	141	91.1	97	129.6	79.3	93	3.4
EXH14-9-14□□	141	91.1	137	129.6	79.3	133	2.75
EXH14-9-19□□	141	91.1	187	129.6	79.3	183	2.27

Custom length available.

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
NEW EXH19- 4-13□□	186.5	43.5	125	170	26.85	120	1.92
NEW EXH19- 4-18□□	186.5	43.5	177	170	26.85	172	1.56
NEW EXH19- 4-23□□	186.5	43.5	230	170	26.85	225	1.32
NEW EXH19- 4-29□□	186.5	43.5	285	170	26.85	280	1.15
NEW EXH19- 6-13□□	186.5	61.5	125	170	44.85	120	1.92
NEW EXH19- 6-18□□	186.5	61.5	177	170	44.85	172	1.56
NEW EXH19- 6-23□□	186.5	61.5	230	170	44.85	225	1.32
NEW EXH19- 6-29□□	186.5	61.5	285	170	44.85	280	1.15
NEW EXH19- 8-13□□	186.5	81.5	125	170	64.85	120	1.92
NEW EXH19- 8-18□□	186.5	81.5	177	170	64.85	172	1.56
NEW EXH19- 8-23□□	186.5	81.5	230	170	64.85	225	1.32
NEW EXH19- 8-29□□	186.5	81.5	285	170	64.85	280	1.15
NEW EXH19-11-13□□	186.5	106.5	125	170	89.85	120	1.92
NEW EXH19-11-18□□	186.5	106.5	177	170	89.85	172	1.56
NEW EXH19-11-23□□	186.5	106.5	230	170	89.85	225	1.32
NEW EXH19-11-29□□	186.5	106.5	285	170	89.85	280	1.15
NEW EXH23- 5-15□□	232	52	153	215	34.85	147	1.47
NEW EXH23- 5-21□□	232	52	213	215	34.85	207	1.2
NEW EXH23- 5-27□□	232	52	273	215	34.85	267	1.03
NEW EXH23- 5-33□□	232	52	333	215	34.85	327	0.91
NEW EXH23- 8-15□□	232	77	153	215	59.85	147	1.47
NEW EXH23- 8-21□□	232	77	213	215	59.85	207	1.2
NEW EXH23- 8-27□□	232	77	273	215	59.85	267	1.03
NEW EXH23- 8-33□□	232	77	333	215	59.85	327	0.91
NEW EXH23-10-15□□	232	102	153	215	84.85	147	1.47
NEW EXH23-10-21□□	232	102	213	215	84.85	207	1.2
NEW EXH23-10-27□□	232	102	273	215	84.85	267	1.03
NEW EXH23-10-33□□	232	102	333	215	84.85	327	0.91

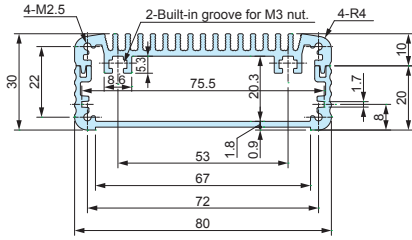
※Thermal resistance test condition  
 • Ambient air cooling  
 • Heat-sink fins are set perpendicular to the ground with temperature at 60°C.  
 • Anodized aluminum extrusion  
 • Heat source is applied on the opposite side (inner side) of the fins.



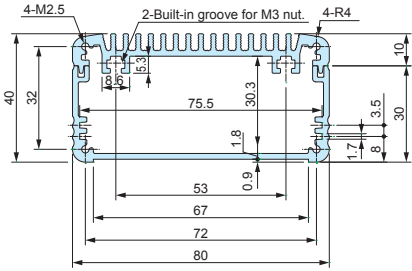
**EXH • EXHF heat-sink top cover / bottom frame**

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

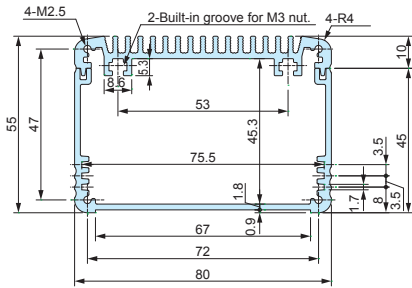
EXH8-3-□



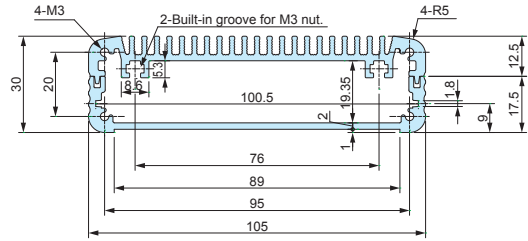
EXH8-4-□



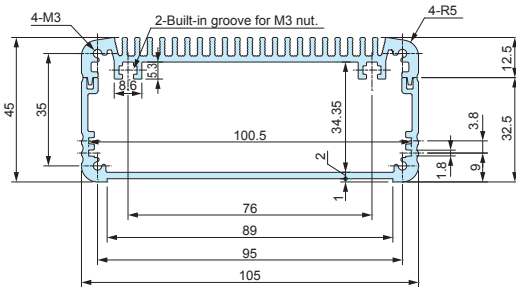
EXH8-6-□



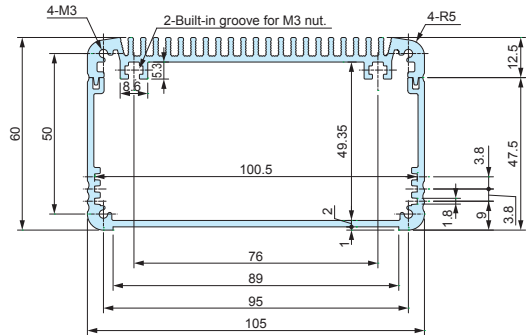
EXH11-3-□



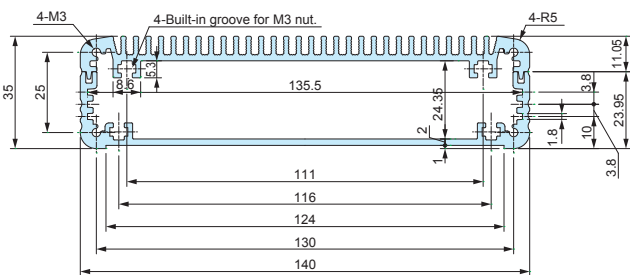
EXH11-5-□



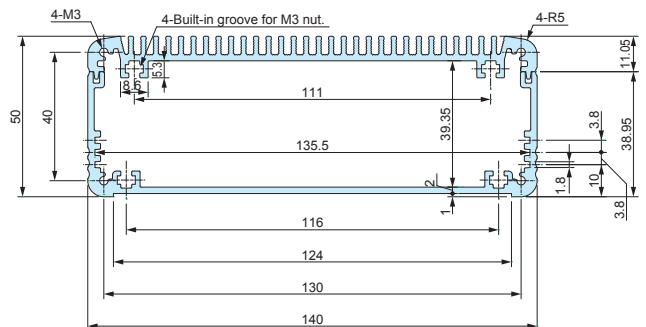
EXH11-6-□



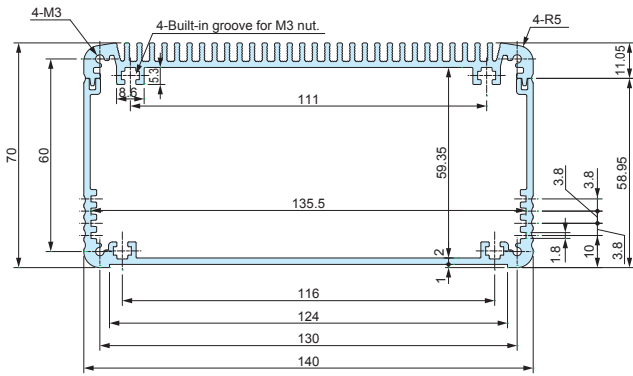
EXH14-4-□



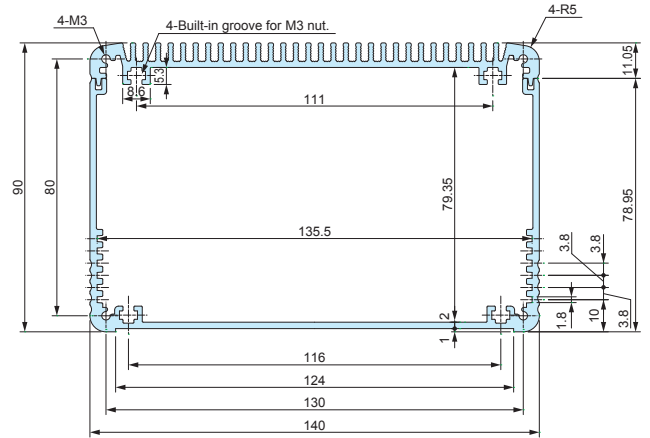
EXH14-5-□



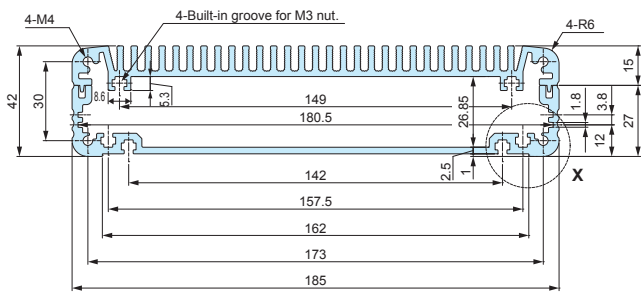
EXH14-7-□



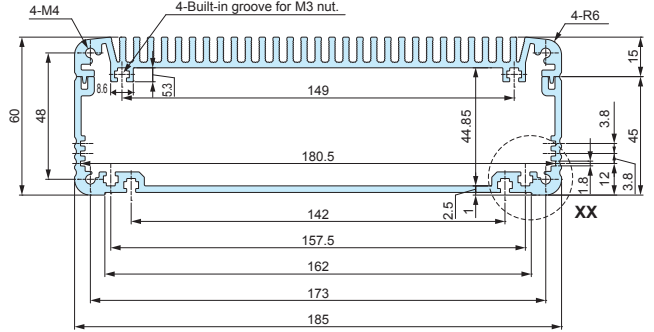
EXH14-9-□



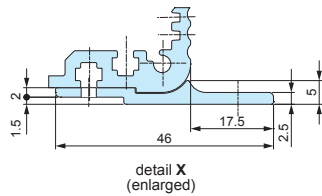
EXH • EXHF19-4-□



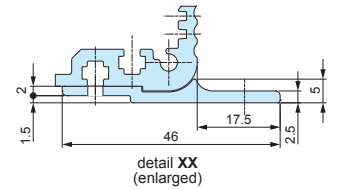
EXH • EXHF19-6-□



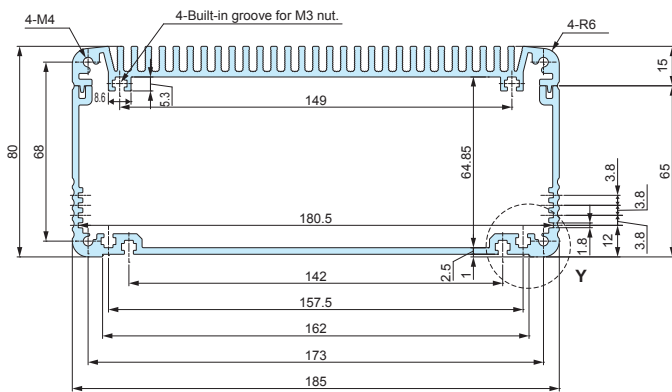
Flange bracket dimensions for EXHF series.



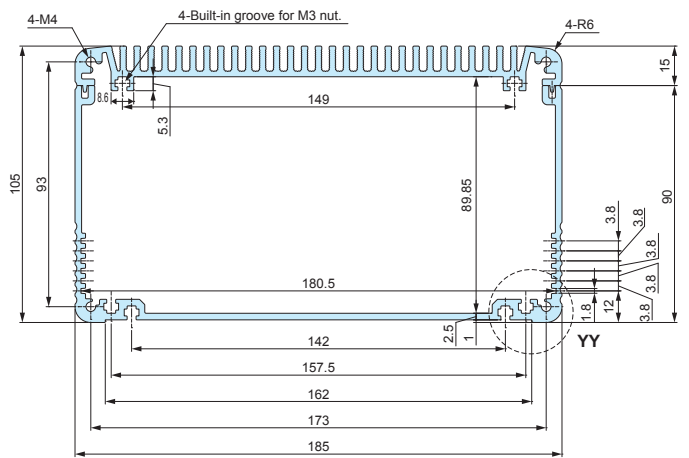
Flange bracket dimensions for EXHF series.



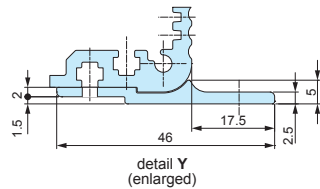
EXH • EXHF19-8-□



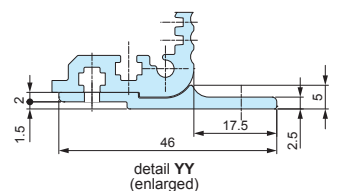
EXH • EXHF19-11-□



Flange bracket dimensions for EXHF series.



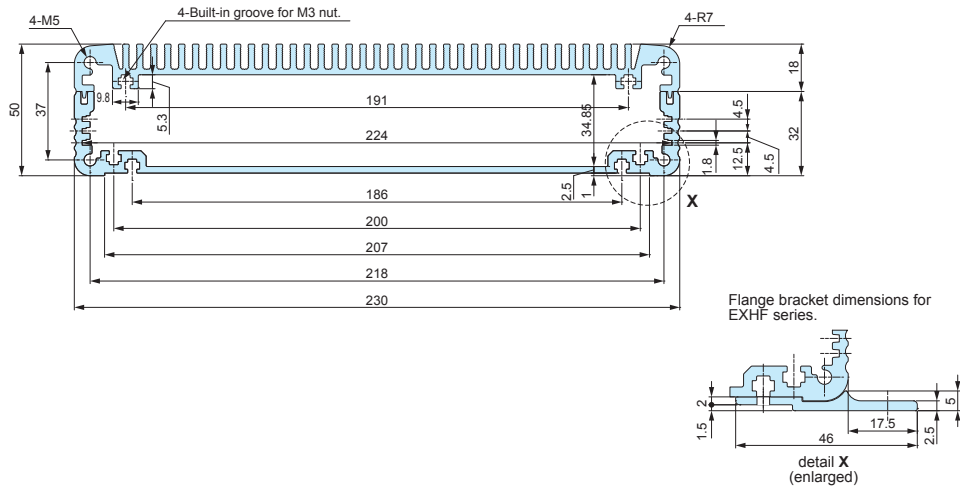
Flange bracket dimensions for EXHF series.



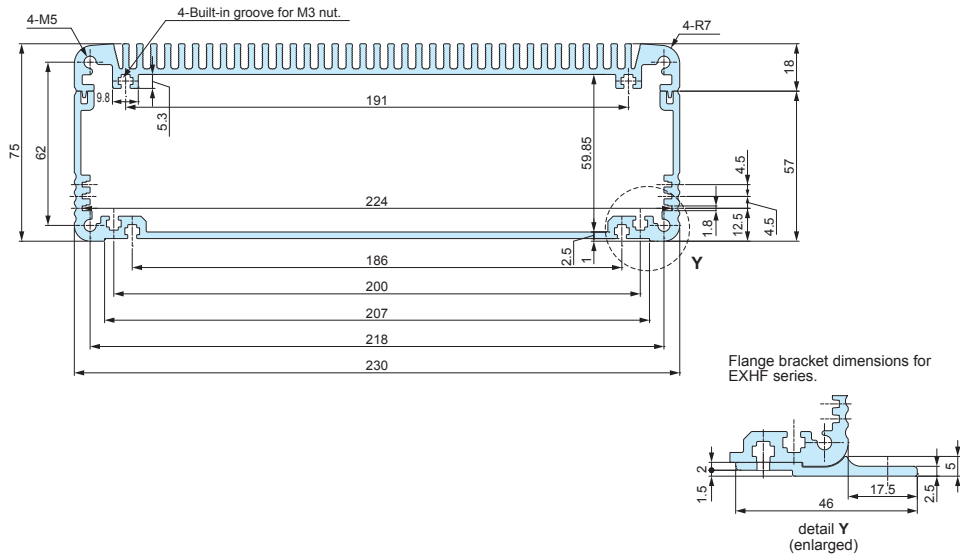
EXH • EXHF heat-sink top cover / bottom frame

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DXF/DWG/PDF drawings available on our website.

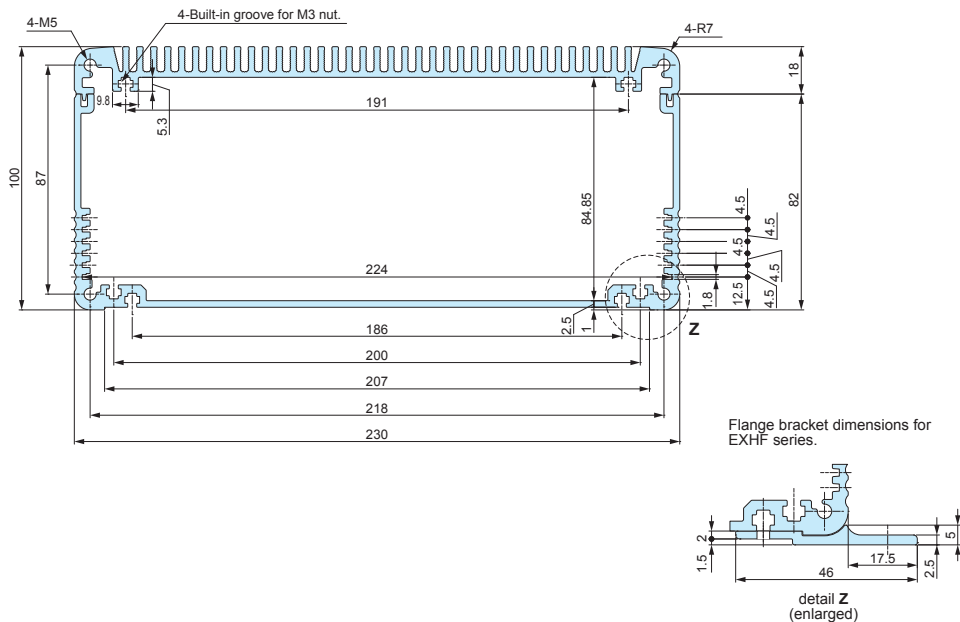
EXH • EXHF23-5-□



EXH • EXHF23-8-□



EXH • EXHF23-10-□



EF SERIES

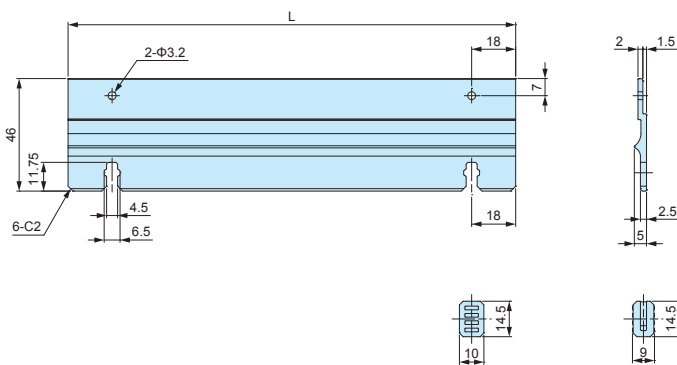
WALL MOUNTING BRACKET for EX • EXH



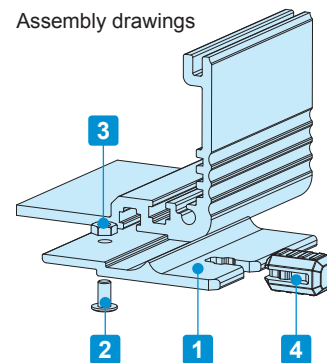
APPLICATION EXAMPLE



- 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

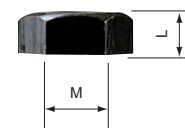
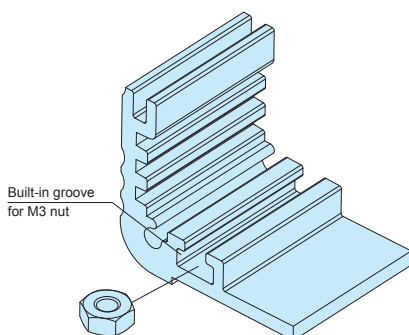
No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Screw	4	Steel M3-6	Black trivalent chromate
3	Nut	4	Steel	Black trivalent chromate
4	Rubber feet	4	Silicone	Black

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.



Application Example

- Double shot injection molded feet with soft and well-designed rounded shape.
- Non-slip design with Elastomer (TPE) pad.
- Available in 3 different color patterns.

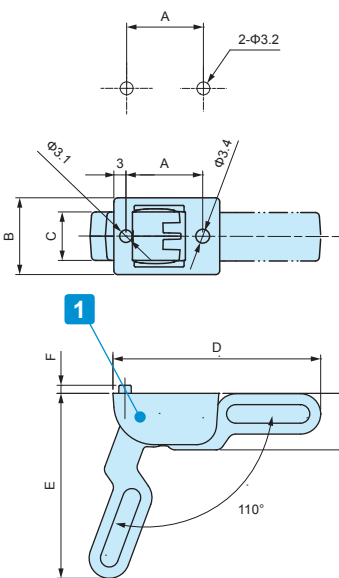
Technical Data
Max load : 7kg

Components

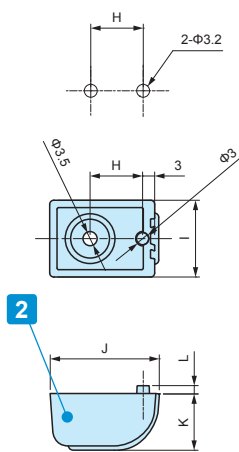
No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear Feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Washer head screw	4	Steel M3-6	Black Trivalent chromate
-	Nut	4	Steel M3	Black Trivalent chromate

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

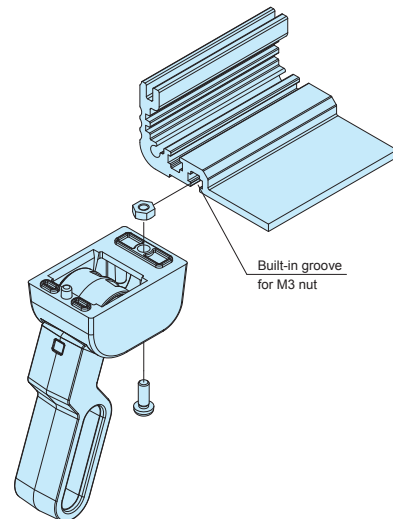
Mounting hole (Front)



Mounting Hole (Rear)



- Possible to install on Built-in groove with M3 nut for all EXP • EXPE • EXW • EX • EXH models with width 185mm or larger bottom covers.
- TLW-70E models are exclusively for width 185mm or larger bottom covers.



Product no. / Dimensions

Product no.	A	B	C	D	E	F	G	H	I	J	K	L	Color (plastic)	Color (TPE)	Weight (g)
TLW-46BB	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Black	Black	23
TLW-46NG	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Navy	Gray	23
TLW-46LG	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Light gray	Gray	23
<b>NEW</b> TLW-70EBB	30	25	16	75.4	69	3	21.5	20	25	39	21.5	3	Black	Black	59
<b>NEW</b> TLW-70ENG	30	25	16	75.4	69	3	21.5	20	25	39	21.5	3	Navy	Gray	59
<b>NEW</b> TLW-70ELG	30	25	16	75.4	69	3	21.5	20	25	39	21.5	3	Light gray	Gray	59

## AFS•AFM SERIES

## ALUMINIUM ISOLATION FEET



- The surface treatment and finish allows the feet to exhibit a polished and luxurious feel.
- Non-slip NBR O-ring is present on the underside of the feet.
- Suitable for use in audio devices.

### Available in both internal and external screw installation type.

#### External type / Shot blast finish (AFS series)



The external type is secured via screws from the underside / base of the feet to the enclosure. A thread hole is required for direct securing, while a circular hole is required for lock nut securing.

The shot blast finish provides a high quality surface finish look, and pairing well with various types of enclosure surfaces.

Available in both silver and black.

#### Internal type / Reflective finish (AFM series)



The internal type is secured via screws from the inside of the enclosure. A circular hole is required for securing into the pre-made threads in the top-side of the feet.

The reflective surface finish adds a high quality touch to the unit, allow it to have a luxurious look.

Available only in Silver.

Accessories (Optional parts)

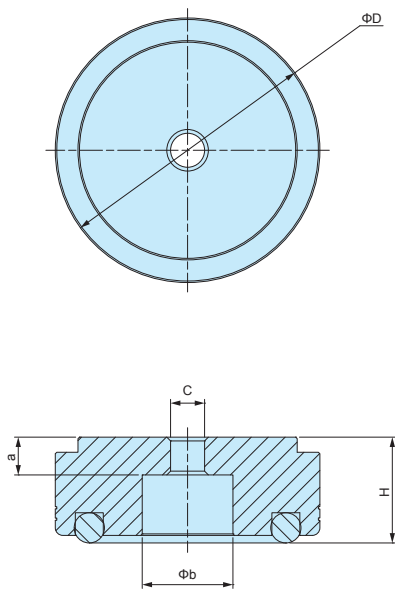
Product no. / Dimensions

Product no.		D	H	Installation type	C	a	b	Pack of
● Silver	● Black							
AFS20- 8S	AFS20- 8B	20	8	External	Φ3.4	3	9	4
AFS25-10S	AFS25-10B	25	10	External	Φ4.5	4	12	4
AFS30-12S	AFS30-12B	30	12	External	Φ4.5	5	12	4
AFS35-14S	AFS35-14B	35	14	External	Φ4.5	5	12	4
AFS39-16S	AFS39-16B	39	16	External	Φ4.5	5	15	4
AFS44-18S	AFS44-18B	44	18	External	Φ4.5	5	20	4
AFS55-20S	AFS55-20B	55	20	External	Φ5.5	5	20	4
AFM15- 7S	-	15	7	Internal	M3	4	-	4
AFM20- 9S	-	20	9	Internal	M3	5	-	4
AFM25-12S	-	25	12	Internal	M4	7	-	4
AFM30-14S	-	30	14	Internal	M4	8	-	4
AFM35-16S	-	35	16	Internal	M4	10	-	4
AFM39-18S	-	39	18	Internal	M4	10	-	4
AFM44-20S	-	44	20	Internal	M4	10	-	4
AFM55-22S	-	55	22	Internal	M5	15	-	4

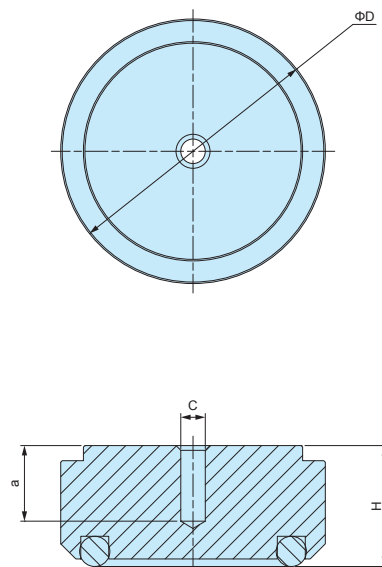
AFS • AFM dimensions

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

AFS SERIES



AFM SERIES



APPLICATION EXAMPLE

