

NOTICE

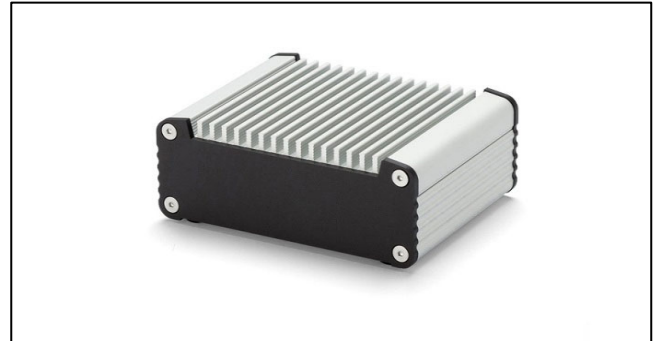
EXH, EXHF and EXHS Series Discontinuation of Color Types

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

BS Color Type (Discontinued)



SB Color Type (Discontinued)



NOTICE

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

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

Current (Old) DesignNew DesignCurrent (Old) Surface Finish

- Silver Anodized

New Surface Finish

- Silver Metallic Painted (Unfinished Inside)

- Purpose: To ensure consistent quality throughout via streamlined supply chain and materials.
- Effective date : From December 9, 2021.
- Alternatives : "SS" or "BB" color types.

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

EXH • EXHE • EXHF • EXHFE series HEAT-SINK ALUMINIUM ENCLOSURE

EXH • EXHE • EXHF • EXHFE series are aluminium enclosures 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, 64 different sizes available with EMC shielded and flanged models.



Waved surface heat-sink fins for maximum cooling performance!

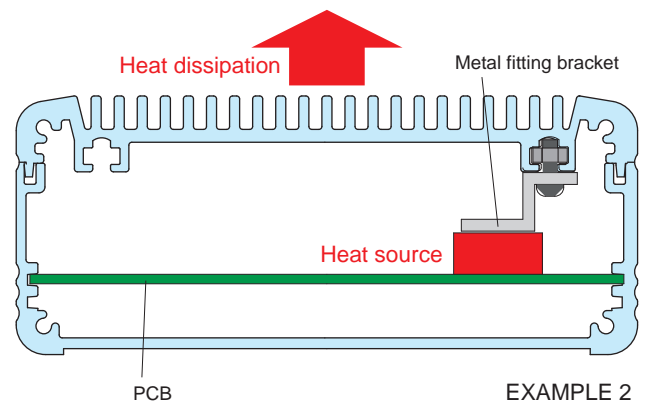
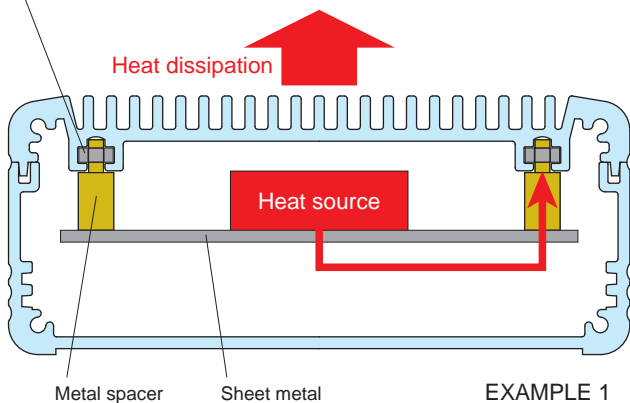
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

Waved Surface



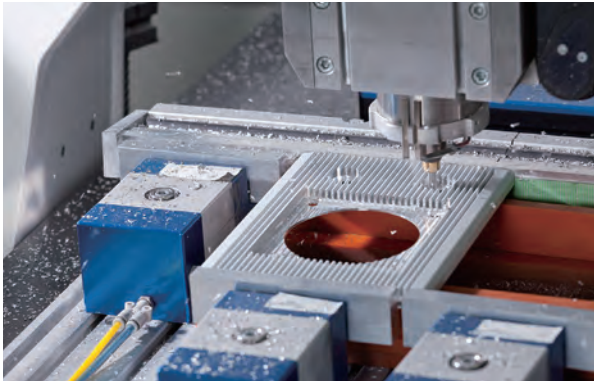
HEAT DISSIPATION EXAMPLE

- 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 Anodization

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)



UPS Battery Monitoring System Product by BatteryDAQ (USA)



All-in-one Edge Node

Product by SHINWA (Japan)



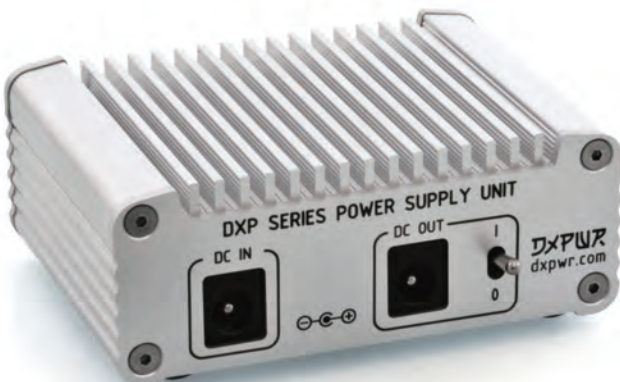
4 Channel Power Switching Edge Node

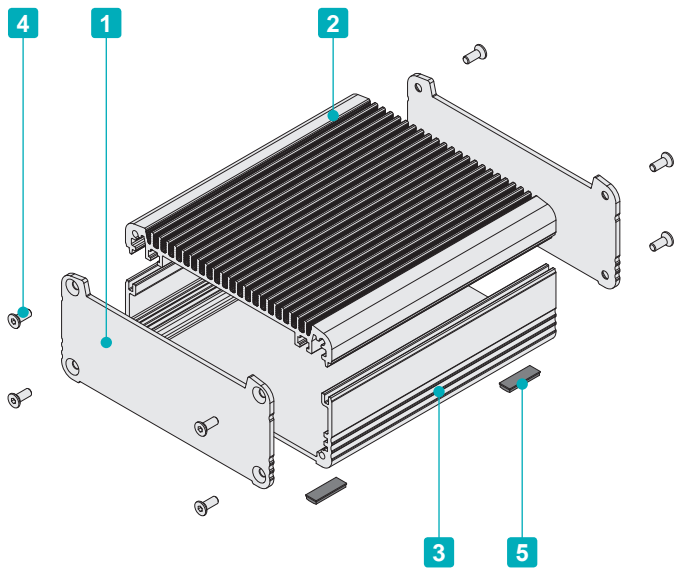
Product by SHINWA (Japan)



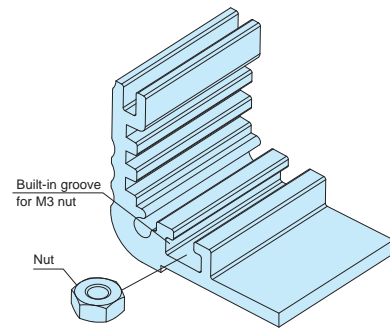
Ultra Low Noise Regulation Power Supply

Product by Impex Technology (UAE)





- 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 64 different sizes and 2 different color combinations.
- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider). Optional nut is available.



Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Metallic silver / Painted (Unfinished inside) : Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside) : Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside) : Black / Anodized
4	Screw (Hexagonal)	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane • Synthetic rubber	Black

■ Rubber feet material : Polyurethane : EXH8-□ ~ 19-□ models • Synthetic rubber : EXH23-□ ~ 29-□ models.

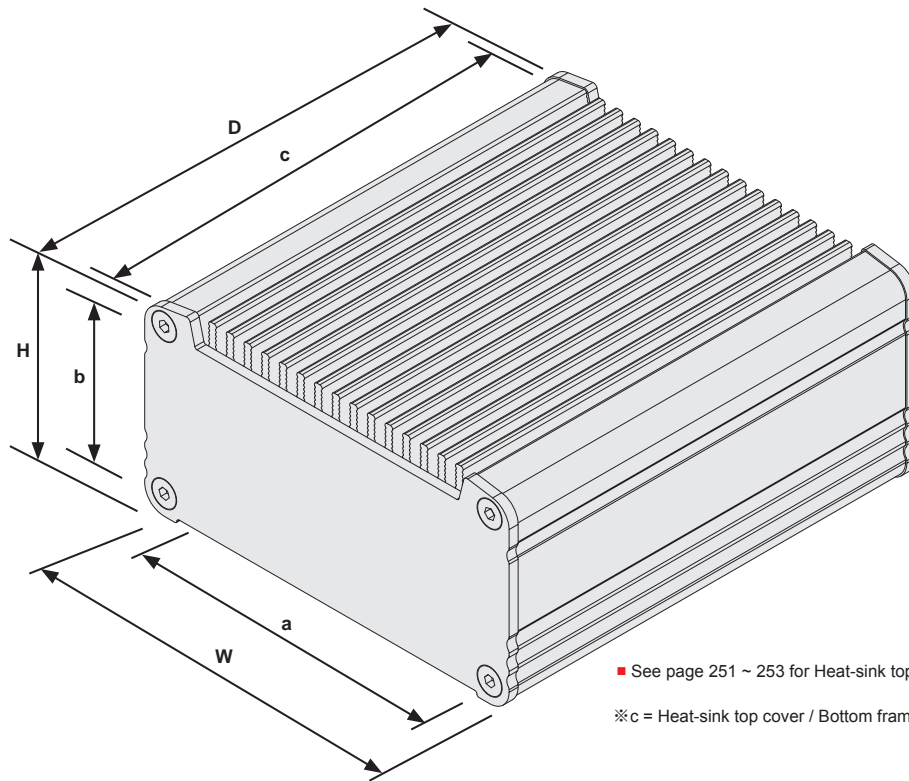
Color Type



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-□, 29-□ models : M5-10 x 8 pcs
 ※Hexagonal wrench included.

EXH dimensions

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



See page 251 ~ 253 for Heat-sink top cover / Bottom frame dimensions.

c = Heat-sink top cover / Bottom frame length.

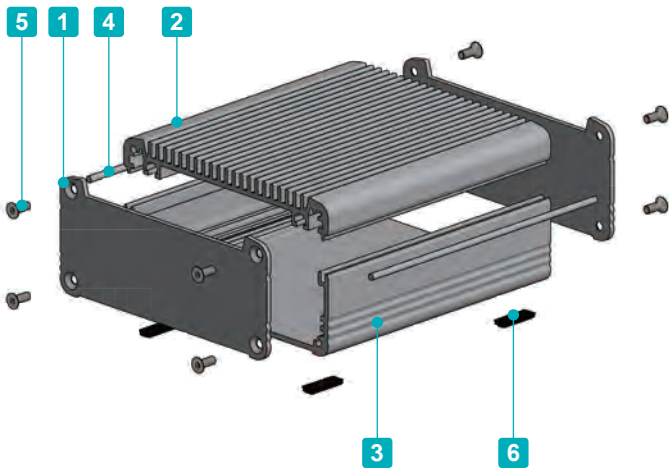
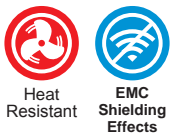
Product no. / Dimensions

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

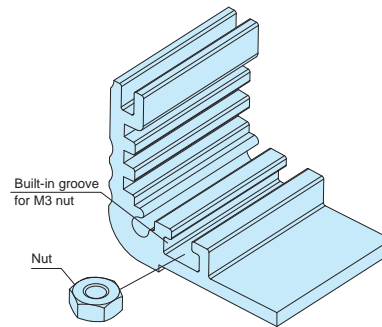
Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)	Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c			W	H	D	a	b	c	
EXH 8-3- 6□□	80.6	30.7	60	66	15	56	7.32	EXH19- 4-13□□	186.5	43.5	125	131	26.8	120	1.92
EXH 8-3- 9□□	80.6	30.7	90	66	15	86	5.65	EXH19- 4-18□□	186.5	43.5	177	131	26.8	172	1.56
EXH 8-3-12□□	80.6	30.7	120	66	15	116	4.72	EXH19- 4-23□□	186.5	43.5	230	131	26.8	225	1.32
EXH 8-4- 6□□	80.6	40.7	60	66	25	56	7.32	EXH19- 4-29□□	186.5	43.5	285	131	26.8	280	1.15
EXH 8-4- 9□□	80.6	40.7	90	66	25	86	5.65	EXH19- 6-13□□	186.5	61.5	125	131	44.8	120	1.92
EXH 8-4-12□□	80.6	40.7	120	66	25	116	4.72	EXH19- 6-18□□	186.5	61.5	177	131	44.8	172	1.56
EXH 8-6- 6□□	80.6	55.7	60	66	40	56	7.32	EXH19- 6-23□□	186.5	61.5	230	131	44.8	225	1.32
EXH 8-6- 9□□	80.6	55.7	90	66	40	86	5.65	EXH19- 6-29□□	186.5	61.5	285	131	44.8	280	1.15
EXH 8-6-12□□	80.6	55.7	120	66	40	116	4.72	EXH19- 8-13□□	186.5	81.5	125	131	64.8	120	1.92
EXH11-3- 8□□	106	31.1	78	88.5	14	74	4.82	EXH19- 8-18□□	186.5	81.5	177	131	64.8	172	1.56
EXH11-3-12□□	106	31.1	118	88.5	14	114	3.72	EXH19- 8-23□□	186.5	81.5	230	131	64.8	225	1.32
EXH11-3-16□□	106	31.1	164	88.5	14	160	3.03	EXH19- 8-29□□	186.5	81.5	285	131	64.8	280	1.15
EXH11-5- 8□□	106	46.1	78	88.5	29	74	4.82	EXH19-11-13□□	186.5	106.5	125	131	89.8	120	1.92
EXH11-5-12□□	106	46.1	118	88.5	29	114	3.72	EXH19-11-18□□	186.5	106.5	177	131	89.8	172	1.56
EXH11-5-16□□	106	46.1	164	88.5	29	160	3.03	EXH19-11-23□□	186.5	106.5	230	131	89.8	225	1.32
EXH11-6- 8□□	106	61.1	78	88.5	44	74	4.82	EXH19-11-29□□	186.5	106.5	285	131	89.8	280	1.15
EXH11-6-12□□	106	61.1	118	88.5	44	114	3.72	EXH23- 5-15□□	232	52	153	176	34.8	147	1.47
EXH11-6-16□□	106	61.1	164	88.5	44	160	3.03	EXH23- 5-21□□	232	52	213	176	34.8	207	1.2
EXH14-4-10□□	141	36.1	97	101.8	24.3	93	3.4	EXH23- 5-27□□	232	52	273	176	34.8	267	1.03
EXH14-4-14□□	141	36.1	137	101.8	24.3	133	2.75	EXH23- 5-33□□	232	52	333	176	34.8	327	0.91
EXH14-4-19□□	141	36.1	187	101.8	24.3	183	2.27	EXH23- 8-15□□	232	77	153	176	59.8	147	1.47
EXH14-5-10□□	141	51.1	97	101.8	39.3	93	3.4	EXH23- 8-21□□	232	77	213	176	59.8	207	1.2
EXH14-5-14□□	141	51.1	137	101.8	39.3	133	2.75	EXH23- 8-27□□	232	77	273	176	59.8	267	1.03
EXH14-5-19□□	141	51.1	187	101.8	39.3	183	2.27	EXH23- 8-33□□	232	77	333	176	59.8	327	0.91
EXH14-7-10□□	141	71.1	97	101.8	59.3	93	3.4	EXH23-10-15□□	232	102	153	176	84.8	147	1.47
EXH14-7-14□□	141	71.1	137	101.8	59.3	133	2.75	EXH23-10-21□□	232	102	213	176	84.8	207	1.2
EXH14-7-19□□	141	71.1	187	101.8	59.3	183	2.27	EXH23-10-27□□	232	102	273	176	84.8	267	1.03
EXH14-9-10□□	141	91.1	97	101.8	79.3	93	3.4	EXH23-10-33□□	232	102	333	176	84.8	327	0.91
EXH14-9-14□□	141	91.1	137	101.8	79.3	133	2.75	NEW EXH29- 8-23□□	287.5	77.5	234	230	59.5	228	0.97
EXH14-9-19□□	141	91.1	187	101.8	79.3	183	2.27	NEW EXH29- 8-30□□	287.5	77.5	304	230	59.5	298	0.82
								NEW EXH29- 8-38□□	287.5	77.5	384	230	59.5	378	0.71
								NEW EXH29-13-23□□	287.5	127.5	234	230	109.5	228	0.97
								NEW EXH29-13-30□□	287.5	127.5	304	230	109.5	298	0.82
								NEW EXH29-13-38□□	287.5	127.5	384	230	109.5	378	0.71

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

Custom length is available.



- EMC shielding is achieved by having the unfinished inner sides of the heat-sink top cover, bottom frame and panels, as well as the shielding gasket in contact with one another.
- Aluminum enclosure equipped with a highly efficient heat-sink top cover.
- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider). Optional nut is available.



Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Metallic silver / Painted (Unfinished inside)
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside)
3	Bottom frame	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside)
4	Fabric-over-foam gasket	2	Conductive fabric : TPE	Metallic gray
5	Screw (Hexagonal)	8	Stainless steel	Unfinished
6	Rubber feet	4	Polyurethane • Synthetic rubber	Black

■ Rubber feet material : Polyurethane : EXHE8-□ ~ 19-□ models • Synthetic rubber : EXHE23-□ ~ 29-□ models.

How to install shield gaskets

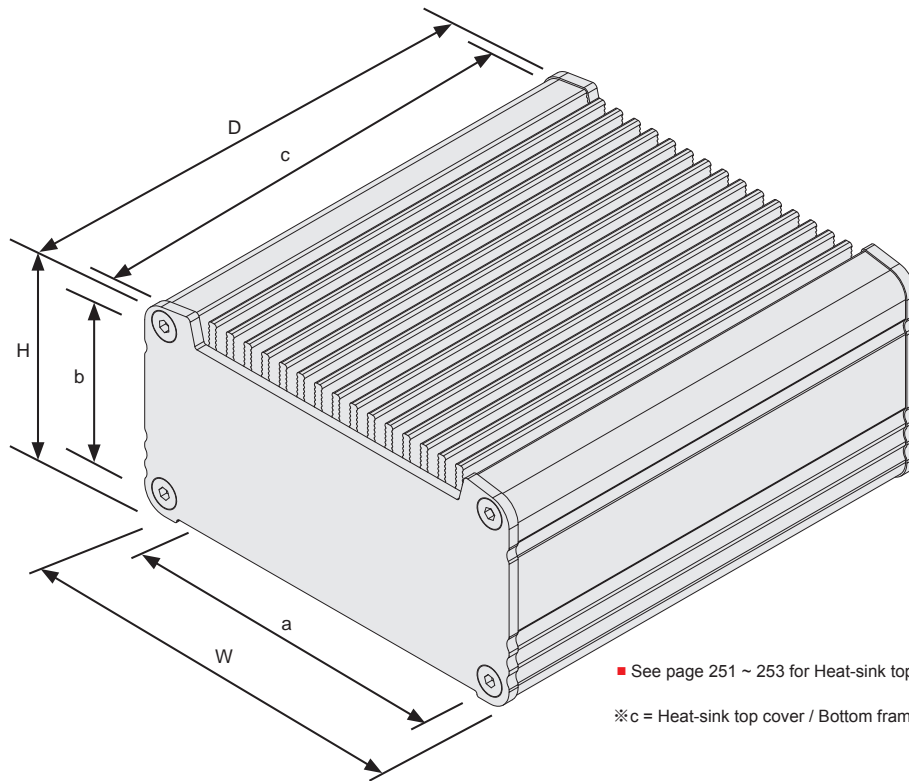


- Insert fabric-over-foam gaskets into the joint-grooves on both sides of the bottom cover.
- Ensure that a small portion of the fabric-over-foam gaskets protrude out in order to maintain connections with the end panels.

Included screws
 EXHE8-□ models : M2.5-8 x 8 pcs
 EXHE11-□, 14-□ models : M3-8 x 8 pcs
 EXHE19-□ models : M4-10 x 8 pcs
 EXHE23-□, 29-□ models : M5-10 x 8 pcs
 ※Hexagonal wrench included.

EXHE dimensions

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



■ See page 251 ~ 253 for Heat-sink top cover / Bottom frame dimensions.

※ c = Heat-sink top cover / Bottom frame length.

Product no. / Dimensions

Product no.	External dimensions			Internal dimensions			※ Thermal resistance rate (°C/W)	Product no.	External dimensions			Internal dimensions			※ Thermal resistance rate (°C/W)
	W	H	D	a	b	c			W	H	D	a	b	c	
EXHE 8-3- 6SS	80.6	30.7	60	66	15	56	7.32	EXHE19- 4-13SS	186.5	43.5	125	131	26.8	120	1.92
EXHE 8-3- 9SS	80.6	30.7	90	66	15	86	5.65	EXHE19- 4-18SS	186.5	43.5	177	131	26.8	172	1.56
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EXHE 8-4- 9SS	80.6	40.7	90	66	25	86	5.65	EXHE19- 6-13SS	186.5	61.5	125	131	44.8	120	1.92
EXHE 8-4-12SS	80.6	40.7	120	66	25	116	4.72	EXHE19- 6-18SS	186.5	61.5	177	131	44.8	172	1.56
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EXHE11-5-16SS	106	46.1	164	88.5	29	160	3.03	EXHE19-11-23SS	186.5	106.5	230	131	89.8	225	1.32
EXHE11-6- 8SS	106	61.1	78	88.5	44	74	4.82	EXHE19-11-29SS	186.5	106.5	285	131	89.8	280	1.15
EXHE11-6-12SS	106	61.1	118	88.5	44	114	3.72	EXHE23- 5-15SS	232	52	153	176	34.8	147	1.47
EXHE11-6-16SS	106	61.1	164	88.5	44	160	3.03	EXHE23- 5-21SS	232	52	213	176	34.8	207	1.2
EXHE14-4-10SS	141	36.1	97	101.8	24.3	93	3.4	EXHE23- 5-27SS	232	52	273	176	34.8	267	1.03
EXHE14-4-14SS	141	36.1	137	101.8	24.3	133	2.75	EXHE23- 5-33SS	232	52	333	176	34.8	327	0.91
EXHE14-4-19SS	141	36.1	187	101.8	24.3	183	2.27	EXHE23- 8-15SS	232	77	153	176	59.8	147	1.47
EXHE14-5-10SS	141	51.1	97	101.8	39.3	93	3.4	EXHE23- 8-21SS	232	77	213	176	59.8	207	1.2
EXHE14-5-14SS	141	51.1	137	101.8	39.3	133	2.75	EXHE23- 8-27SS	232	77	273	176	59.8	267	1.03
EXHE14-5-19SS	141	51.1	187	101.8	39.3	183	2.27	EXHE23- 8-33SS	232	77	333	176	59.8	327	0.91
EXHE14-7-10SS	141	71.1	97	101.8	59.3	93	3.4	EXHE23-10-15SS	232	102	153	176	84.8	147	1.47
EXHE14-7-14SS	141	71.1	137	101.8	59.3	133	2.75	EXHE23-10-21SS	232	102	213	176	84.8	207	1.2
EXHE14-7-19SS	141	71.1	187	101.8	59.3	183	2.27	EXHE23-10-27SS	232	102	273	176	84.8	267	1.03
EXHE14-9-10SS	141	91.1	97	101.8	79.3	93	3.4	EXHE23-10-33SS	232	102	333	176	84.8	327	0.91
EXHE14-9-14SS	141	91.1	137	101.8	79.3	133	2.75	EXHE29- 8-23SS	287.5	77.5	234	230	59.5	228	0.97
EXHE14-9-19SS	141	91.1	187	101.8	79.3	183	2.27	EXHE29- 8-30SS	287.5	77.5	304	230	59.5	298	0.82
								EXHE29- 8-38SS	287.5	77.5	384	230	59.5	378	0.71
								EXHE29-13-23SS	287.5	127.5	234	230	109.5	228	0.97
								EXHE29-13-30SS	287.5	127.5	304	230	109.5	298	0.82
								EXHE29-13-38SS	287.5	127.5	384	230	109.5	378	0.71

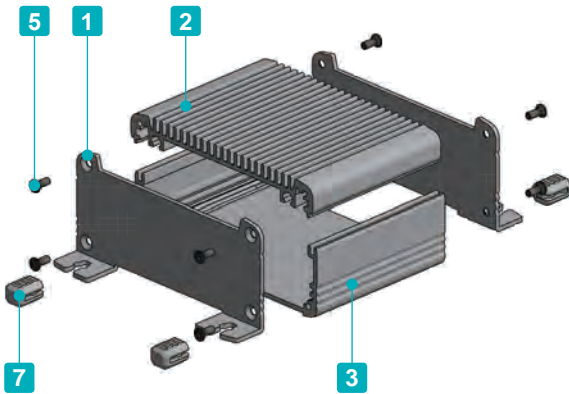
- ※ Thermal resistance test condition
- Ambient air cooling.
 - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
 - Painted aluminium extrusion.
 - Heat source is applied on the opposite side (inner side) of the fins.

■ Custom length is available.

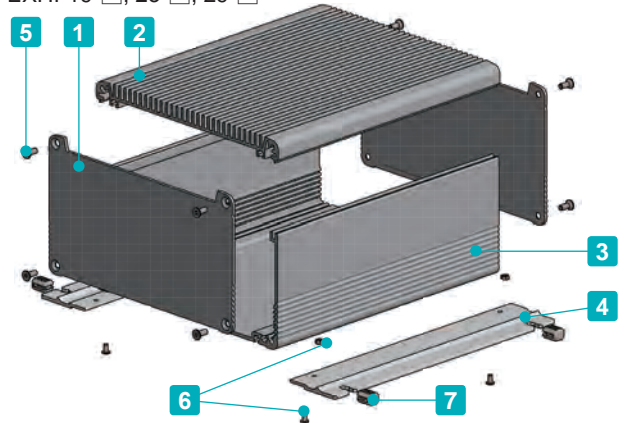


- Equipped with flanged bracket for easy wall mounting.
- Aluminum enclosure equipped with a highly efficient heat-sink top cover.

EXHF8-□, 11-□, 14-□



EXHF19-□, 23-□, 29-□



Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged panel (EXHF8-□, 11-□, 14-□) Panel (EXHF19-□, 23-□, 29-□)	2	Aluminium A1050P	Metallic silver / Painted (Unfinished inside) : Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside) : Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside) : Black / Anodized
4	Flange bracket	2	Extruded aluminium A6063S-T5	Metallic silver / Painted • Black / Anodized
5	Panel screw (Hexagonal)	8	Stainless steel	Unfinished
6	Flange screw & nut	4 each	Steel	Black trivalent chromate
7	Rubber feet	4	Silicone	Black

Color Type

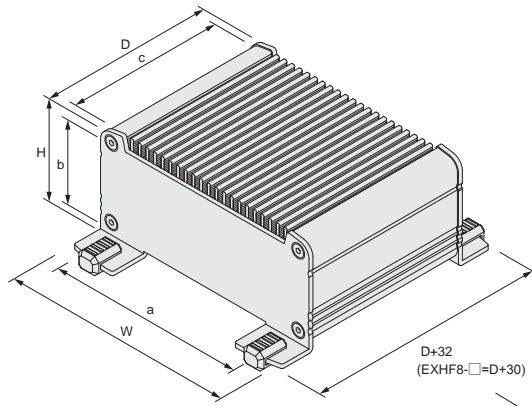


Included screws
 EXHF8-□ models : M2.5-8 x 8 pcs
 EXHF11-□, 14-□ models : M3-8 x 8 pcs
 EXHF19-□ models : M4-10 x 8 pcs
 EXHF23-□, 29-□ models : M5-10 x 8 pcs
 ※Hexagonal wrench included.

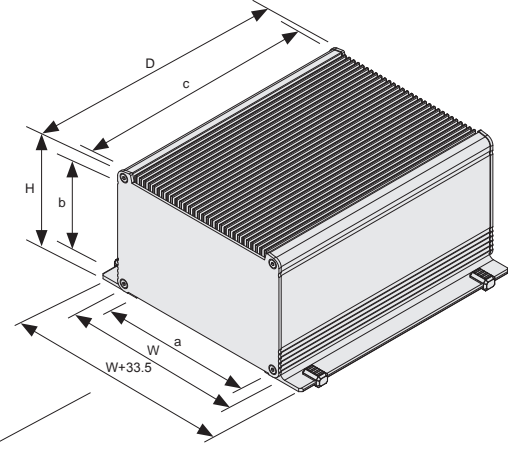
EXHF dimensions

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

EXHF8-□, 11-□, 14-□



EXHF19-□, 23-□, 29-□



See page 251 ~ 253 for Heat-sink top cover / Bottom frame dimensions.
 ※c = Heat-sink top cover / Bottom frame length.

*Rubber feet dimensions are not included.

Product no. / Dimensions

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

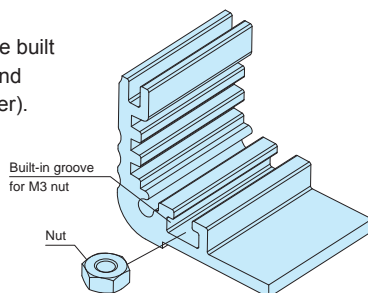
Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
NEW EXHF 8-3- 6□□	80.6	32.8	60	66	15	56	7.32
NEW EXHF 8-3- 9□□	80.6	32.8	90	66	15	86	5.65
NEW EXHF 8-3-12□□	80.6	32.8	120	66	15	116	4.72
NEW EXHF 8-4- 6□□	80.6	42.8	60	66	25	56	7.32
NEW EXHF 8-4- 9□□	80.6	42.8	90	66	25	86	5.65
NEW EXHF 8-4-12□□	80.6	42.8	120	66	25	116	4.72
NEW EXHF 8-6- 6□□	80.6	57.8	60	66	40	56	7.32
NEW EXHF 8-6- 9□□	80.6	57.8	90	66	40	86	5.65
NEW EXHF 8-6-12□□	80.6	57.8	120	66	40	116	4.72
NEW EXHF11-3- 8□□	106	33.1	78	88.5	14	74	4.82
NEW EXHF11-3-12□□	106	33.1	118	88.5	14	114	3.72
NEW EXHF11-3-16□□	106	33.1	164	88.5	14	160	3.03
NEW EXHF11-5- 8□□	106	48.1	78	88.5	29	74	4.82
NEW EXHF11-5-12□□	106	48.1	118	88.5	29	114	3.72
NEW EXHF11-5-16□□	106	48.1	164	88.5	29	160	3.03
NEW EXHF11-6- 8□□	106	63.1	78	88.5	44	74	4.82
NEW EXHF11-6-12□□	106	63.1	118	88.5	44	114	3.72
NEW EXHF11-6-16□□	106	63.1	164	88.5	44	160	3.03
NEW EXHF14-4-10□□	141	38.1	97	101.8	24.3	93	3.4
NEW EXHF14-4-14□□	141	38.1	137	101.8	24.3	133	2.75
NEW EXHF14-4-19□□	141	38.1	187	101.8	24.3	183	2.27
NEW EXHF14-5-10□□	141	53.1	97	101.8	39.3	93	3.4
NEW EXHF14-5-14□□	141	53.1	137	101.8	39.3	133	2.75
NEW EXHF14-5-19□□	141	53.1	187	101.8	39.3	183	2.27
NEW EXHF14-7-10□□	141	73.1	97	101.8	59.3	93	3.4
NEW EXHF14-7-14□□	141	73.1	137	101.8	59.3	133	2.75
NEW EXHF14-7-19□□	141	73.1	187	101.8	59.3	183	2.27
NEW EXHF14-9-10□□	141	93.1	97	101.8	79.3	93	3.4
NEW EXHF14-9-14□□	141	93.1	137	101.8	79.3	133	2.75
NEW EXHF14-9-19□□	141	93.1	187	101.8	79.3	183	2.27

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
EXHF19- 4-13□□	186.5	45.25	125	131	26.8	120	1.92
EXHF19- 4-18□□	186.5	45.25	177	131	26.8	172	1.56
EXHF19- 4-23□□	186.5	45.25	230	131	26.8	225	1.32
EXHF19- 4-29□□	186.5	45.25	285	131	26.8	280	1.15
EXHF19- 6-13□□	186.5	63.25	125	131	44.8	120	1.92
EXHF19- 6-18□□	186.5	63.25	177	131	44.8	172	1.56
EXHF19- 6-23□□	186.5	63.25	230	131	44.8	225	1.32
EXHF19- 6-29□□	186.5	63.25	285	131	44.8	280	1.15
EXHF19- 8-13□□	186.5	83.25	125	131	64.8	120	1.92
EXHF19- 8-18□□	186.5	83.25	177	131	64.8	172	1.56
EXHF19- 8-23□□	186.5	83.25	230	131	64.8	225	1.32
EXHF19- 8-29□□	186.5	83.25	285	131	64.8	280	1.15
EXHF19-11-13□□	186.5	108.25	125	131	89.8	120	1.92
EXHF19-11-18□□	186.5	108.25	177	131	89.8	172	1.56
EXHF19-11-23□□	186.5	108.25	230	131	89.8	225	1.32
EXHF19-11-29□□	186.5	108.25	285	131	89.8	280	1.15
EXHF23- 5-15□□	232	53.5	153	176	34.8	147	1.47
EXHF23- 5-21□□	232	53.5	213	176	34.8	207	1.2
EXHF23- 5-27□□	232	53.5	273	176	34.8	267	1.03
EXHF23- 5-33□□	232	53.5	333	176	34.8	327	0.91
EXHF23- 8-15□□	232	78.5	153	176	59.8	147	1.47
EXHF23- 8-21□□	232	78.5	213	176	59.8	207	1.2
EXHF23- 8-27□□	232	78.5	273	176	59.8	267	1.03
EXHF23- 8-33□□	232	78.5	333	176	59.8	327	0.91
EXHF23-10-15□□	232	103.5	153	176	84.8	147	1.47
EXHF23-10-21□□	232	103.5	213	176	84.8	207	1.2
EXHF23-10-27□□	232	103.5	273	176	84.8	267	1.03
EXHF23-10-33□□	232	103.5	333	176	84.8	327	0.91
NEW EXHF29- 8-23□□	287.5	78.75	234	230	59.5	228	0.97
NEW EXHF29- 8-30□□	287.5	78.75	304	230	59.5	298	0.82
NEW EXHF29- 8-38□□	287.5	78.75	384	230	59.5	378	0.71
NEW EXHF29-13-23□□	287.5	128.75	234	230	109.5	228	0.97
NEW EXHF29-13-30□□	287.5	128.75	304	230	109.5	298	0.82
NEW EXHF29-13-38□□	287.5	128.75	384	230	109.5	378	0.71

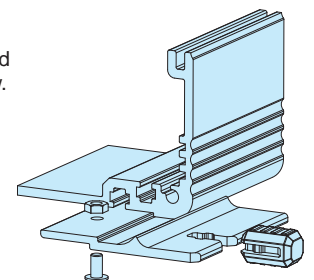
- ※ Thermal resistance test condition
- Ambient air cooling.
 - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
 - Painted aluminium extrusion.
 - Heat source is applied on the opposite side (inner side) of the fins.

Custom length is available.

- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider). Optional nut is available.



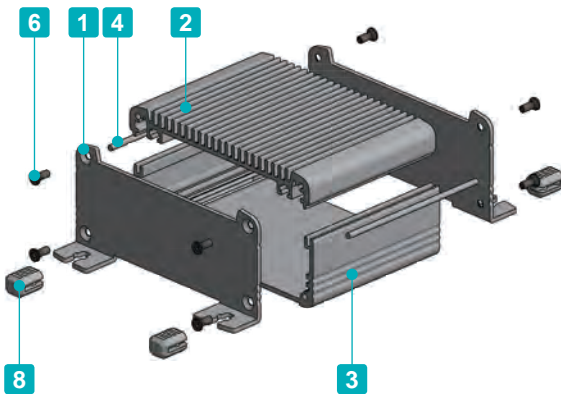
- Flange bracket is installed as per the diagram below.



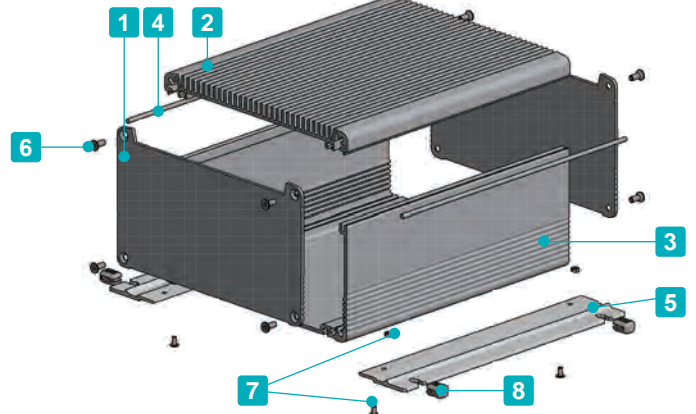


- EMC shielding is achieved by having the unfinished internal parts of the enclosure, as well as the fabric-over-foam gasket, in contact with one another.
- Aluminum enclosure equipped with a highly efficient heat-sink top cover.
- Equipped with flanged bracket for easy wall mounting.

EXHFE8-□, 11-□, 14-□



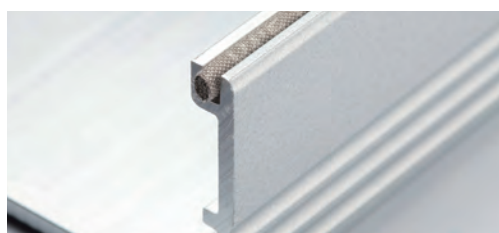
EXHFE19-□, 23-□, 29-□



Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged panel (EXHF8-□, 11-□, 14-□) Panel (EXHF19-□, 23-□, 29-□)	2	Aluminium A1050P	Metallic silver / Painted (Unfinished inside)
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside)
3	Bottom frame	1	Extruded aluminium A6063S-T5	Metallic silver / Painted (Unfinished inside)
4	Fabric-over-foam gasket	2	Conductive fabric : TPE	Metallic gray
5	Flange bracket	2	Extruded aluminium A6063S-T5	Metallic silver / Painted
6	Panel screw (Hexagonal)	8	Stainless steel	Unfinished
7	Flange screw & nut	4 each	Steel	Black trivalent chromate
8	Rubber feet	4	Silicone	Black

How to install shield gaskets



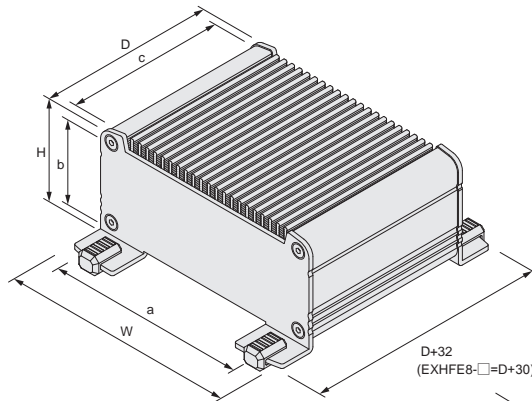
- Insert fabric-over-foam gaskets into the joint-grooves on both sides of the bottom cover.
- Ensure that a small portion of the fabric-over-foam gaskets protrude out in order to maintain connections with the end panels.

Included screws
 EXHFE8-□ models : M2.5-8 x 8 pcs
 EXHFE11-□, 14-□ models : M3-8 x 8 pcs
 EXHFE19-□ models : M4-10 x 8 pcs
 EXHFE23-□, 29-□ models : M5-10 x 8 pcs
 ※Hexagonal wrench included.

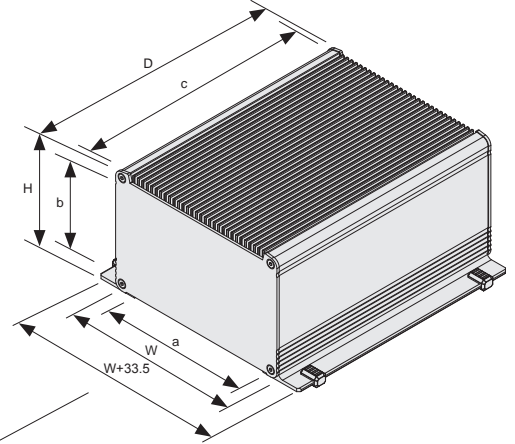
EXHFE dimensions

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

EXHFE8-□, 11-□, 14-□



EXHFE19-□, 23-□, 29-□



■ See page 251 ~ 253 for Heat-sink top cover / Bottom frame dimensions.
 ※c = Heat-sink top cover / Bottom frame length.

*Rubber feet dimensions are not included.

Product no. / Dimensions

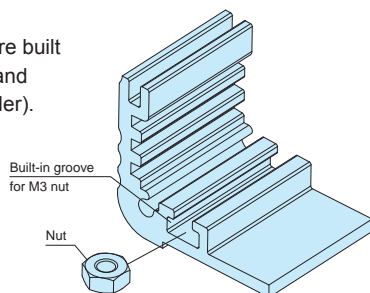
Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
EXHFE 8-3- 6SS	80.6	32.8	60	66	15	56	7.32
EXHFE 8-3- 9SS	80.6	32.8	90	66	15	86	5.65
EXHFE 8-3-12SS	80.6	32.8	120	66	15	116	4.72
EXHFE 8-4- 6SS	80.6	42.8	60	66	25	56	7.32
EXHFE 8-4- 9SS	80.6	42.8	90	66	25	86	5.65
EXHFE 8-4-12SS	80.6	42.8	120	66	25	116	4.72
EXHFE 8-6- 6SS	80.6	57.8	60	66	40	56	7.32
EXHFE 8-6- 9SS	80.6	57.8	90	66	40	86	5.65
EXHFE 8-6-12SS	80.6	57.8	120	66	40	116	4.72
EXHFE11-3- 8SS	106	33.1	78	88.5	14	74	4.82
EXHFE11-3-12SS	106	33.1	118	88.5	14	114	3.72
EXHFE11-3-16SS	106	33.1	164	88.5	14	160	3.03
EXHFE11-5- 8SS	106	48.1	78	88.5	29	74	4.82
EXHFE11-5-12SS	106	48.1	118	88.5	29	114	3.72
EXHFE11-5-16SS	106	48.1	164	88.5	29	160	3.03
EXHFE11-6- 8SS	106	63.1	78	88.5	44	74	4.82
EXHFE11-6-12SS	106	63.1	118	88.5	44	114	3.72
EXHFE11-6-16SS	106	63.1	164	88.5	44	160	3.03
EXHFE14-4-10SS	141	38.1	97	101.8	24.3	93	3.4
EXHFE14-4-14SS	141	38.1	137	101.8	24.3	133	2.75
EXHFE14-4-19SS	141	38.1	187	101.8	24.3	183	2.27
EXHFE14-5-10SS	141	53.1	97	101.8	39.3	93	3.4
EXHFE14-5-14SS	141	53.1	137	101.8	39.3	133	2.75
EXHFE14-5-19SS	141	53.1	187	101.8	39.3	183	2.27
EXHFE14-7-10SS	141	73.1	97	101.8	59.3	93	3.4
EXHFE14-7-14SS	141	73.1	137	101.8	59.3	133	2.75
EXHFE14-7-19SS	141	73.1	187	101.8	59.3	183	2.27
EXHFE14-9-10SS	141	93.1	97	101.8	79.3	93	3.4
EXHFE14-9-14SS	141	93.1	137	101.8	79.3	133	2.75
EXHFE14-9-19SS	141	93.1	187	101.8	79.3	183	2.27

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
EXHFE19- 4-13SS	186.5	45.25	125	131	26.8	120	1.92
EXHFE19- 4-18SS	186.5	45.25	177	131	26.8	172	1.56
EXHFE19- 4-23SS	186.5	45.25	230	131	26.8	225	1.32
EXHFE19- 4-29SS	186.5	45.25	285	131	26.8	280	1.15
EXHFE19- 6-13SS	186.5	63.25	125	131	44.8	120	1.92
EXHFE19- 6-18SS	186.5	63.25	177	131	44.8	172	1.56
EXHFE19- 6-23SS	186.5	63.25	230	131	44.8	225	1.32
EXHFE19- 6-29SS	186.5	63.25	285	131	44.8	280	1.15
EXHFE19- 8-13SS	186.5	83.25	125	131	64.8	120	1.92
EXHFE19- 8-18SS	186.5	83.25	177	131	64.8	172	1.56
EXHFE19- 8-23SS	186.5	83.25	230	131	64.8	225	1.32
EXHFE19- 8-29SS	186.5	83.25	285	131	64.8	280	1.15
EXHFE19-11-13SS	186.5	108.25	125	131	89.8	120	1.92
EXHFE19-11-18SS	186.5	108.25	177	131	89.8	172	1.56
EXHFE19-11-23SS	186.5	108.25	230	131	89.8	225	1.32
EXHFE19-11-29SS	186.5	108.25	285	131	89.8	280	1.15
EXHFE23- 5-15SS	232	53.5	153	176	34.8	147	1.47
EXHFE23- 5-21SS	232	53.5	213	176	34.8	207	1.2
EXHFE23- 5-27SS	232	53.5	273	176	34.8	267	1.03
EXHFE23- 5-33SS	232	53.5	333	176	34.8	327	0.91
EXHFE23- 8-15SS	232	78.5	153	176	59.8	147	1.47
EXHFE23- 8-21SS	232	78.5	213	176	59.8	207	1.2
EXHFE23- 8-27SS	232	78.5	273	176	59.8	267	1.03
EXHFE23- 8-33SS	232	78.5	333	176	59.8	327	0.91
EXHFE23-10-15SS	232	103.5	153	176	84.8	147	1.47
EXHFE23-10-21SS	232	103.5	213	176	84.8	207	1.2
EXHFE23-10-27SS	232	103.5	273	176	84.8	267	1.03
EXHFE23-10-33SS	232	103.5	333	176	84.8	327	0.91
EXHFE29- 8-23SS	287.5	78.75	234	230	59.5	228	0.97
EXHFE29- 8-30SS	287.5	78.75	304	230	59.5	298	0.82
EXHFE29- 8-38SS	287.5	78.75	384	230	59.5	378	0.71
EXHFE29-13-23SS	287.5	128.75	234	230	109.5	228	0.97
EXHFE29-13-30SS	287.5	128.75	304	230	109.5	298	0.82
EXHFE29-13-38SS	287.5	128.75	384	230	109.5	378	0.71

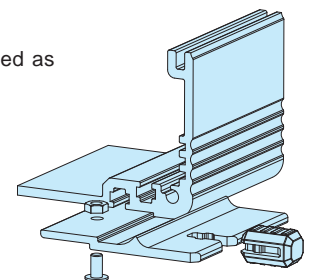
- ※Thermal resistance test condition
- Ambient air cooling.
 - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
 - Painted aluminium extrusion.
 - Heat source is applied on the opposite side (inner side) of the fins.

■ Custom length is available.

- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider). Optional nut is available.



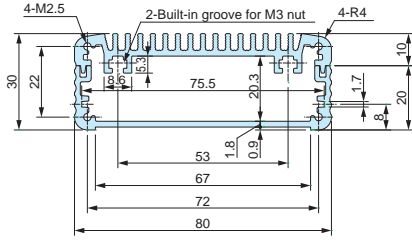
- Flange bracket is installed as per the diagram below.



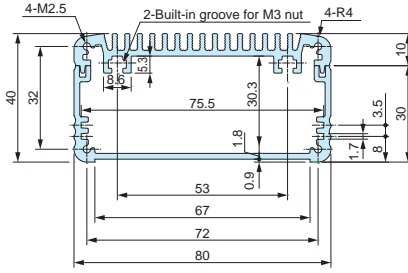
Cross-section view of heat-sink top cover & bottom frame

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

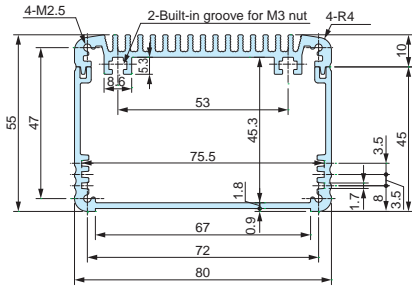
EXH • EXHE • EXHF • EXHFE8-3-□



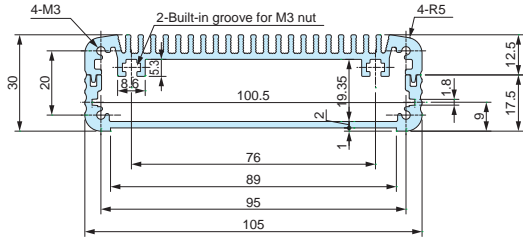
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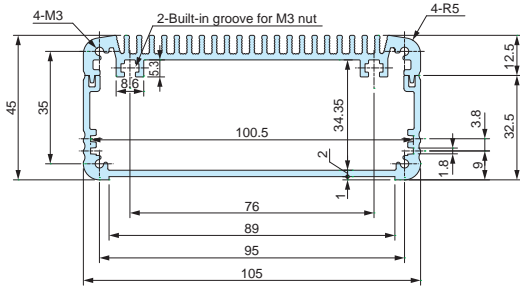
EXH • EXHE • EXHF • EXHFE8-6-□



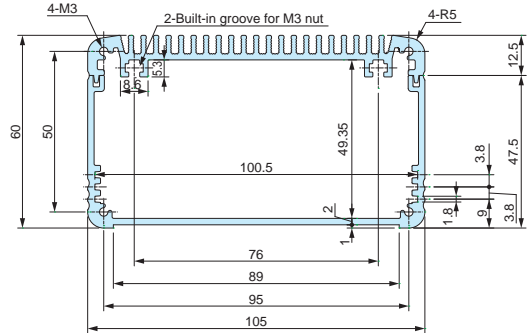
EXH • EXHE • EXHF • EXHFE11-3-□



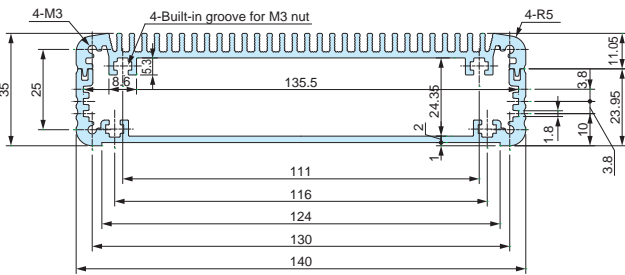
EXH • EXHE • EXHF • EXHFE11-5-□



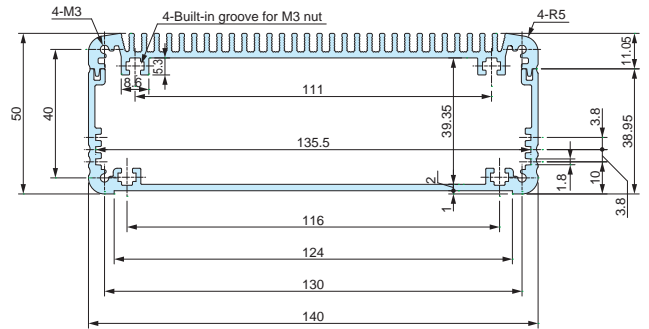
EXH • EXHE • EXHF • EXHFE11-6-□



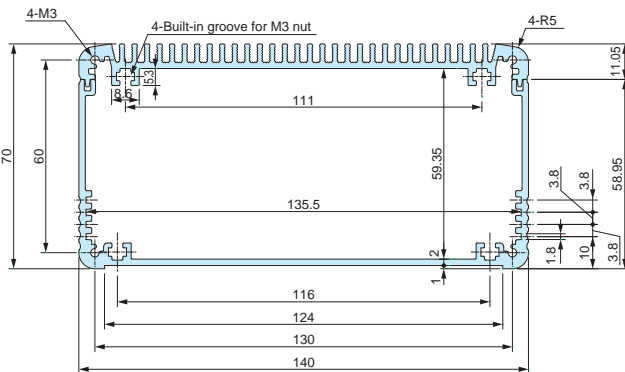
EXH • EXHE • EXHF • EXHFE14-4-□



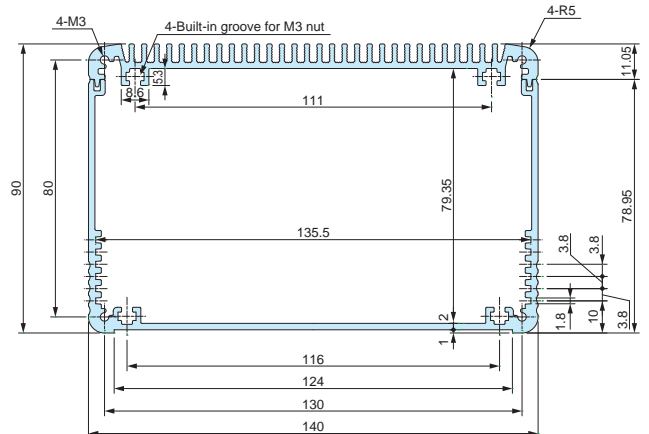
EXH • EXHE • EXHF • EXHFE14-5-□



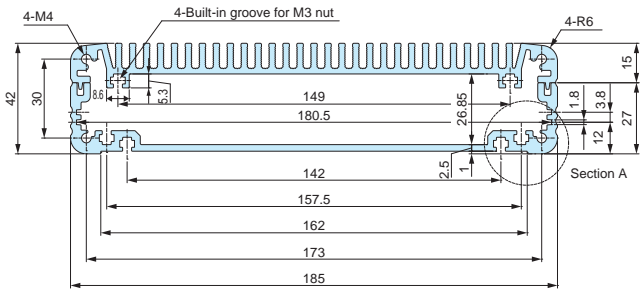
EXH • EXHE • EXHF • EXHFE14-7-□



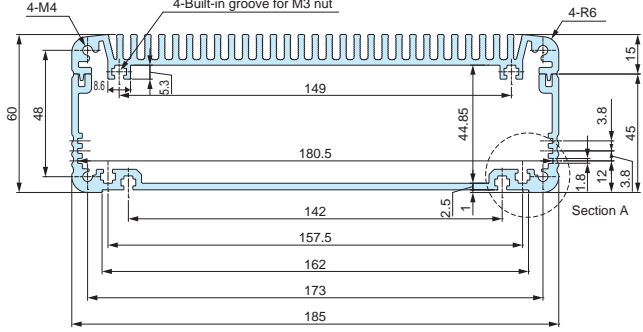
EXH • EXHE • EXHF • EXHFE14-9-□



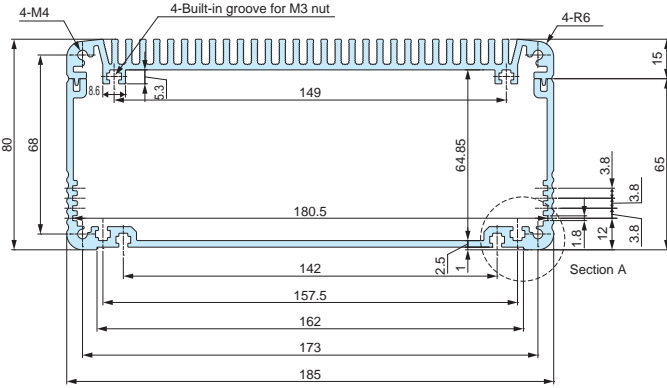
EXH • EXHE • EXHF • EXHFE19-4-□



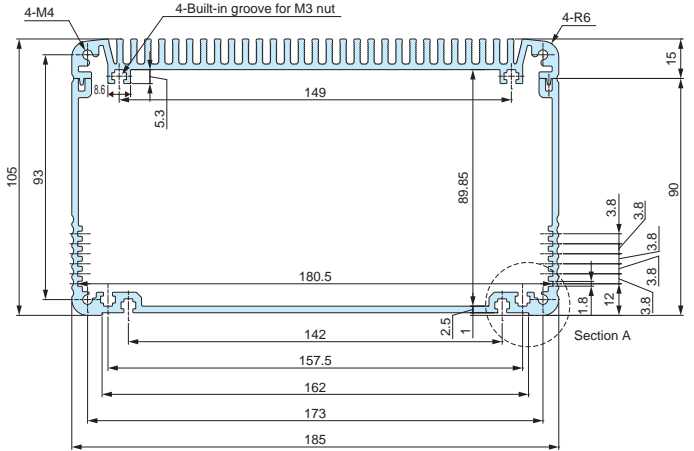
EXH • EXHE • EXHF • EXHFE19-6-□



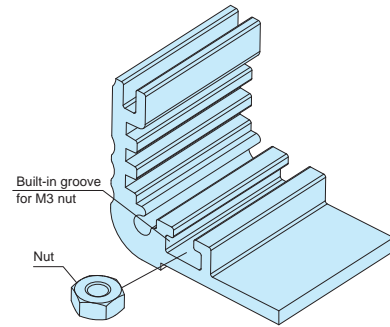
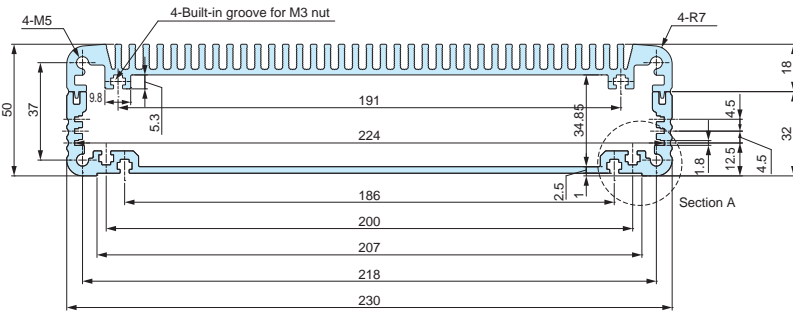
EXH • EXHE • EXHF • EXHFE19-8-□



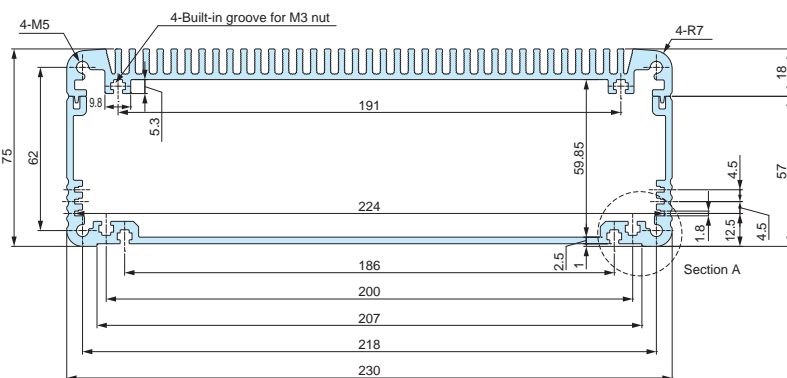
EXH • EXHE • EXHF • EXHFE19-11-□



EXH • EXHE • EXHF • EXHFE23-5-□



EXH • EXHE • EXHF • EXHFE23-8-□



■ Optional M3 nut is available.

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

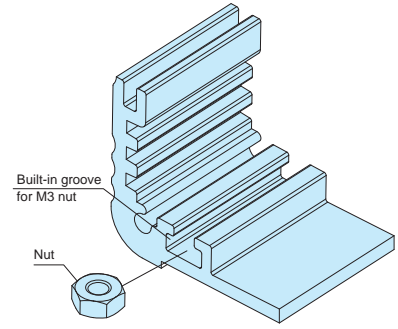
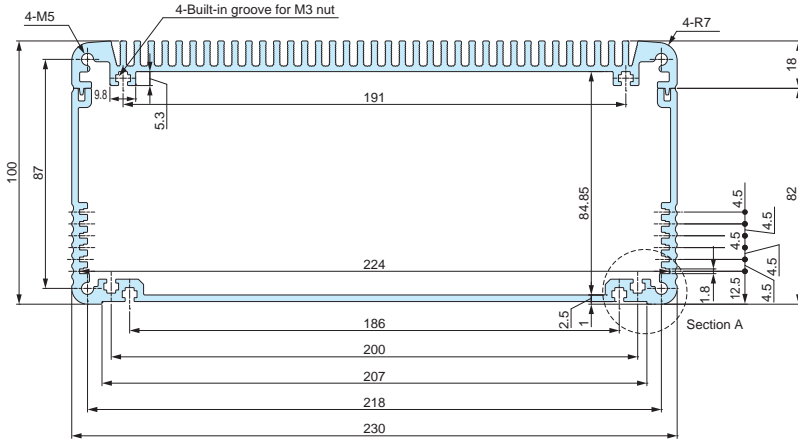
See page 221 for MT-3N optional M3 nut.

*See page 253 for detailed dimensions for Section A

Cross-section view of heat-sink top cover & bottom frame

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

EXH • EXHE • EXHF • EXHFE23-10-□

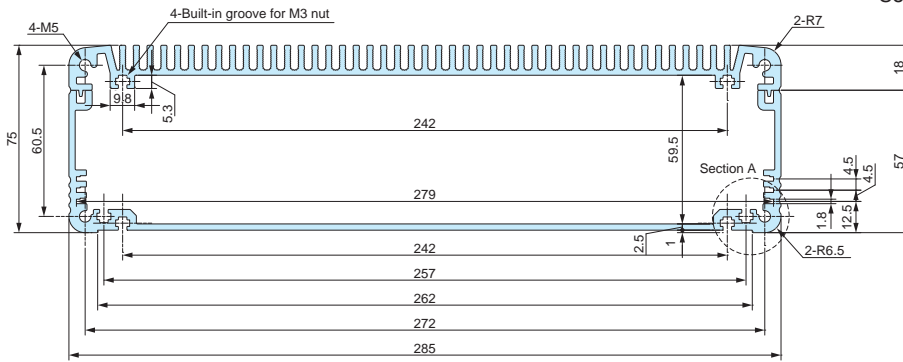


■ Optional M3 nut is available.

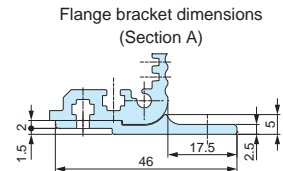
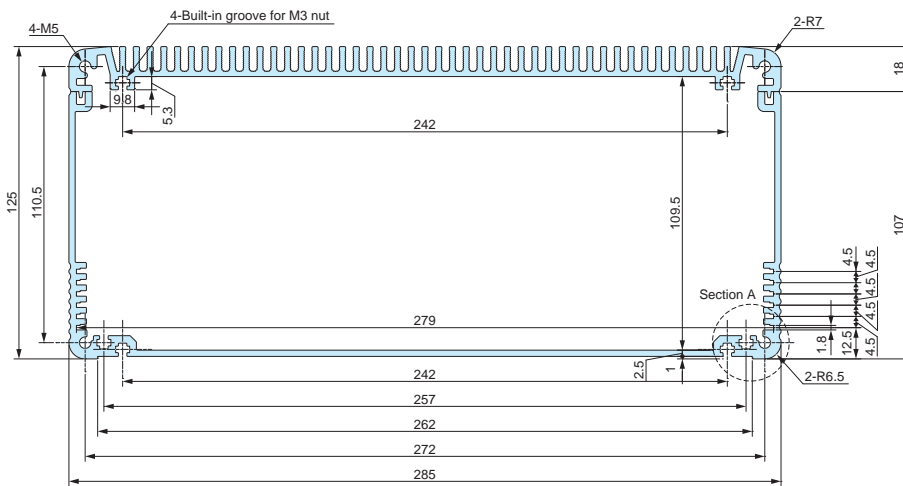
Sliding nut can be used on all EXH • EXHE • EXHF • EXHFE models with width 140mm or larger bottom covers, as well as all heat-sink top covers.

See page 221 for MT-3N optional M3 nut.

EXH • EXHE • EXHF • EXHFE29-8-□



EXH • EXHE • EXHF • EXHFE29-13-□



EF series

WALL MOUNTING BRACKET for EX • EXH • EXHE



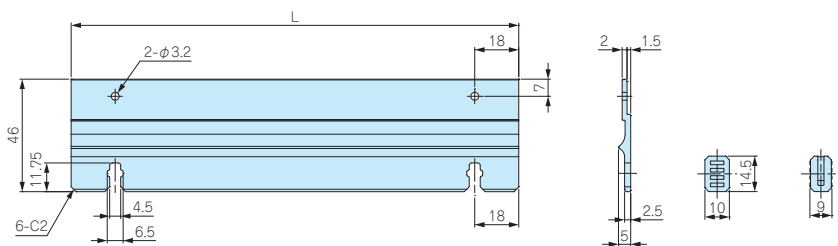
Installation Example



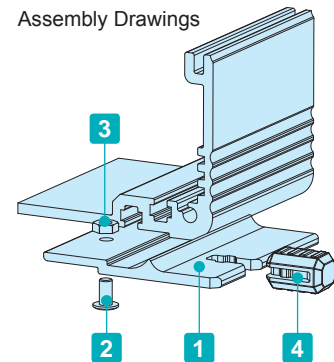
- Wall mounting bracket for EX, EXH, and EXHE series. Applicable only for width 185, 230, and 285mm bottom covers.
- Easy installation by inserting the nuts into built-in grooves on EX, EXH, and EXHE bottom cover.
- Rubber feet are included to hide the mounting cutouts when not used for wall mounting, and act as feet stabilizers for desktop use.

EF dimensions

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



Assembly Drawings



Components

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

Product no. / Dimensions

Product no.		L	Suitable models
● Metallic silver	● Black		
EF19-13S	EF19-13B	119.5	EX • EXH • EXHE19-□-13
EF19-18S	EF19-18B	171.5	EX • EXH • EXHE19-□-18
EF19-23S	EF19-23B	224.5	EX • EXH • EXHE19-□-23
EF19-29S	EF19-29B	279.5	EX • EXH • EXHE19-□-29
EF23-15S	EF23-15B	146.5	EX • EXH • EXHE23-□-15
EF23-21S	EF23-21B	206.5	EX • EXH • EXHE23-□-21
EF23-27S	EF23-27B	266.5	EX • EXH • EXHE23-□-27
EF23-33S	EF23-33B	326.5	EX • EXH • EXHE23-□-33
NEW EF29-23S	NEW EF29-23B	227.5	EX • EXH • EXHE29-□-23
NEW EF29-30S	NEW EF29-30B	297.5	EX • EXH • EXHE29-□-30
NEW EF29-38S	NEW EF29-38B	377.5	EX • EXH • EXHE29-□-38

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

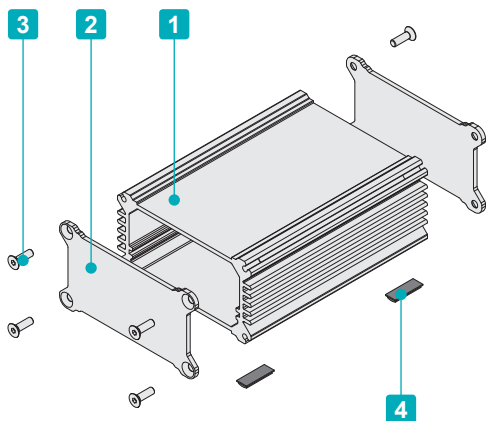
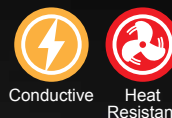
Product by Spectra Quest Lab. (Japan)



Customization

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





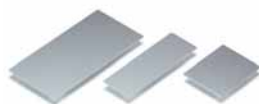
- Extruded aluminium frame manufactured with heat-sink sides.
- Silver anodized end panels makes for a luxurious finish.
- Conductivity is achieved by utilizing the contact between the unfinished end panels side, and the unfinished ends of the frame.
- PCB or chassis can be horizontally mounted by sliding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

Included screws :
 AWA5-3, 6-6, 8-4 models : Hex flat head M3-8 x 8 pcs
 AWA8-8, 10-5, 12-7, 15-8 models : Hex flat head M4-10 x 8 pcs
 AWA20-8 models : Hex flat head 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 with clear coating
2	End panel	2	Aluminium A1050P	Silver / Anodized (Unfinished inside)
3	Hex socket screw	8	Stainless steel	Unfinished
4	Rubber feet	4	Polyurethane	Black

Accessories (Optional parts)



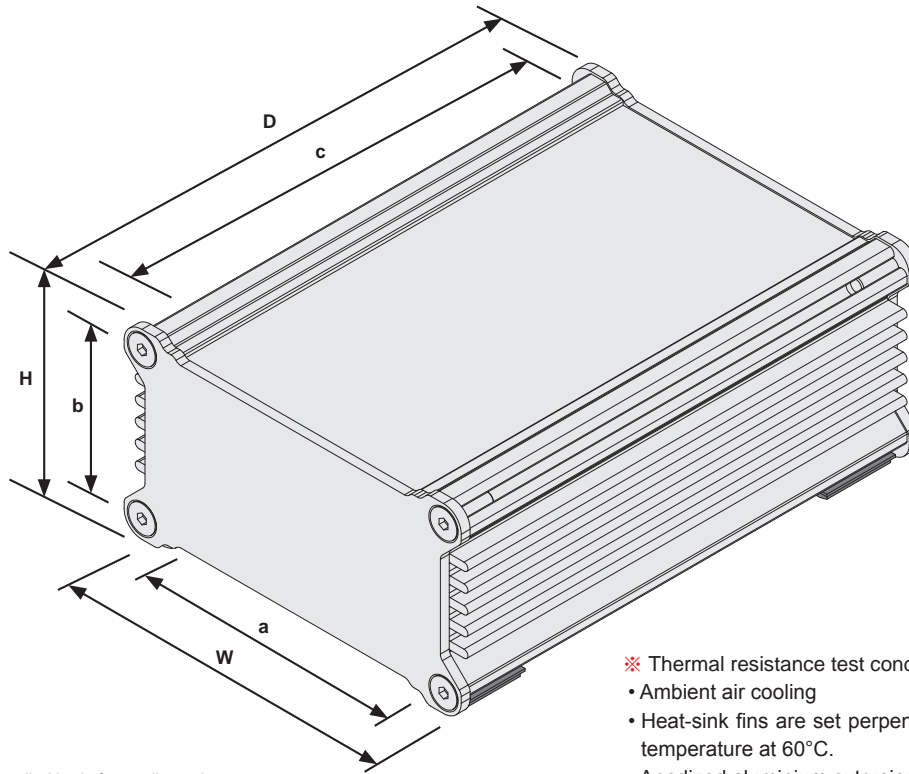
Mounting plate AWC series
See page 238



Aluminium isolation feet AFS・AFM series
See page 293 ~ 294

AWA dimensions

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



See page 235 and 236 for detailed body frame dimensions.

- ※ 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.	External dimensions			Internal dimensions			※ 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 series

IP68 ALUMINIUM ENCLOSURE

AW • AWN • AWP series are highly functional aluminium enclosures which are IP68 (24 hours / 1m depth immersion) rated with heat dissipating heat-sink fins.

34 sizes available. Standard, Flanged, Shielding, and Silicone protector types are available.

Suitable for LED power supply, industrial camera, controller or measuring instrument where waterproof and cooling performance are crucial.

APPLICATION EXAMPLE

Waterproof Boating Network Modular System

Product by Dockmate (Belgium)



GNSS Receiver

Product by KomNavRus



Heavy Duty Portable Hardness Tester

Product by DEMEQ (Argentina)



LoRa Wan Gateway

Product by ProEsys (Italy)



Radio-Control Electronic Exploder

Product by CODETEL (France)



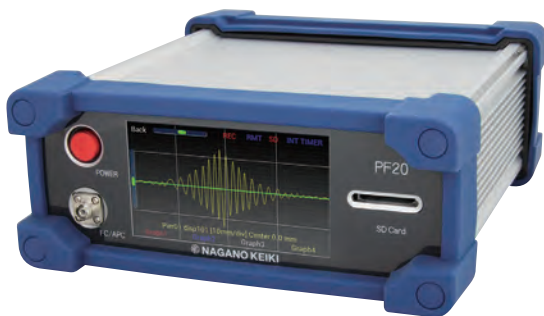
Pin Hole Detector

Product by SANKO ELECTRONIC LABORATORY (Japan)



FBG Data Logger

Product by NAGANO KEIKI (Japan)



Data Logger with 3G Modem Report Function

Product by mSolution (Hong Kong)



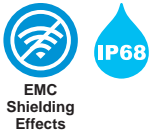
Custom Length Available

Flexible frame length from 50mm to 700mm in 1mm intervals.

No minimum order quantity and short lead time for small quantity order.

See our website for further details.





- IP68 and heat dissipation enclosure. Designed with flanged end panels.
- PCB or chassis is mounted by sliding it horizontally into an inner-grooved body frame.
- Designed for a tough environment where waterproof and heat countermeasures are required.
- Suitable for outdoor use such as LED power supply and junction boxes.

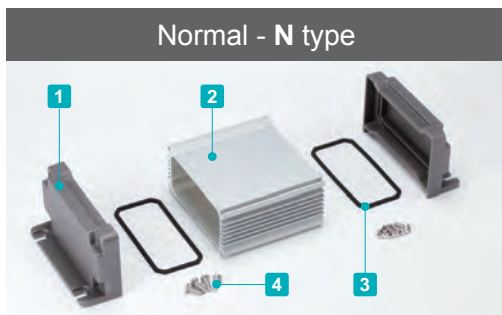
Technical Data
Protection class: IP68 (24 hours/1m depth)
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N · m

Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished

EMC Shielded E type Components

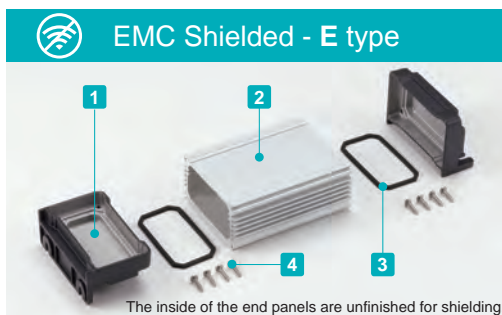
No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished



Normal - N type



Color type



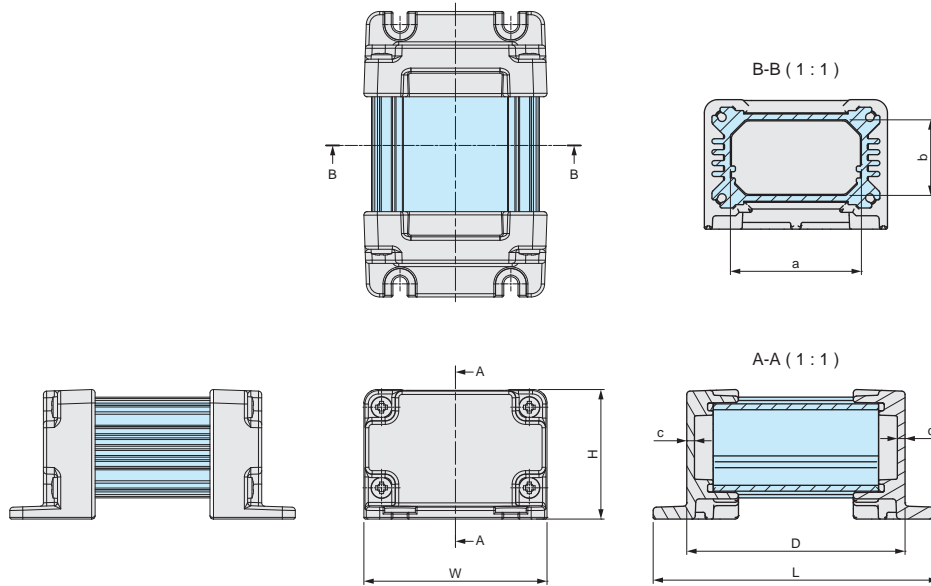
The inside of the end panels are unfinished for shielding.



Color type

AW dimensions

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



See page 235 and 236 for detailed body frame dimensions.

Product no. / Dimensions

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

Product no.	W	H	D	L	a	b	c	Weight (g)
AW 5-4- 7□□□	54.6	38.6	65	85	39	22.5	2.3	128.5
AW 5-4- 9□□□	54.6	38.6	85	105	39	22.5	2.3	149
AW 5-4-11□□□	54.6	38.6	110	130	39	22.5	2.3	175
AW 5-4-14□□□	54.6	38.6	135	155	39	22.5	2.3	201.5
AW 7-7- 8□□□	65.8	70.8	80	106	47	51	2.5	294.5
AW 7-7-11□□□	65.8	70.8	110	136	47	51	2.5	350
AW 7-7-15□□□	65.8	70.8	150	176	47	51	2.5	424.5
AW 7-7-20□□□	65.8	70.8	200	226	47	51	2.5	517
AW 7-7-25□□□	65.8	70.8	250	276	47	51	2.5	610
AW 8-5- 9□□□	80.8	50.8	90	116	62	31	2.5	289.5
AW 8-5-12□□□	80.8	50.8	115	141	62	31	2.5	330.5
AW 8-5-14□□□	80.8	50.8	140	166	62	31	2.5	372
AW 8-5-18□□□	80.8	50.8	175	201	62	31	2.5	429.5
AW 9-9-10□□□	86.3	92	100	129	66.5	66.5	3	560.5
AW 9-9-13□□□	86.3	92	125	154	66.5	66.5	3	633.5
AW 9-9-17□□□	86.3	92	170	199	66.5	66.5	3	764.5
AW 9-9-22□□□	86.3	92	220	249	66.5	66.5	3	910.5
AW 9-9-28□□□	86.3	92	275	304	66.5	66.5	3	1,071
AW11-6-11□□□	106.3	62	110	139	86.5	36.5	3	526.5
AW11-6-15□□□	106.3	62	150	179	86.5	36.5	3	625
AW11-6-19□□□	106.3	62	190	219	86.5	36.5	3	723.5
AW11-6-24□□□	106.3	62	240	269	86.5	36.5	3	847
AW12-8-11□□□	120	77	105	134	100.2	51.5	3	614.5
AW12-8-14□□□	120	77	140	169	100.2	51.5	3	720.5
AW12-8-17□□□	120	77	179.5	208.5	100.2	51.5	3	840
AW12-8-22□□□	120	77	215	244	100.2	51.5	3	947.5
AW16-9-14□□□	156.3	87	135	164	136.5	61.5	3	945.5
AW16-9-18□□□	156.3	87	175	204	136.5	61.5	3	1,092.5
AW16-9-23□□□	156.3	87	225	254	136.5	61.5	3	1,275.5
AW16-9-28□□□	156.3	87	275	304	136.5	61.5	3	1,459
AW21-9-17□□□	206.3	87	170	199	186.5	61.5	3	1,303
AW21-9-21□□□	206.3	87	210	239	186.5	61.5	3	1,473.5
AW21-9-26□□□	206.3	87	260	289	186.5	61.5	3	1,686.5
AW21-9-31□□□	206.3	87	310	339	186.5	61.5	3	1,899.5

■ Custom length is available.

Accessories (Optional parts)



Mounting plate AWC series
See page 238



Hexagon socket head screw HCS series
See page 238



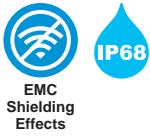
Cable gland
See page 333 ~ 340



Pole mounting bracket SSK series
See website



Protective vent PMF series
See page 325 ~ 326



- IP68 and heat dissipation enclosure design. Selectable in both Normal or EMC Shielded type.
- The extruded aluminium frame and diecast aluminium panels makes it extremely suitable to be used in harsh environments where waterproofing and heat dissipation is essential.
- PCB or chassis can be mounted by sliding it horizontally into inner-grooved body frame.
- Suitable for measuring instruments, industrial control box, and industrial camera housing, among others.

Technical Data
Protection class: IP68 (24 hours/1m depth)
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N • m

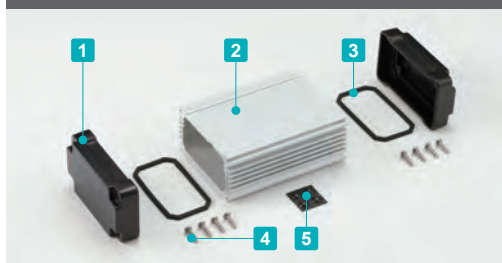
Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

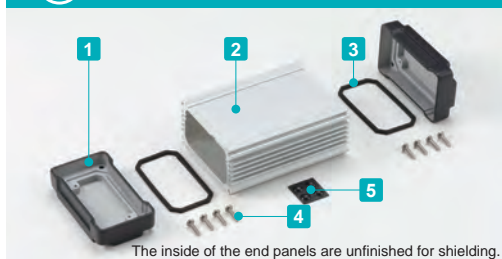
Normal - N type



Color type



EMC Shielded - E type

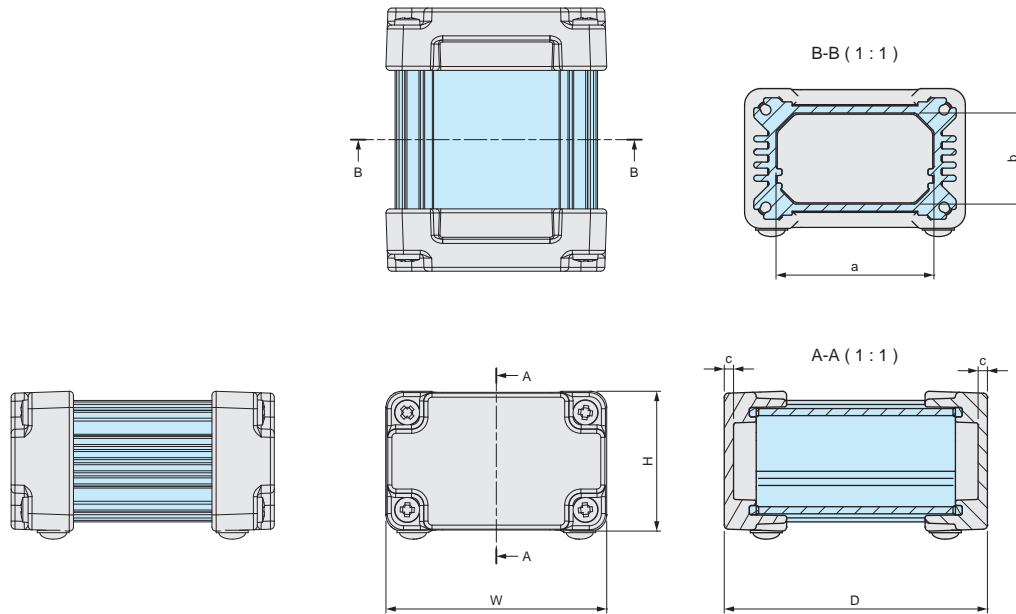


Color type



AWN dimensions

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



See page 235 and 236 for detailed body frame dimensions.

Product no. / Dimensions

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

Product no.	W	H	D	a	b	c	Weight (g)
AWN 5-4- 7□□□	54.6	34.6	65	39	22.5	2.3	118.5
AWN 5-4- 9□□□	54.6	34.6	85	39	22.5	2.3	139
AWN 5-4-11□□□	54.6	34.6	110	39	22.5	2.3	165
AWN 5-4-14□□□	54.6	34.6	135	39	22.5	2.3	191.5
AWN 7-7- 8□□□	65.8	65.8	80	47	51	2.5	272.5
AWN 7-7-11□□□	65.8	65.8	110	47	51	2.5	328
AWN 7-7-15□□□	65.8	65.8	150	47	51	2.5	402.5
AWN 7-7-20□□□	65.8	65.8	200	47	51	2.5	495
AWN 7-7-25□□□	65.8	65.8	250	47	51	2.5	588
AWN 8-5- 9□□□	80.8	45.8	90	62	31	2.5	259.5
AWN 8-5-12□□□	80.8	45.8	115	62	31	2.5	300.5
AWN 8-5-14□□□	80.8	45.8	140	62	31	2.5	342
AWN 8-5-18□□□	80.8	45.8	175	62	31	2.5	399.5
AWN 9-9-10□□□	86.3	86.3	100	66.5	66.5	3	521.5
AWN 9-9-13□□□	86.3	86.3	125	66.5	66.5	3	594.5
AWN 9-9-17□□□	86.3	86.3	170	66.5	66.5	3	725.5
AWN 9-9-22□□□	86.3	86.3	220	66.5	66.5	3	871.5
AWN 9-9-28□□□	86.3	86.3	275	66.5	66.5	3	1,032
AWN11-6-11□□□	106.3	56.3	110	86.5	36.5	3	479.5
AWN11-6-15□□□	106.3	56.3	150	86.5	36.5	3	578
AWN11-6-19□□□	106.3	56.3	190	86.5	36.5	3	676.5
AWN11-6-24□□□	106.3	56.3	240	86.5	36.5	3	800
AWN12-8-11□□□	120	71.3	105	100.2	51.5	3	590.5
AWN12-8-14□□□	120	71.3	140	100.2	51.5	3	696.5
AWN12-8-17□□□	120	71.3	179.5	100.2	51.5	3	816
AWN12-8-22□□□	120	71.3	215	100.2	51.5	3	923.5
AWN16-9-14□□□	156.3	81.3	135	136.5	61.5	3	871.5
AWN16-9-18□□□	156.3	81.3	175	136.5	61.5	3	1,018.5
AWN16-9-23□□□	156.3	81.3	225	136.5	61.5	3	1,201.5
AWN16-9-28□□□	156.3	81.3	275	136.5	61.5	3	1,385
AWN21-9-17□□□	206.3	81.3	170	186.5	61.5	3	1,261
AWN21-9-21□□□	206.3	81.3	210	186.5	61.5	3	1,431.5
AWN21-9-26□□□	206.3	81.3	260	186.5	61.5	3	1,644.5
AWN21-9-31□□□	206.3	81.3	310	186.5	61.5	3	1,857.5

■ Custom length is available.

Accessories (Optional parts)



Mounting plate AWC series
See page 238

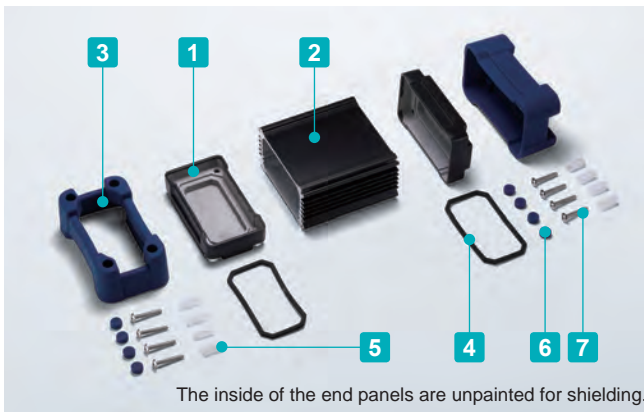
Hexagon socket head screw HCS series
See page 238

Cable gland
See page 333 ~ 340

Silicone protector AWSP series
See page 237



Technical Data
Protection class: IP68 (24 hours/1m depth)
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N • m



- Strong impact resistant enclosure with tough silicone boot protectors.
- Specifically designed with heat dissipation effect, EMC shielding and IP68 rating.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Available in 25 sizes and 6 different color combinations. Selectable from a total of 150 different combinations.
- Suitable for measuring instruments, industrial control box, industrial camera housing, etc.

Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Protector	2	Silicone	Black • Gray • Navy
4	Conductive gasket	2	Conductive silicone	Black
5	Spacer	8	Resin	White
6	Blind cap	8	Silicone	Black • Gray • Navy
7	Screw	8	Stainless steel	Unfinished

■ AWP series utilizes AWN series E type enclosures.
 If N type is required, kindly purchase the enclosure and silicone protector separately.

Color Type



Ordering Number

For example, in case of ordering AWP8-5-9 size, Black enclosure and Navy silicone protector.

Product no. : AWP8-5-9



Put a color code SB, SG, SN, BB, BG or BN.

- ※ 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

See page 235 and 236 for detailed body frame dimensions.

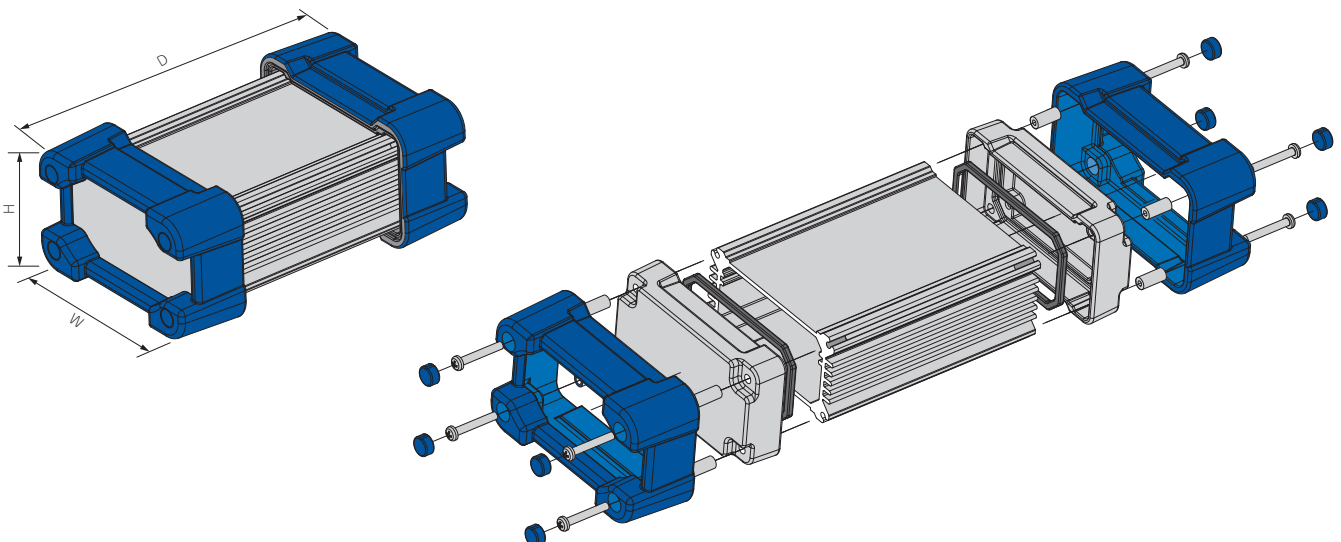
Product no.	W	H	D	※Thermal resistance rate (°C/W)	Weight (g)
AWP 8-5- 9□□	87.4(80.8)	53.6(45.8)	114 (90)	5.97	353.5
AWP 8-5-12□□	87.4(80.8)	53.6(45.8)	139(115)	5.01	394.5
AWP 8-5-14□□	87.4(80.8)	53.6(45.8)	164(140)	4.37	436
AWP 8-5-18□□	87.4(80.8)	53.6(45.8)	199(175)	3.76	493.5
AWP 9-9-10□□	93.9(86.3)	95.1(86.3)	130(100)	3.1	693
AWP 9-9-13□□	93.9(86.3)	95.1(86.3)	155(125)	2.63	766
AWP 9-9-17□□	93.9(86.3)	95.1(86.3)	200(170)	2.12	897
AWP 9-9-22□□	93.9(86.3)	95.1(86.3)	250(220)	1.79	1,043
AWP 9-9-28□□	93.9(86.3)	95.1(86.3)	305(275)	1.54	1,203.5
AWP11-6-11□□	113.9(106.3)	65.1(56.3)	140(110)	4.52	652.5
AWP11-6-15□□	113.9(106.3)	65.1(56.3)	180(150)	3.62	751.5
AWP11-6-19□□	113.9(106.3)	65.1(56.3)	220(190)	3.08	850
AWP11-6-24□□	113.9(106.3)	65.1(56.3)	270(240)	2.64	973
AWP12-8-11□□	127.6(120)	80.1(71.3)	135(105)	3.6	778.5
AWP12-8-14□□	127.6(120)	80.1(71.3)	170(140)	2.93	885
AWP12-8-17□□	127.6(120)	80.1(71.3)	209.5(179.5)	2.47	1,004.5
AWP12-8-22□□	127.6(120)	80.1(71.3)	245(215)	2.18	1,112
AWP16-9-14□□	163.9(156.3)	90.1(81.3)	165(135)	2.64	1,094
AWP16-9-18□□	163.9(156.3)	90.1(81.3)	205(175)	2.2	1,240.5
AWP16-9-23□□	163.9(156.3)	90.1(81.3)	255(225)	1.86	1,424
AWP16-9-28□□	163.9(156.3)	90.1(81.3)	305(275)	1.63	1,607.5
AWP21-9-17□□	213.9(206.3)	90.1(81.3)	202(170)	2.3	1,571.5
AWP21-9-21□□	213.9(206.3)	90.1(81.3)	242(210)	1.99	1,742
AWP21-9-26□□	213.9(206.3)	90.1(81.3)	292(260)	1.72	1,955.5
AWP21-9-31□□	213.9(206.3)	90.1(81.3)	342(310)	1.54	2,168.5

■ Custom length is available.

■ () value = enclosure dimension.

AWP dimensions

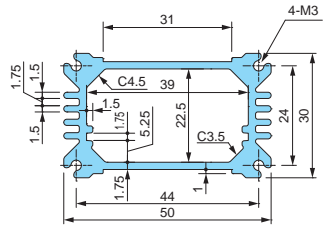
■ DXF/DWG/PDF/STP drawings available on our website.



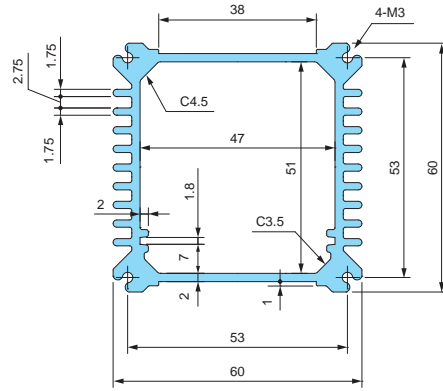
Cross-section view of frame

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

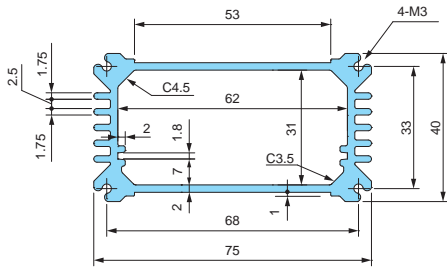
AW • AWN5-4-□
AWA5-3-□



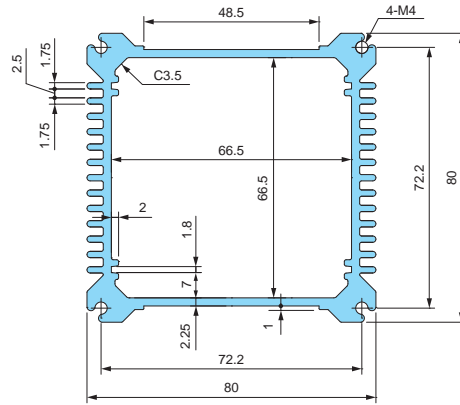
AW • AWN • AWP7-7-□
AWA6-6-□



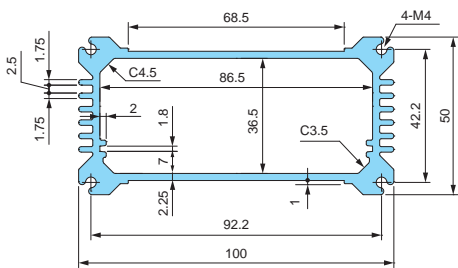
AW • AWN • AWP8-5-□
AWA8-4-□



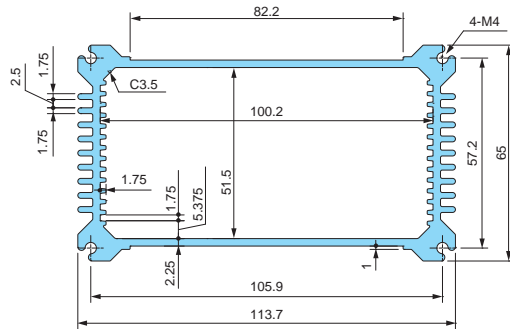
AW • AWN • AWP9-9-□
AWA8-8-□



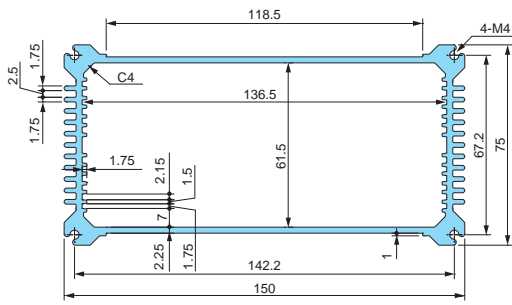
AW • AWN • AWP11-6-□
AWA10-5-□



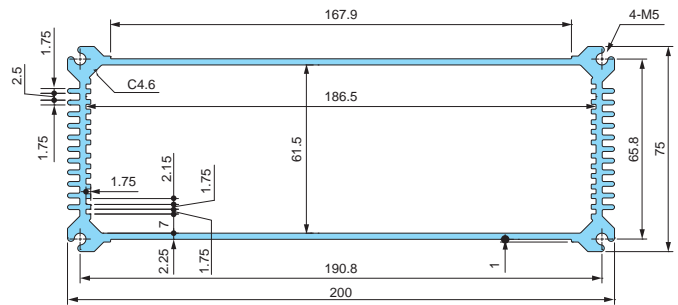
AW • AWN • AWP12-8-□
AWA12-7-□



AW • AWN • AWP16-9-□
AWA15-8-□



AW • AWN • AWP21-9-□
AWA20-8-□

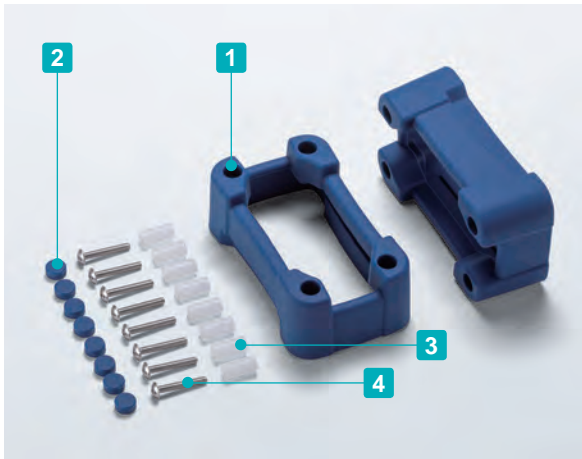


- ※ Thermal resistance test condition
- Ambient air cooling
 - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
 - Anodized aluminium extrusion
 - Heat source is applied on the opposite side (inner side) of the fins.

Product no.				Frame length	※ 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	—	AWA 6-6- 7	64	4.41
AW 7-7-11	AWN 7-7-11	—	AWA 6-6-10	94	3.5
AW 7-7-15	AWN 7-7-15	—	AWA 6-6-14	134	2.83
AW 7-7-20	AWN 7-7-20	—	AWA 6-6-19	184	2.33
AW 7-7-25	AWN 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	AWA15-8-12	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

AWSP series

SILICONE PROTECTOR for AWN



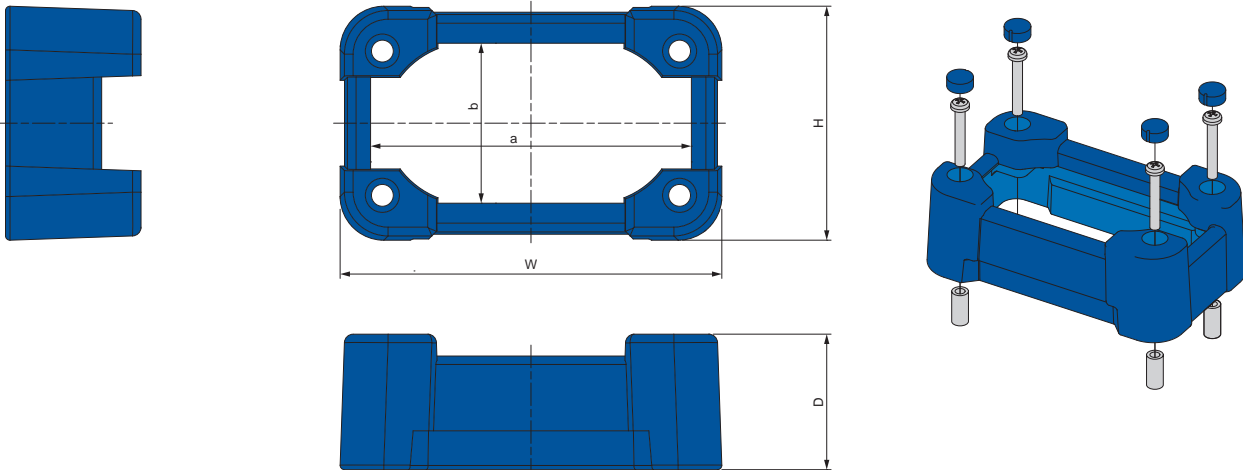
Color Type

Code	B Black	G Gray	N Navy
Color			

- Silicone protector for AWN series.
- Protect switches and/or connectors on end panels from impact when dropped, etc.
Custom color is available from just 1 set. For 250 sets or more, manufacture costs will be similar to a standard color. Please inquire for more details.
For custom color order, please specify **PANTONE®** color code.

AWSP dimensions

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



Components

No.	Part name	Pcs	Material	Color / Finish
1	Protector	2	Silicone	Black • Gray • Navy
2	Blind cap	8	Silicone	Black • Gray • Navy
3	Spacer	8	POM	White
4	Screw	8	Stainless steel	Unfinished

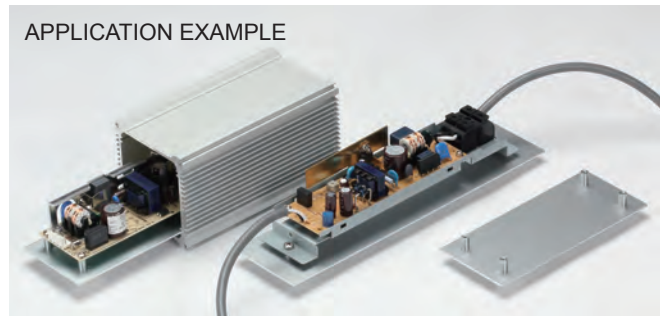
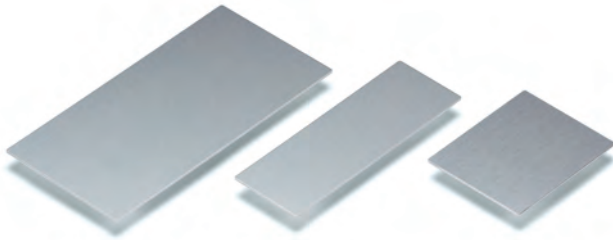
Product no. / Dimensions

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

Product no.	W	H	D	a	b	Screw size	Suitable models	Weight (g)
AWSP 8-5□	87.4	53.6	31	73.4	36.6	M3	AWN 8-5-□	100.5
AWSP 9-9□	93.9	95.1	35.5	76.9	75.1	M4	AWN 9-9-□	184.5
AWSP11-6□	113.9	65.1	35.5	96.9	45.1	M4	AWN11-6-□	186
AWSP12-8□	127.6	80.1	35.5	110.6	60.1	M4	AWN12-8-□	201
AWSP16-9□	163.9	90.1	35.5	145.9	69.1	M4	AWN16-9-□	235
AWSP21-9□	213.9	90.1	39.5	192.9	66.1	M5	AWN21-9-□	333

AWC series

ALUMINIUM MOUNTING PLATE for AW • AWN • AWP • AWA

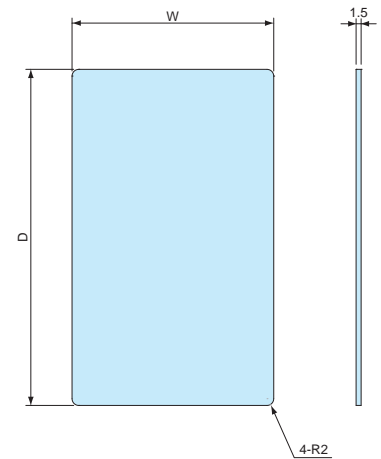


- Material: Aluminium A1050P t=1.5 / Silver anodized
- Mounting plate for AW, AWN, AWP, and AWA enclosures.
- Utilize for mounting PCB, power supply, terminal blocks, etc.

Product no. / Dimensions

Product no.	W	D	Suitable models
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

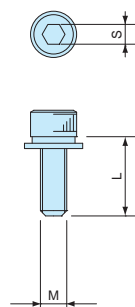
AWC dimensions



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

HCS series

HEXAGON SOCKET HEAD SCREW for AW • AWN



- 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

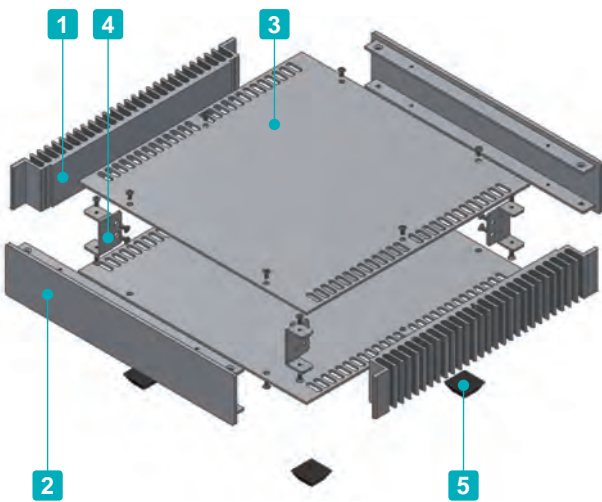
Product no.	M	L	S	Material	Pack of
HCS3-12S	3	12	2.5	Stainless steel	8
HCS4-12S	4	12	3	Stainless steel	8
HCS5-12S	5	12	4	Stainless steel	8



Heat Resistant



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



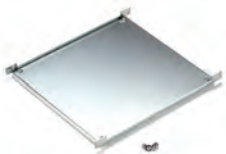
- Stylish and elegantly designed with a hairline finish.
- Excellent cooling performance with the heat-sink side plates.
- Now available in 56 sizes, and 2 different colors.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.
- Flat back heat-sink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

Included screws
 BB color type
 M3-6 flat head & Black trivalent chromate x 16 pcs
 M3-5 Slotted raised countersunk & Black trivalent chromate x 12 pcs
 SS color type
 M3-6 flat head & 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

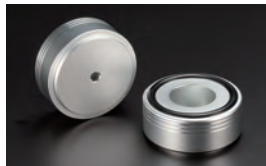
Accessories (Optional parts)



Mounting plate HYC series
See page 257



L-bracket HYCL series
See page 257



Aluminium isolation feet AFS • AFM series
See page 293 ~ 294

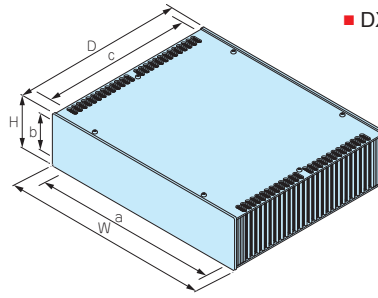


TORX screw - for top / bottom cover MR3-5Z series
See website



HY dimensions

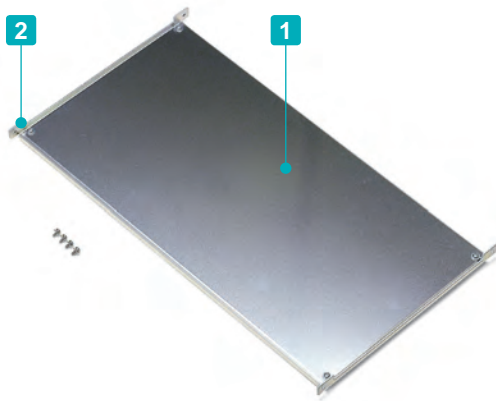
■ DXF/DWG/PDF/STP drawings available on our website.



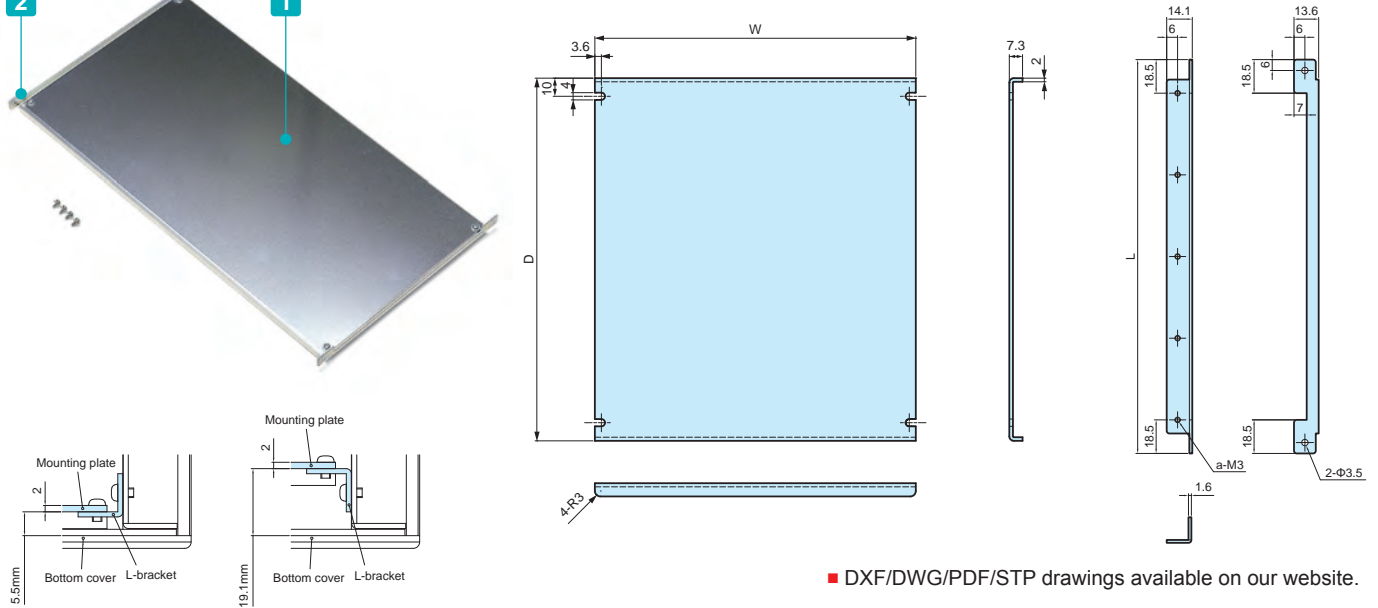
Product no.		External dimensions			Internal dimensions			Weight (kg)
● Silver	● Black	W	H	D	a	b	c	
HY 44-23-23SS	HY 44-23-23BB	230	44	231	186	36	225	1.1
HY 44-23-33SS	HY 44-23-33BB	230	44	330	186	36	324	1.6
HY 44-28-23SS	HY 44-28-23BB	280	44	231	236	36	225	1.4
HY 44-28-33SS	HY 44-28-33BB	280	44	330	236	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	236	62	225	1.8
HY 70-28-33SS	HY 70-28-33BB	280	70	330	236	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	236	80	225	2.1
HY 88-28-33SS	HY 88-28-33BB	280	88	330	236	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	236	91	225	2.3
HY 99-28-33SS	HY 99-28-33BB	280	99	330	236	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	236	124.5	225	2.8
HY133-28-33SS	HY133-28-33BB	280	132.5	330	236	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	236	141	225	3.1
HY149-28-33SS	HY149-28-33BB	280	149	330	236	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	236	169	225	3.6
HY177-28-33SS	HY177-28-33BB	280	177	330	236	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

HYC series

MOUNTING PLATE for HY • HYR • HYRH



HYC dimensions



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

■ 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	Trivalent chromate
-	Screw	1 set	Steel M3	Trivalent 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

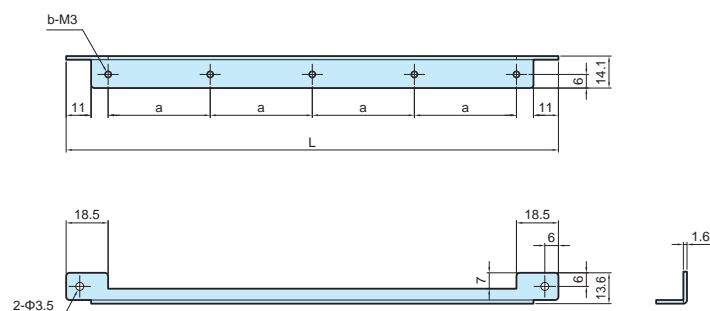


Clinching stud customization service available.

HYCL series

L-bracket for HY • HYR • HYRH

HYCL dimensions



- 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	Trivalent chromate
2	Screw	Steel M3	Trivalent chromate

Product no. / Dimensions

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

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

HY series APPLICATION EXAMPLE

Complete Balanced Special Tuned DC Headphone Amplifier

Product by Sanyo Kasei (Japan)



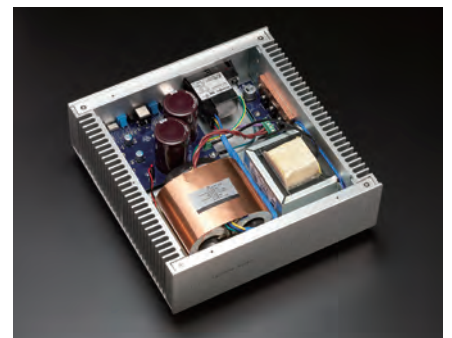
Energy Creation Power Conditioner Development Kit

Product by Smart Energy Laboratory (Japan)



Linear Power Supply

Product by UpTone Audio (USA)



Industrial Fanless PC

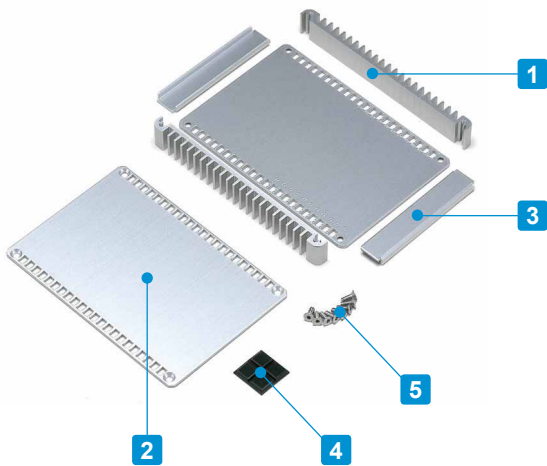
Product by Techno Veins (Japan)





- 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



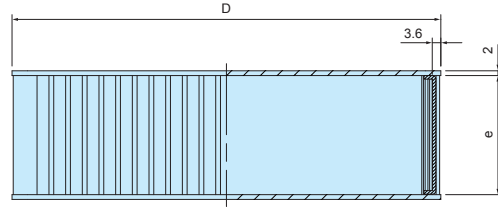
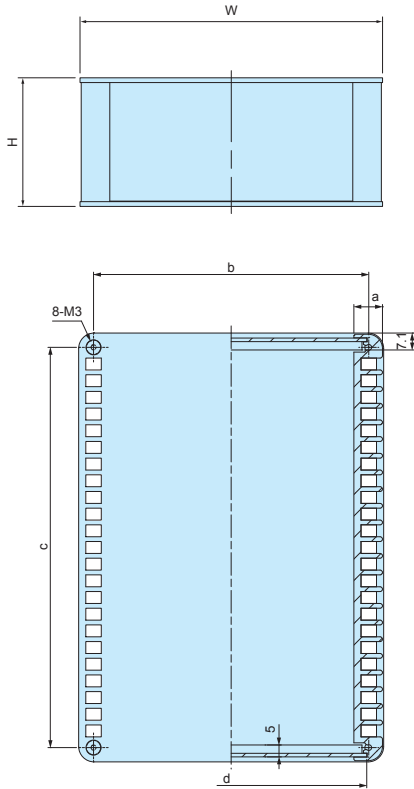
Included screws
 Enclosure (Silver) M3-8 Hexagonal countersunk : Stainless steel : Unfinished x 8 pcs
 Enclosure (Black) M3-8 Hexagonal countersunk : Steel : Black trivalent chromate x 8 pcs
 ※Hexagonal wrench included

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



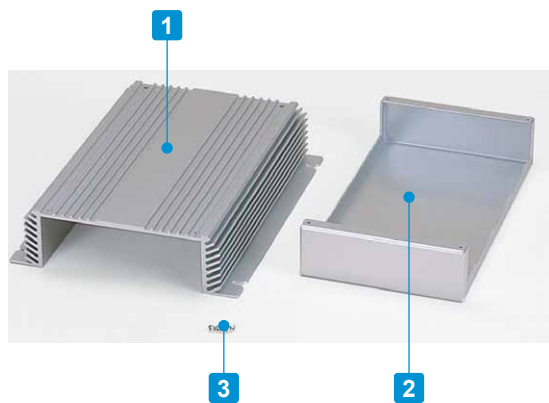
Heat Resistant



- 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



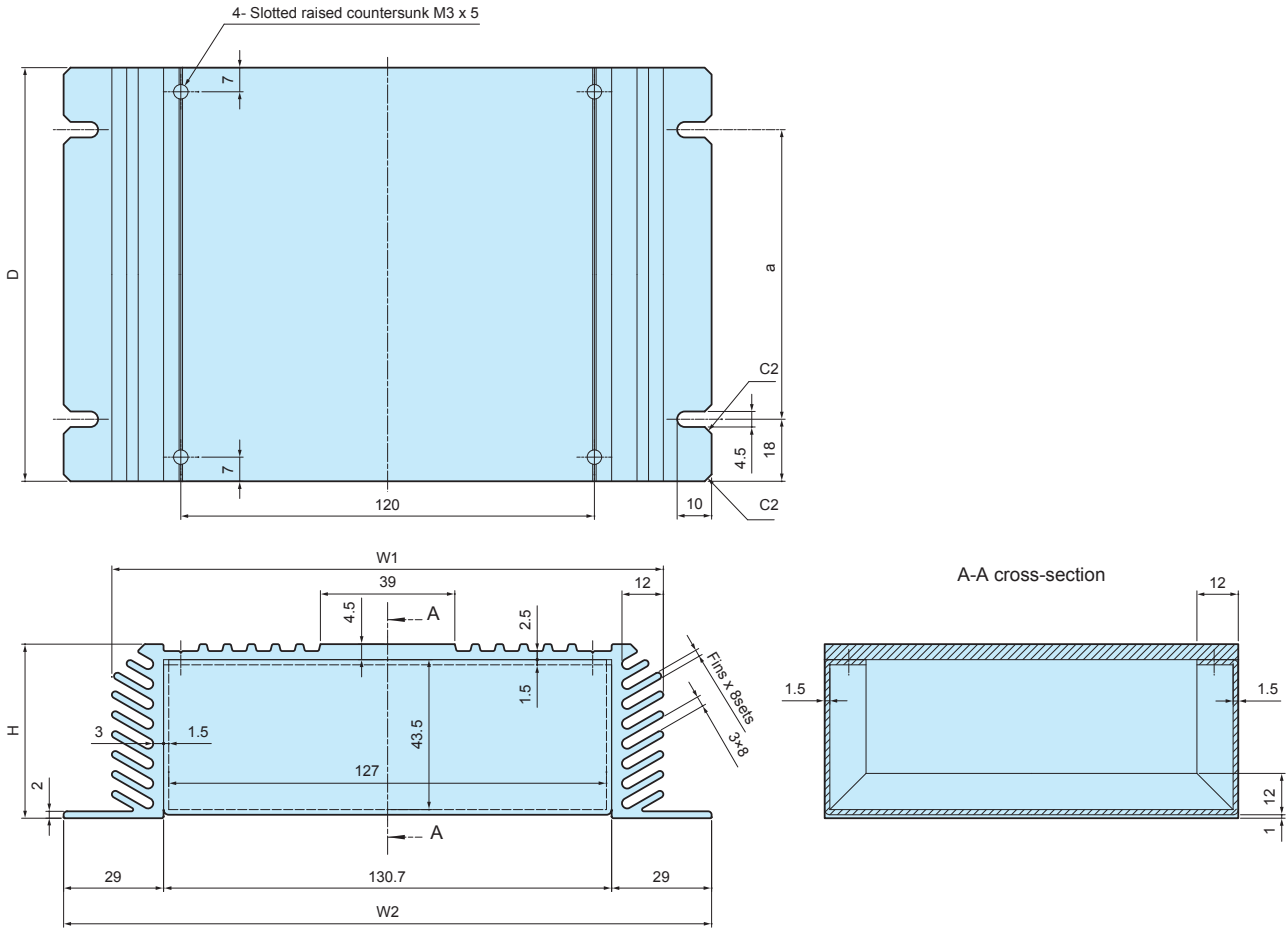
Product by: IC Technologies (Australia)

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

■ Cross out products are discontinued. ■ 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



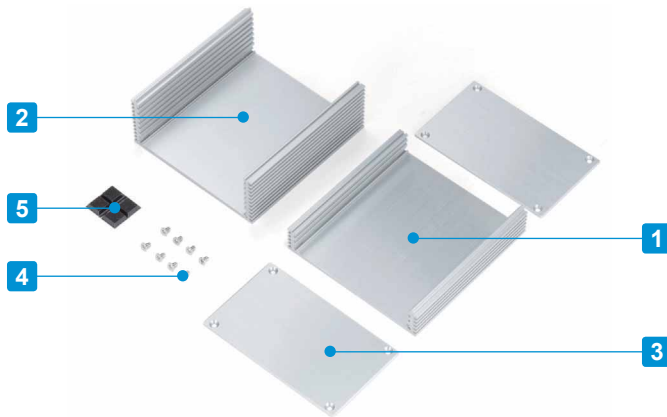
- For use with the heat-sink cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

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)



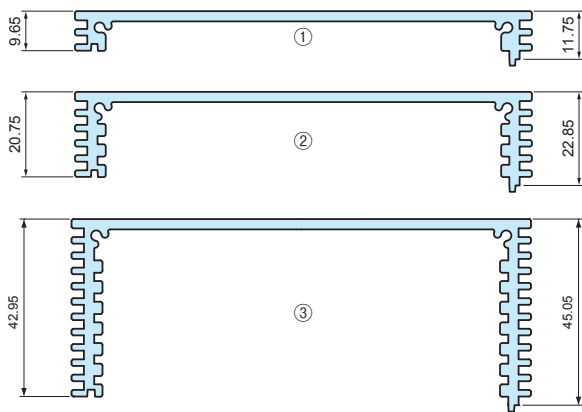
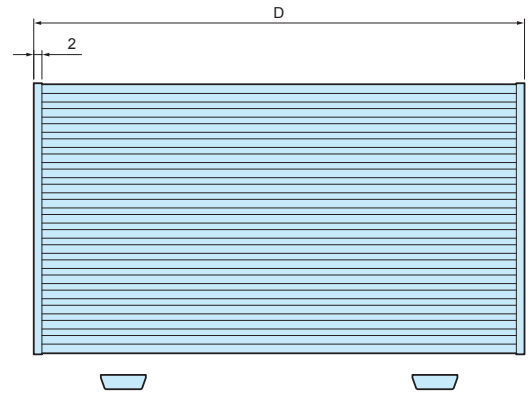
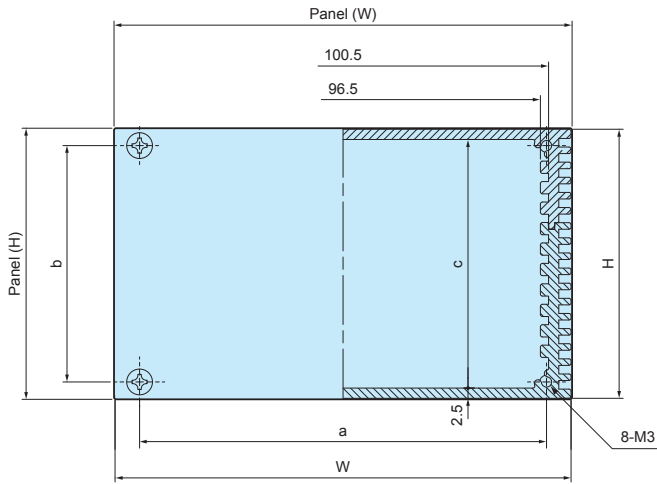
TORX screw MR-2S
See page EM•MR-1



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

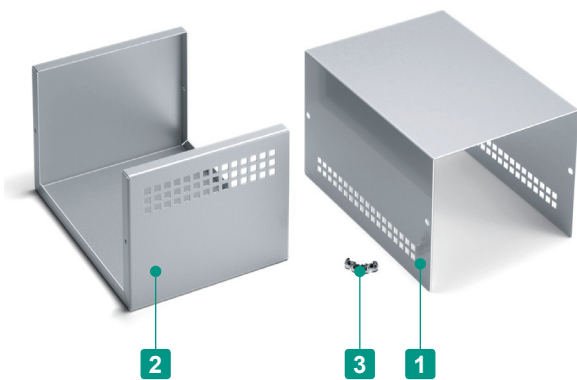
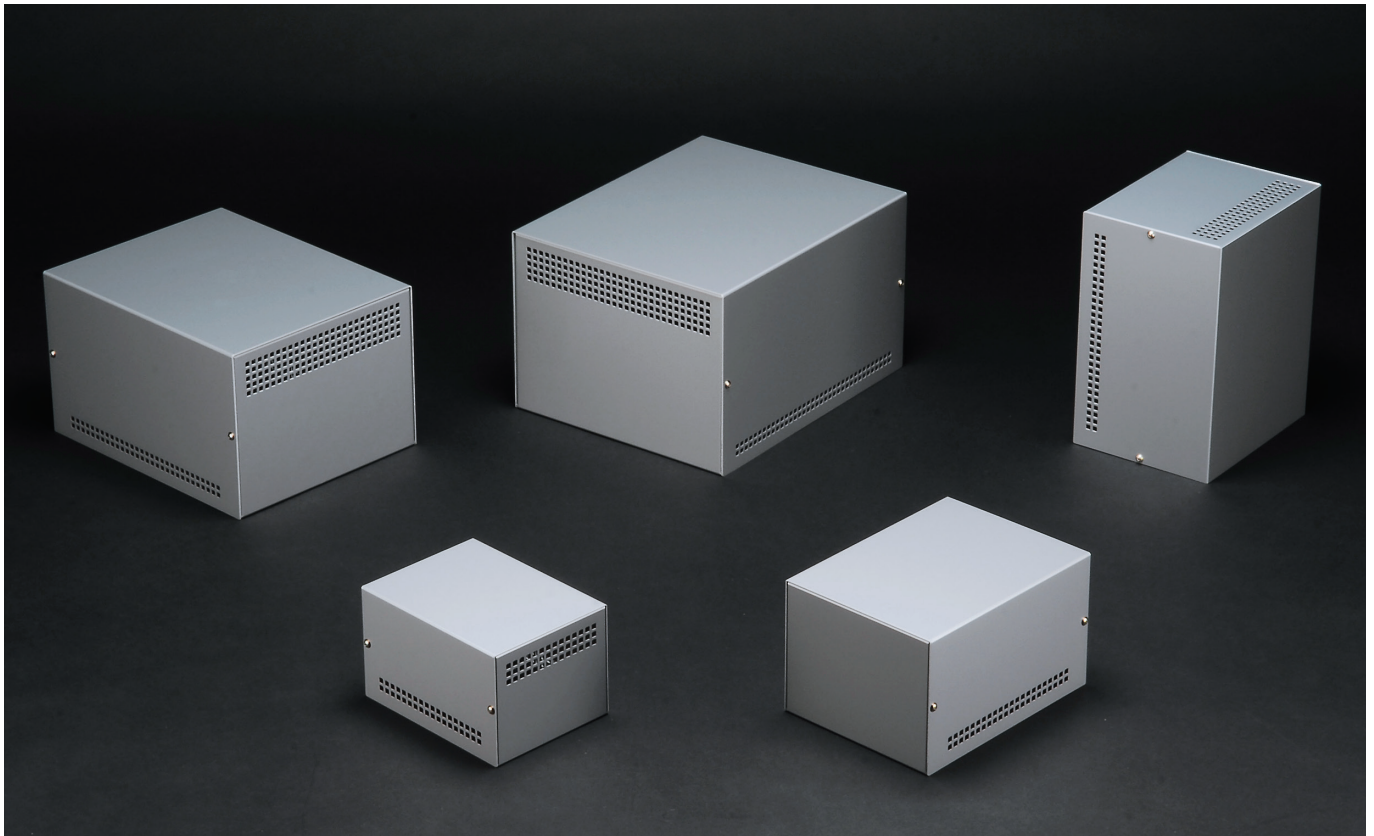
Product no.		W	H	D	Panel (W)	Panel (H)	a	b	c	Cover combination	Weight (g)
● Silver	● Black										
HEN110206S	HEN110206B	111.2	21.4	60	112	21.9	99.2	13.4	16.4	①×2	143
HEN110212S	HEN110212B	111.2	21.4	120	112	21.9	99.2	13.4	16.4		258
HEN110220S	HEN110220B	111.2	21.4	200	112	21.9	99.2	13.4	16.4		411
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)



MBH SERIES VENTILATED ALUMINIUM CASE



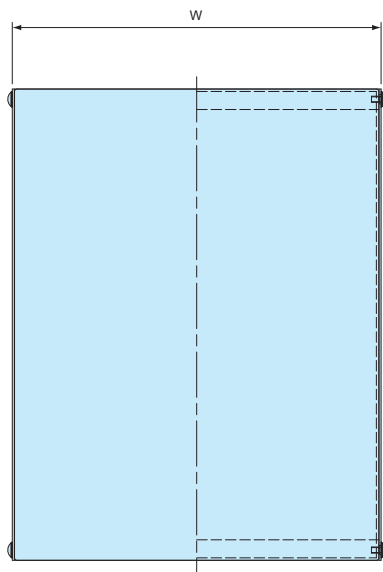
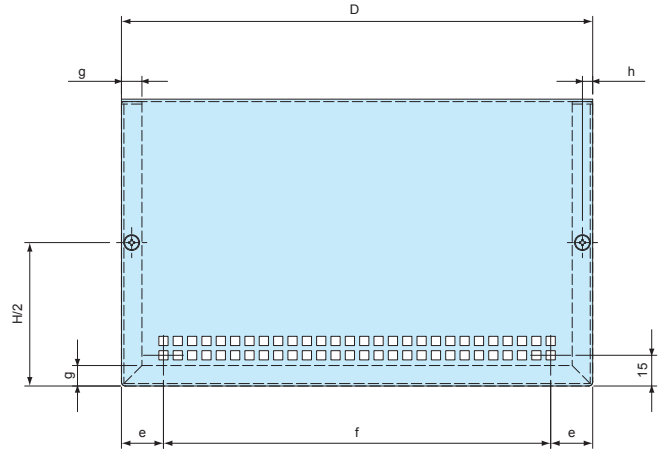
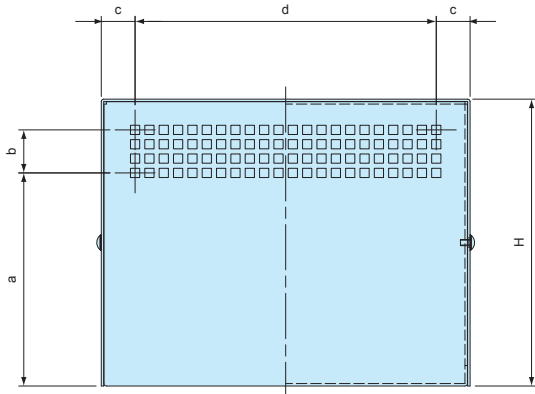
- Ventilation holes are punched on the lower side of the cover (both sides) and the upper side of the base (one side) for enhancing airflow.
- The internal surface is unfinished, making conductive and grounding possible.

Components

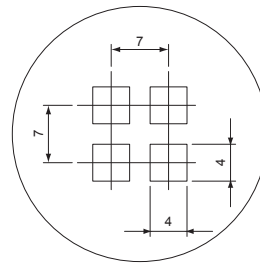
No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Aluminium A1100P	Metallic silver / Painted : Unfinished internal surface
2	Base	1	Aluminium A1100P	Metallic silver / Painted : Unfinished internal surface
3	Screw (Truss M3-5)	4	Brass	Nickel plated
	Washer	4	Brass	Nickel plated

MBH dimensions

■ Detailed DXF/DWG/PDF drawings available online.



Detail: Ventilation hole



Number of Ventilation Hole

Product no.	Cover	Base
MBH10- 9-12	24×2 faces	36
MBH12-10-16	36×2 faces	42
MBH15-12-20	44×2 faces	72
MBH18-14-23	56×2 faces	88
MBH21-16-26	60×2 faces	130
MBH24-18-29	72×2 faces	150

Product no. / Dimensions

Product no.	W	H	D	a	b	c	d	e	f	g	h	Thickness	Weight (g)
MBH10- 9-12	100	90	120	64.5	14	11.5	77	21.5	77	10	5	1.0	190
MBH12-10-16	120	100	160	71	14	14.5	91	20.5	119	10	5	1.0	265
MBH15-12-20	150	120	200	84	21	15.5	119	26.5	147	10	5	1.2	476
MBH18-14-23	180	140	230	104	21	16.5	147	20.5	189	10	5	1.2	655
MBH21-16-26	210	160	260	117	28	17.5	175	28.5	203	12	6	1.5	1,068
MBH24-18-29	240	180	290	137	28	18.5	203	22.5	245	12	6	1.5	1,354

Accessories (Optional parts)



Rubber feet B series
See page Feet-1~Feet-4



TORX screw MR3-5Z
See page MR-1



Conductive screw EV3-5S
See page EV-1



Insert nut adhesive standoff AST series
See page AST-1

AFS•AFM series

ALUMINIUM ISOLATION FEET



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

Available in both internal and external screw installation type.

External type / Shot blast finish (AFS series)



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

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

Available in both silver and black.

Internal type / Reflective finish (AFM series)



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

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

Available only in Silver.

Accessories (Optional parts)

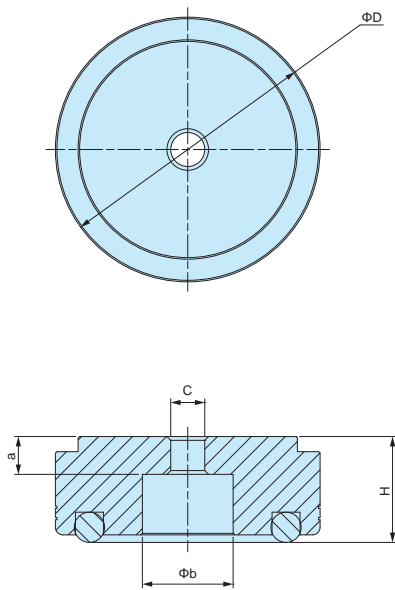
Product no. / Dimensions

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

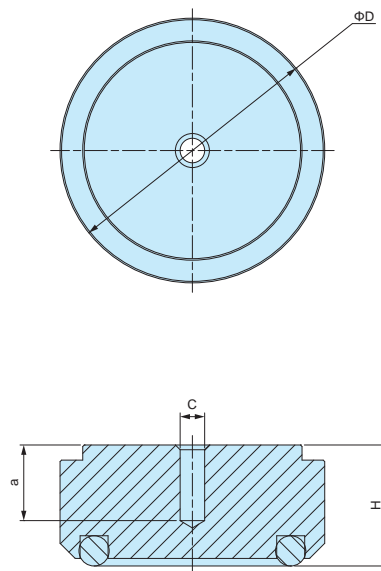
AFS • AFM dimensions

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

AFS SERIES



AFM SERIES



APPLICATION EXAMPLE



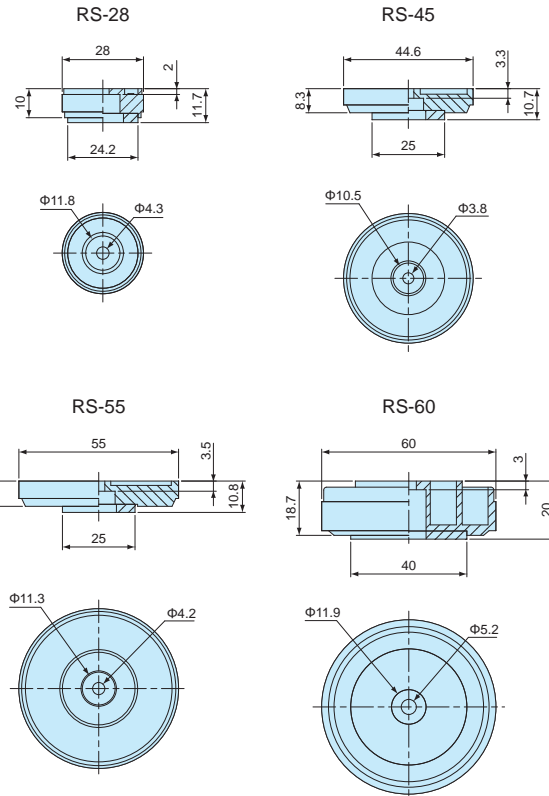
RS series

PLATED PLASTIC FEET



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

RS dimensions



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

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

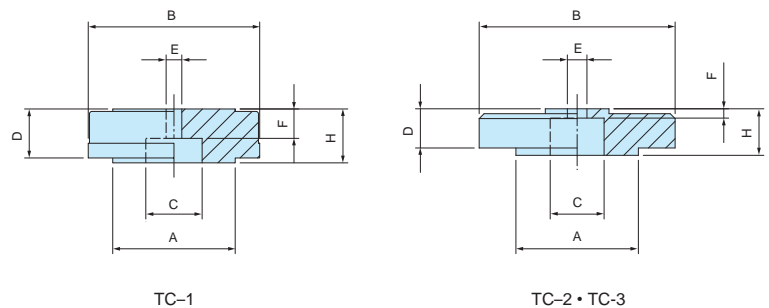
TC series

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.

TC dimensions



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

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	10.4	4.1	2.4	12.5	ABS UL94HB / Aluminium / EVA	4
TC-3S	TC-3G	25	45	11.7	13	4.2	7.5	15	ABS UL94HB / Aluminium / EVA	4

TB series

ADHESIVE RUBBER FEET



■ Adhesive is present on the underside.

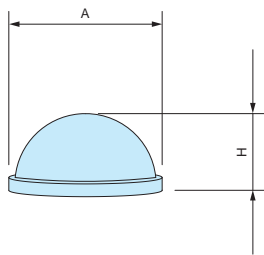
Product no. / Dimensions

■ Material : Rubber

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

* No color code denotation required

TB dimensions



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

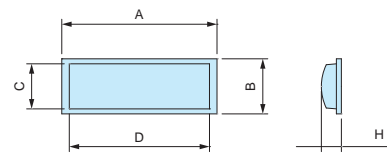
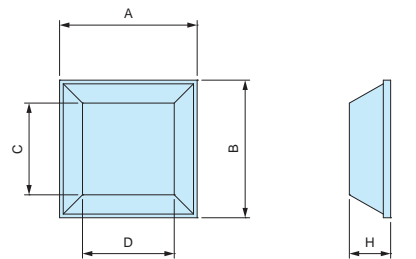
SJ-P series

POLYURETHANE RUBBER FEET



■ Adhesive is present on the underside.

SJ-P dimensions



SJ-P1011

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

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

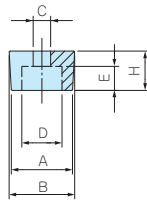
A series

SCREW MOUNT ELASTOMER FEET

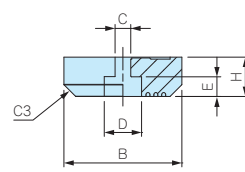


A dimensions

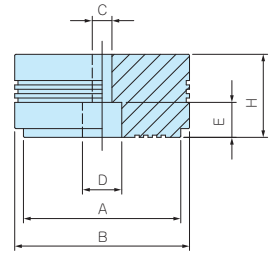
■ DXF/DWG/PDF drawings available on our website.



A11-4~A24-14



A30-10



A40-19

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

■ Material / Color : Elastomer / Black

Product no.	A	B	H	C	D	E	Pack of	Old product no.	Difference
A11- 4	9.4	10.8	4	3.3	6.8	2	10	A-P1	Product number change only.
A14- 6	13.4	14.2	5.5	3	8	3.5	10	A-P2	Product number change only.
A15- 9	14	15	9	4	9.5	6	10	A-P3	Product number change only.
A21- 8	20	21	8	4	8.2	5	10	A-P4	Product number change only.
A24-14	20	24	14	5.5	8.6	8	10	A-P5	Product number change only.
NEW A30-10	—	30	10	4	9.5	5	10	—	—
A40-19	36	40	19	4.5	9	8	10	A-P6	Product number change only.

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

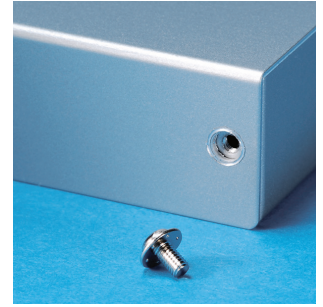
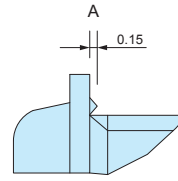
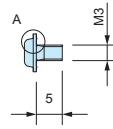
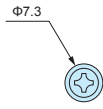
Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

EV3-5S

CONDUCTIVE SCREW



Conductive



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

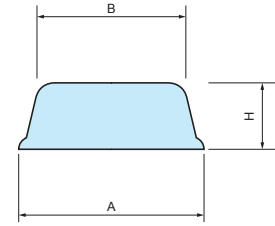
Product no. / Dimensions

Product no.	M	L	Material	Finish	Pack of
EV3-5S	3	5	Steel	Nickel plated	20

B SERIES

ADHESIVE RUBBER FEET

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



■ Injection molded type.

Product no. / Dimensions

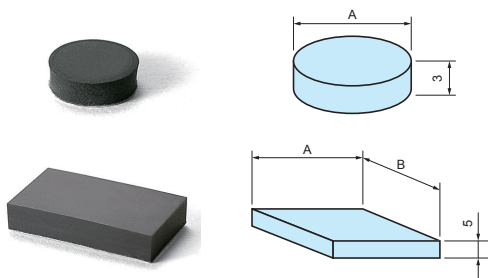
■ Material : Synthetic rubber

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

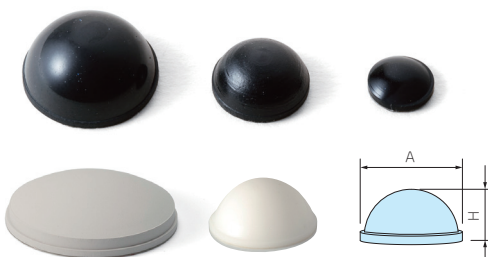
Product no.	A	B	Pack of
B-P31	28	16	10
B-P32	46	26	10

TB SERIES

ROUNDED ADHESIVE RUBBER FEET



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



Product no. / Dimensions

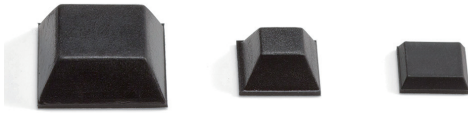
■ Material : Synthetic rubber

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

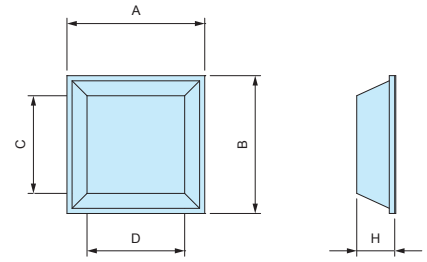
SF SERIES

SQUARE ADHESIVE RUBBER FEET - LOW COST TYPE

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



■ Square-shaped adhesive rubber feet.



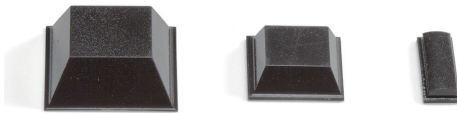
Product no. / Dimensions

■ Material / Color : Synthetic rubber / Black

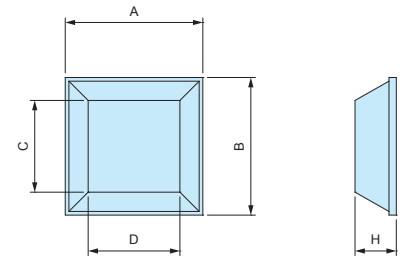
Product no.	A	B	H	C	D	Pack of
SF11-3	10.5	10.5	2.5	8.6	8.6	10
SF13-4	12.7	12.7	3.5	9	9	10
SF13-6	12.7	12.7	6	7	7	10
SF20-8	20	20	7.6	14	14	10

SJ-P SERIES

SQUARE ADHESIVE POLYURETHANE FEET



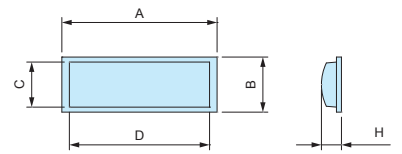
- Strong adhesive strength with the use of rubber pressure sensitive adhesive.
- Polyurethane material is resistant against color migration.



Product no. / Dimensions

■ Material / Color : Polyurethane / Black

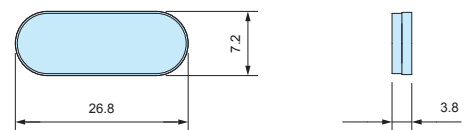
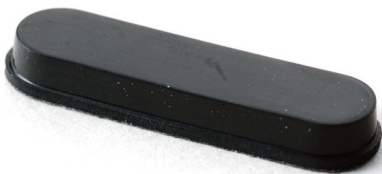
Product no.	A	B	H	C	D	Pack of
SJ-P5007	10.4	10.4	2.5	7.5	7.5	10
SJ-P5008	12.7	12.7	3	9.5	9.5	10
SJ-P5018	12.7	12.7	5.8	7	7	10
SJ-P1004	15	15	4.5	10	10	10
SJ-P5023	20.6	20.6	7.6	12.7	12.7	10
SJ-P1011	15.5	5.5	2	4.5	14.5	10



SJ-P1011

TN-27

OVAL ADHESIVE RUBBER FEET



Product no. / Feature

■ Material / Color : Synthetic rubber / Black

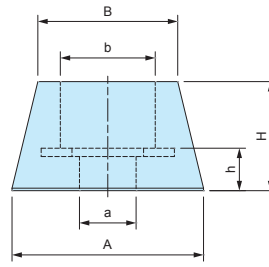
Product no.	Pack of
TN-27	10

B-P SERIES SCREW MOUNT RUBBER FEET

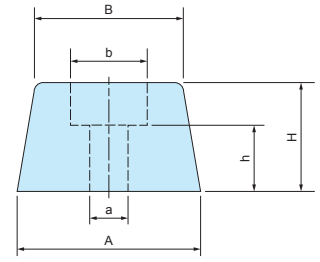
■ DXF/DWG/PDF drawings available on our website.



- 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

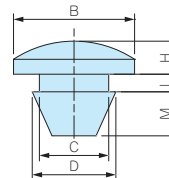
Product no.	A	B	H	a	b	h	Washer	Material	Pack of
B-P1S	11.5	8.4	7.2	3.4	5.7	3.2	○	Synthetic rubber	10
B-P1M	15	15	4	3.5	7.4	2.2	○	Synthetic rubber	10
B-P1	15	13	7.7	3	6	4.2	×	Synthetic rubber	10
B-P1L	16	13	7.8	3	6	3.7	○	Synthetic rubber	10
B-P2S	18	15	11	3	6	5	○	Synthetic rubber	10
B-P2	19	15	8	3	6	4.5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

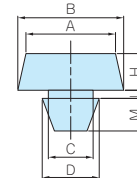
■ DXF/DWG/PDF drawings available on our website.



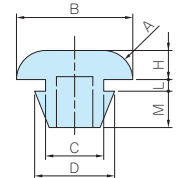
- Hole milling required for installation.



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

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.

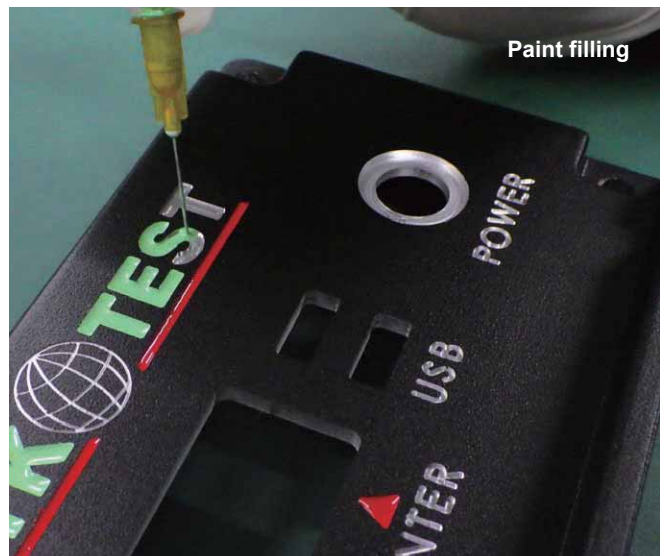
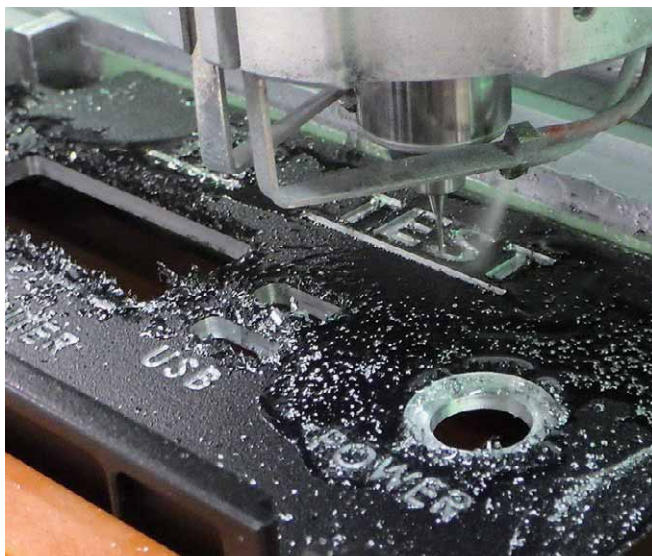
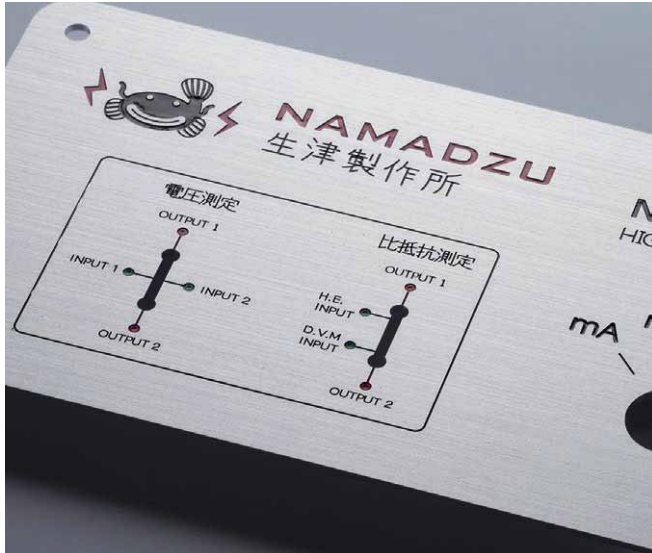


- Mainly used for plastic, aluminium die-cast, and aluminium extrusion material types.
- Able to perform milling for various shapes and sizes.
- Recommended for small quantity customization.



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 CO² laser machines, which causes excessive burring.

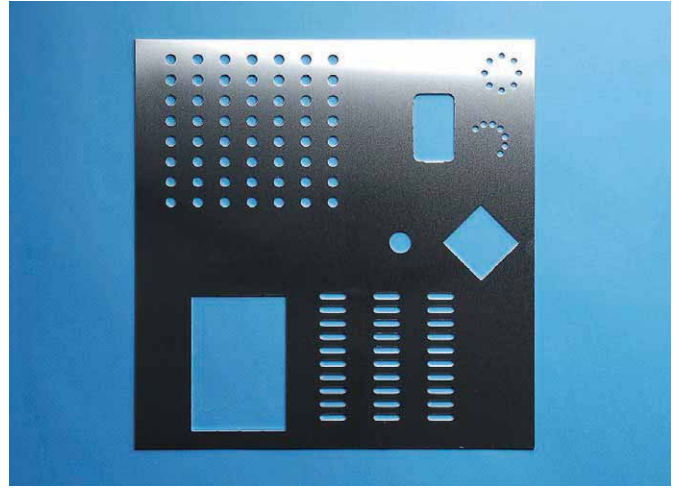
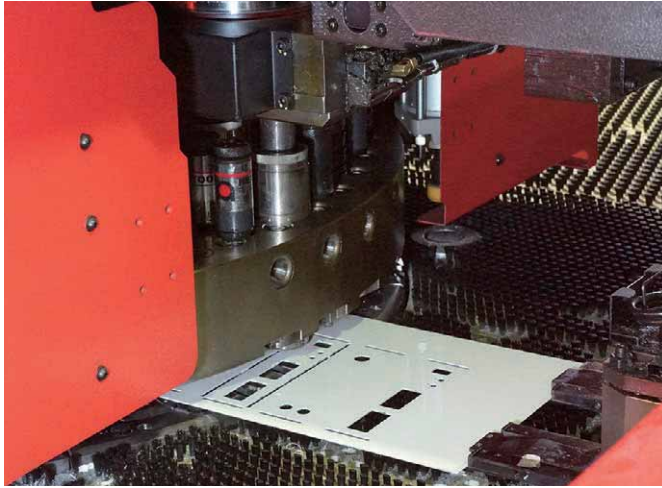


PUNCHING PRESS

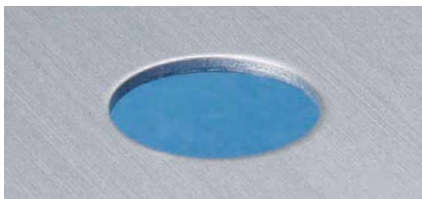
What is punching press? It is a type of machine press used to cut holes in material via the use of various sized die sets.

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.

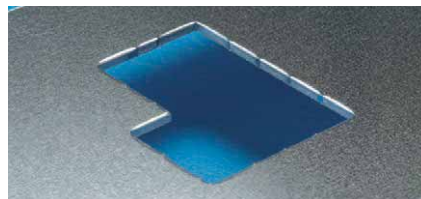


Circular hole



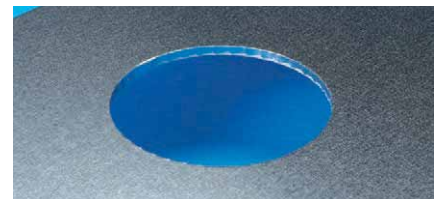
Circular holes as small as 1.0mm in diameter can be punched.

Nibbling press (rectangle)



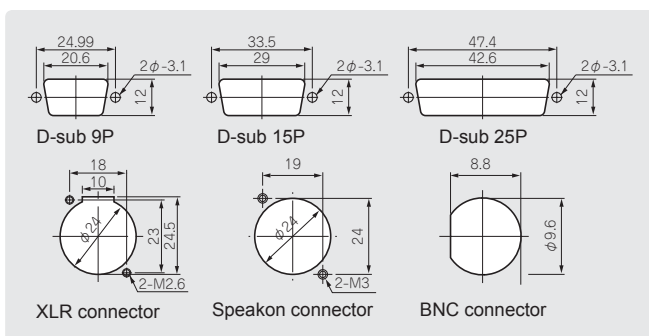
Complex or large rectangular shapes can be punched out with multiple presses.

Nibbling press (round)

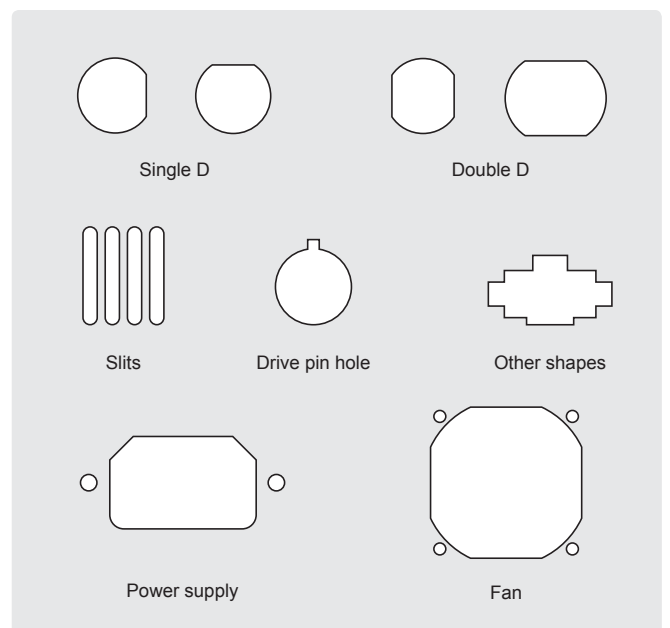


Punching of large circular holes with multiple smaller die strokes.

Common connector shapes



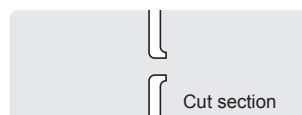
Unique shapes



Burring punch



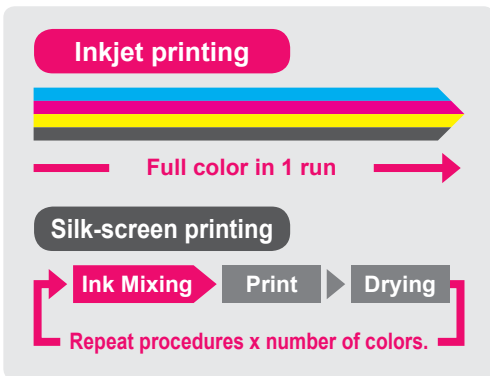
Increasing surface area on a thin metallic sheet for screw threads to bore into.



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.



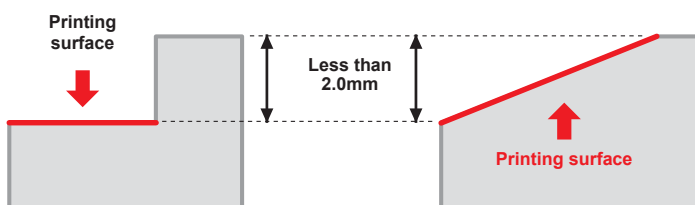
Maximum printable enclosure size



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

