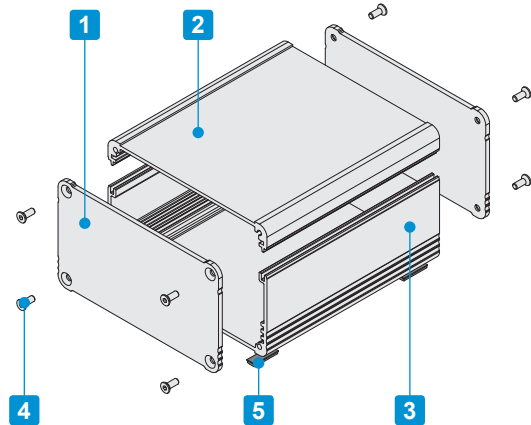




- Simple yet beautifully designed aluminium extrusion enclosure.
- Selectable in 4 different color combinations.
- Beautiful high-end finish is achieved by precision CNC finishing.
- Suitable for industrial and audio interface equipment.
- Custom length is available.



Components

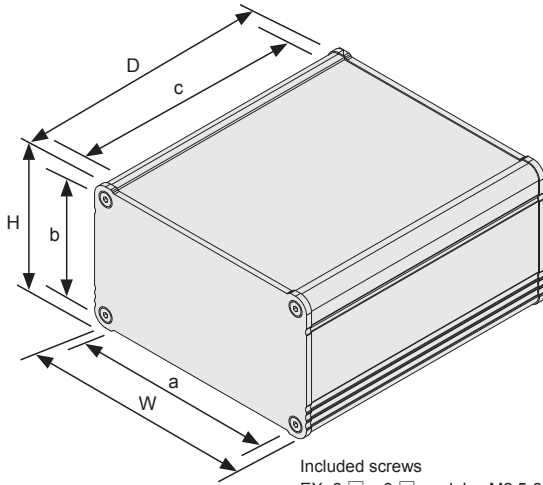
No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

Color Type

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

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



Included screws  
EX 6-□, 8-□ models : M2.5-8 x 8 pcs  
EX11-□, 14-□ models : M3-8 x 8 pcs  
EX19-□ models : M4-10 x 8 pcs  
EX23-□ models : M5-10 x 8 pcs  
※Hexagonal wrench included.

Accessories (Optional parts)



Wall mounting bracket EF series  
See page 182

Product no. / Dimensions

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

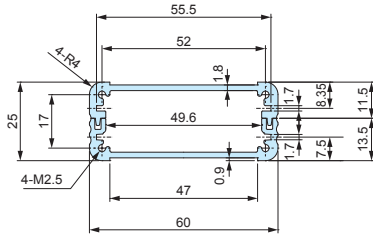
Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
EX 6- 3- 5□□	60.6	25.6	50	47	19.6	46
EX 6- 3- 8□□	60.6	25.6	77	47	19.6	73
EX 6- 3-10□□	60.6	25.6	100	47	19.6	96
EX 6- 4- 5□□	60.6	35.6	50	47	29.6	46
EX 6- 4- 8□□	60.6	35.6	77	47	29.6	73
EX 6- 4-10□□	60.6	35.6	100	47	29.6	96
EX 6- 5- 5□□	60.6	50.6	50	47	44.6	46
EX 6- 5- 8□□	60.6	50.6	77	47	44.6	73
EX 6- 5-10□□	60.6	50.6	100	47	44.6	96
EX 8- 3- 6□□	80.6	30.6	60	67	24.6	56
EX 8- 3- 9□□	80.6	30.6	90	67	24.6	86
EX 8- 3-12□□	80.6	30.6	120	67	24.6	116
EX 8- 4- 6□□	80.6	40.6	60	67	34.6	56
EX 8- 4- 9□□	80.6	40.6	90	67	34.6	86
EX 8- 4-12□□	80.6	40.6	120	67	34.6	116
EX 8- 6- 6□□	80.6	55.6	60	67	49.6	56
EX 8- 6- 9□□	80.6	55.6	90	67	49.6	86
EX 8- 6-12□□	80.6	55.6	120	67	49.6	116
EX11- 3- 8□□	106	31	79	89	24	74
EX11- 3-12□□	106	31	119	89	24	114
EX11- 3-16□□	106	31	165	89	24	160
EX11- 5- 8□□	106	46	79	89	39	74
EX11- 5-12□□	106	46	119	89	39	114
EX11- 5-16□□	106	46	165	89	39	160
EX11- 6- 8□□	106	61	79	89	54	74
EX11- 6-12□□	106	61	119	89	54	114
EX11- 6-16□□	106	61	165	89	54	160
EX14- 4-10□□	141	36	98	107.4	29	93
EX14- 4-14□□	141	36	138	107.4	29	133
EX14- 4-19□□	141	36	188	107.4	29	183
EX14- 5-10□□	141	51	98	107.4	44	93
EX14- 5-14□□	141	51	138	107.4	44	133
EX14- 5-19□□	141	51	188	107.4	44	183
EX14- 7-10□□	141	71	98	107.4	64	93
EX14- 7-14□□	141	71	138	107.4	64	133
EX14- 7-19□□	141	71	188	107.4	64	183
EX14- 9-10□□	141	91	98	107.4	84	93
EX14- 9-14□□	141	91	138	107.4	84	133
EX14- 9-19□□	141	91	188	107.4	84	183

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
<b>NEW</b> EX19- 4-13□□	186.5	43.5	125	132	35	120
<b>NEW</b> EX19- 4-18□□	186.5	43.5	177	132	35	172
<b>NEW</b> EX19- 4-23□□	186.5	43.5	230	132	35	225
<b>NEW</b> EX19- 4-29□□	186.5	43.5	285	132	35	280
<b>NEW</b> EX19- 6-13□□	186.5	61.5	125	132	53	120
<b>NEW</b> EX19- 6-18□□	186.5	61.5	177	132	53	172
<b>NEW</b> EX19- 6-23□□	186.5	61.5	230	132	53	225
<b>NEW</b> EX19- 6-29□□	186.5	61.5	285	132	53	280
<b>NEW</b> EX19- 8-13□□	186.5	81.5	125	132	73	120
<b>NEW</b> EX19- 8-18□□	186.5	81.5	177	132	73	172
<b>NEW</b> EX19- 8-23□□	186.5	81.5	230	132	73	225
<b>NEW</b> EX19- 8-29□□	186.5	81.5	285	132	73	280
<b>NEW</b> EX19-11-13□□	186.5	106.5	125	132	98	120
<b>NEW</b> EX19-11-18□□	186.5	106.5	177	132	98	172
<b>NEW</b> EX19-11-23□□	186.5	106.5	230	132	98	225
<b>NEW</b> EX19-11-29□□	186.5	106.5	285	132	98	280
<b>NEW</b> EX23- 5-15□□	232	52	153	177	43	147
<b>NEW</b> EX23- 5-21□□	232	52	213	177	43	207
<b>NEW</b> EX23- 5-27□□	232	52	273	177	43	267
<b>NEW</b> EX23- 5-33□□	232	52	333	177	43	327
<b>NEW</b> EX23- 8-15□□	232	77	153	177	68	147
<b>NEW</b> EX23- 8-21□□	232	77	213	177	68	207
<b>NEW</b> EX23- 8-27□□	232	77	273	177	68	267
<b>NEW</b> EX23- 8-33□□	232	77	333	177	68	327
<b>NEW</b> EX23-10-15□□	232	102	153	177	93	147
<b>NEW</b> EX23-10-21□□	232	102	213	177	93	207
<b>NEW</b> EX23-10-27□□	232	102	273	177	93	267
<b>NEW</b> EX23-10-33□□	232	102	333	177	93	327

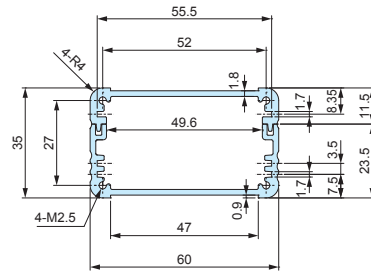
EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX top / bottom covers

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

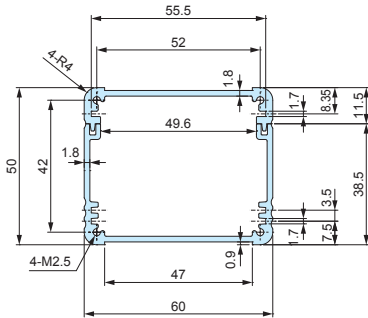
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-4-□  
EX6-3-□



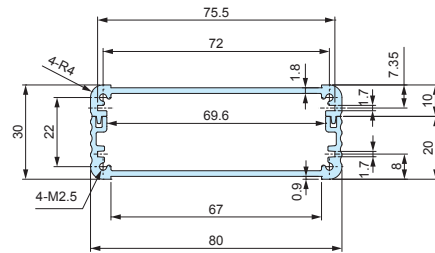
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EX6-4-□



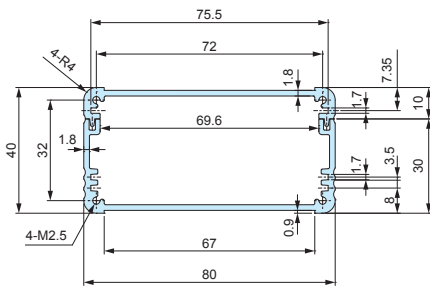
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-6-□  
EX6-5-□



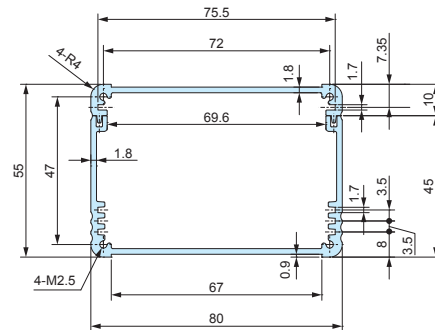
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-4-□  
EX8-3-□



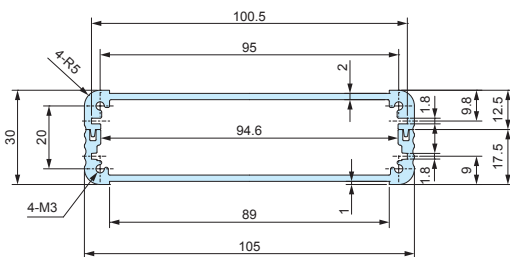
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EX8-4-□



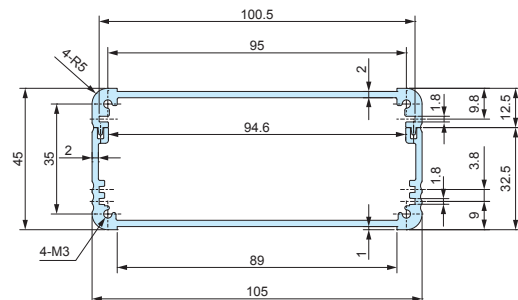
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-6-□  
EX8-6-□



EXP • EXPE • EXW12-4-□  
EXPF • EXEF • EXWF11-4-□  
EX11-3-□



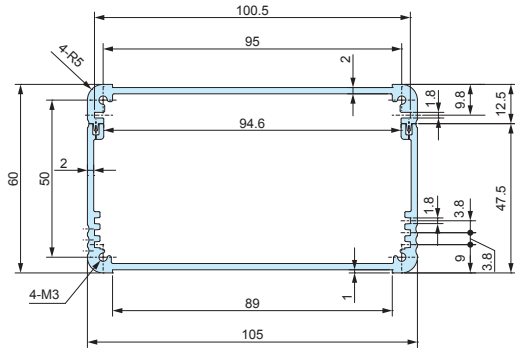
EXP • EXPE • EXW12-6-□  
EXPF • EXEF • EXWF11-6-□  
EX11-5-□



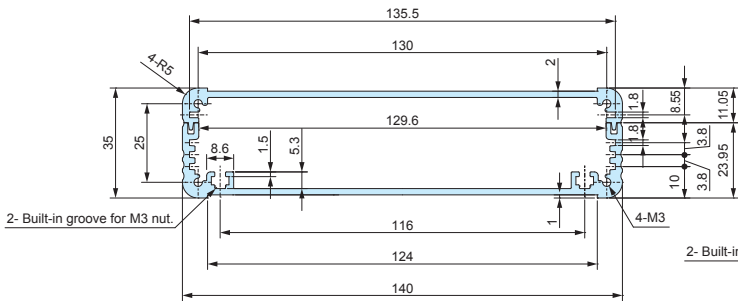
EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX top / bottom covers

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

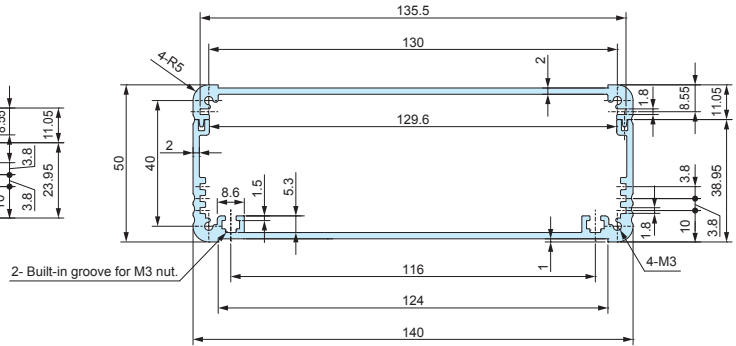
EXP • EXPE • EXW12-7-□  
EXPF • EXEF • EXWF11-7-□  
EX11-6-□



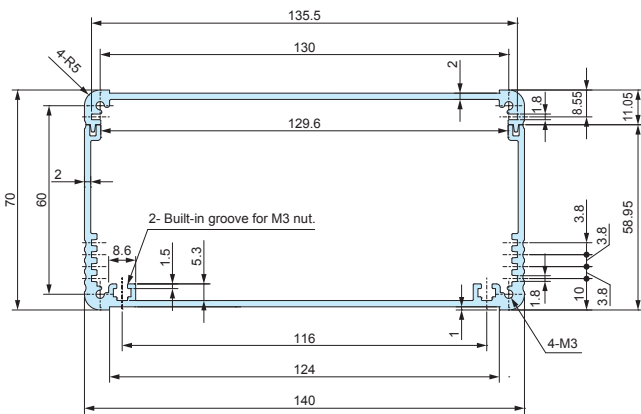
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-5-□  
EX14-4-□



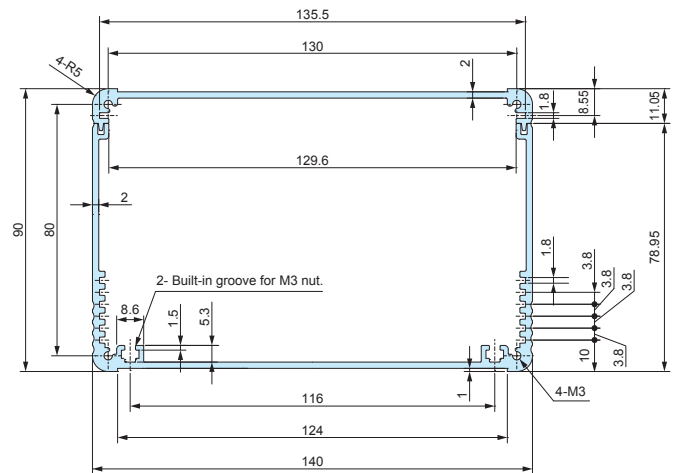
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-6-□  
EX14-5-□



EXP • EXPE • EXW • EXPF • EXEF • EXWF15-8-□  
EX14-7-□



EXP • EXPE • EXW • EXPF • EXEF • EXWF15-10-□  
EX14-9-□

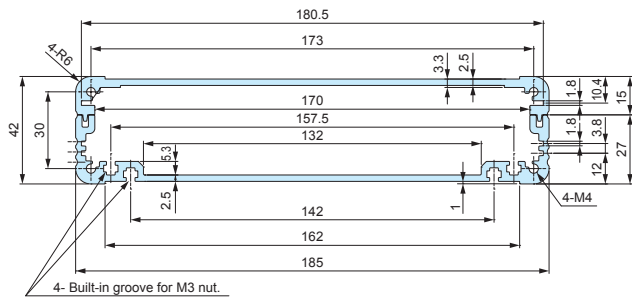




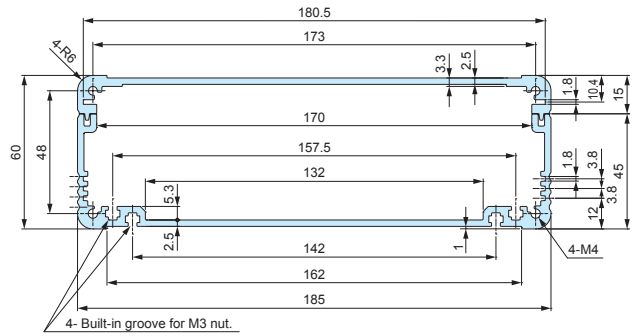
EXP • EXPE • EXPF • EXEF • EXWF • EX top / bottom covers

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

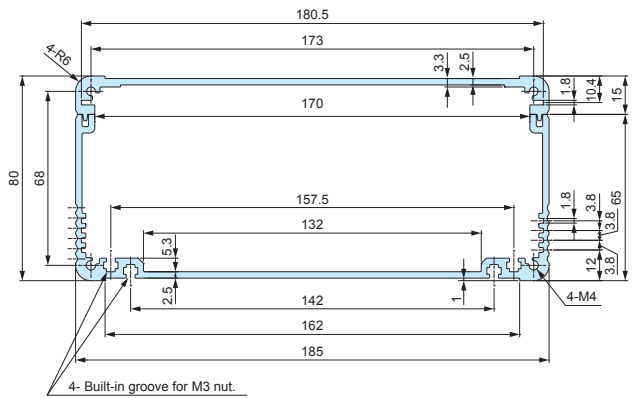
EXP • EXPE • EXPF • EXEF • EXWF20-6-□  
EX19-4-□



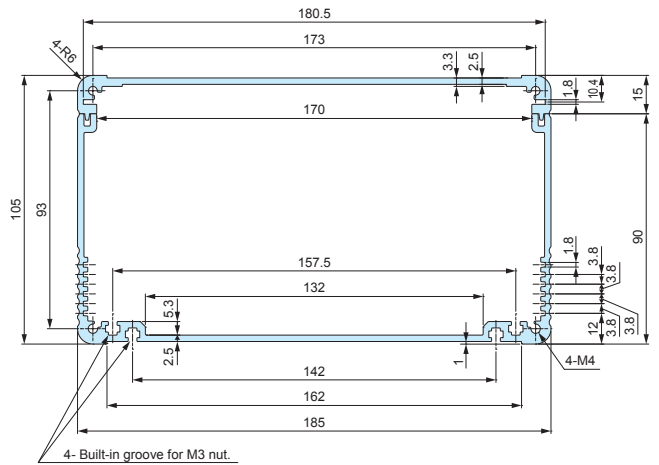
EXP • EXPE20-7-□  
EXPF • EXEF • EXWF20-8-□  
EX19-6-□



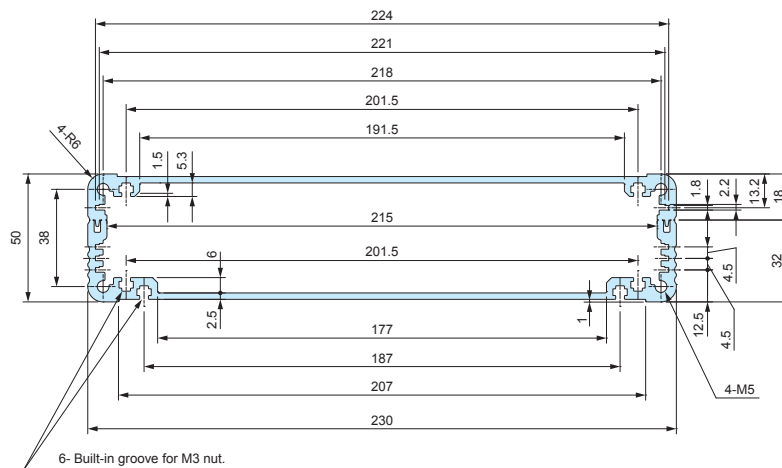
EXP • EXPE20-9-□  
EXPF • EXEF • EXWF20-10-□  
EX19-8-□



EXP • EXPE • EXPF • EXEF • EXWF20-12-□  
EX19-11-□



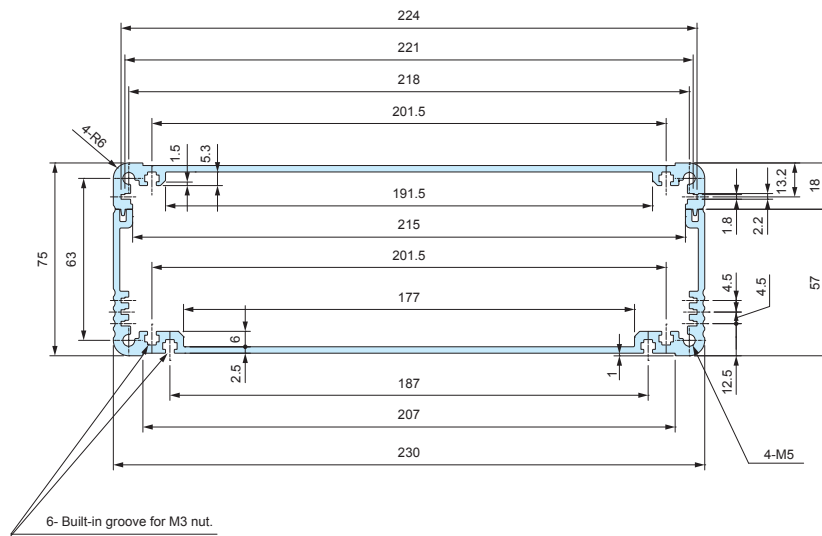
EXP • EXPE24-6-□  
EXPF • EXEF • EXWF24-7-□  
EX23-5-□



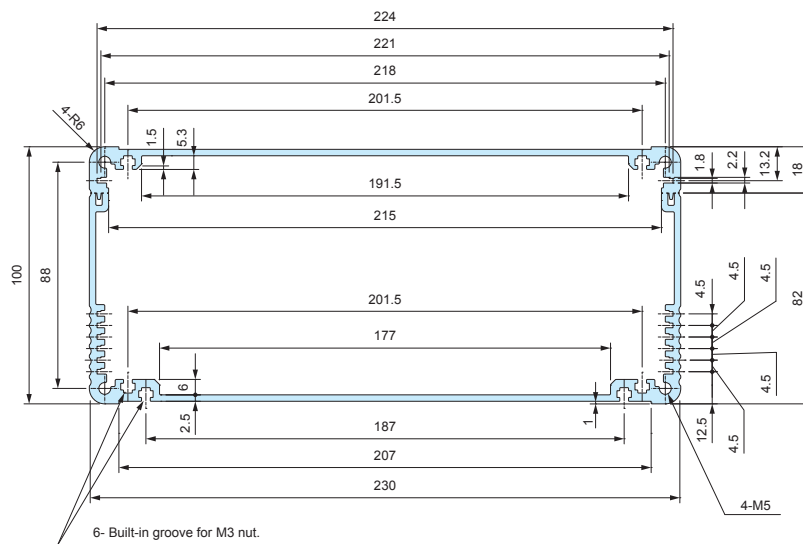
EXP • EXPE • EXPF • EXEF • EXWF • EX top / bottom covers

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

EXP • EXPE • EXPF • EXEF • EXWF24-9-□  
EX23-8-□

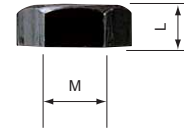
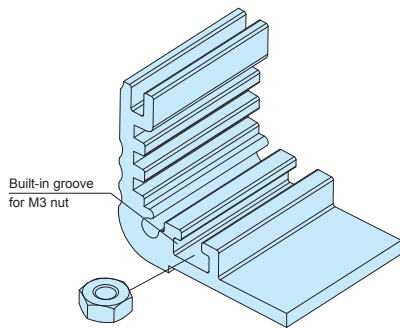


EXP • EXPE24-11-□  
EXPF • EXEF • EXWF24-12-□  
EX23-10-□



**MT-3N**

**SLIDING NUT for EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX**



**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 EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX models with width 140mm or larger bottom covers, as well as with width 230mm top covers.

**EXEG SERIES**

**EMC SHIELDING FABRIC-OVER-FOAM GASKET for EXPE • EXEF**



- EMC shielding fabric-over-foam gasket for EXPE • EXEF series.

**Suitable Enclosure**

Product no.	Suitable enclosure
EXEG-2.5	EXPE7-□ • 9-□ • 12-□ • 15-□ / EXEF7-□ • 9-□ • 11-□ • 15-□
EXEG-3.2	EXPE20-□ • 24-□ / EXEF20-□ • 24-□



**Product no. / Dimensions**

Product no.	Φ	Material	Color	Sales unit
EXEG-2.5	2.5	Wire mesh gasket • TPE	Metallic gray	500mm x 1 pc
<b>NEW</b> EXEG-3.2	3.2	Wire mesh gasket • TPE	Metallic gray	500mm x 1 pc

Length tolerance = +/- 10%

**APPLICATION EXAMPLE EX series**

**PREMAIN POWER AMPLIFIER**

Product by AY-densi (Japan)



**USB EDGE NODE**

Product by SHINWA (Japan)





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.

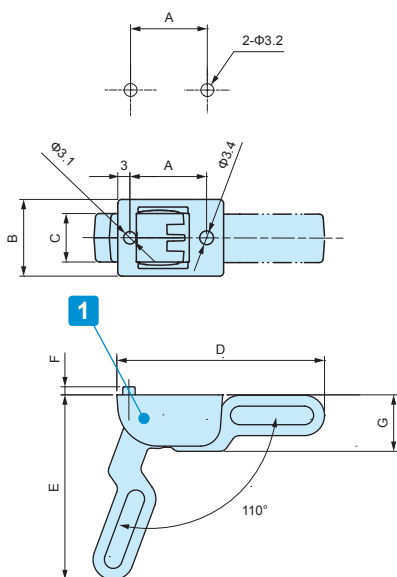
Technical Data
Max load : 7kg

**Components**

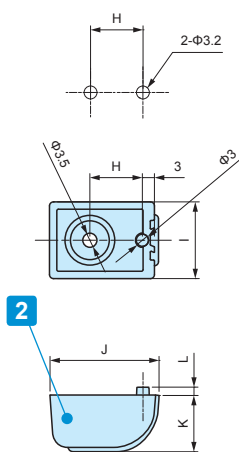
No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear Feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Washer head screw	4	Steel M3-6	Black Trivalent chromate
-	Nut	4	Steel M3	Black Trivalent chromate

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

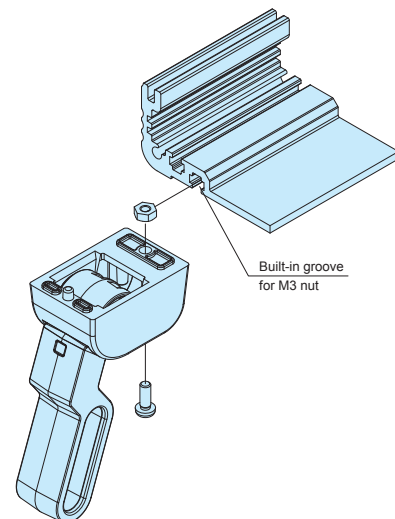
Mounting hole (Front)



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

# MX • MXA • MXF • MXB SERIES

## ALUMINIUM MOBILE ENCLOSURE

MXF • MXB • MXA • MX mobile enclosures are designed with a beautiful and elegant finish in mind. Having a rounded design, it fits comfortably in your hand, while giving off a simple yet sharp look. Suitable for use as small audio devices and as an amplifier unit, among others in a wide variety of industries. Selectable from 4 different types: an affordable plastic end panel type MX series, a luxurious aluminium end panel type MXA series, a flanged end panel MXF series, and the MXB series, which is the MXA series with a protective silicone band.

## APPLICATION EXAMPLE

### DESKTOP AUDIO PREAMPLIFIER with USB Product by Conisis lab.inc. (Japan)



### DIGITAL HEADPHONE AMPLIFIER

Product by UpTone Audio (USA)

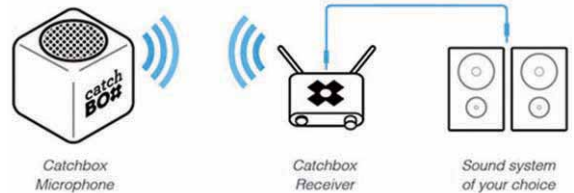


### WIRELESS MICROPHONE SYSTEM

Product by Catchbox (Finland)



**reddot award**  
product design





## ETHERNET CELLULAR ROUTER

Product by NimbeLink (USA)



## WiFi ACCESS POINT



## AIS (AUTOMATIC IDENTIFICATION SYSTEM) SIGNAL RECEIVER

Product by SRT Marine System Solutions (UK)



## DATA TRANSMITTER for AUTOMATIC NUMBER PLATE RECOGNITION (ANPR) SYSTEM

Product by Sensor Dynamics (Australia)



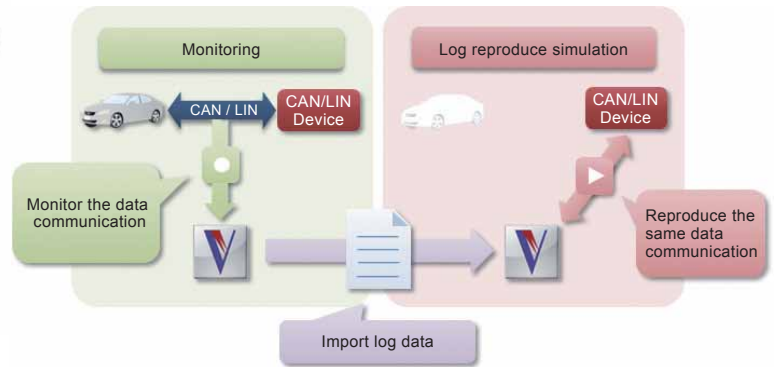
## IO-Link DEVICE

Product by Lemonage Software (Germany)



## CAN & LIN VEHICLE COMMUNICATION SIMULATOR / MONITOR

Product by P&A Technologies (Japan)



## SIGNAL CHECKER / TESTER

Product by KUWATEC (Japan)



## MODEL RAILROAD CONTROLLER

Product by Calura Ltd (Japan)





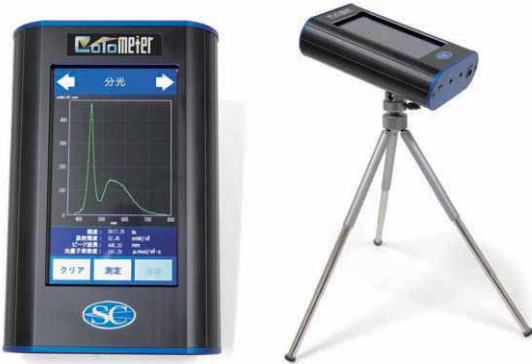
### PORTABLE FREQUENCY STANDARD DEVICE

Product by FREQTIME (Japan)



### SPECTRAL LUMINOMETER

Product by Spectra Co-op (Japan)



### RTD SENSOR TESTER

Product by Turbomation (USA)



### MOBILE MOISTURE METER

Product by ARP (Japan)



### FULL COLOR LED TABLETOP LIGHTING DIVICE

Product by DAISHO DENKI INC. (Japan)



### ACTIVE EMF PROTECTION DEVICE

Product by Blueshield Inc (New Zealand)



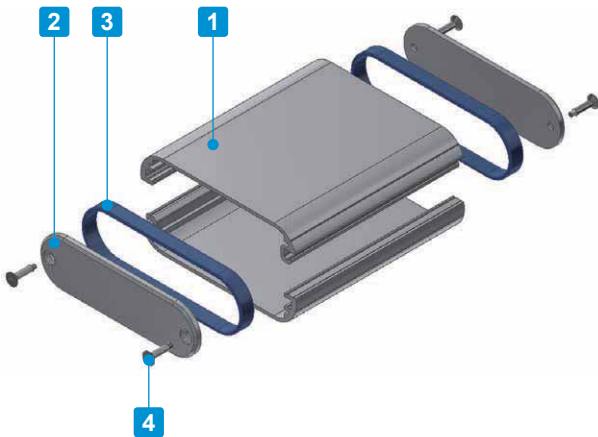
### ILLUMINATION INVERTER

Product by Future Illuminations (USA)



# MXB SERIES

# ALUMINIUM MOBILE ENCLOSURE with SILICONE BAND



- All aluminium mobile enclosure with anti-slip, impact resistant silicone band.
- 16 different color combinations and 30 different sizes available to choose from.
- Suitable to be used as digital audio amplifiers, communication devices, measurement tools, etc.

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Aluminium A1050P	Silver • Black / Anodized
3	Silicone band	2	Silicone	Black • Light gray • Navy • Cyan • Green • Yellow • Orange • Red
4	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

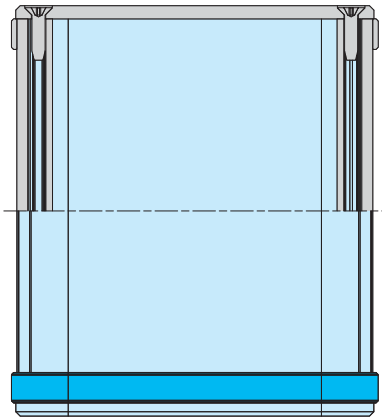
### Color Type



■ Mix and match the MXA series with the SIB series silicone band for a wider variety of color combinations.

MXB dimensions

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





Included screws

MXB1-5, 2-4, 2-6, 2-10 models : M2.6-14 x 4 pcs

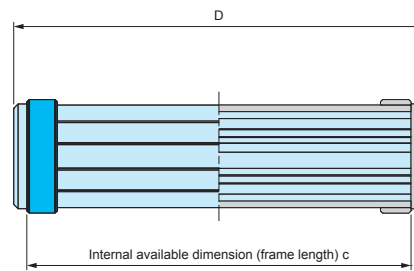
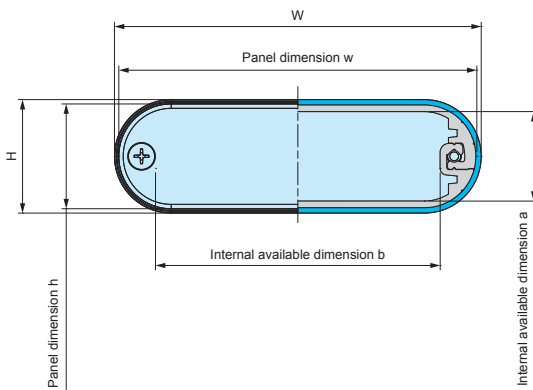
MXB2-7, 2-8, 3-11, 4-7, 4-10, 4-13 models : M3-10 x 4 pcs

Screw Type

P	H
	
Plus head	Hexalobular head

Please request / order by indicating the combination part number as below.

**MXB 1 - 5 - 5** □ □ □  
Color code Screw P or H



Product no. / Dimensions

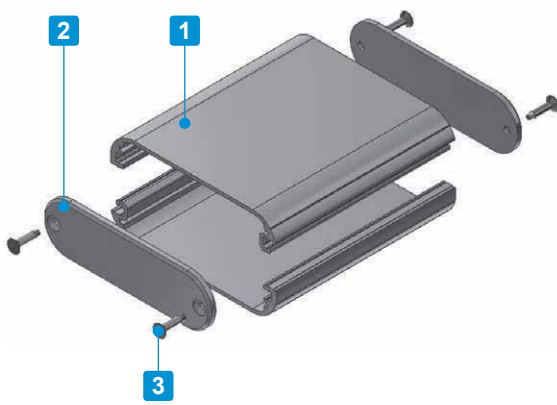
■ Please suffix color and screw code at the end of the product number.

Product no.	H	W	D	h	w	a	b	c	Weight (g)
NEW MXB1- 5- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	49	13	48	10.2	33.6	43	26
NEW MXB1- 5- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	79	13	48	10.2	33.6	73	41
NEW MXB1- 5-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	109	13	48	10.2	33.6	103	56
NEW MXB2- 4- 4 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	44	15	41	12.2	26.6	38	26
NEW MXB2- 4- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	74	15	41	12.2	26.6	68	41
NEW MXB2- 4-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	104	15	41	12.2	26.6	98	51
NEW MXB2- 6- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	46	18	57	15.1	42.5	40	36
NEW MXB2- 6- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	71	18	57	15.1	42.5	65	51
NEW MXB2- 6-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	96	18	57	15.1	42.5	90	66
NEW MXB2- 7- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	54	20	70	16.5	53.2	48	57
NEW MXB2- 7- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	84	20	70	16.5	53.2	78	82
NEW MXB2- 7-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	114	20	70	16.5	53.2	108	112
NEW MXB2- 8- 6 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	64	24	82	20.5	65.2	58	77
NEW MXB2- 8- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	94	24	82	20.5	65.2	88	107
NEW MXB2- 8-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	124	24	82	20.5	65.2	118	137
NEW MXB2-10- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	74	16	100	13.2	85.6	68	75
NEW MXB2-10-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	104	16	100	13.2	85.6	98	105
NEW MXB2-10-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	144	16	100	13.2	85.6	138	140
NEW MXB3-11- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	72	30	110	26.5	93.2	66	120
NEW MXB3-11-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	112	30	110	26.5	93.2	106	170
NEW MXB3-11-16 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	162	30	110	26.5	93.2	156	240
NEW MXB4- 7- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	52	35	70	31.4	53.2	46	72
NEW MXB4- 7- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	82	35	70	31.4	53.2	76	102
NEW MXB4- 7-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	112	35	70	31.4	53.2	106	137
NEW MXB4-10- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	70	40	95	36.4	78.2	64	125
NEW MXB4-10-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	110	40	95	36.4	78.2	104	180
NEW MXB4-10-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	140	40	95	36.4	78.2	134	225
NEW MXB4-13- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	90	35	130	31	113.2	84	187
NEW MXB4-13-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	140	35	130	31	113.2	134	272
NEW MXB4-13-20 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	200	35	130	31	113.2	194	377

■ H and W may experience slight variance from listed dimensions due to silicone band construct.

# MXA SERIES

# ALUMINIUM MOBILE ENCLOSURE



- All aluminium mobile enclosure with easy to hold rounded design.
- 14 different color combinations and 30 different sizes available to choose from.
- Suitable to be used as digital audio amplifiers, communication devices, measurement tools, etc.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.
- MXA1-5 models do not have internal grooves.

Included screws  
 MXA1-5, 2-4, 2-6, 2-10 models : M2.6-14 x 4pcs  
 MXA2-7, 2-8, 3-11, 4-7, 4-10, 4-13 models : M3-10 x 4 pcs

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Aluminium A1050P	Black • Silver • Cobalt • Green • Purple • Orange • Red / Anodized
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

Custom length available in 1mm intervals.



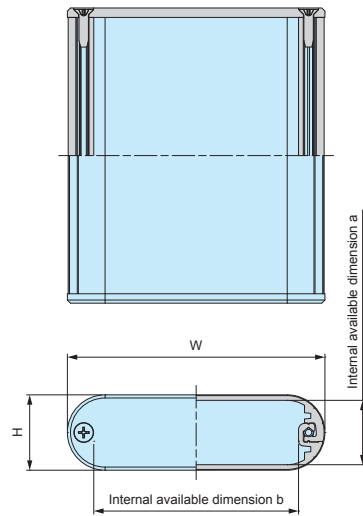


**Color Type** Please choose from the color combinations listed below

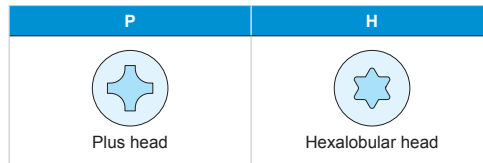


**MXA dimensions**

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

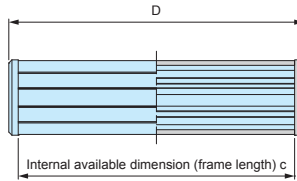


**Screw Type**



Please request / order by indicating the combination part number as below.

**MXA 1 - 5 - 5** □ □ □  
 Color code Screw P or H



**Accessories (Optional parts)**



Silicone band SIB series  
See page 130

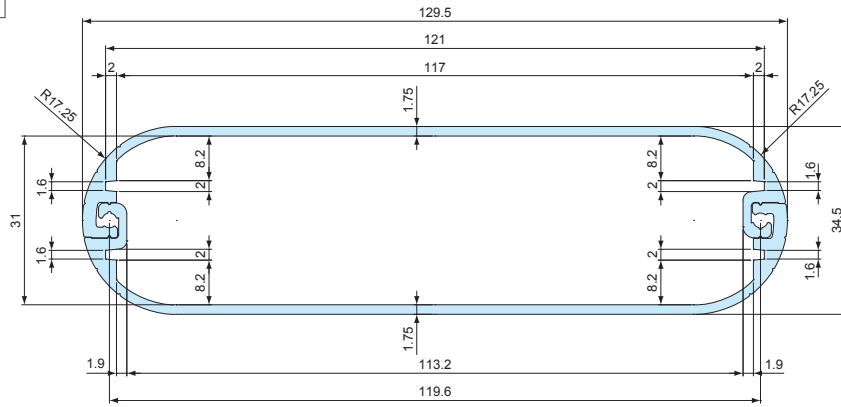
**Product no. / Dimensions**

■ Please suffix color and screw code at the end of the product number.

Product no.	H	W	D	a	b	c	Weight (g)
MXA1- 5- 5□□	13	48	49	10.2	33.6	43	25
MXA1- 5- 8□□	13	48	79	10.2	33.6	73	40
MXA1- 5-11□□	13	48	109	10.2	33.6	103	55
MXA2- 4- 4□□	15	41	44	12.2	26.6	38	25
MXA2- 4- 7□□	15	41	74	12.2	26.6	68	40
MXA2- 4-10□□	15	41	104	12.2	26.6	98	50
MXA2- 6- 5□□	18	57	46	15.1	42.5	40	35
MXA2- 6- 7□□	18	57	71	15.1	42.5	65	50
MXA2- 6-10□□	18	57	96	15.1	42.5	90	65
MXA2- 7- 5□□	20	70	54	16.5	53.2	48	55
MXA2- 7- 8□□	20	70	84	16.5	53.2	78	80
MXA2- 7-11□□	20	70	114	16.5	53.2	108	110
MXA2- 8- 6□□	24	82	64	20.5	65.2	58	75
MXA2- 8- 9□□	24	82	94	20.5	65.2	88	105
MXA2- 8-12□□	24	82	124	20.5	65.2	118	135
MXA2-10- 7□□	16	100	74	13.2	85.6	68	70
MXA2-10-10□□	16	100	104	13.2	85.6	98	100
MXA2-10-14□□	16	100	144	13.2	85.6	138	135
MXA3-11- 7□□	30	110	72	26.5	93.2	66	115
MXA3-11-11□□	30	110	112	26.5	93.2	106	165
MXA3-11-16□□	30	110	162	26.5	93.2	156	235
MXA4- 7- 5□□	35	70	52	31.4	53.2	46	70
MXA4- 7- 8□□	35	70	82	31.4	53.2	76	100
MXA4- 7-11□□	35	70	112	31.4	53.2	106	135
MXA4-10- 7□□	40	95	70	36.4	78.2	64	120
MXA4-10-11□□	40	95	110	36.4	78.2	104	175
MXA4-10-14□□	40	95	140	36.4	78.2	134	220
MXA4-13- 9□□	35	130	90	31	113.2	84	180
MXA4-13-14□□	35	130	140	31	113.2	134	265
MXA4-13-20□□	35	130	200	31	113.2	194	370



MXF/MXB/MXA/MX4-13-□



Accessories (Optional parts)

**SIB SERIES** **SILICONE BAND** ★★ NEW

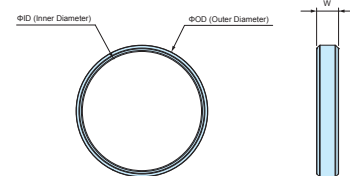


Application example



- Silicone band designed to fit MXA & MX series.
- Silicone band provides both shock resistance and non-slip grips for the MXA & MX enclosure.
- Elastic silicone band may also fit other similarly sized enclosures.

SIB dimensions



Color Type

Code	R Red	O Orange	Y Yellow	G Green	C Cyan	N Navy	L Light gray	B Black
Color								

Components

Part name	Pcs	Material	Color
Silicone band	Pair (2 pcs)	Silicone	Red • Orange • Yellow • Green • Cyan • Navy • Light gray • Black

Product no. / Dimensions

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

Product no.	W	ID	OD	Suitable enclosures	Enclosure circumference (mm)	Weight (g)
NEW SIB-21□	6	21	25	MXA/MX1-5-□ • 2-4-□ • 2-6-□	95~135	2
NEW SIB-38□	7	38	42	MXA/MX2-7-□ • 2-8-□ • 4-7-□	160~190	4
NEW SIB-58□	8	58	63	MXA/MX2-10-□ • 3-11-□ • 4-10-□	215~255	10
NEW SIB-72□	10	72	77	MXA/MX4-13-□	280~320	14



# EXH HEAT-SINK ALUMINIUM ENCLOSURE

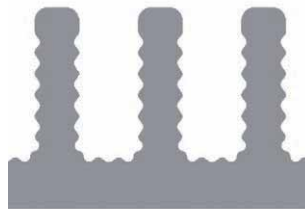
EXH series is an aluminium enclosure with a highly efficient heat-sink top cover. Suitable to be used as fanless PC, power amplifier, and power supply box where heat dissipation is required. Wide range, 30 different sizes available.



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

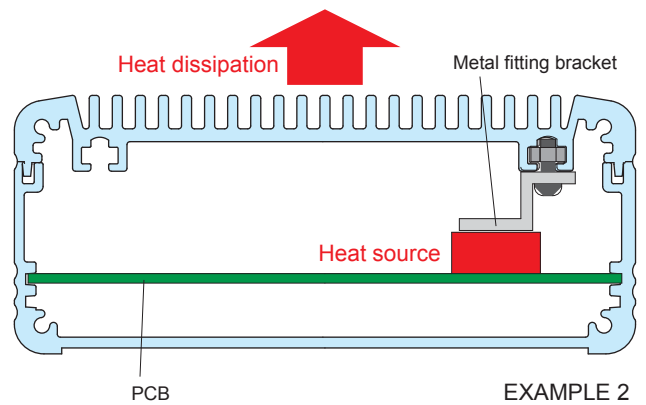
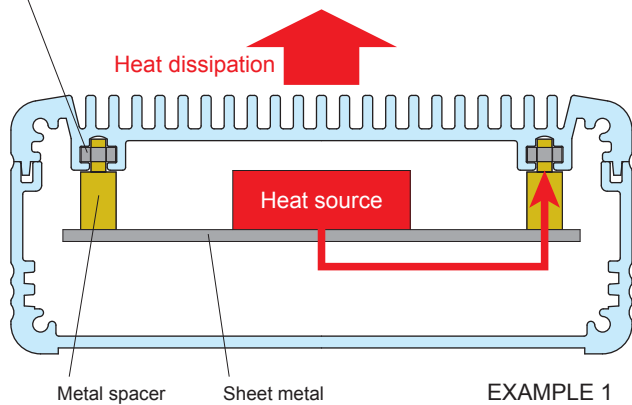
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

### 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)



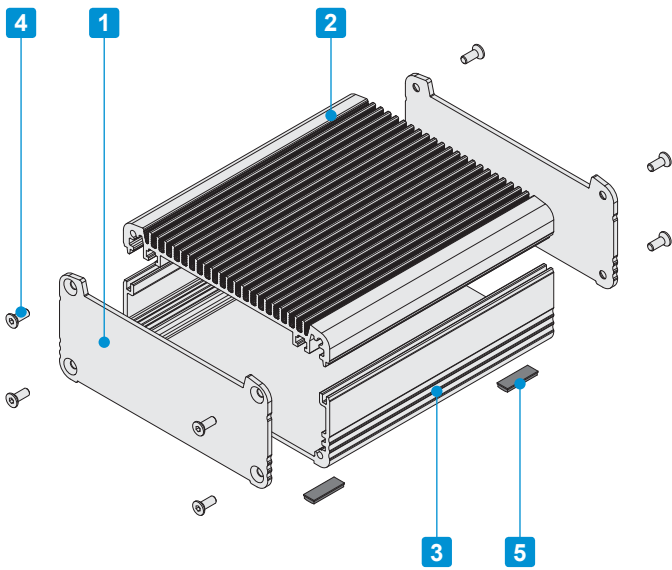
## 4 CHANNEL POWER SWITCHING EDGE NODE

Product by SHINWA (Japan)

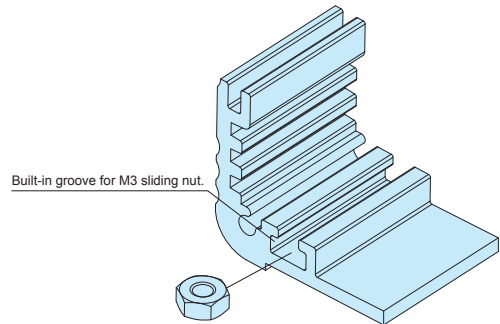


## AUDIO AMPLIFIER





- 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).



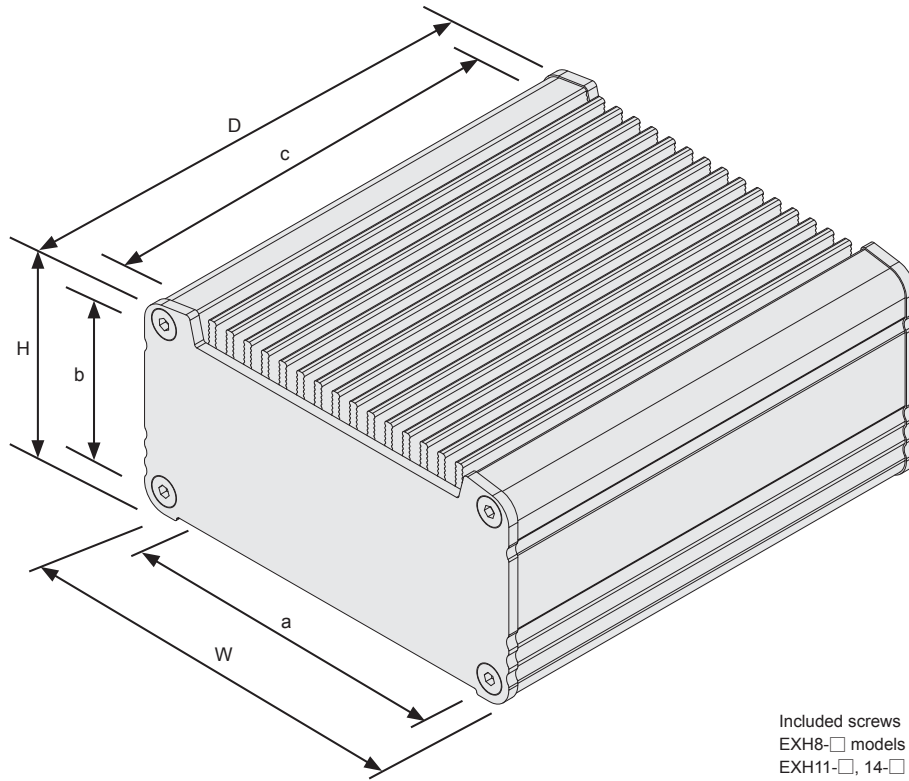
Components

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.

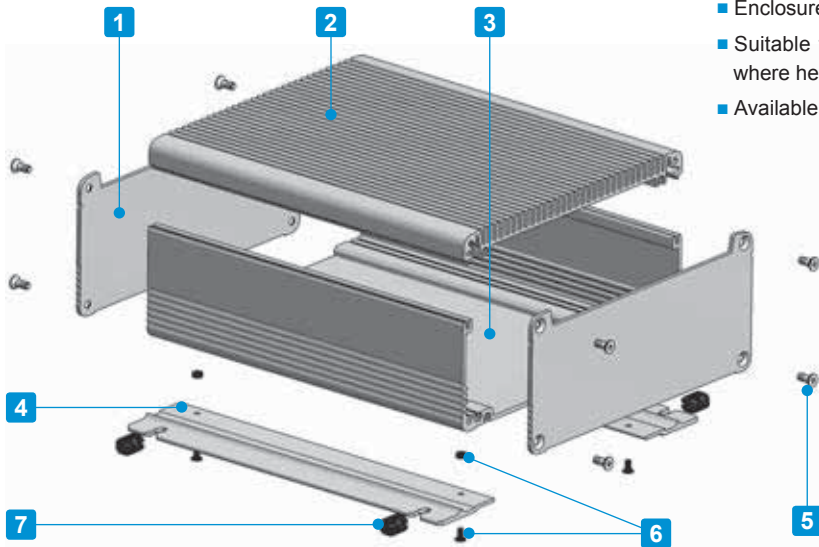
Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
EXH 8-3- 6□□	80.6	30.7	60	69.6	20.3	56	7.32
EXH 8-3- 9□□	80.6	30.7	90	69.6	20.3	86	5.65
EXH 8-3-12□□	80.6	30.7	120	69.6	20.3	116	4.72
EXH 8-4- 6□□	80.6	40.7	60	69.6	30.3	56	7.32
EXH 8-4- 9□□	80.6	40.7	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.





- 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

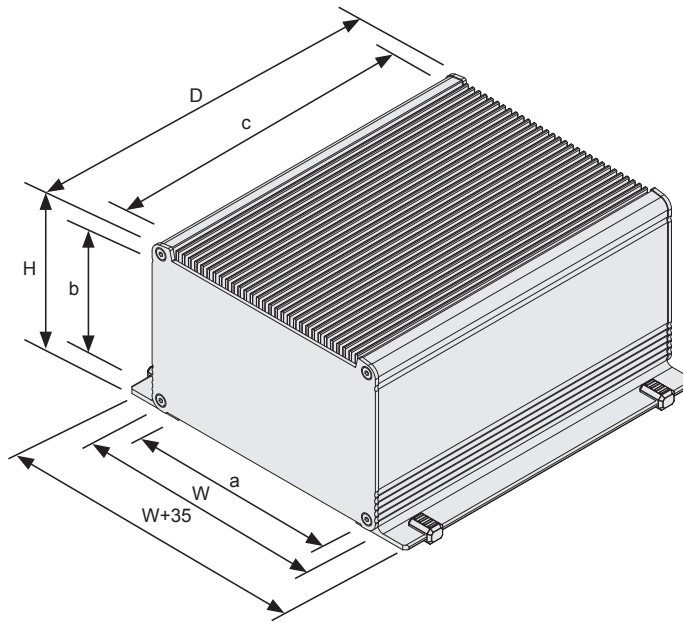
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Flange bracket	2	Extruded aluminium A6063S-T5	Silver • 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.

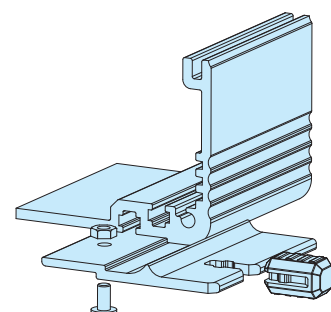
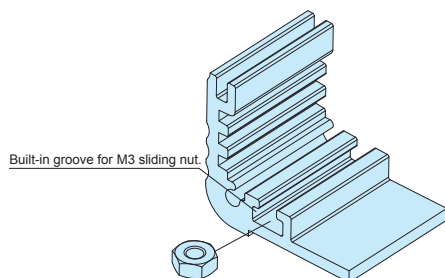
Product no. / Dimensions

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).

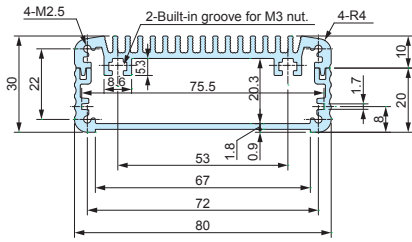
Flange bracket is installed as per the diagram below.



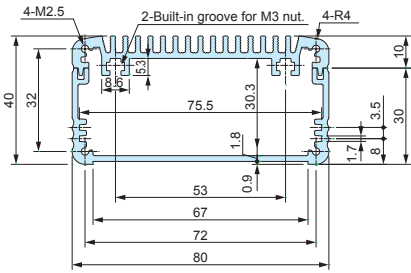
**EXH • EXHF heat-sink top cover / bottom frame**

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

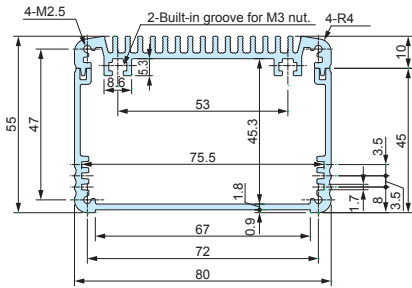
EXH8-3-□



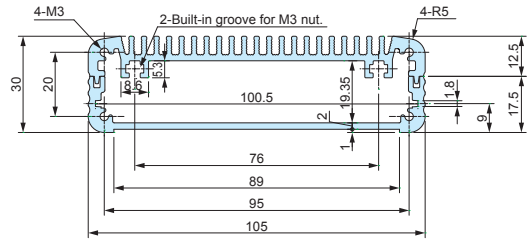
EXH8-4-□



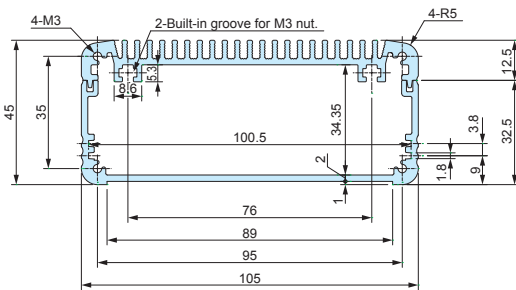
EXH8-6-□



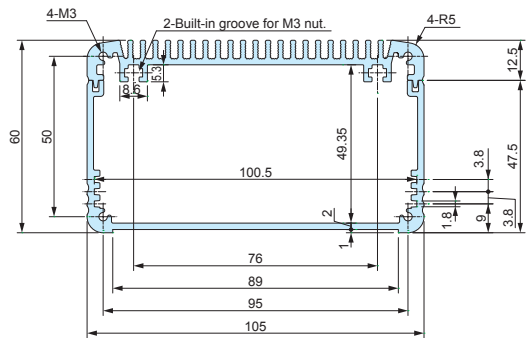
EXH11-3-□



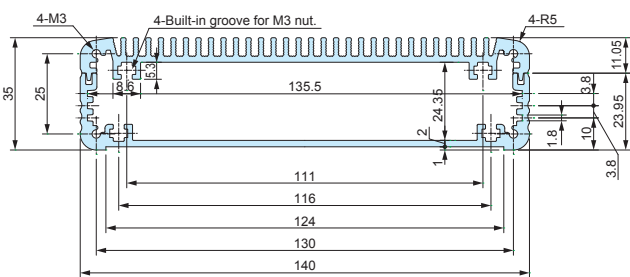
EXH11-5-□



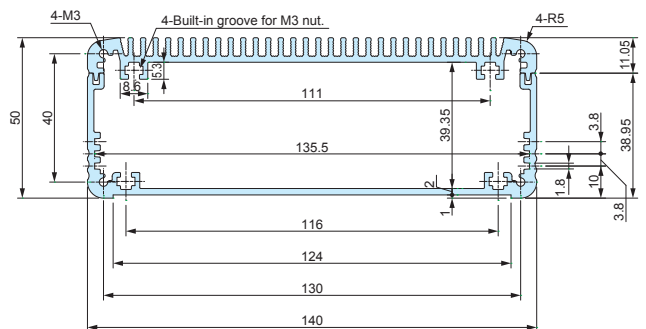
EXH11-6-□



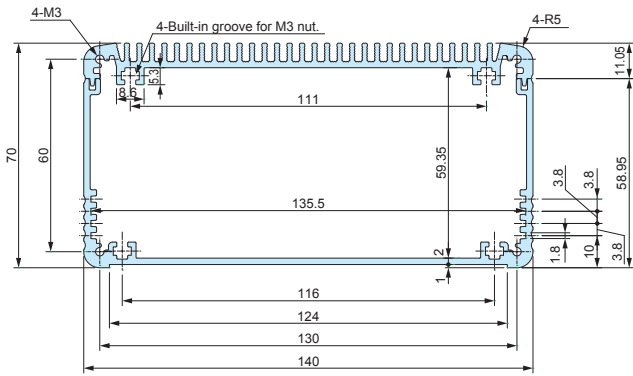
EXH14-4-□



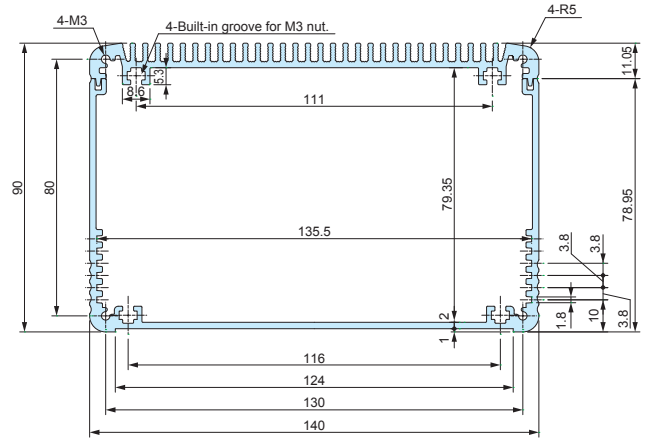
EXH14-5-□



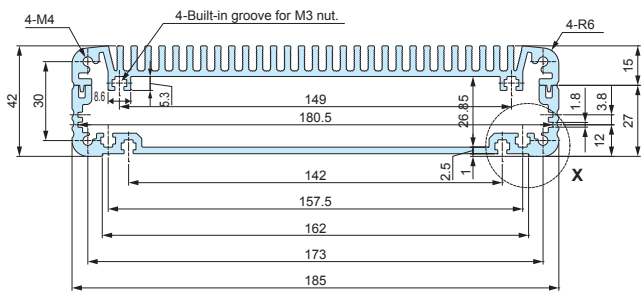
EXH14-7-□



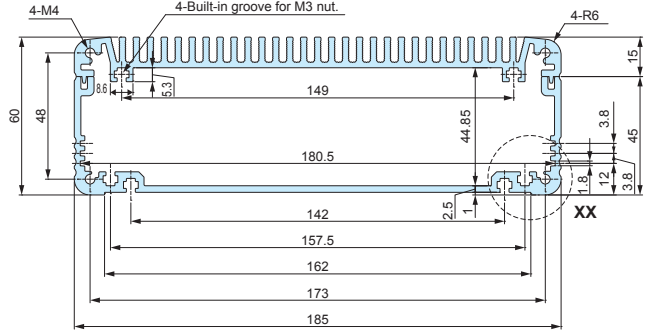
EXH14-9-□



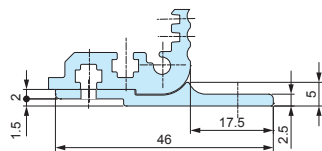
EXH • EXHF19-4-□



EXH • EXHF19-6-□

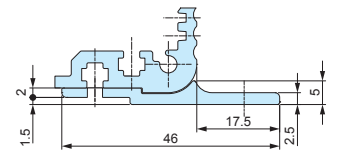


Flange bracket dimensions for EXHF series.



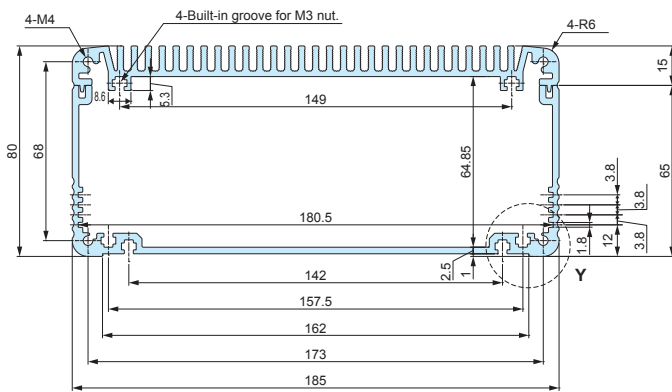
detail X (enlarged)

Flange bracket dimensions for EXHF series.

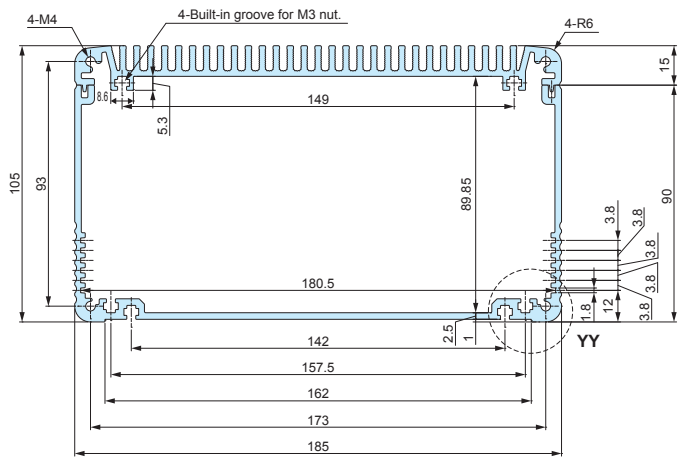


detail XX (enlarged)

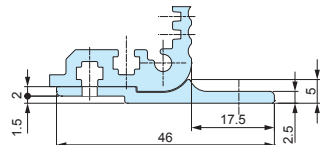
EXH • EXHF19-8-□



EXH • EXHF19-11-□

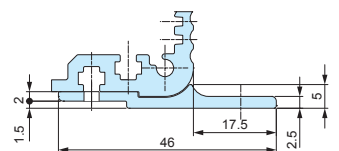


Flange bracket dimensions for EXHF series.



detail Y (enlarged)

Flange bracket dimensions for EXHF series.

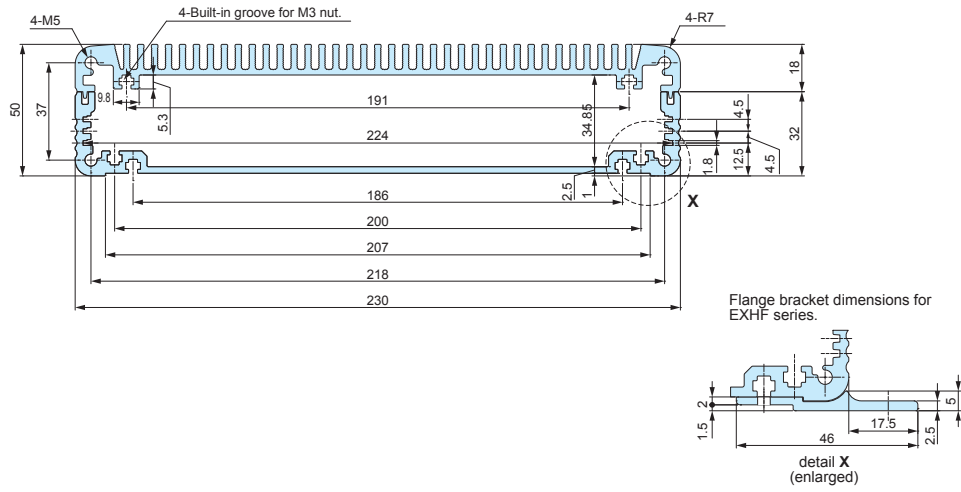


detail YY (enlarged)

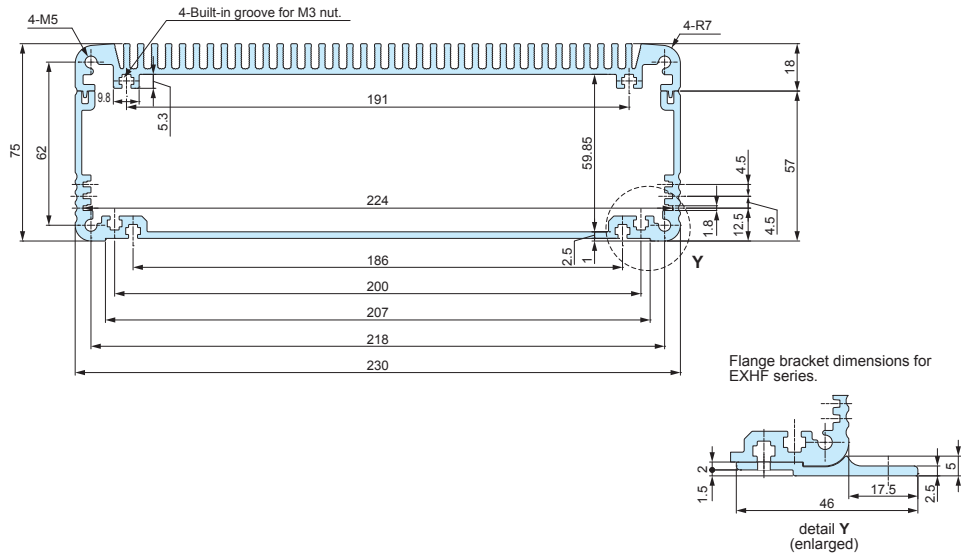
EXH • EXHF heat-sink top cover / bottom frame

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

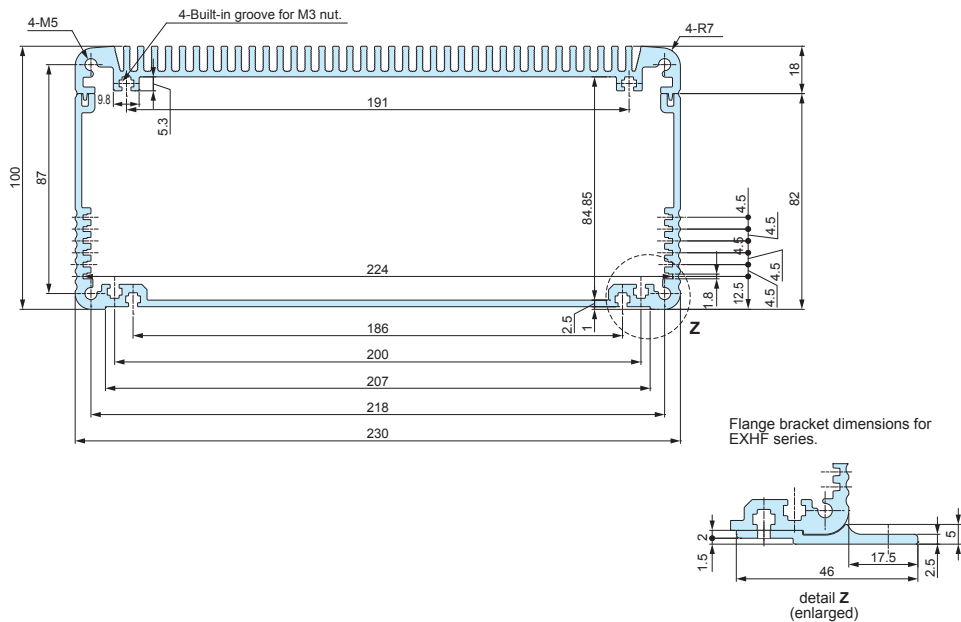
EXH • EXHF23-5-□



EXH • EXHF23-8-□



EXH • EXHF23-10-□



EF SERIES

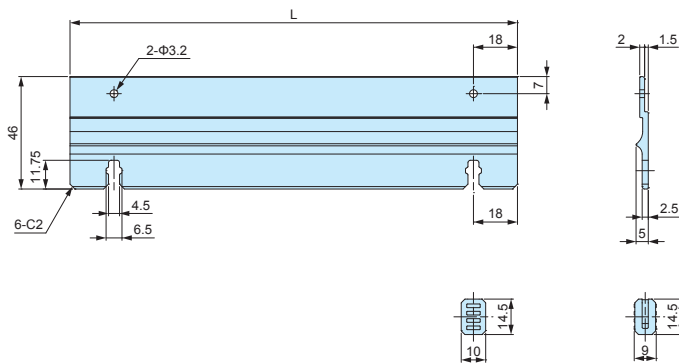
WALL MOUNTING BRACKET for EX • EXH



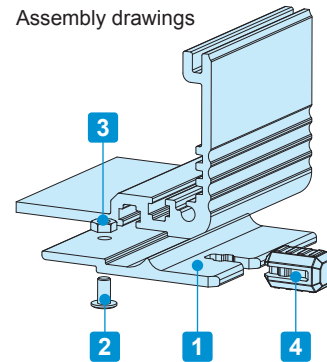
APPLICATION EXAMPLE



- 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

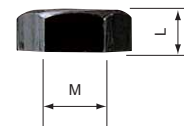
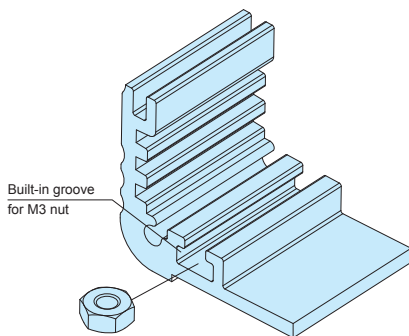
No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Screw	4	Steel M3-6	Black trivalent chromate
3	Nut	4	Steel	Black trivalent chromate
4	Rubber feet	4	Silicone	Black

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.

# AWA SERIES HEAT-SINK ALUMINIUM ENCLOSURE

AWA series is an aluminium enclosure that has a frame with heat-sink fins on both sides. Furthermore, the enclosure is also conductive, which provides a shielding effect.

By machining the panels, the unit becomes extremely suitable to be used as high-end audio, or as an industrial equipment.

## APPLICATION EXAMPLE

### INDUSTRIAL IoT INTERFACE DEVICE

Product by SEE Système Radio (France)





## INDUSTRIAL FANLESS PC



## AUDIO AMPLIFIER



## WIDE-BAND SOLID STATE OPTICAL AMPLIFIER

Product by Spectra Quest Lab. (Japan)

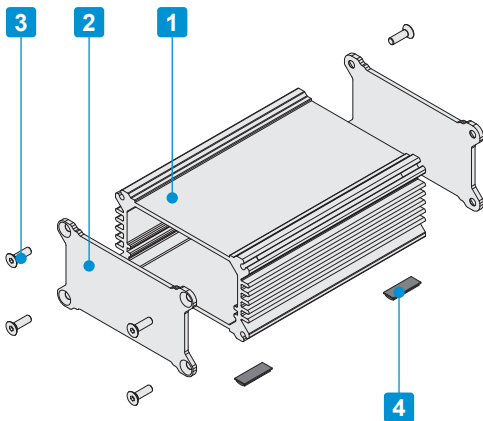
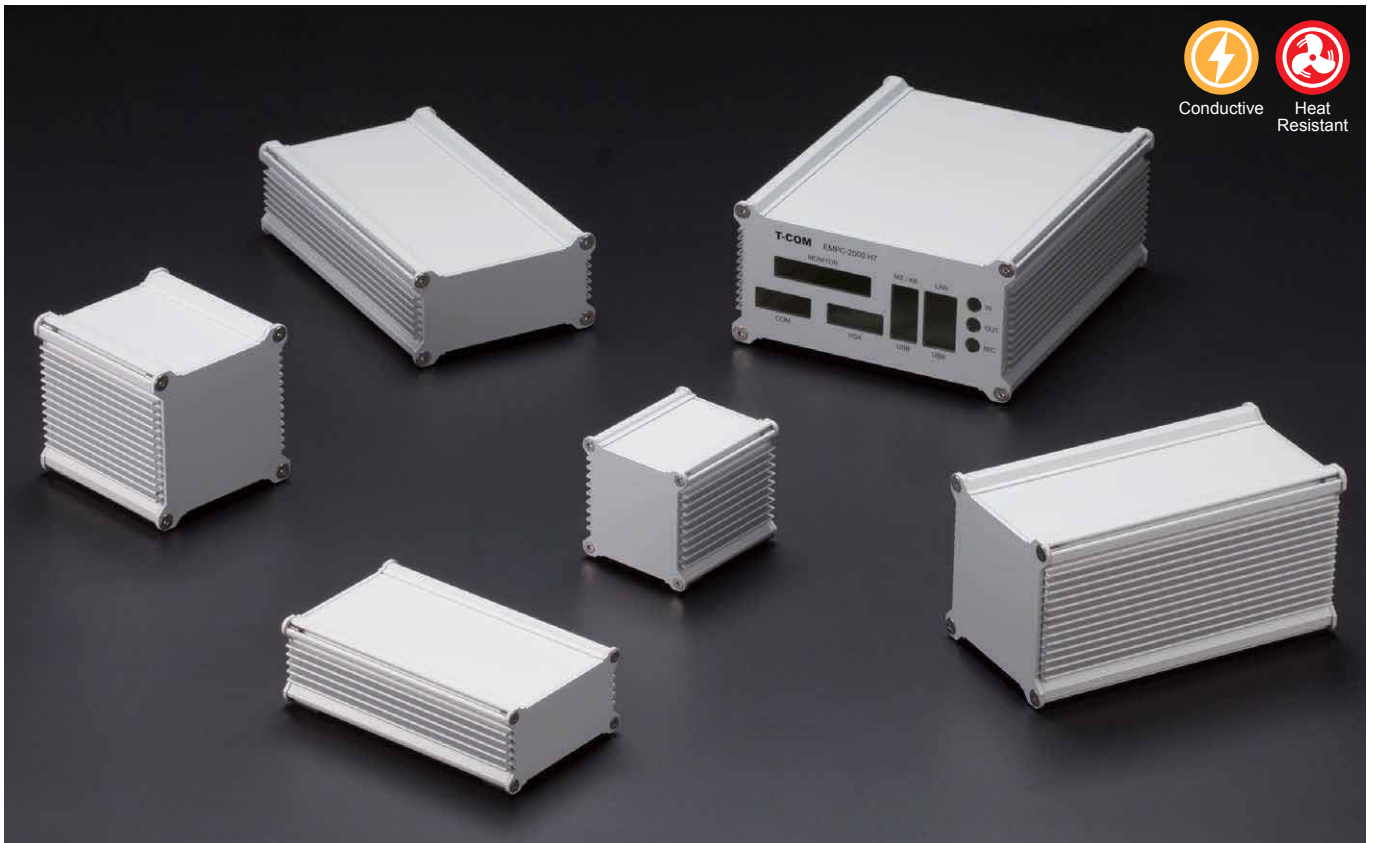


## CUSTOMIZATION

CNC milling available for customization on AWA series.  
See website for more details.







- Extruded aluminium frame manufactured with heat-sink sides.
- Silver anodized end panels makes for a luxurious finish.
- Conductivity is achieved by utilizing the contact between the unfinished end panels side, and the unfinished ends of the frame.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Suitable for industrial fanless PC, measuring instrument, digital audio amplifier and so on.

Included screws :  
 AWA5-3, 6-6, 8-4 models : Hex countersunk M3-10 x 8 pcs  
 AWA8-8, 10-5, 12-7, 15-8 models : Hex countersunk M4-10 x 8 pcs  
 AWA20-8 models : Hex countersunk M5-10 x 8 pcs  
 ※Hexagonal wrench included.

Component

No.	Part name	Pcs	Material	Color / Finish
1	Body frame	1	Extruded aluminium A6063S-T5	Silver / Anodized
2	End panel	2	Aluminium A1050P	Silver / Anodized (outside) : Unfinished (inside)
3	Hex socket screw	8	Stainless steel	Unfinished
4	Rubber feet	4	Polyurethane	Black

Accessories (Optional parts)

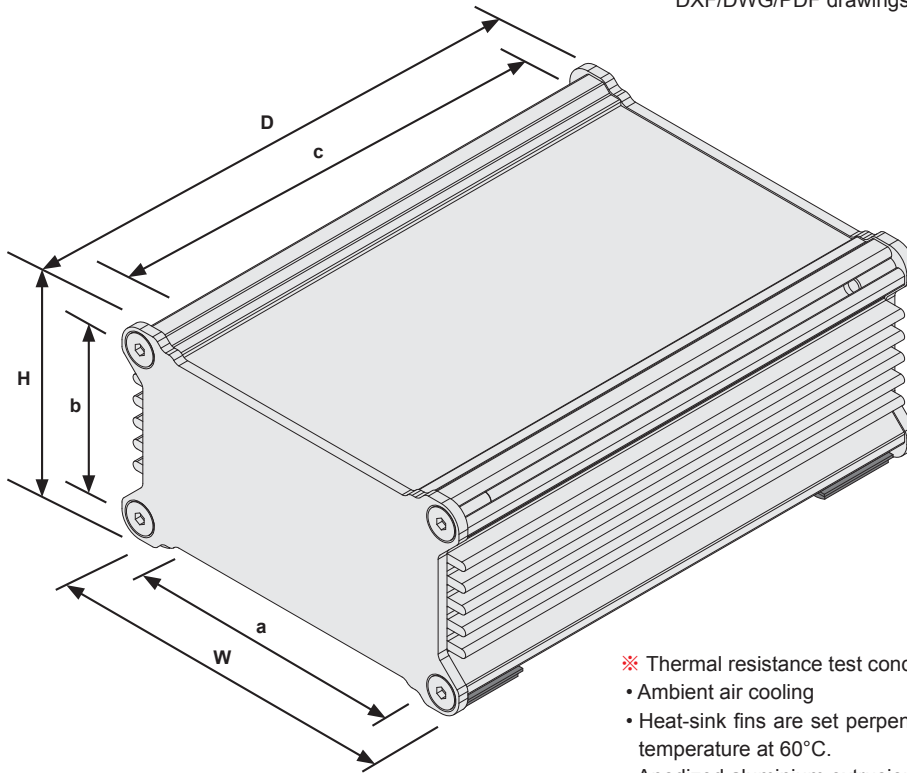


Mounting plate AWC series  
See page 170



Aluminium isolation feet AFS • AFM series  
See page AFS • AFM-1 ~ AFS • AFM-2

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



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

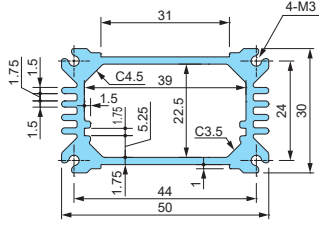
Product no. / Dimensions

Product no.	Dimensions (External)			Dimensions (Internal)			※ Thermal resistance rate (°C/W)	Weight (g)
	W	H	D	a	b	c		
AWA 5-3- 5SS	52	32	53.2	39	22.5	49.2	11.2	69.5
AWA 5-3- 7SS	52	32	73.2	39	22.5	69.2	9.18	90.5
AWA 5-3-10SS	52	32	98.2	39	22.5	94.2	7.64	116.5
AWA 5-3-12SS	52	32	123.2	39	22.5	119.2	6.63	142.5
AWA 6-6- 7SS	61	61	68	47	51	64	4.41	156
AWA 6-6-10SS	61	61	98	47	51	94	3.5	212
AWA 6-6-14SS	61	61	138	47	51	134	2.83	286
AWA 6-6-19SS	61	61	188	47	51	184	2.33	379
AWA 6-6-24SS	61	61	238	47	51	234	2.02	471.5
AWA 8-4- 8SS	76	41	78	62	31	74	5.97	154
AWA 8-4-10SS	76	41	103	62	31	99	5.01	195
AWA 8-4-13SS	76	41	128	62	31	124	4.37	236.5
AWA 8-4-16SS	76	41	163	62	31	159	3.76	294
AWA 8-8- 9SS	82	82	86	66.5	66.5	81	3.1	319.5
AWA 8-8-11SS	82	82	111	66.5	66.5	106	2.63	392.5
AWA 8-8-16SS	82	82	156	66.5	66.5	151	2.12	523.5
AWA 8-8-21SS	82	82	206	66.5	66.5	201	1.79	669.5
AWA 8-8-26SS	82	82	261	66.5	66.5	256	1.54	829.5
AWA10-5-10SS	102	52	95.6	86.5	36.5	90.6	4.52	288.5
AWA10-5-14SS	102	52	135.6	86.5	36.5	130.6	3.62	387.5
AWA10-5-18SS	102	52	175.6	86.5	36.5	170.6	3.08	486
AWA10-5-23SS	102	52	225.6	86.5	36.5	220.6	2.64	609
AWA12-7- 9SS	115.7	67	90.6	100.2	51.5	85.6	3.6	354
AWA12-7-12SS	115.7	67	125.6	100.2	51.5	120.6	2.93	460
AWA12-7-17SS	115.7	67	165.1	100.2	51.5	160.1	2.47	579.5
AWA12-7-20SS	115.7	67	200.6	100.2	51.5	195.6	2.18	687
AWA15-8-12SS	152	77	120.6	136.5	61.5	115.6	2.64	565.5
AWA15-8-16SS	152	77	160.6	136.5	61.5	155.6	2.2	712
AWA15-8-21SS	152	77	210.6	136.5	61.5	205.6	1.86	895.5
AWA15-8-26SS	152	77	260.6	136.5	61.5	255.6	1.63	1,079
AWA20-8-15SS	202.4	77.4	153.8	186.5	61.5	147.8	2.3	854.5
AWA20-8-19SS	202.4	77.4	193.8	186.5	61.5	187.8	1.99	1,025
AWA20-8-24SS	202.4	77.4	243.8	186.5	61.5	237.8	1.72	1,238
AWA20-8-29SS	202.4	77.4	293.8	186.5	61.5	287.8	1.54	1,451.5

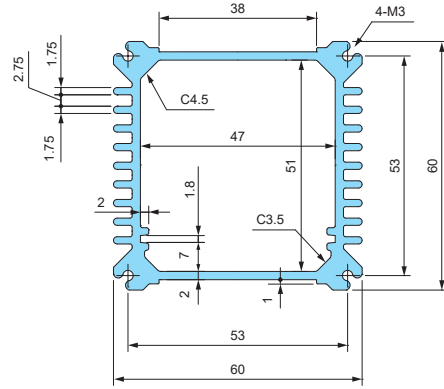
AW • AWN • AWP • AWA frame

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

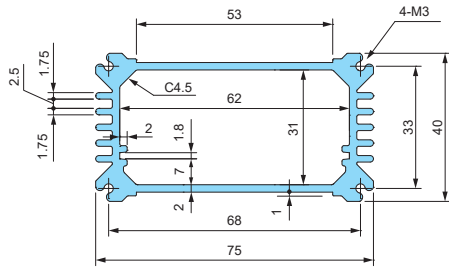
AW/AWN5-4-□  
AWA5-3-□



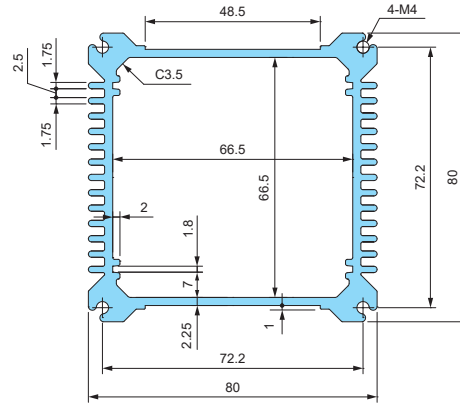
AW/AWN/AWP7-7-□  
AWA6-6-□



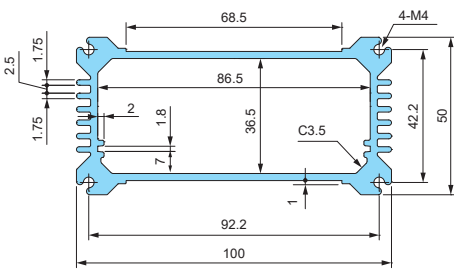
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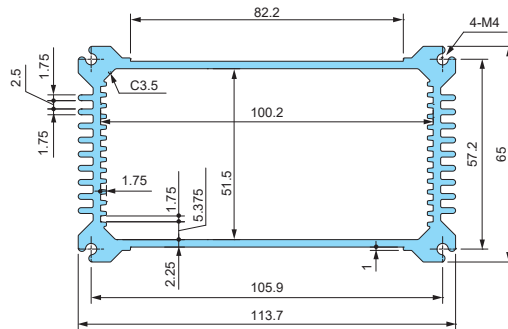
AW/AWN/AWP9-9-□  
AWA8-8-□



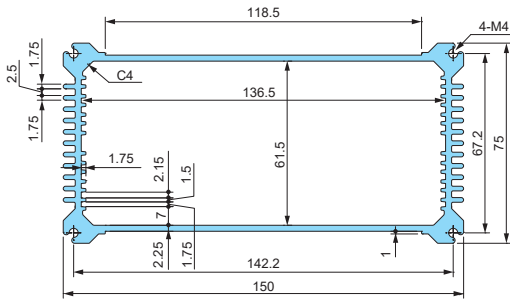
AW/AWN/AWP11-6-□  
AWA10-5-□



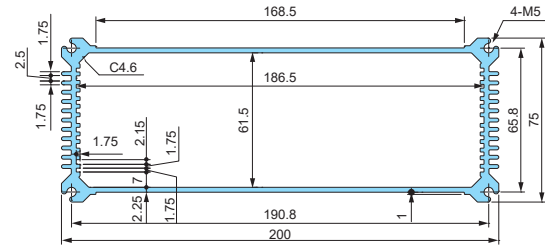
AW/AWN/AWP12-8-□  
AWA12-7-□



AW/AWN/AWP16-9-□  
AWA15-8-□



AW/AWN/AWP21-9-□  
AWA20-8-□



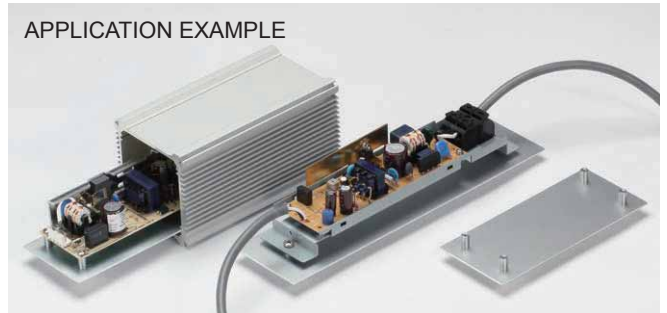
- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

Product no.				Frame	※Thermal resistance rate (°C/W)
AW 5-4- 7	AWN 5-4- 7	—	AWA 5-3- 5	49.2	11.2
AW 5-4- 9	AWN 5-4- 9	—	AWA 5-3- 7	69.2	9.18
AW 5-4-11	AWN 5-4-11	—	AWA 5-3-10	94.2	7.64
AW 5-4-14	AWN 5-4-14	—	AWA 5-3-12	119.2	6.63
AW 7-7- 8	AWN 7-7- 8	AWP 7-7- 8	AWA 6-6- 7	64	4.41
AW 7-7-11	AWN 7-7-11	AWP 7-7-11	AWA 6-6-10	94	3.5
AW 7-7-15	AWN 7-7-15	AWP 7-7-15	AWA 6-6-14	134	2.83
AW 7-7-20	AWN 7-7-20	AWP 7-7-20	AWA 6-6-19	184	2.33
AW 7-7-25	AWN 7-7-25	AWP 7-7-25	AWA 6-6-24	234	2.02
AW 8-5- 9	AWN 8-5- 9	AWP 8-5- 9	AWA 8-4- 8	74	5.97
AW 8-5-12	AWN 8-5-12	AWP 8-5-12	AWA 8-4-10	99	5.01
AW 8-5-14	AWN 8-5-14	AWP 8-5-14	AWA 8-4-13	124	4.37
AW 8-5-18	AWN 8-5-18	AWP 8-5-18	AWA 8-4-16	159	3.76
AW 9-9-10	AWN 9-9-10	AWP 9-9-10	AWA 8-8- 9	81	3.1
AW 9-9-13	AWN 9-9-13	AWP 9-9-13	AWA 8-8-11	106	2.63
AW 9-9-17	AWN 9-9-17	AWP 9-9-17	AWA 8-8-16	151	2.12
AW 9-9-22	AWN 9-9-22	AWP 9-9-22	AWA 8-8-21	201	1.79
AW 9-9-28	AWN 9-9-28	AWP 9-9-28	AWA 8-8-26	256	1.54
AW11-6-11	AWN11-6-11	AWP11-6-11	AWA10-5-10	90.6	4.52
AW11-6-15	AWN11-6-15	AWP11-6-15	AWA10-5-14	130.6	3.62
AW11-6-19	AWN11-6-19	AWP11-6-19	AWA10-5-18	170.6	3.08
AW11-6-24	AWN11-6-24	AWP11-6-24	AWA10-5-23	220.6	2.64
AW12-8-11	AWN12-8-11	AWP12-8-11	AWA12-7- 9	85.6	3.6
AW12-8-14	AWN12-8-14	AWP12-8-14	AWA12-7-12	120.6	2.93
AW12-8-17	AWN12-8-17	AWP12-8-17	AWA12-7-17	160.1	2.47
AW12-8-22	AWN12-8-22	AWP12-8-22	AWA12-7-20	195.6	2.18
AW16-9-14	AWN16-9-14	AWP16-9-14	AWA15-5-12	115.6	2.64
AW16-9-18	AWN16-9-18	AWP16-9-18	AWA15-8-16	155.6	2.2
AW16-9-23	AWN16-9-23	AWP16-9-23	AWA15-8-21	205.6	1.86
AW16-9-28	AWN16-9-28	AWP16-9-28	AWA15-8-26	255.6	1.63
AW21-9-17	AWN21-9-17	AWP21-9-17	AWA20-8-15	147.8	2.3
AW21-9-21	AWN21-9-21	AWP21-9-21	AWA20-8-19	187.8	1.99
AW21-9-26	AWN21-9-26	AWP21-9-26	AWA20-8-24	237.8	1.72
AW21-9-31	AWN21-9-31	AWP21-9-31	AWA20-8-29	287.8	1.54



**AWC SERIES**

**ALUMINIUM MOUNTING PLATE**

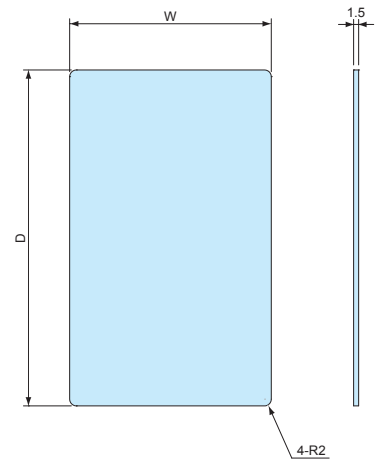


- Material: Aluminium A1050P t=1.5 / Silver anodized
- Mounting plate for AW, AWN, AWP, and AWA series enclosures.
- Utilize for mounting PCB, power supply, terminal blocks, etc.

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

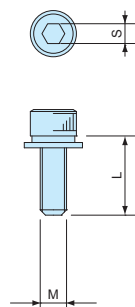
**Product no. / Dimensions**

Product no.	W	D	Suitable enclosure
AWC 5- 7	38.9	49.2	AW • AWN 5-4-7 • AWA 5-3-5
AWC 5- 9	38.9	69.2	AW • AWN 5-4-9 • AWA 5-3-7
AWC 5-11	38.9	94.2	AW • AWN 5-4-11 • AWA 5-3-10
AWC 5-14	38.9	119.2	AW • AWN 5-4-14 • AWA 5-3-12
AWC 7- 8	47	64	AW • AWN • AWP 7-7-8 • AWA 6-6- 7
AWC 7-11	47	94	AW • AWN • AWP 7-7-11 • AWA 6-6-10
AWC 7-15	47	134	AW • AWN • AWP 7-7-15 • AWA 6-6-14
AWC 7-20	47	184	AW • AWN • AWP 7-7-20 • AWA 6-6-19
AWC 7-25	47	234	AW • AWN • AWP 7-7-25 • AWA 6-6-24
AWC 8- 9	61.8	74	AW • AWN • AWP 8-5-9 • AWA 8-4-8
AWC 8-12	61.8	99	AW • AWN • AWP 8-5-12 • AWA 8-4-10
AWC 8-14	61.8	124	AW • AWN • AWP 8-5-14 • AWA 8-4-13
AWC 8-18	61.8	159	AW • AWN • AWP 8-5-18 • AWA 8-4-16
AWC 9-10	66.5	81	AW • AWN • AWP 9-9-10 • AWA 8-8-9
AWC 9-13	66.5	106	AW • AWN • AWP 9-9-13 • AWA 8-8-11
AWC 9-17	66.5	151	AW • AWN • AWP 9-9-17 • AWA 8-8-16
AWC 9-22	66.5	201	AW • AWN • AWP 9-9-22 • AWA 8-8-21
AWC 9-28	66.5	256	AW • AWN • AWP 9-9-28 • AWA 8-8-26
AWC11-11	86.5	90.6	AW • AWN • AWP11-6-11 • AWA10-5-10
AWC11-15	86.5	130.6	AW • AWN • AWP11-6-15 • AWA10-5-14
AWC11-19	86.5	170.6	AW • AWN • AWP11-6-19 • AWA10-5-18
AWC11-24	86.5	220.6	AW • AWN • AWP11-6-24 • AWA10-5-23
AWC12-11	100.2	85.6	AW • AWN • AWP12-8-11 • AWA12-7-9
AWC12-14	100.2	120.6	AW • AWN • AWP12-8-14 • AWA12-7-12
AWC12-17	100.2	160.1	AW • AWN • AWP12-8-17 • AWA12-7-17
AWC12-22	100.2	195.6	AW • AWN • AWP12-8-22 • AWA12-7-20
AWC16-14	136.3	115.6	AW • AWN • AWP16-9-14 • AWA15-8-12
AWC16-18	136.3	155.6	AW • AWN • AWP16-9-18 • AWA15-8-16
AWC16-23	136.3	205.6	AW • AWN • AWP16-9-23 • AWA15-8-21
AWC16-28	136.3	255.6	AW • AWN • AWP16-9-28 • AWA15-8-26
AWC21-17	186.1	147.8	AW • AWN • AWP21-9-17 • AWA20-8-15
AWC21-21	186.1	187.8	AW • AWN • AWP21-9-21 • AWA20-8-19
AWC21-26	186.1	237.8	AW • AWN • AWP21-9-26 • AWA20-8-24
AWC21-31	186.1	287.8	AW • AWN • AWP21-9-31 • AWA20-8-29



**HCS SERIES**

**HEXAGON SOCKET HEAD SCREW**



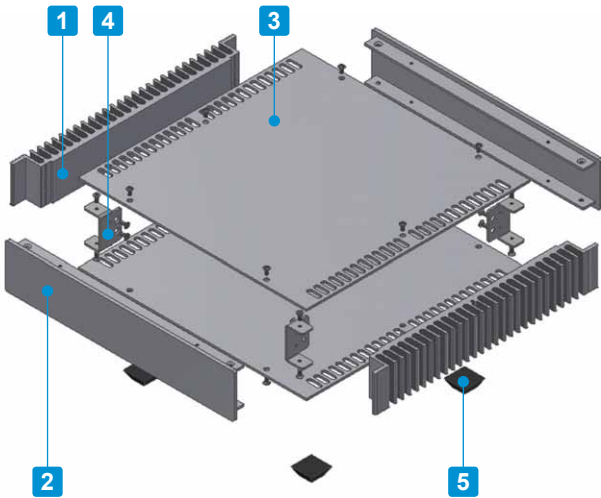
- Hexagon socket head screws for fastening the end panels of AW and AWN enclosures.
- Utilize for tamper-resistance functionality or for an elegant sleek look.

**Product no. / Dimensions**

Product no.	M	L	S	Material	Pack of
HCS3-12S	3	12	2.5	Stainless steel	8
HCS4-12S	4	12	3	Stainless steel	8
HCS5-12S	5	12	4	Stainless steel	8



HYR series Rack Mount  
HYRH series Rack Mount with handle  
Variations of HY series, HYR and HYRH series are also available. See website for more details.



- Stylish and elegantly designed with a hairline finish.
- Excellent cooling performance with the heat-sink side plates.
- Now available in 56 sizes, and 2 different colors.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.
- Flat back heat-sink plates for more effective heat spreading.

Included screws

BB color type  
M3-6 countersunk • Black trivalent chromate x 16 pcs  
M3-5 Slotted raised countersunk • Black trivalent chromate x 12 pcs

SS color type  
M3-6 countersunk • Nickel plated x 16 pcs  
M3-5 Slotted raised countersunk • Nickel plated x 12 pcs

Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Corner support	4	Steel SPCC t=1.6	Trivalent chromate
5	Rubber feet	4	Polyurethane	Black

※HL = Hairline brushed

Accessories (Optional parts)



Mounting plate HYC series  
See page HYC • HYCL-1



L-bracket HYCL series  
See page HYC • HYCL-1



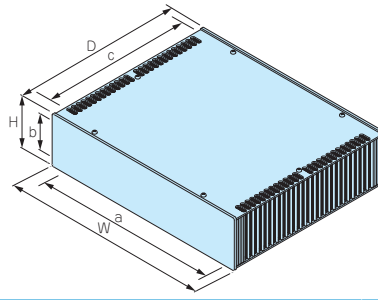
Aluminium isolation feet AFS • AFM series  
See page AFS • AFM-1 ~ 2



TORX screw - for top / bottom cover MR3-5Z series  
See page HY • HYR • HYRH-2



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



Product no.		Dimensions (External)			Dimensions (Internal)			Weight (kg)
● Silver	● Black	W	H	D	a	b	c	
HY 44-23-23SS	HY 44-23-23BB	230	44	231	186	36	225	1.1
HY 44-23-33SS	HY 44-23-33BB	230	44	330	186	36	324	1.6
HY 44-28-23SS	HY 44-28-23BB	280	44	231	196	36	225	1.4
HY 44-28-33SS	HY 44-28-33BB	280	44	330	196	36	324	1.9
HY 44-33-23SS	HY 44-33-23BB	330	44	231	286	36	225	1.5
HY 44-33-33SS	HY 44-33-33BB	330	44	330	286	36	324	2.2
HY 44-43-23SS	HY 44-43-23BB	430	44	231	386	36	225	1.9
HY 44-43-33SS	HY 44-43-33BB	430	44	330	386	36	324	2.6
HY 70-23-23SS	HY 70-23-23BB	230	70	231	186	62	225	1.6
HY 70-23-33SS	HY 70-23-33BB	230	70	330	186	62	324	2.2
HY 70-28-23SS	HY 70-28-23BB	280	70	231	196	62	225	1.8
HY 70-28-33SS	HY 70-28-33BB	280	70	330	196	62	324	2.5
HY 70-33-23SS	HY 70-33-23BB	330	70	231	286	62	225	2.0
HY 70-33-33SS	HY 70-33-33BB	330	70	330	286	62	324	2.8
HY 70-43-23SS	HY 70-43-23BB	430	70	231	386	62	225	2.3
HY 70-43-33SS	HY 70-43-33BB	430	70	330	386	62	324	3.2
HY 88-23-23SS	HY 88-23-23BB	230	88	231	186	80	225	1.9
HY 88-23-33SS	HY 88-23-33BB	230	88	330	186	80	324	2.6
HY 88-28-23SS	HY 88-28-23BB	280	88	231	196	80	225	2.1
HY 88-28-33SS	HY 88-28-33BB	280	88	330	196	80	324	2.8
HY 88-33-23SS	HY 88-33-23BB	330	88	231	286	80	225	2.3
HY 88-33-33SS	HY 88-33-33BB	330	88	330	286	80	324	3.1
HY 88-43-23SS	HY 88-43-23BB	430	88	231	386	80	225	2.7
HY 88-43-33SS	HY 88-43-33BB	430	88	330	386	80	324	3.6
HY 99-23-23SS	HY 99-23-23BB	230	99	231	186	91	225	2.1
HY 99-23-33SS	HY 99-23-33BB	230	99	330	186	91	324	2.7
HY 99-28-23SS	HY 99-28-23BB	280	99	231	196	91	225	2.3
HY 99-28-33SS	HY 99-28-33BB	280	99	330	196	91	324	3.1
HY 99-33-23SS	HY 99-33-23BB	330	99	231	286	91	225	2.5
HY 99-33-33SS	HY 99-33-33BB	330	99	330	286	91	324	3.4
HY 99-43-23SS	HY 99-43-23BB	430	99	231	386	91	225	2.9
HY 99-43-33SS	HY 99-43-33BB	430	99	330	386	91	324	3.9
HY133-23-23SS	HY133-23-23BB	230	132.5	231	186	124.5	225	2.6
HY133-23-33SS	HY133-23-33BB	230	132.5	330	186	124.5	324	3.4
HY133-28-23SS	HY133-28-23BB	280	132.5	231	196	124.5	225	2.8
HY133-28-33SS	HY133-28-33BB	280	132.5	330	196	124.5	324	3.8
HY133-33-23SS	HY133-33-23BB	330	132.5	231	286	124.5	225	3.0
HY133-33-33SS	HY133-33-33BB	330	132.5	330	286	124.5	324	4.1
HY133-43-23SS	HY133-43-23BB	430	132.5	231	386	124.5	225	3.5
HY133-43-33SS	HY133-43-33BB	430	132.5	330	386	124.5	324	4.7
HY149-23-23SS	HY149-23-23BB	230	149	231	186	141	225	2.8
HY149-23-33SS	HY149-23-33BB	230	149	330	186	141	324	3.8
HY149-28-23SS	HY149-28-23BB	280	149	231	196	141	225	3.1
HY149-28-33SS	HY149-28-33BB	280	149	330	196	141	324	4.2
HY149-33-23SS	HY149-33-23BB	330	149	231	286	141	225	3.3
HY149-33-33SS	HY149-33-33BB	330	149	330	286	141	324	4.5
HY149-43-23SS	HY149-43-23BB	430	149	231	386	141	225	3.8
HY149-43-33SS	HY149-43-33BB	430	149	330	386	141	324	5.1
HY177-23-23SS	HY177-23-23BB	230	177	231	186	169	225	3.4
HY177-23-33SS	HY177-23-33BB	230	177	330	186	169	324	4.5
HY177-28-23SS	HY177-28-23BB	280	177	231	196	169	225	3.6
HY177-28-33SS	HY177-28-33BB	280	177	330	196	169	324	4.8
HY177-33-23SS	HY177-33-23BB	330	177	231	286	169	225	3.9
HY177-33-33SS	HY177-33-33BB	330	177	330	286	169	324	5.2
HY177-43-23SS	HY177-43-23BB	430	177	231	386	169	225	4.5
HY177-43-33SS	HY177-43-33BB	430	177	330	386	169	324	5.8

# HY SERIES APPLICATION EXAMPLE

## COMPLETE BALANCED SPECIAL TUNED DC HEADPHONE AMPLIFIER

Product by Sanyo Kasei (Japan)



## ENERGY CREATION POWER CONDITIONER DEVELOPMENT KIT

Product by Smart Energy Laboratory (Japan)



## LINEAR POWER SUPPLY Product by UpTone Audio (USA)



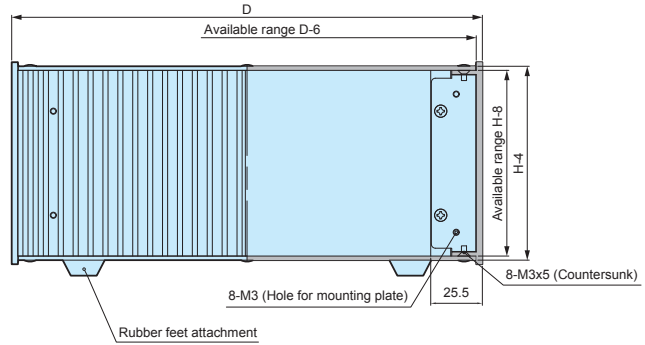
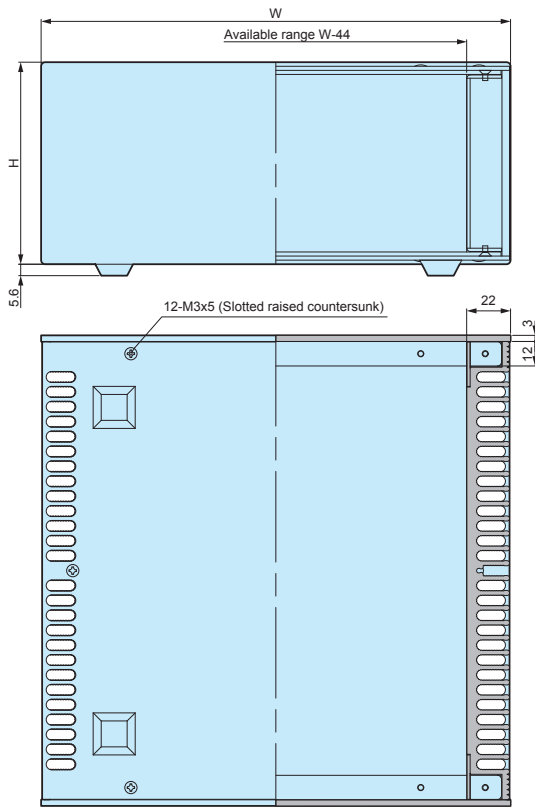
## INDUSTRIAL FANLESS COMPUTER

Product by Techno Veins (Japan)





**HY dimensions (outside view)**



Included screws

BB Color type

M3-6 countersunk screw, black trivalent chromate x 16 pcs

M3-5 Slotted raised countersunk screw, black trivalent chromate x 12 pcs

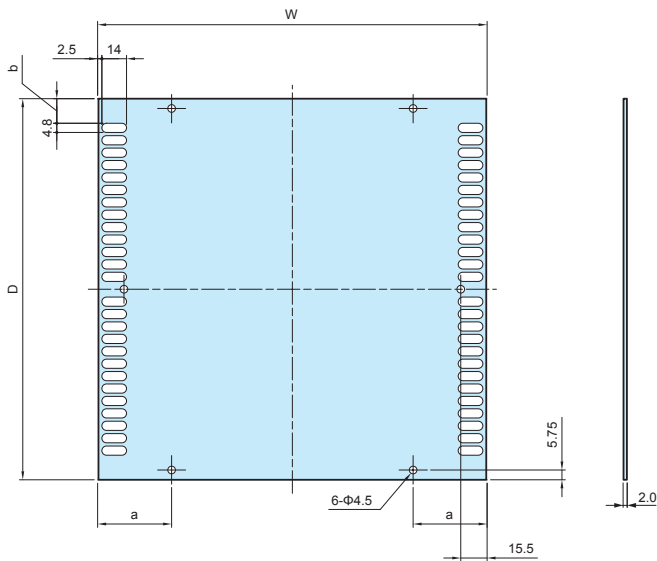
SS Color type

M3-6 countersunk screw, nickel plated x 16 pcs

M3-5 Slotted raised countersunk screw, nickel plated x 12 pcs

**Component Parts Drawings**

**HY • HYR • HYRH top / bottom cover**



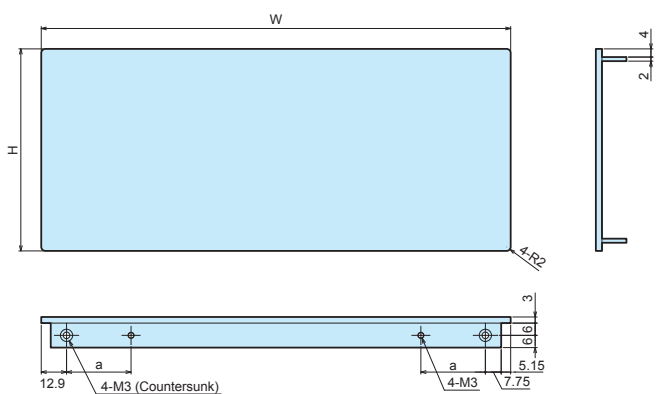
**Color Type**

Code	Material	Color / Finish
SS	Aluminium A1050P t = 2.0	Silver / Hairline brushed & Anodized
BB	Aluminium A1050P t = 2.0	Black / Hairline brushed & Anodized

**Dimensions**

Enclosure W x D	W	D	a	b
230 × 231	229	224.5	45.7	14.95
230 × 330	229	323.5	45.7	15.1
280 × 231	279	224.5	55.8	14.95
280 × 330	279	323.5	55.8	15.1
330 × 231	329	224.5	65.8	14.95
330 × 330	329	323.5	65.8	15.1
430 × 231	429	224.5	85.8	14.95
430 × 330	429	323.5	85.8	15.1

**HY front / rear panels & HYR • HYRH rear panel**



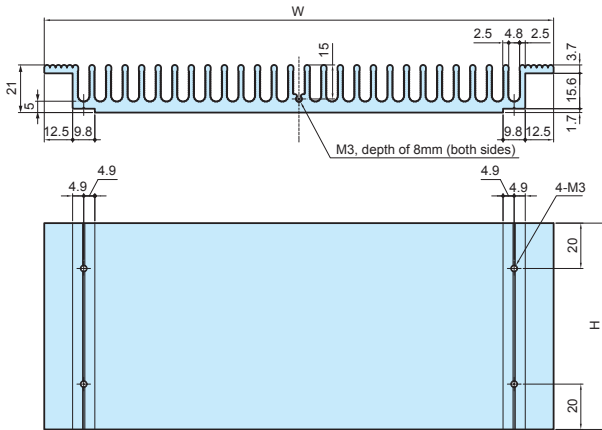
**Color Type**

Code	Material	Color / Finish
SS	Extruded aluminium A6063S-T5	Silver / Hairline brushed & Anodized
BB	Extruded aluminium A6063S-T5	Black / Hairline brushed & Anodized

**Dimensions**

Enclosure W	W	a	H(44)	H(70)	H(88)	H(99)	H(132.5)	H(149)	H(177)
230	230	33.3	44	70	88	99	132.5	149	177
280	280	43.4	44	70	88	99	132.5	149	177
330	330	53.4	44	70	88	99	132.5	149	177
430	430	73.4	44	70	88	99	132.5	149	177

**HY • HYR • HYRH heat-sink side plate**



**Color Type**

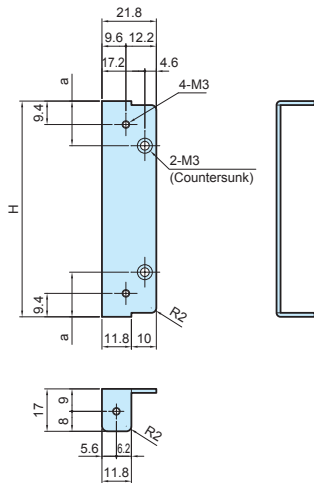
Code	Material	Color / Finish
SS	Extruded aluminium A6063S-T5	Silver / Anodized
BB	Extruded aluminium A6063S-T5	Black / Anodized

**Dimensions**

Enclosure D x H	W	H	Thermal resistance (°C/W)
231 × 44	224.6	36	2.41
330 × 44	323.6	36	1.89
231 × 70	224.6	62	1.49
330 × 70	323.6	62	1.36
231 × 88	224.6	80	1.49
330 × 88	323.6	80	1.17
231 × 99	224.6	91	1.38
330 × 99	323.6	91	1.08
231 × 132.5	224.6	124.5	1.14
330 × 132.5	323.6	124.5	0.89
231 × 149	224.6	141	1.06
330 × 149	323.6	141	0.83
231 × 177	224.6	169	0.95
330 × 177	323.6	169	0.74

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

**HY • HYR • HYRH corner support**



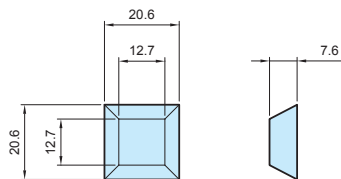
**Part Information**

Part name	Material	Finish
Corner support	Steel t=1.6	Trivalent chromate

**Dimensions**

Enclosure H	H	a
44	31.8	10.9
70	57.8	17.9
88	75.8	17.9
99	86.8	17.9
132.5	120.3	17.9
149	136.8	17.9
177	164.8	17.9

**HY • HYR • HYRH rubber feet**



**Part Information**

Part name	Material	Color
Rubber feet	Polyurethane	Black

**Accessories (Optional parts)**

**MR SERIES**

**SLOTTED RAISED COUNTERSUNK TORX SCREW**



- For use with top/bottom cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

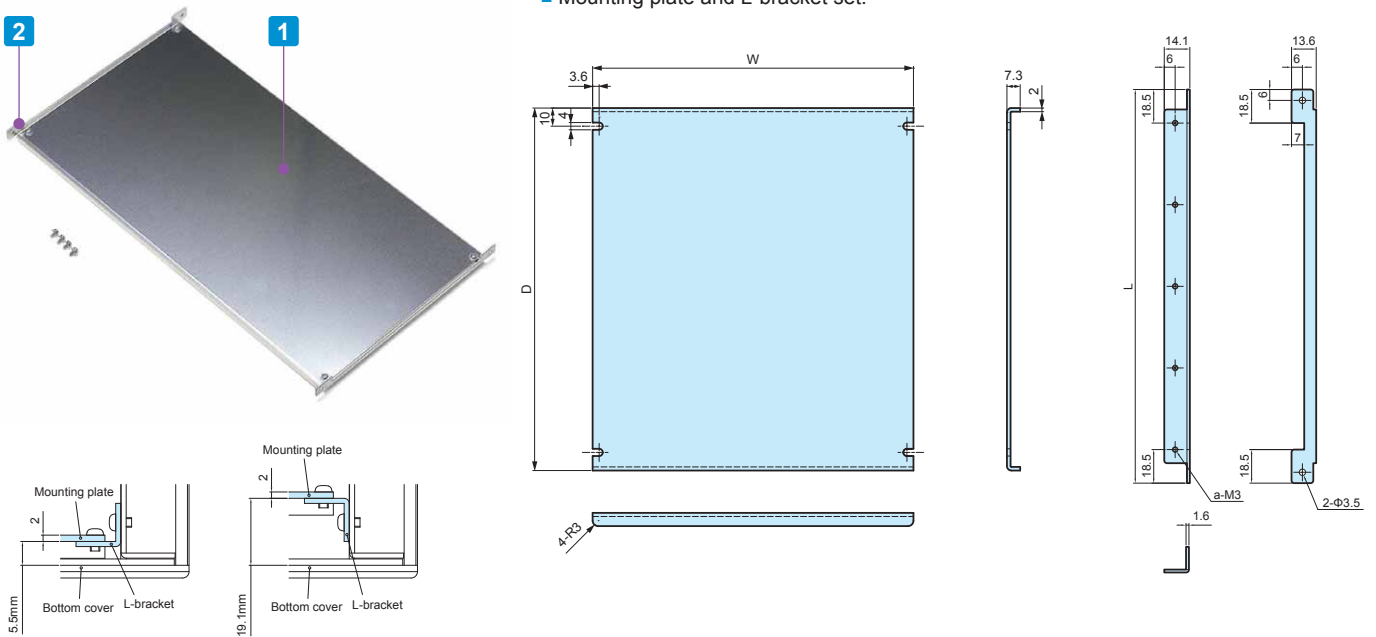
**Product no. / Dimensions**

Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

**HYC SERIES**

**MOUNTING PLATE for HY · HYR · HYRH**

■ Mounting plate and L-bracket set.



**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	L-bracket	2	Steel SPCC t=1.6	Tivalent chromate
?	Screw	1 set	Steel M3	Tivalent chromate

**Product no. / Dimensions**

Product no.	W	D	L	a	Suitable models	Weight (g)
HYC23-23	177	200	217	5	HY□-23-23	300
HYC23-28	227	200	217	5	HY□-28-23	350
HYC23-33	277	200	217	5	HY□-33-23	410
HYC23-43	377	200	217	5	HY□-43-23	520
HYC33-23	177	299	316	7	HY□-23-33	450
HYC33-28	227	299	316	7	HY□-28-33	550
HYC33-33	277	299	316	7	HY□-33-33	710
HYC33-43	377	299	316	7	HY□-43-33	800

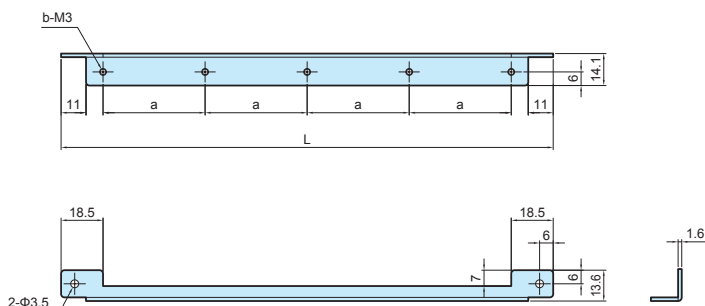


Clinching stud customization service available.

**HYCL SERIES**

**L-bracket for HY · HYR · HYRH**

- Simple L-bracket and screw set.
- Use with your original mounting plate or PCB.



**Components**

No.	Part name	Material	Color / Finish
1	L-bracket	Steel t=1.6	Tivalent chromate
2	Screw	Steel M3	Tivalent chromate

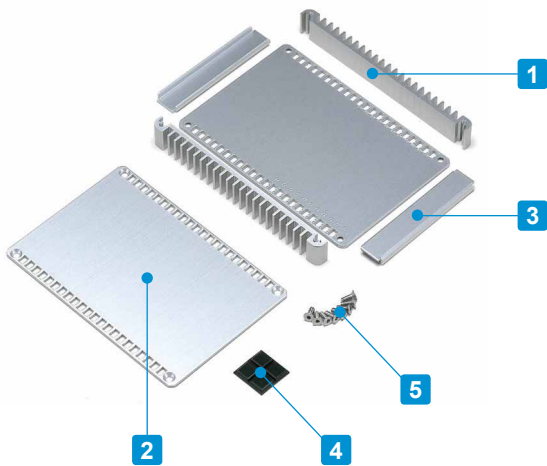
**Product no. / Dimensions**

Product no.	L	a	b	Pack of
HYCL-23	217	45	5	2
HYCL-33	316	46.5	7	2



- Heat dissipation and cooling via the utilization of extruded aluminium heat-sink side plates.
- Rounded corners gives it an elegant feel.
- Aluminium extrusion parts provides high structural durability.
- Suitable for use as small-type fanless PC, digital audio equipment, and so on.
- Available in both Silver and Black color types.

- Optional aluminium isolation feet, AFS and AFM series are available. See page AFS•AFM-1 ~ AFS•AFM-2 for more details.



Application example



Included screws  
 Enclosure (Silver) M3-8 Hexagonal countersunk : Stainless steel : Unfinished x 8 pcs  
 Enclosure (Black) M3-8 Hexagonal countersunk : Steel : Black trivalent chromate x 8 pcs  
 ※Hexagonal wrench included

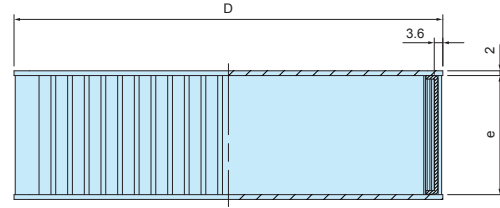
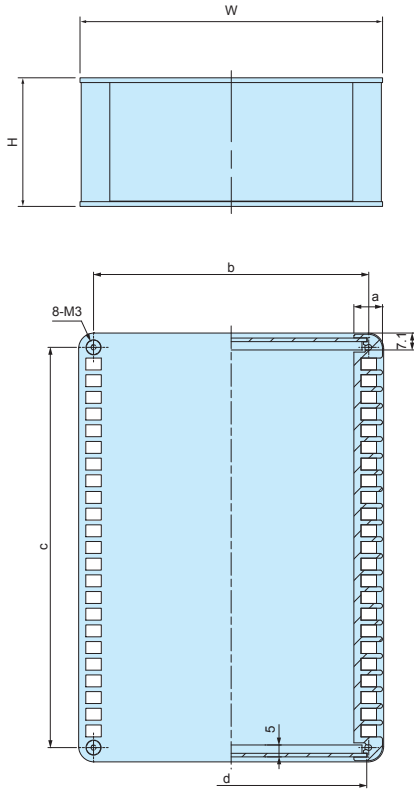
Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
3	Front • Rear panel	2	Aluminium A1050P t=1.5	Silver • Black / Hairline brushed & Anodized
4	Rubber feet	1 set	Polyurethane	Black
5	Screw	8	Stainless steel (SS color type) Steel (BB color type)	Unfinished Black trivalent chromate (Steel)



HIT dimensions

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



APPLICATION EXAMPLE

FIBER OPTICS EXTENSION UNIT

Product by Sanritz Automation (Japan)



AUDIO POWER SUPPLY for MacBook

Product by AY-densi (Japan)



Product no. / Dimensions

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

Product no.		W	H	D	a	b	c	d	e	※ Thermal resistance rate (°C/W)	Weight (g)
● Silver	● Black										
HIT 9-2-13SS	HIT 9-2-13BB	89	20	130	8	81	118.6	78.8	16	9.14	183
HIT 9-4-13SS	HIT 9-4-13BB	89	40	130	8	81	118.6	78.8	36	5.6	255
HIT13-3-13SS	HIT13-3-13BB	130	30	130	8	122	118.6	119.8	26	6.82	289
HIT13-5-13SS	HIT13-5-13BB	130	50	130	8	122	118.6	119.8	46	4.83	370
HIT18-4-13SS	HIT18-4-13BB	180	40	130	8	172	118.6	169.8	36	5.6	414
HIT18-6-13SS	HIT18-6-13BB	180	60	130	8	172	118.6	169.8	56	4.29	503
HIT13-3-18SS	HIT13-3-18BB	128	30	180	12	115.5	168	113.8	26	4.38	411
HIT13-5-18SS	HIT13-5-18BB	128	50	180	12	115.5	168	113.8	46	3.1	535
HIT17-4-18SS	HIT17-4-18BB	174	40	180	12	161.5	168	159.8	36	3.6	578
HIT17-6-18SS	HIT17-6-18BB	174	60	180	12	161.5	168	159.8	56	2.76	719
HIT23-5-18SS	HIT23-5-18BB	228	50	180	12	215.5	168	213.8	46	3.1	772
HIT23-7-18SS	HIT23-7-18BB	228	70	180	12	215.5	168	213.8	66	2.5	928



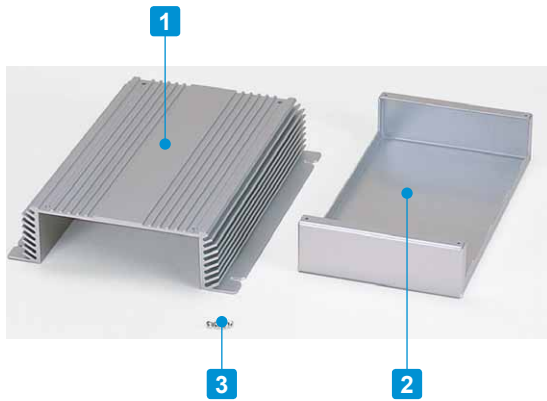
Heat Resistant



- Aluminium case with heat dissipating heat-sink cover for superior cooling effect.
- Recommended for use with equipment requiring heat dissipation.
- Manufactured with mounting flange for easy attachment onto walls and other surfaces.

**APPLICATION EXAMPLE**

**HIGH-END PERFORMANCE AUDIO AMPLIFIER**



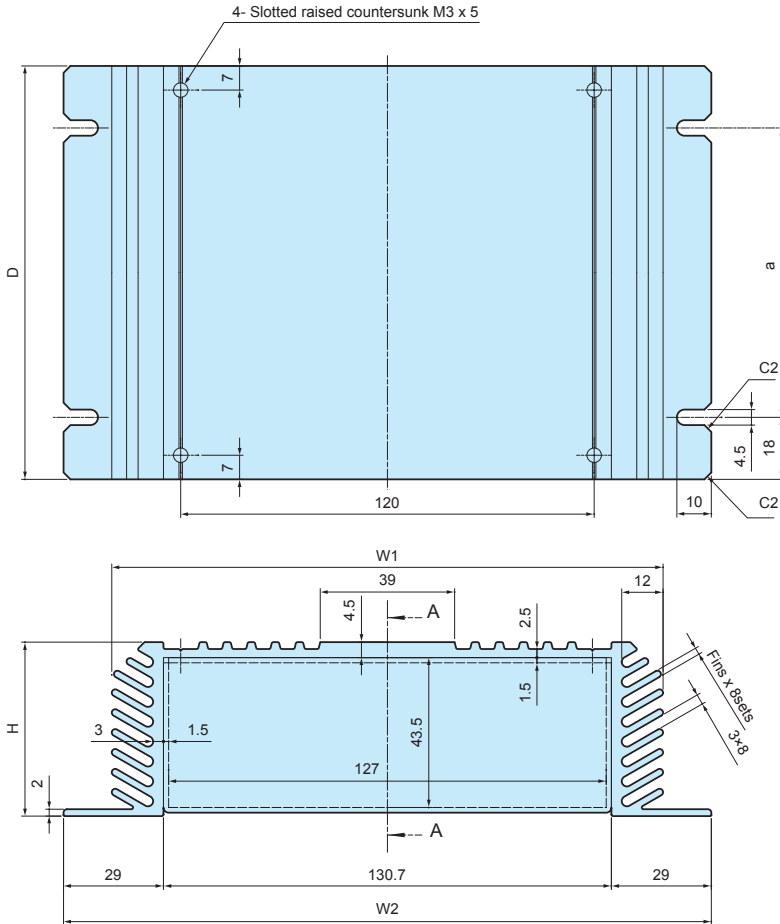
Product by: IC Technologies (Australia)

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Bottom chassis	1	Aluminium A1050P t=1.5	Silver • Black / Anodized
3	Screw	4	Steel M3-5	Nickel plated • Black trivalent chromate

HS dimensions

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



Product no. / Dimensions

Product no.		W1	W2	H	D	a	Thermal resistance (°C / W)	Weight (kg)
● Silver	● Black							
HS16-5-16S	HS16-5-16B	160	188.7	50.5	160	124	1.1	0.72
HS16-5-23S	HS16-5-23B	160	188.7	50.5	230	194	0.83	1.0
HS16-5-30S	HS16-5-30B	160	188.7	50.5	300	264	0.69	1.29

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

Accessories (Optional parts)

MR SERIES

SLOTTED RAISED COUNTERSUNK TORX SCREW



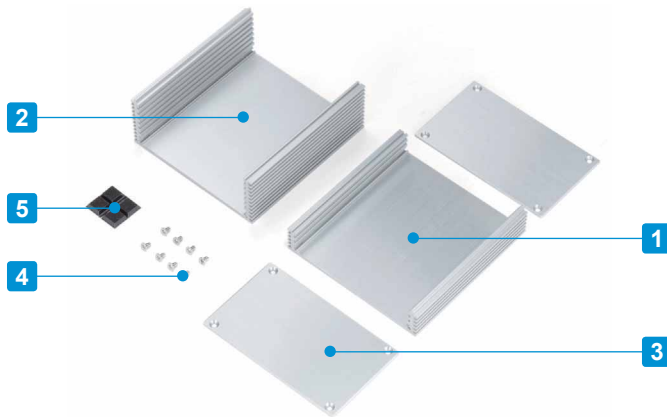
- For use with the heat-sink cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

Product no. / Dimensions

Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

# HEN SERIES

# HEAT-SINK ALUMINIUM CASE



- Stylish design coupled with hairline brushed finish makes for a luxurious high-end case.
- Heat dissipation and cooling via the utilization of extruded aluminium heat-sink top/bottom cover.
- Available in 18 sizes.
- Sturdy extruded case construction.

Included screws  
 Enclosure (Silver) M3-6 countersunk : Steel : Nickel plated x 8 pcs  
 Enclosure (Black) M3-6 countersunk : Steel : Black trivalent chromate x 8 pcs

## Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
2	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Front • Rear panel	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Screw	8	Steel countersunk M3-6	Nickel plated • Black trivalent chromate
5	Rubber feet	4	Polyurethane	Black

※HL = Hairline brushed

## Accessories (Optional parts)



TORX screw MR-2S  
 See page EM•MR-1

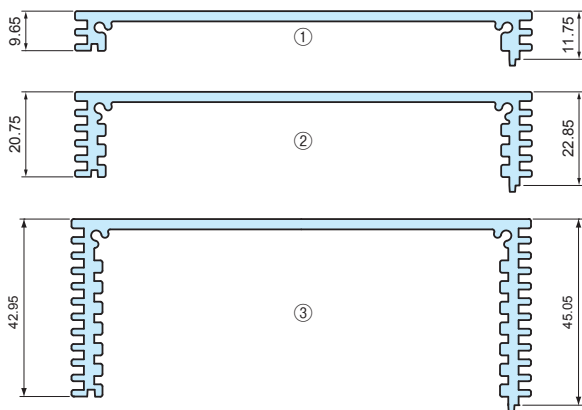
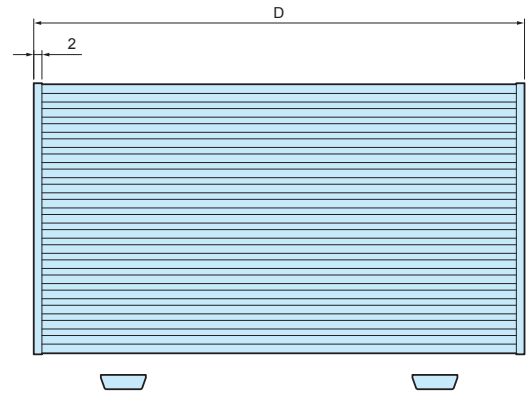
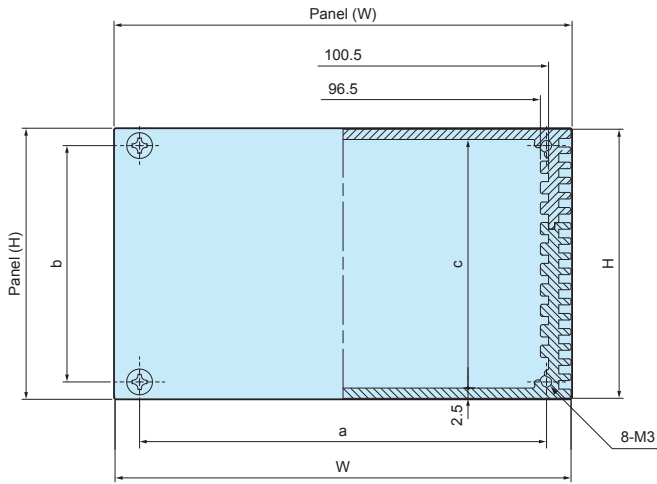


Aluminium isolation feet AFS • AFM series  
 See page AFS•AFM-1 ~ AFS•AFM-2



**HEN dimensions**

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



**Cover Type**

Cover	Cover length (D-4)	※ Thermal resistance rate (°C/W)
①	56	6.7
	116	3.6
	196	2.1
②	56	5
	116	2.6
	196	1.5
③	56	3.3
	116	1.7
	196	0.93

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

**Product no. / Dimensions**

Product no.		W	H	D	Panel (W)	Panel (H)	a	b	c	Cover combination	Weight (g)
● Silver	● Black										
HEN110206S	HEN110206B	111.2	21.4	60	112	21.9	99.2	13.4	16.4	①×2	143
HEN110212S	HEN110212B	111.2	21.4	120	112	21.9	99.2	13.4	16.4		258
HEN110220S	HEN110220B	111.2	21.4	200	112	21.9	99.2	13.4	16.4		411
HEN110306S	HEN110306B	111.2	32.5	60	112	33.0	99.2	24.5	27.5	①×1 ②×1	179
HEN110312S	HEN110312B	111.2	32.5	120	112	33.0	99.2	24.5	27.5		311
HEN110320S	HEN110320B	111.2	32.5	200	112	33.0	99.2	24.5	27.5		488
HEN110406S	HEN110406B	111.2	43.6	60	112	44.1	99.2	35.6	38.6	②×2	215
HEN110412S	HEN110412B	111.2	43.6	120	112	44.1	99.2	35.6	38.6		365
HEN110420S	HEN110420B	111.2	43.6	200	112	44.1	99.2	35.6	38.6		565
HEN110506S	HEN110506B	111.2	54.7	60	112	55.2	99.2	46.7	49.7	①×1 ③×1	250
HEN110512S	HEN110512B	111.2	54.7	120	112	55.2	99.2	46.7	49.7		417
HEN110520S	HEN110520B	111.2	54.7	200	112	55.2	99.2	46.7	49.7		640
HEN110606S	HEN110606B	111.2	65.8	60	112	66.3	99.2	57.8	60.8	②×1 ③×1	286
HEN110612S	HEN110612B	111.2	65.8	120	112	66.3	99.2	57.8	60.8		471
HEN110620S	HEN110620B	111.2	65.8	200	112	66.3	99.2	57.8	60.8		717
HEN110806S	HEN110806B	111.2	88.0	60	112	88.5	99.2	80.8	83.0	③×2	358
HEN110812S	HEN110812B	111.2	88.0	120	112	88.5	99.2	80.8	83.0		577
HEN110820S	HEN110820B	111.2	88.0	200	112	88.5	99.2	80.8	83.0		869

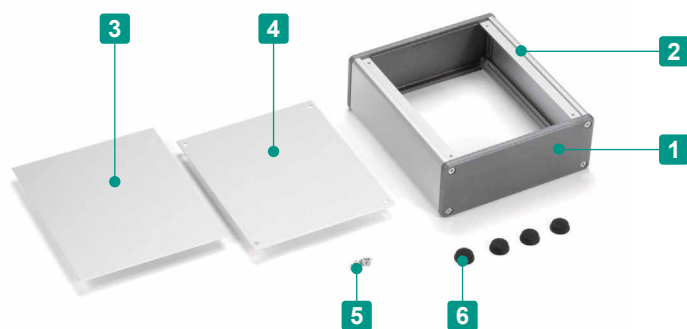
**APPLICATION EXAMPLE AUDIO POWER SUPPLY**

Product by AY-densi (Japan)



# CH SERIES

# ALUMINIUM CONTROL BOX



- Simple and strong construction with diecast and extruded aluminium material.
- Durable powder-coated side plate.
- Both the slide and screwed panel can be utilized as the front panel.
- 2 color types available.

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Side plate	2	Diecast aluminium ADC12	Black • Metallic gray / Powder coated
2	Frame	2	Extruded aluminium A6063S-T5	Black / Anodized • Silver / Hairline brushed & Anodized
3	Slide panel	1	Aluminium A1100P • A1050P	Black / Painted • Silver / Hairline brushed & Anodized
4	Screwed panel	1	Aluminium A1100P • A1050P	Black / Painted • Silver / Hairline brushed & Anodized
5	Screw	1 set	Steel	Black trivalent chromate • Nickel plated
6	Rubber feet	4	Synthetic rubber	Black

■ Note: panels are covered with a protective film on one side. Remove before assembly.

※CH7 models come with copper plated screws for grounding.

## APPLICATION EXAMPLE

### WAVEFORM ANALYZER



Product by Graviton Inc. (Japan)

### CNC MACHINING CENTER CONTROL UNIT

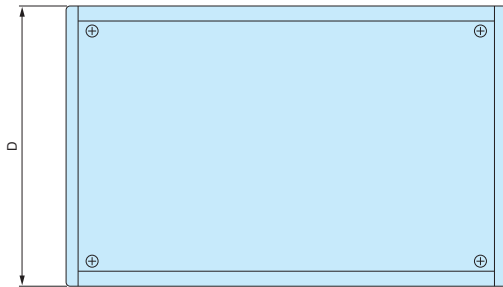
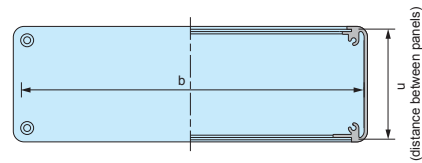
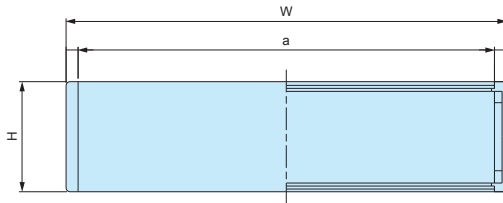


Product by FNS Co. Ltd. (Japan)



CH dimensions

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



Included screws

- CH4 • CH6 models  
 M3-5 Slotted raised countersunk • Black trivalent chromate x 4 pcs  
 M3-5 Slotted raised countersunk • Nickel plated x 4 pcs  
 M3-10 countersunk • Black trivalent chromate x 8 pcs  
 M3-10 countersunk • Nickel plated x 8 pcs
- CH7 • CH8 models  
 M3-5 Slotted raised countersunk • Black trivalent chromate x 4 pcs  
 M3-5 Slotted raised countersunk • Nickel plated x 4 pcs  
 M4-12 countersunk • Black trivalent chromate x 8 pcs  
 M4-12 countersunk • Nickel plated x 8 pcs

Product no. / Dimensions

Product no.		W	H	D	a	b	u	Weight (kg)
● Black (BBP)	● Gray-Silver(GSP)							
CH4- 7-10BBP	CH4- 7-10GSP	70	36.5	100.5	60	96.4	30.5	0.15
CH4-10-10BBP	CH4-10-10GSP	100	36.5	100.5	90	96.4	30.5	0.20
CH4-15-10BBP	CH4-15-10GSP	150	36.5	100.5	140	96.4	30.5	0.27
CH4-20-10BBP	CH4-20-10GSP	200	36.5	100.5	190	96.4	30.5	0.35
CH4-25-10BBP	CH4-25-10GSP	250	36.5	100.5	240	96.4	30.5	0.42
CH6- 8-14BBP	CH6- 8-14GSP	80	55	140.7	68	135.7	48.8	0.25
CH6-11-14BBP	CH6-11-14GSP	110	55	140.7	98	135.7	48.8	0.31
CH6-16-14BBP	CH6-16-14GSP	160	55	140.7	148	135.7	48.8	0.41
CH6-22-14BBP	CH6-22-14GSP	220	55	140.7	208	135.7	48.8	0.53
CH6-29-14BBP	CH6-29-14GSP	290	55	140.7	278	135.7	48.8	0.67

Product no.		W	H	D	a	b	u	Weight (kg)
● Black (BBP)	● Gray-Silver(GSP)							
CH7- 9-17BBP	CH7- 9-17GSP	90	65.5	168.5	74	164.4	58	0.50
CH7-12-17BBP	CH7-12-17GSP	120	65.5	168.5	104	164.4	58	0.58
CH7-17-17BBP	CH7-17-17GSP	170	65.5	168.5	154	164.4	58	0.72
CH7-25-17BBP	CH7-25-17GSP	250	65.5	168.5	234	164.4	58	0.94
CH7-33-17BBP	CH7-33-17GSP	330	65.5	168.5	314	164.4	58	1.16
CH8-15-23BBP	CH8-15-23GSP	150	75	230.6	134	226.1	68.8	0.74
CH8-25-23BBP	CH8-25-23GSP	250	75	230.6	234	226.1	68.8	1.06
CH8-33-23BBP	CH8-33-23GSP	330	75	230.6	314	226.1	68.8	1.31
CH8-43-23BBP	CH8-43-23GSP	430	75	230.6	414	226.1	68.8	1.63

Accessories (Optional parts)

MR SERIES

TORX SCREW



- Material / Finish : Steel / Nickel plated
- TORX screw set for 1 unit.
- Recommended for aesthetic purposes, or for tamper-resistance.
- Requires the use of a specialized screwdriver.

Suitable Enclosures

Product no.	Suitable enclosures
MR-3CS	CH4 and CH6 models
MR-4CS	CH7 and CH8 models

Product no. / Dimensions

Product no.	Included screws	TORX head no.
MR-3CS	M3-10 countersunk x 8 pcs • M3-5 Slotted raised countersunk x 4 pcs	T10 (M3)
MR-4CS	M4-12 countersunk x 8 pcs • M3-5 Slotted raised countersunk x 4 pcs	T10 (M3) • T20 (M4)

# HIGH END DESIGN Aluminium Case HD SERIES

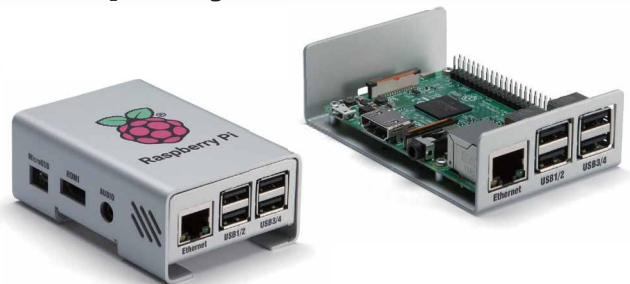


**Distinctive design,  
suitable for many different devices**

**Industrial Embedded System**



**Raspberry Pi**



**Data Transmitter / Receiver**



**Measurement / Test Equipment**

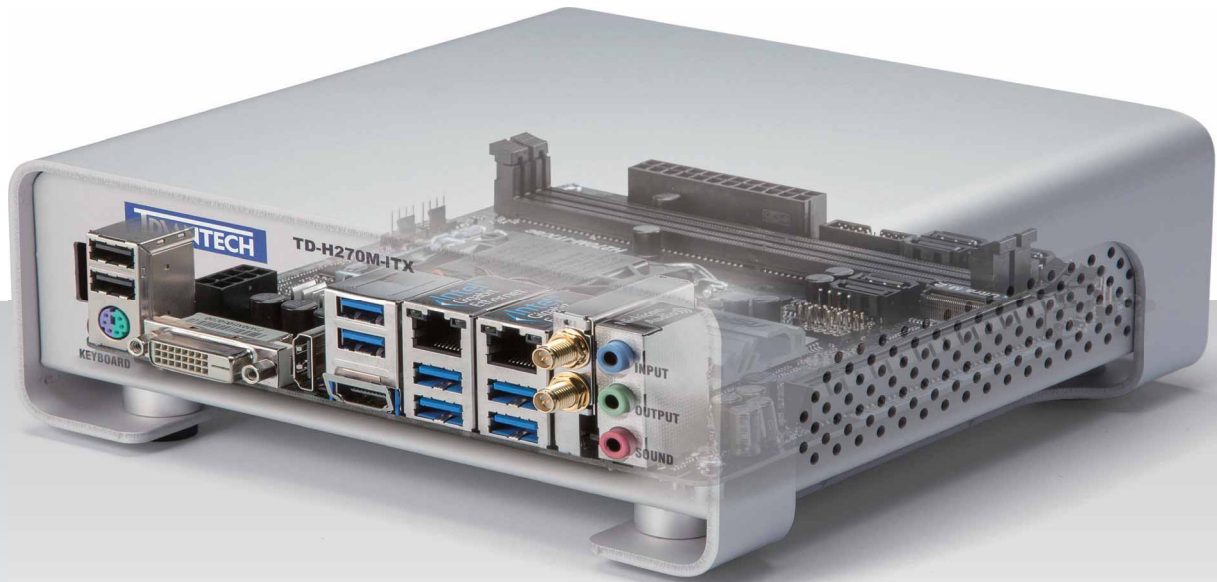


**Audio Amplifier**



**Power Supply**





## Compatibility with Standard Board Sizes

### Raspberry Pi

Board Size  
56×85mm

### EURO BOARD

Board Size  
100×160mm

### 3.5 inch Board

Board Size  
146×102mm

### Mini STX

Board Size  
140×147mm

### Mini ITX

Board Size  
170×170mm

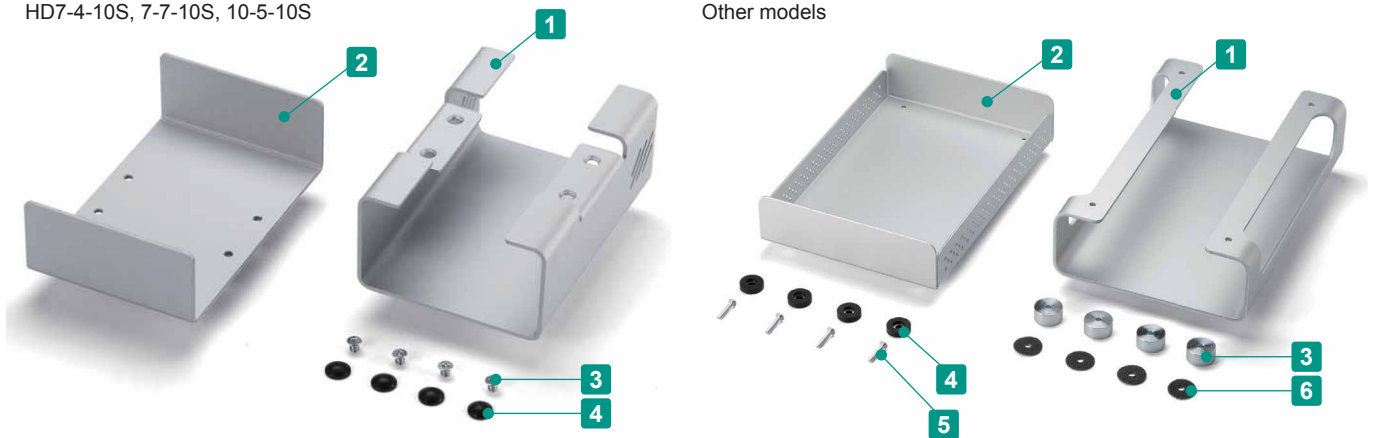




- Distinctively designed aluminium case.
- Polished, elegant and sleek metallic silver finish.
- Suitable for embedded system, measurement equipment, data transmitter, audio amplifier, and so on.

HD7-4-10S, 7-7-10S, 10-5-10S

Other models



Components

HD7-4-10S, 7-7-10S, 10-5-10S

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Aluminium A1100P	Metallic silver / Painted : Conductive inside
2	Base	1	Aluminium A1100P	Metallic silver / Painted : Conductive inside
3	Screw (M3-4 Flat-head)	4	Steel	Trivalent chromate
4	Rubber feet	4	Rubber	Black

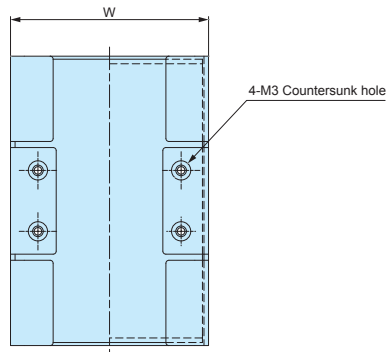
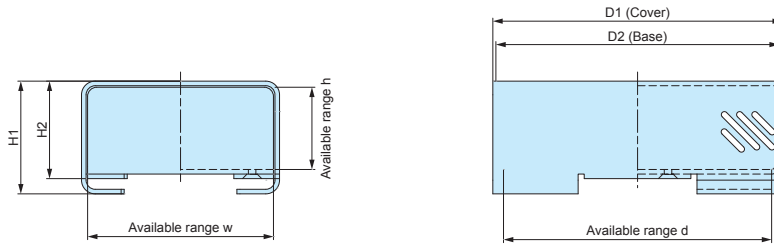
Other models

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Aluminium A1050P	Metallic silver / Painted
2	Base	1	Aluminium A1050P	Metallic silver / Painted
3	Pillar feet	4	Extruded Aluminium A6063S-T5	Silver / Anodized
4	Rubber feet	4	Rubber	Black
5	Screw (M3-16 Flat-head)	4	Steel	Trivalent chromate
6	Cushion	4	Polyethylene	Black

**HD dimensions**

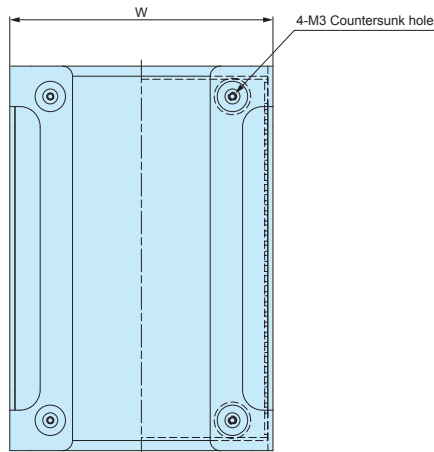
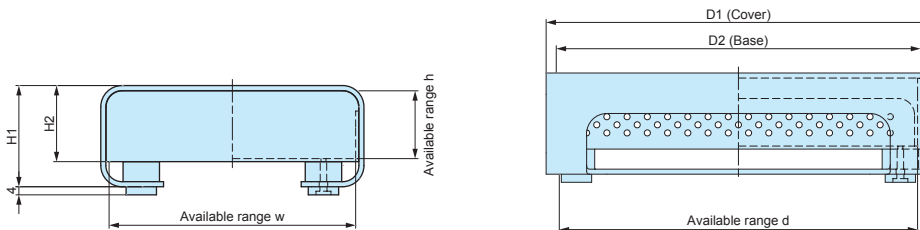
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

HD7-4-10S • 7-7-10S • 10-5-10S (Conductive models)



Included screws  
HD7-4-10S • 7-7-10S • 10-5-10S : M3-4 x 4 pcs

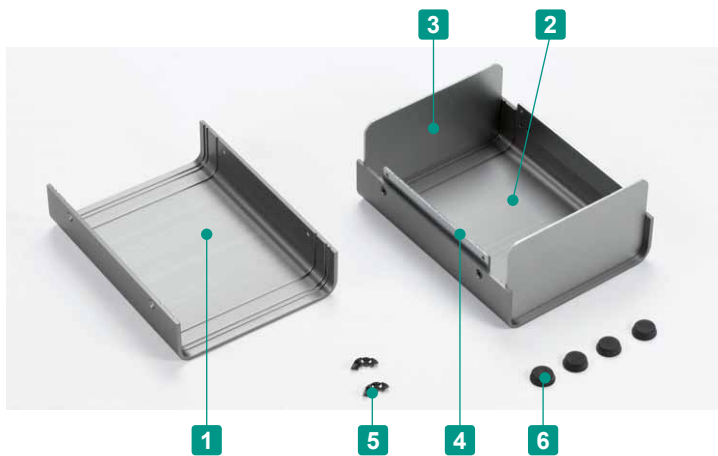
Other models



Included screws  
Other models : M3-16 x 4 pcs

**Product no. / Dimensions**

Product no.	W	H1	H2	D1	D2	w	h	d	Compatible Board Size	Weight (g)
<b>NEW</b> HD 7- 4-10S	65	37	32	95	93	61	27	90	Raspberry Pi (56 x 85)	94.1
<b>NEW</b> HD 7- 7-10S	65	65	60	95	93	61	55.5	90		129
<b>NEW</b> HD10- 5-10S	95	48	40	95	93	91	35.5	90	—	138.5
<b>NEW</b> HD11- 5-18S	111	50	37.6	175	165	102.4	33.5	162	Euro Board (100 x 160)	386.3
<b>NEW</b> HD11- 7-18S	111	70	57.6	175	165	102.4	53.5	162		447.7
<b>NEW</b> HD15- 7-16S	151	65	52.6	162	152	142.4	48.5	149	Mini STX (140 x 147)	500.8
<b>NEW</b> HD16- 6-12S	157	60	47.6	118	108	148.4	43.5	105	3.5 Inch Board (146 x 102)	382.1
<b>NEW</b> HD16- 5-21S	160	50	37.6	210	200	151.4	33.5	197	—	573.9
<b>NEW</b> HD19- 8-21S	192	75	62.1	210	200	182.4	57.5	197	Mini ITX (170 x 170)	838.1
<b>NEW</b> HD21-14-25S	210	135	122.1	250	240	199.4	117	236	—	1587.8
<b>NEW</b> HD26- 8-20S	260	80	67.1	200	190	249.4	62	186	—	1162.8
<b>NEW</b> HD32-10-23S	320	100	87.1	230	220	309.4	82	216	—	1678



- Simple structure and tough case with extruded aluminium covers.
- 36 sizes and 3 different colors for a total of 108 different combinations.
- New BB color type is available.
- 2 or 3 grooves available on top/bottom covers for adjusting front/rear panel positions or PCB insertion.
- Custom sizes are available.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Extruded aluminium A6063S-T5	Bronze • Light gray • Black / Anodized • Painted • Painted
2	Bottom cover	1	Extruded aluminium A6063S-T5	Bronze • Light gray • Black / Anodized • Painted • Painted
3	Panel	2	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Light gray • Black / Painted
4	Joint plate	2	Steel SPCC t=2.0	Trivalent chromate
5	Screw	12	Steel M3	Black trivalent chromate
6	Rubber feet	4	Rubber	Black

- Bronze color may vary between each production lot.
- Panels are covered with a protective film on one side.

Accessories (Optional parts)



Mounting plate UCC series  
See page UC-3 ~ UC-4



Mounting bracket UCK-P series  
See page UC-5



Panel retainer UCF-26  
See page UC-4



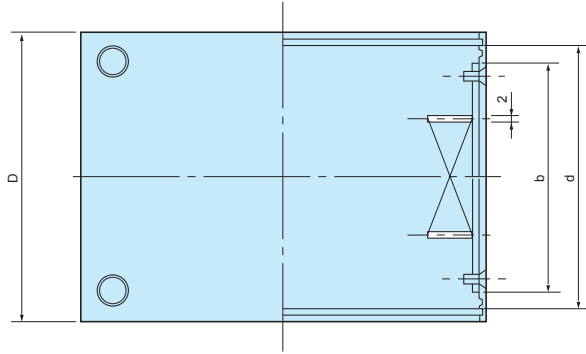
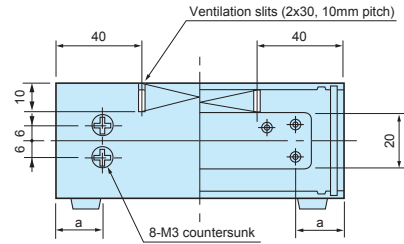
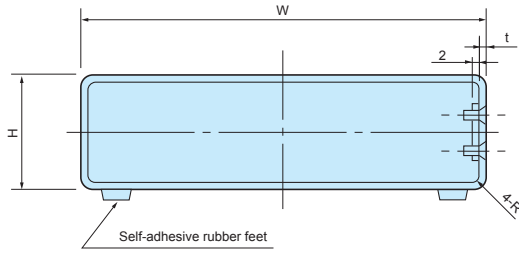
TORX screw MR-1 series  
See page 135



Aluminium isolation feet  
AFS · AFM series  
See page 191 ~ 192

UC dimensions

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



Color Type

● GG		● DD	
Cover	Light gray · Painted	Cover	Bronze · Anodized
Panel	Light gray · Painted	Panel	Silver / Hairline brushed & Anodized
<b>NEW</b> ● BB			
Cover	Black · Painted		
Panel	Black · Painted		

Product no. / Dimensions

■ Please suffix color code at the end of the product number.  
■ Refer to the below chart for ventilation slits availability.

Product no.	W	H	D	d	R	t	a	b	Ventilation slits	Weight (kg)
UC 6- 3- 8□	60	35	80	72	3	2	16	58	—	0.12
UC 7- 3-10□	75	30	100	92	3	2	16	78	—	0.16
UC 9- 5-12□	90	50	120	112	5	2.5	18	94	—	0.29
UC10- 4-14□	100	40	140	130	5	2.5	28	94	—	0.32
UC12- 7-16□	120	70	160	146	8	3	30	110	—	0.56
UC13- 4-18□	130	40	180	166	8	3	30	130	—	0.56
UC15- 8-20□	150	80	200	186	8	3	30	150	○	0.86
UC16- 5-22□	165	50	220	206	8	3	30	170	○	0.84
UC18-10-24□	180	100	240	226	8	3	30	190	○	1.26
UC22-12-26□	220	120	260	246	8	3	30	210	○	1.70
UC24-14-34□	240	140	340	326	8	3.2	30	290	○	2.54
UC 8- 3- 6□	80	30	60	52	3	2	16	38	—	0.10
UC11- 3- 8□	110	30	80	72	3	2	16	58	—	0.17
UC11- 5- 8□	110	50	80	72	3	2	16	58	—	0.20
UC14- 4-10□	140	40	100	92	3	2	16	78	—	0.27
UC14- 6-10□	140	60	100	92	3	2	16	78	—	0.31
UC15-10-12□	150	100	120	112	5	2.5	18	94	—	0.53
UC17- 5-12□	170	50	120	112	5	2.5	18	94	—	0.45
UC17- 7-12□	170	70	120	112	5	2.5	18	94	—	0.51
UC20- 5-14□	200	50	140	130	5	2.5	28	94	—	0.56
UC20- 8-14□	200	80	140	130	5	2.5	28	94	—	0.67
UC20-12-16□	200	120	160	146	8	3	30	110	—	0.82
UC26- 5-18□	260	50	180	166	8	3	30	130	○	1.02
UC26-10-18□	260	100	180	166	8	3	30	130	○	1.26
UC26- 7-20□	260	70	200	186	8	3	30	150	○	1.23
UC32- 5-22□	320	50	220	206	8	3	30	170	○	1.45
UC32-12-22□	320	120	220	206	8	3	30	170	○	1.88
UC32- 8-24□	320	80	240	226	8	3	30	190	○	1.76
UC35-13-26□	350	130	260	246	8	3	30	210	○	2.45
UC43- 5-28□	430	50	280	266	8	3	30	230	○	2.37
UC43-14-28□	430	140	280	266	8	3	30	230	○	3.05
UC 7- 8-14□	75	85	140	130	5	2.5	28	94	—	0.37
UC10-11-18□	100	110	180	166	8	3	30	130	—	0.72
UC12-14-22□	120	140	220	206	8	3	30	170	○	1.08
UC15-18-28□	150	180	280	266	8	3	30	230	○	1.74
UC18-21-34□	180	210	340	326	8	3.2	30	290	○	2.63

**UCC SERIES**

**MOUNTING PLATE for UC**

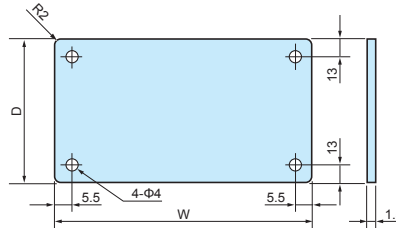
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

**Components**

Part name	Pcs	Material	Color / Finish
Mounting plate	1	Aluminium A1050P t=1.5	Unfinished
Screw	4	Steel M3-5	Trivalent chromate

■ See "Suitable cases" on the chart below for matching cases.

**Type A**

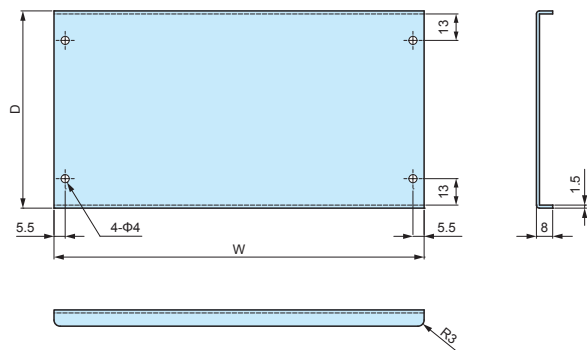


**Product no. / Dimensions (Type A)**

Product no.	Suitable cases	W	D
UCC 6- 8	UC 6- 3- 8	43	58
UCC 7-10	UC 7- 3-10	58	78
UCC 8- 6	UC 8- 3- 6	63	38
UCC11- 8	UC 11- 3- 8	93	58
	UC 11- 5- 8		
UCC 9-12	UC 9- 5-12	72	94
UCC10-14	UC 10- 4-14	82	94
UCC12-16	UC 12- 7-16	101	110
UCC13-18	UC 13- 4-18	111	130
UCC15-20	UC 15- 8-20	131	150
	UCG15- 9-20		

Product no.	Suitable cases	W	D
UCC14-10	UC 14- 4-10	123	78
	UC 14- 6-10		
UCC15-12	UC 15-10-12	132	94
UCC17-12	UC 17- 5-12	152	94
	UC 17- 7-12		
UCC 7-14	UC 7- 8-14	57	94
UCC10-18	UC 10-11-18	81	130
UCC12-22	UC 12-14-22	101	170
	UCY12-14-22		

**Type B**



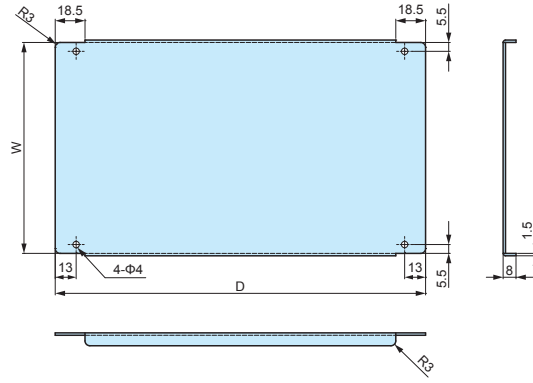
**Product no. / Dimensions (Type B)**

Product no.	Suitable cases	W	D
UCC16-22	UC 16- 5-22	146	173
UCC18-24	UC 18-10-24	161	193
	UCY18-10-24		
UCC20-14	UCG18-10-24	182	97
	UC 20- 5-14		
	UC 20- 8-14		
UCC22-26	UCG20- 9-14	201	213
	UC 22-12-26		
UCC20-16	UC 20-12-16	181	113
UCC26-18	UC 26- 5-18	241	133
	UC 26-10-18		
	UCG26-10-18		

Product no.	Suitable cases	W	D
UCC26-20	UC 26- 7-20	241	153
UCC32-22	UC 32- 5-22	301	173
	UCG32-12-22		
UCC32-24	UC 32- 8-24	301	193
UCC35-26	UC 35-13-26	331	213
UCC43-28	UC 43- 5-28	411	233
	UC 43-14-28		



Type C



**Product no. / Dimensions (Type C)**

Product no.	Suitable cases	W	D
UCC15-28	UC 15-18-28	134	230
	UCY15-18-28		
UCC18-34	UC 18-21-34	163.6	290
UCC24-34	UC 24-14-34	223.6	290

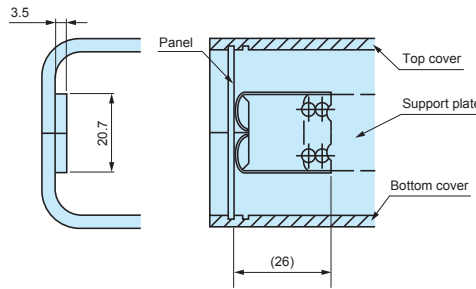
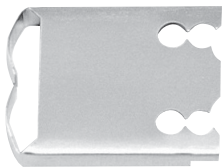
**UCF-26**

**PANEL RETAINER for UC**

- Use to minimize panel vibration.
- Possible to use with UCK-P mounting bracket.

**Installation drawings**

■ UCF-26 and the joint plate on UC case with screw fastening.



**Product no.**

Product no.	Material	Finish	Pack of
UCF-26	Stainless steel t=0.3	Unfinished	2

■ Not applicable for use on 60, 80, 100 and 120 "D" dimension cases.

**Installation Example**



UCK-P SERIES

MOUNTING BRACKET for UC



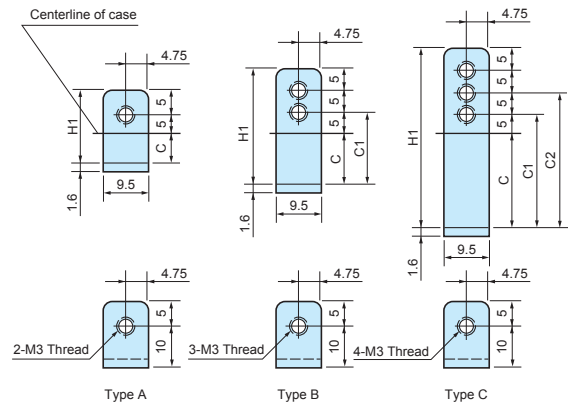
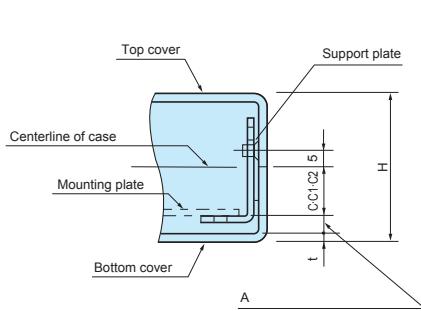
Product no. / Dimensions

Product no.	Type	H1	C	C1	C2	Pack of
UCK-P 13	A	13	3	—	—	4
UCK-P 17	A	17	7	—	—	4
UCK-P 27	B	27	12	17	—	4
UCK-P 42	C	42	22	27	32	4
UCK-P 57	C	57	37	42	47	4
UCK-P 72	C	72	52	57	62	4
UCK-P 87	C	87	67	72	77	4
UCK-P102	C	102	82	87	92	4

■ Screws are not included (screw set available with UC case)

■ Material / Finish : Steel SPCC t=1.6 / Trivalent chromate

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



■ Calculation formula for A dimension

(Case height (H) / 2) - (C, C1 or C2 + Bottom cover thickness) = A dimension.  
Use either C, C1 or C2 values from chart above.

Bracket matching chart / A dimension

Product no. (Case)	Bracket no.	A
UC 6- 3- 8	UCK-P 13	12.5
	UCK-P 17	8.5
UC 7- 3-10	UCK-P 13	10
	UCK-P 17	6
UC 9- 5-12	UCK-P 17	15.5
	UCK-P 27	10.5   5.5
UC 10- 4-14	UCK-P 13	14.5
	UCK-P 17	10.5
	UCK-P 27	5.5
UC 12- 7-16	UCK-P 27	15
	UCK-P 42	10
UC 13- 4-18	UCK-P 13	14
	UCK-P 17	10
UC 15- 8-20	UCK-P 42	15   10   5
	UCK-P 13	19
	UCK-P 17	15
UC 16- 5-22	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 24-14-34	UCK-P 57	19.8
	UCK-P 72	14.8   9.8
UC 8- 3- 6	UCK-P 13	10
	UCK-P 17	6
UC 11- 3- 8	UCK-P 13	10
	UCK-P 17	6
UC 11- 5- 8	UCK-P 17	16
	UCK-P 27	11   6

Product no. (Case)	Bracket no.	A
UC 14- 4-10	UCK-P 13	15
	UCK-P 17	11
	UCK-P 27	6
UC 14- 6-10	UCK-P 27	16   11
	UCK-P 42	6
UCG 15- 9-20	UCK-P 42	10
	UCK-P 57	
UC 15-10-12	UCK-P 42	20.5   15.5
	UCK-P 57	10.5   5.5
	UCK-P 27	15.5
UC 17- 5-12	UCK-P 17	15.5
	UCK-P 27	10.5   5.5
	UCK-P 42	10.5   5.5
UC 17- 7-12	UCK-P 27	15.5
	UCK-P 42	10.5   5.5
	UCK-P 13	19.5
UC 20- 5-14	UCK-P 17	15.5
	UCK-P 27	10.5   5.5
	UCK-P 42	20.5
UC 20- 8-14	UCK-P 27	20.5
	UCK-P 42	15.5   10.5
	UCK-P 57	5
UCG 20- 9-14	UCK-P 42	5
	UCK-P 57	
UC 20-12-16	UCK-P 57	20   15   10
	UCK-P 13	19
	UCK-P 17	15
UC 26- 5-18	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 26-10-18	UCK-P 42	20   15
	UCK-P 57	10

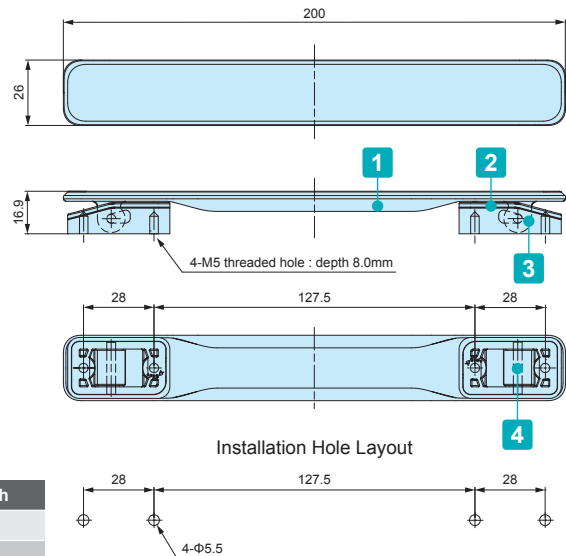
Product no. (Case)	Bracket no.	A
UC 26- 7-20	UCK-P 27	15
	UCK-P 42	10
UC 18-10-24	UCK-P 42	20   15
	UCK-P 57	10
UC 22-12-26	UCK-P 57	20   15   10
	UCK-P 13	19
	UCK-P 17	15
UC 32- 5-22	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 32-12-22	UCK-P 57	20   15   10
	UCK-P 13	19
	UCK-P 17	15
UC 32- 8-24	UCK-P 42	15   10   5
	UCK-P 57	25   20   15
	UCK-P 72	10   5
UC 43- 5-28	UCK-P 13	19
	UCK-P 17	15
	UCK-P 27	10
UC 43-14-28	UCK-P 57	20
	UCK-P 72	15   10
UC 7- 8-14	UCK-P 42	18   13   8
UC 10-11-18	UCK-P 57	15   10   5
UC 12-14-22	UCK-P 72	15   10   5
	UCK-P 87	20   15   10
UCY 12-14-22	UCK-P 72	15   10   5
UC 15-18-28	UCK-P 87	20   15   10
UCY 15-18-28	UCK-P 87	20   15   10
UC 18-21-34	UCK-P102	19.8   14.8   9.8

FM200 SERIES

ELASTOMER CARRYING HANDLE



DXF/DWG/PDF drawings available on our website.



Comfortable and easy to grip elastomer handle.

Technical Data	
Max load : 20kg	

Components

No.	Part name	Pcs	Material	Color / Finish
1	Grip	1	PU	Black • Gray
2	Base	2	PA6	Black • Gray
3	Base cover	2	ABS	Black • Gray
4	Shaft	2	SWCH	Nickel plated
—	Screw (Pan head tapping M5-8)	4	Steel	Trivalent chromate

Product no.

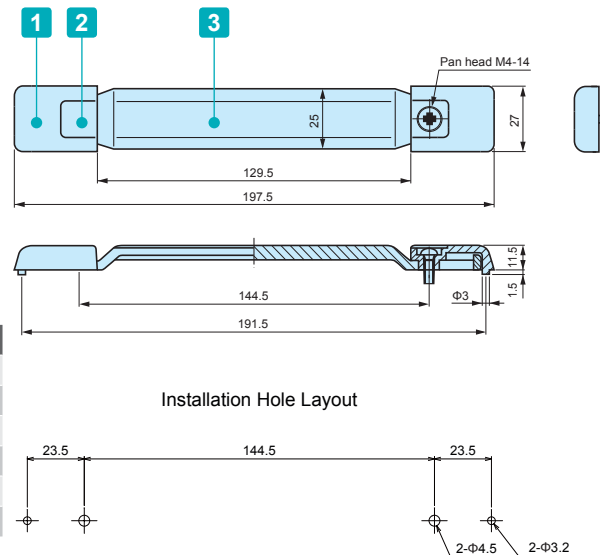
Product no.	
● Black	● Gray
NEW FM200B	NEW FM200G

MH SERIES

CARRYING HANDLE



DXF/DWG/PDF drawings available on our website.



Components

No.	Part name	Pcs	Material	Color / Finish
1	Holder	2	PC + ABS	Black • Gray
2	Blind cap	2	PP + Elastomer	Black • Gray
3	Grip	1	PP + Elastomer	Black • Gray
—	Screw (Pan head M4-14)	2	Steel	Trivalent chromate
—	Nut	2	Steel	Trivalent chromate
—	Spring washer	2	Steel	Trivalent chromate

Product no.

Product no.	
● Black	● Gray
MH-197B	MH-197G

Technical Data	
Max load : 20kg	

# SRDSL SERIES

# ALUMINIUM DESKTOP CHASSIS



- Designed with an elegant and stylish hairline brushed top cover.
- Champagne gold and silver top covers available.
- Recommended for audio amplifier use.

## APPLICATION EXAMPLE

### VACUUM TUBE POWER AMPLIFIER

Product by MJ Musen to Jikken (Japan)



### DIGITAL MULTI-CHANNEL ANALYZER

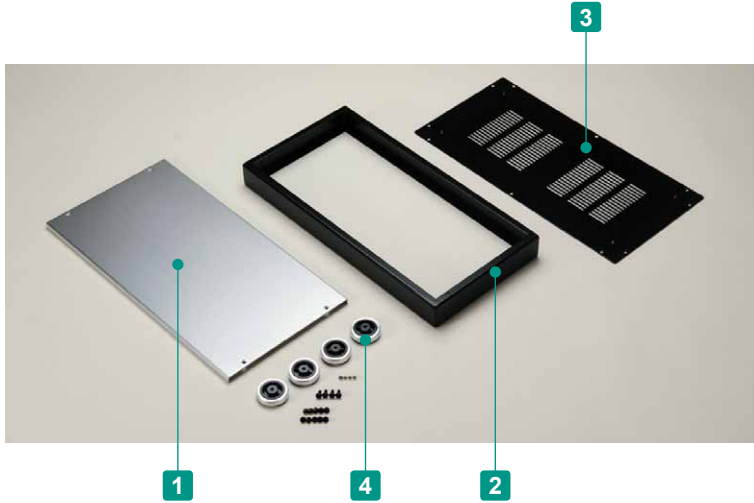
Product by Project Integration LLC (Armenia)



### Accessories (Optional parts)



Aluminium isolation feet AFS • AFM series  
See page AFS • AFM-1 ~ AFS • AFM-2



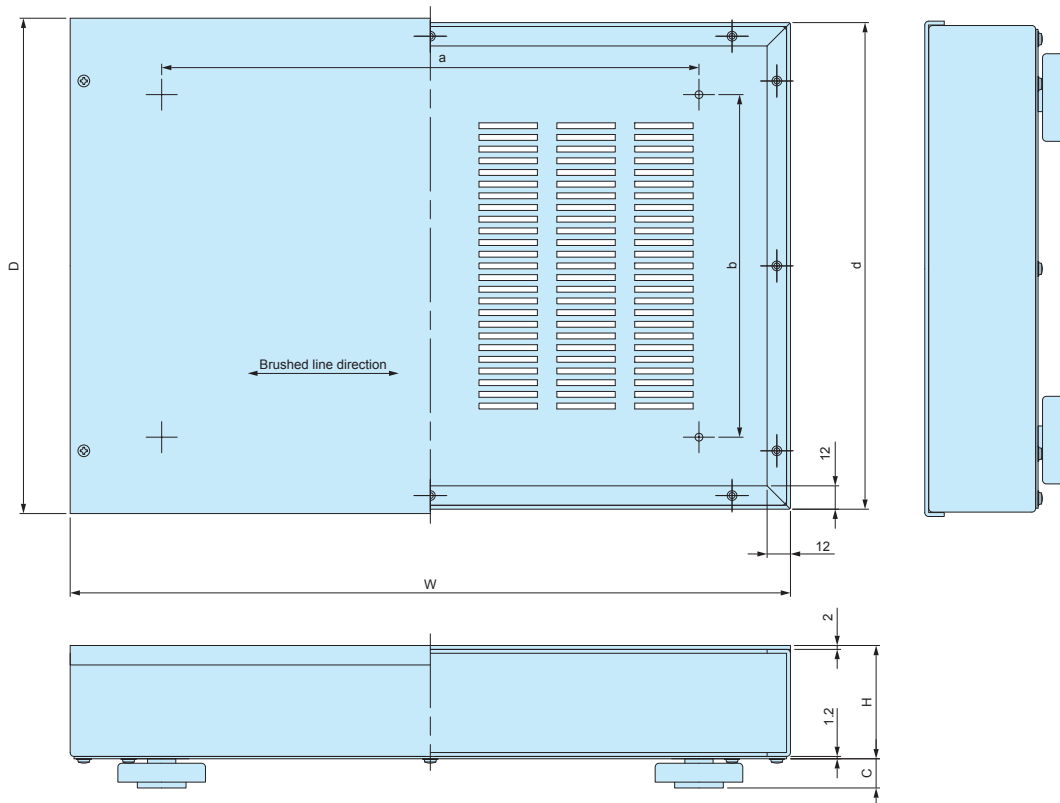
Included screws  
 M3-5 countersunk • Nickel plated x 4 pcs  
 M3-5 Binding head with washer • Black trivalent chromate x 14 pcs  
 M4-10 Binding head • Black trivalent chromate x 4 pcs

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Aluminium A1050P t=2.0	Champagne gold • Silver / Hairline brushed & Anodized
2	Body frame	1	Aluminium A1050P t=2.0	Black / Painted (leather tone)
3	Bottom cover	1	Steel SECC t=1.2	Black / Painted
4	Feet	4	ABS UL94HB : Aluminium	Black : Gold • Black : Silver

**SRDSL dimensions**

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



**Product no. / Dimensions**

Product no.		W	H	D	a	b	c	d	Weight (kg)
● Champagne gold	● Silver								
SRDSL- 7HG	SRDSL- 7HS	400	43.2	164.5	336	96	12	160	1.29
SRDSL- 8HG	SRDSL- 8HS	350	58.2	224.5	246	142	12	220	1.56
SRDSL- 9HG	SRDSL- 9HS	400	43.2	204.5	336	136	12	200	1.53
SRDSL-10HG	SRDSL-10HS	370	58.2	254.5	276	176	15	250	1.77
SRDSL-15HG	SRDSL-15HS	460	63.2	224.5	396	156	15	220	1.91
SRDSL-20HG	SRDSL-20HS	450	68.2	305	336	208	15	300	2.49



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)

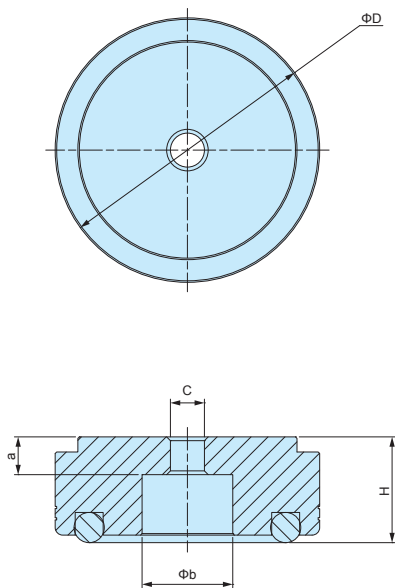
Product no. / Dimensions

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

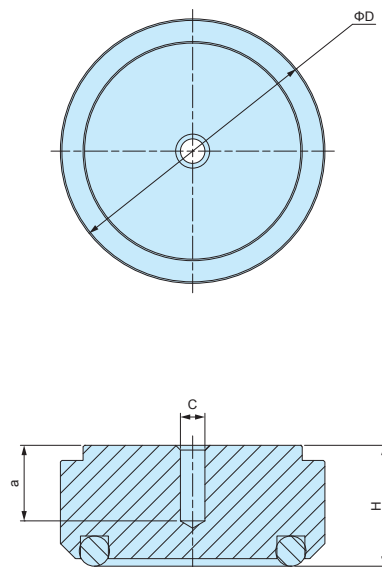
AFS • AFM dimensions

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

AFS SERIES



AFM SERIES



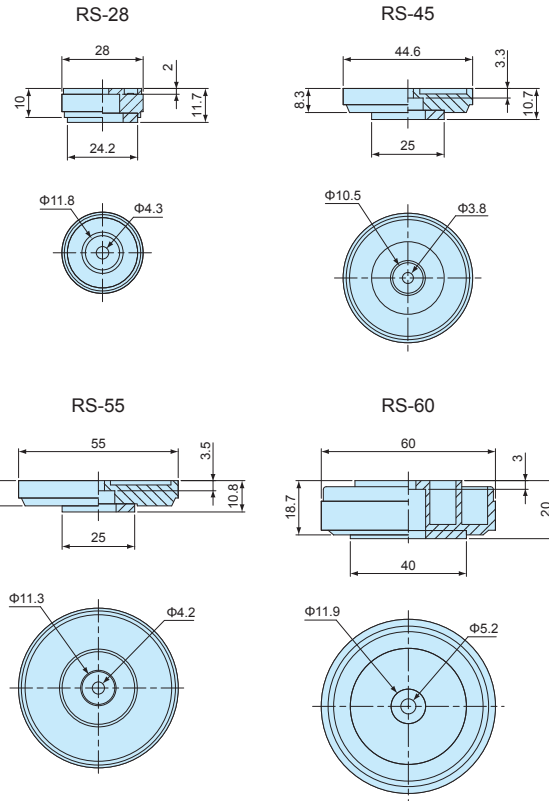
APPLICATION EXAMPLE



**RS SERIES** PLATED PLASTIC FEET



- Suitable for audio equipment use.
- Elastomeric foam pad can be found at the underside of the feet.



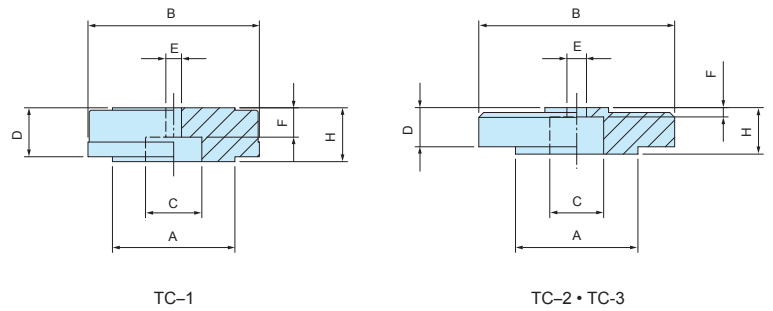
Product no. / Dimensions

Product no.		Material	Pack of
● Silver	● Gold		
RS-28S	RS-28G	ABS UL94HB / Polyester / EVA	4
RS-45S	RS-45G	ABS UL94HB / Polyester / EVA	4
RS-55S	RS-55G	ABS UL94HB / Polyester / EVA	4
RS-60S	RS-60G	ABS UL94HB / Polyester / EVA	4

**TC SERIES** ALUMINIUM FEET



- Aluminium material gives it a refined and elegant look.
- Suitable for audio equipment use.
- Elastomeric foam pad can be found on the underside of the feet.

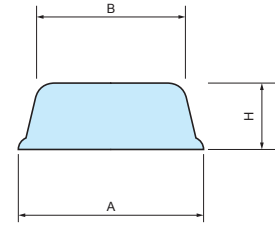


Product no. / Dimensions

Product no.		A	B	C	D	E	F	H	Material	Pack of
● Silver	● Gold									
TC-1S	TC-1G	25	35	11.5	9.7	3.4	5.6	11.5	ABS UL94HB / Aluminium / EVA	4
TC-2S	TC-2G	25	40	11	10.2	4.1	2.1	12	ABS UL94HB / Aluminium / EVA	4
TC-3S	TC-3G	25	45	11.7	12	4.2	7.5	15	ABS UL94HB / Aluminium / EVA	4

**B SERIES** ADHESIVE RUBBER FEET

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



■ Injection molded type.

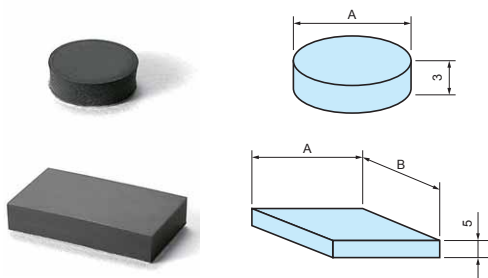
Product no. / Dimensions

■ Material : Synthetic rubber

Product no.	A	B	H	Color	Pack of
B 6-2	6	5	1.8	Black	10
B 8-4	8	7.7	3.5	Black	10
B10-4	10	9.2	4.2	Black	10
B11-3	10.8	10.2	3	Black	10
B11-5	11	9.6	5	Black	10
B12-4	12.7	10	3.8	Black	10
B15-5	15.4	14.8	5.1	Black	10
B16-7	16	13	7	Black	10
B19-4	19	15.8	4.2	Black	10
B21-7	21	17	7	Black	10
B23-5	22.8	22.4	5	Black	10
B26-11	26	20	11	Black	10
B 6-2G	6	5	1.8	Gray	10
B11-3G	10.8	10.2	3	Gray	10
B15-5G	15.4	14.8	5.1	Gray	10
B21-7G	21	17	7	Gray	10
B26-11G	26	20	11	Gray	10

**B-P SERIES** ADHESIVE RUBBER FEET

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



■ Press-punched type.

Product no. / Dimensions

■ Material / Color : Synthetic rubber / Black

Product no.	A	Pack of
B-P21	10	10
B-P22	20	10
B-P23	15	10

Product no. / Dimensions

■ Material / Color : Synthetic rubber / Black

Product no.	A	B	Pack of
B-P31	28	16	10
B-P32	46	26	10

**TB SERIES** ROUNDED ADHESIVE RUBBER FEET



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



Product no. / Dimensions

■ Material : Synthetic rubber

Product no.	Product no.		A	H	Pack of
	● Black	● White (W) ● White gray (G)			
TB- 7	-	-	6.7	4.2	10
TB- 8	NEW TB- 8W	-	8	2.6	10
TB-10	-	-	10	2.8	10
TB-12	NEW TB-12W	-	11.3	5.6	10
TB-14	-	-	14	8	10
TB-16	NEW TB-16W	-	15.9	8	10
TB-21	-	-	21.6	8.5	10
TB-27	TB-27G	-	27.8	7.4	10

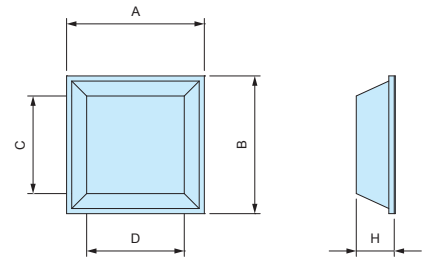
**SF SERIES**

**SQUARE ADHESIVE RUBBER FEET - LOW COST TYPE**

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



■ Square-shaped adhesive rubber feet.



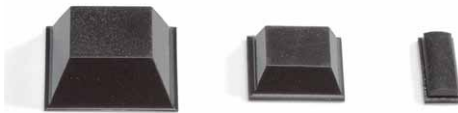
**Product no. / Dimensions**

■ Material / Color : Synthetic rubber / Black

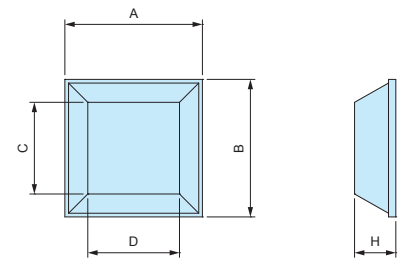
Product no.	A	B	H	C	D	Pack of
SF11-3	10.5	10.5	2.5	8.6	8.6	10
SF13-4	12.7	12.7	3.5	9	9	10
SF13-6	12.7	12.7	6	7	7	10
SF20-8	20	20	7.6	14	14	10

**SJ-P SERIES**

**SQUARE ADHESIVE POLYURETHANE FEET**



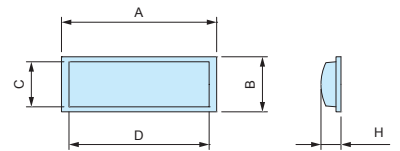
- Strong adhesive strength with the use of rubber pressure sensitive adhesive.
- Polyurethane material is resistant against color migration.



**Product no. / Dimensions**

■ Material / Color : Polyurethane / Black

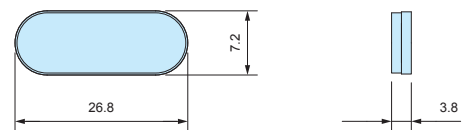
Product no.	A	B	H	C	D	Pack of
SJ-P5007	10.4	10.4	2.5	7.5	7.5	10
SJ-P5008	12.7	12.7	3	9.5	9.5	10
SJ-P5018	12.7	12.7	5.8	7	7	10
SJ-P1004	15	15	4.5	10	10	10
SJ-P5023	20.6	20.6	7.6	12.7	12.7	10
SJ-P1011	15.5	5.5	2	4.5	14.5	10



SJ-P1011

**TN-27**

**OVAL ADHESIVE RUBBER FEET**



**Product no. / Feature**

■ Material / Color : Synthetic rubber / Black

Product no.	Pack of
TN-27	10



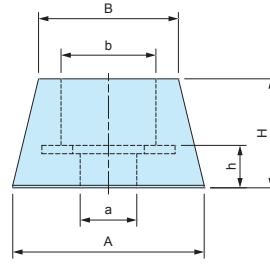
**B-P** SERIES

**SCREW MOUNT RUBBER FEET**

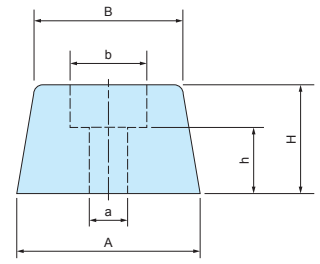
■ DXF/DWG/PDF drawings available on our website.



- Built-in washer and non-washer types are available.
- Installation screws are separately sold.



B-P1S, P1M, P1L, P2S, P4, P5



B-P1, P2, P3

**Product no. / Dimensions**

■ Color : Black

Product no.	A	B	H	a	b	h	Washer	Material	Pack of
B-P1S	11.5	8.4	7.2	3.4	5.7	3.2	○	Synthetic rubber	10
B-P1M	15	15	4	3.5	7.4	2.2	○	Synthetic rubber	10
B-P1	15	13	7.7	3	6	4.2	×	Synthetic rubber	10
B-P1L	16	13	7.8	3	6	3.7	○	Synthetic rubber	10
B-P2S	18	15	11	3	6	5	○	Synthetic rubber	10
B-P2	19	15	8	3	6	4.5	×	Synthetic rubber	10
B-P3	22	18	13	3	7.5	7	×	Synthetic rubber	10
B-P4	32	26	20	5	15	10	○	EPDM	10
B-P5	32	28	15	5	14	10	○	EPDM	10

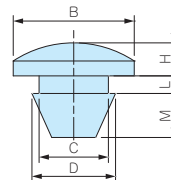
**B-P** SERIES

**SNAP-IN RUBBER FEET**

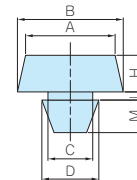
■ DXF/DWG/PDF drawings available on our website.



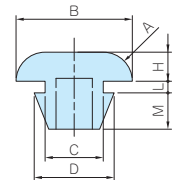
- Hole milling required for installation.



B-P10



B-P10S, P11, P12



B-P13, P14, P15

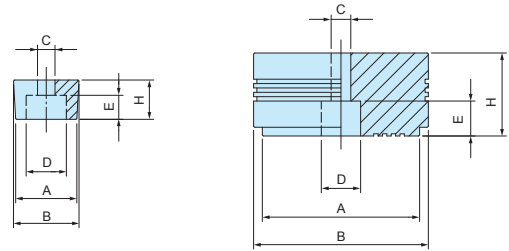
**Product no. / Dimensions**

Product no.	A	B	H	C	D	L	M	Material	Color	Pack of
B-P10S	8	8	2	5	5.6	0.9	3	Silicone UL94V-0	Black	10
B-P10	—	11	3	6.3	7.6	1.6	4	Silicone UL94V-0	Black	10
B-P11	11	13	4.5	5.5	7	1	4	Synthetic rubber	Black	10
B-P12	15	17	4.5	5.5	7	1	4	Synthetic rubber	Black	10
B-P13	R3	12	3	5	7	1.6	4	EPDM	Black	10
B-P14	R4	14	4	6	9	1.6	5	EPDM	Black	10
B-P15	R4	16	4	8	11	1.6	5	EPDM	Black	10

**A-P SERIES**

**SCREW MOUNT ELASTOMER FEET**

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



A-P1 ~ A-P5

A-P6

- Prepare screws for installation.
- Resistant against color migration.

**Product no. / Dimensions**

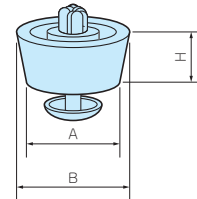
■ Material / Color : Elastomer / Black

Product no.	A	B	H	C	D	E	Pack of
A-P1	9.4	10.8	4	3.3	6.8	2	10
A-P2	13.4	14.2	5.5	3	8	3.5	10
A-P3	14	15	9	4	9.5	6	10
A-P4	20	21	8	4	8.2	5	10
A-P5	20	24	14	5.5	8.6	8	10
A-P6	36	40	19	4.5	9	7.5	10

**TP SERIES**

**SNAP-IN ELASTOMER FEET**

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



- Easy installation with snap-in pin.
- Require a hole for installation.
- Resistant against color migration.

**Product no. / Dimensions**

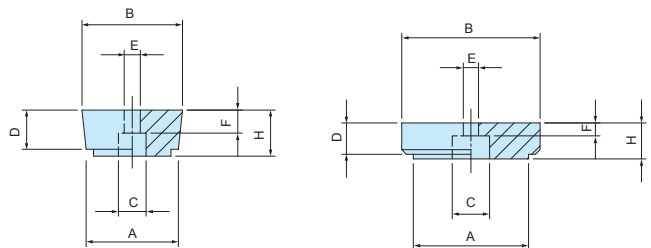
■ Material / Color : (Feet) LDPE • (PIN) PP / Black

Product no.	A	B	H	Mounting hole	Panel thickness	Pack of
TP-1	12	12.7	4.4	5	1.0 ~ 2.0	10
TP-2	15	15.7	4.4	5	1.0 ~ 2.0	10
TP-3	17.2	19.2	7.9	8	0.8 ~ 1.2	10
TP-4	18	20	10	8	1.0 ~ 2.5	10
TP-5	19.8	20.8	6.4	8	1.0 ~ 2.5	10
TP-6	19.5	23.7	13.7	8	1.0 ~ 2.5	10
TP-7	26.5	29.4	15	10	1.0 ~ 3.5	10

**TM SERIES**

**PLASTIC FEET**

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



TM-1, TM-2

TM-1S, TM-3

- Plastic feet equipped with soft padding on the bottom to prevent sliding.

**Product no. / Dimensions**

Product no.	A	B	H	C	D	E	F	Feet material	Pad material	Color	Pack of
TM-1S	15.9	19.5	6.3	7	5.8	4	2.3	ABS UL94HB	Silicone	Black	10
TM-1	20	21.8	10	7.2	8.5	3.5	4.5	ABS UL94HB	EVA	Black	10
TM-2	20	21.8	15	7.2	13.5	3.5	4.5	ABS UL94HB	EVA	Black	10
TM-3	25	30	7.8	8.1	6.8	3.3	2.7	ABS UL94HB	EVA	Black	10

# CNC MACHINING

CNC milling is a form of computer controlled machining. Similar in operation to drilling and cutting, it is able to create various hole styles and shapes by using a rotating cutting tool to bore into the object.



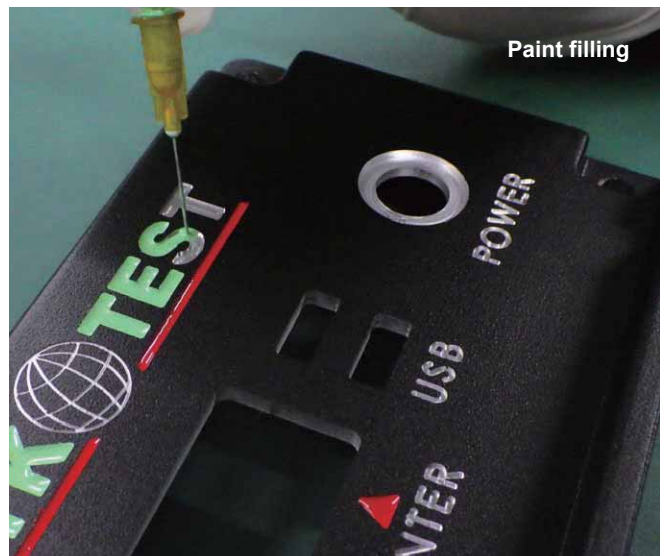
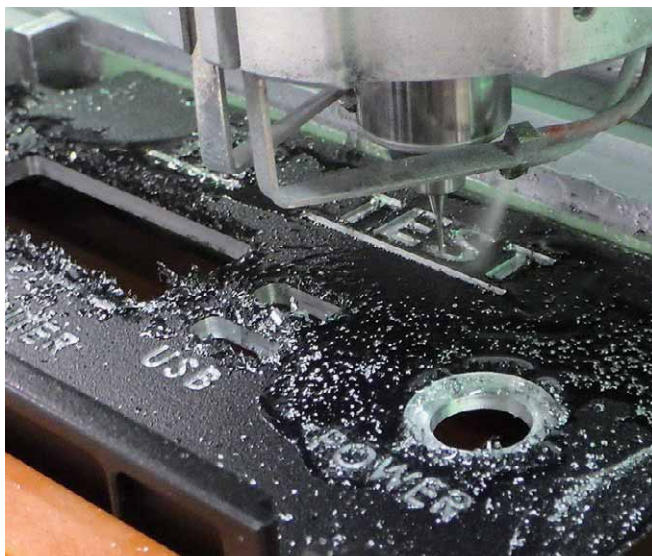
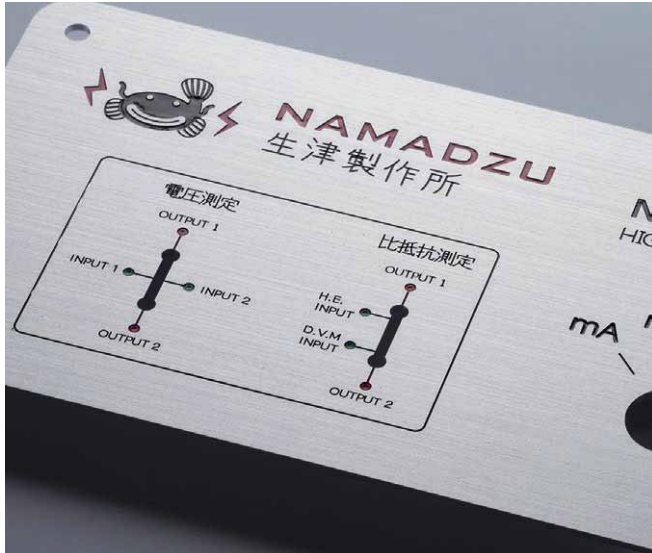
- Mainly used for plastic, aluminium die-cast, and aluminium extrusion material types.
- Able to perform milling for various shapes and sizes.
- Recommended for small quantity customization.





# ENGRAVING

By having the drill-head slightly milling the surface, the engraving of fine text or complex designs is able to be performed on a variety of surfaces, be it flat, curved, and so on. Suitable for small batch print, and/or simple lettering. Font shall be similar to VAG Rounded font type.



# LASER CUTTING

Laser cutting utilizes a laser to perform cutting on an object, allowing various types and shapes of holes to be cut.

New fiber laser machine allows the processing of aluminium sheets with both high precision and speed. Processing of Pure Aluminium 1050 is also possible with minimal burr as compared to conventional CO<sup>2</sup> laser machines, which causes excessive burring.



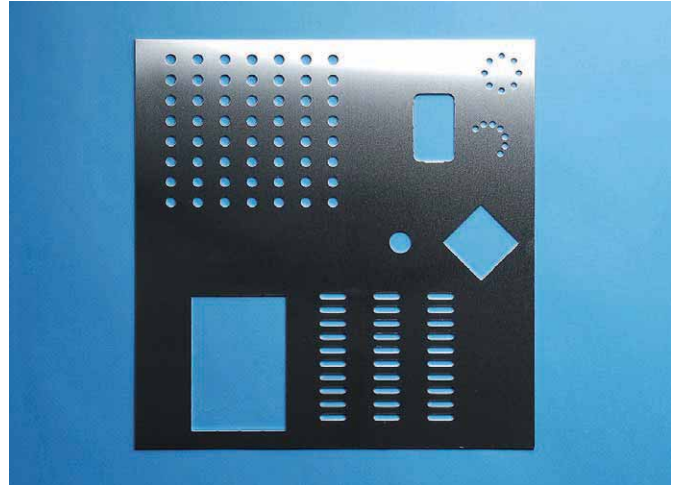
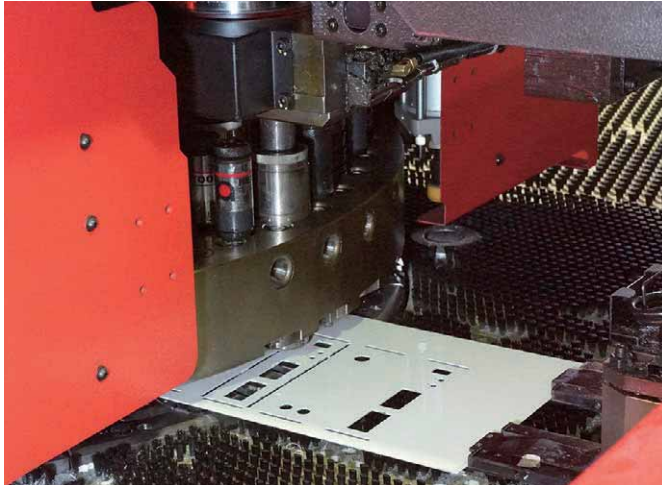


# PUNCHING PRESS

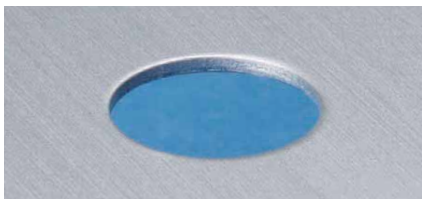
What is punching press? It is a type of machine press used to cut holes in material via the use of various sized die sets.

Punching press allows the realization of high cost performance due to its high speed automated turret punching process, which significantly reduces machining lead-time.

Due to its ability to create designated sized holes by means of rapid multiple hole punches, this enables it to punch holes of various sizes and types quickly and efficiently.

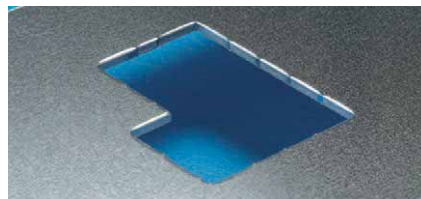


## Circular hole



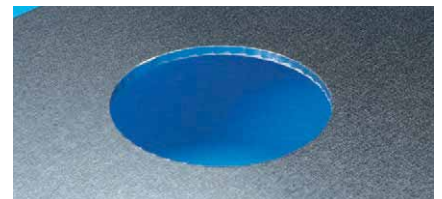
Circular holes as small as 1.0mm in diameter can be punched.

## Nibbling press (rectangle)



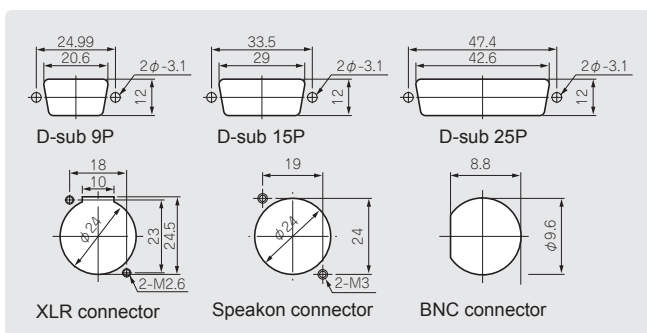
Complex or large rectangular shapes can be punched out with multiple presses.

## Nibbling press (round)

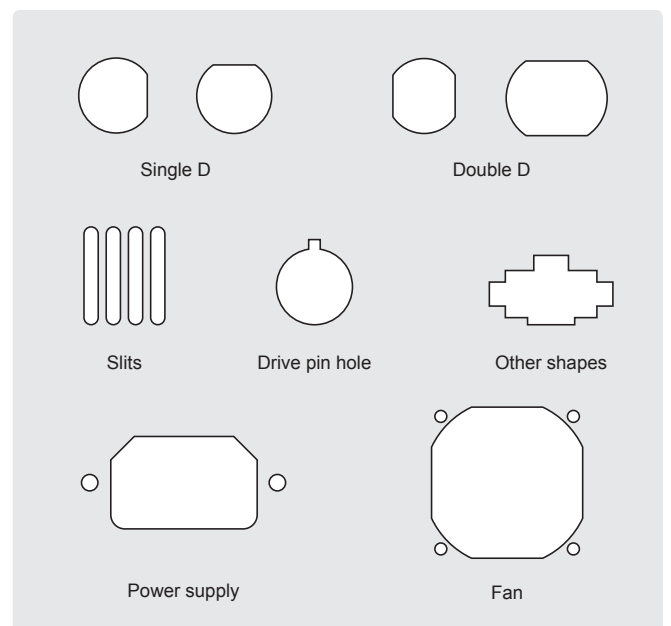


Punching of large circular holes with multiple smaller die strokes.

## Common connector shapes



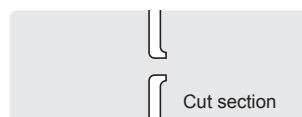
## Unique shapes



## Burring punch



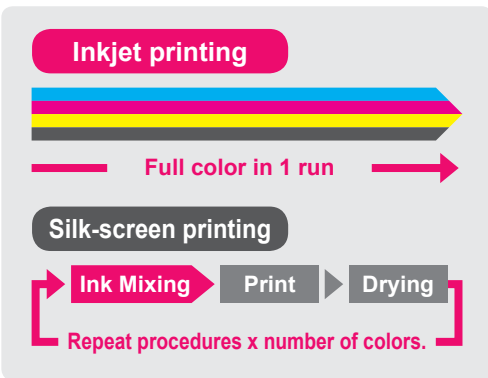
Increasing surface area on a thin metallic sheet for screw threads to bore into.



# INKJET PRINTING



Full color digitally designed image can be printed in 1 run.  
No cost difference regardless of the number of colors used.



**Low printing cost**  
Full color print possible in small quantities

**Inkjet printing** 1 run only for full color print

**Printing cost Full color**

**Silk-screen printing** Printing cost x number of colors

Printing cost Color 1	Printing cost Color 2	Printing cost Color 3	Printing cost Color 4
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# High quality printing of photo image and color gradation.

Print photo images in maximum 1,800 x 1,800 dpi quality.

Pictures, logos and unique designs with color gradation can be recreated in a high quality print.



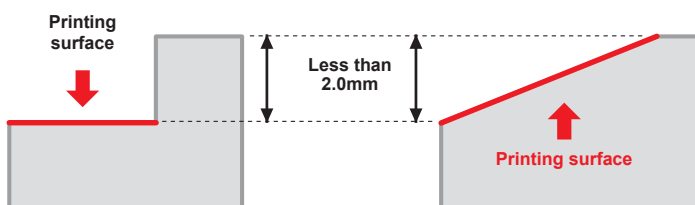
## Maximum printable enclosure size



## Printable on surfaces with height differential

Printing is possible on recessed, sloped and rounded sections.

Gap difference is less than 2.0mm.



\*Not suitable if height difference is more than 2.0mm.



Printed example

