



- Available in 3 different colors and 176 different sizes.
- Screws are hidden out of view for a sophisticated and elegant look.
- Suitable for use as measuring instruments, testing equipment, power supply controller, etc.



MSN series
Tip-Up Handle Model



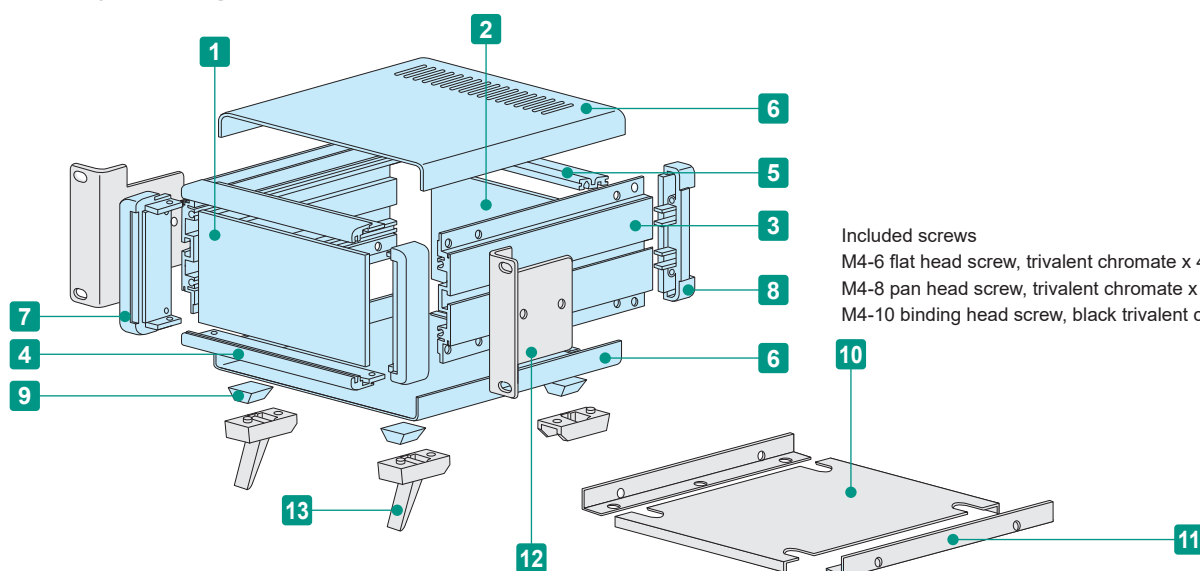
MSY series
Carrying Handle Model



MSR series
19" Rack Mount Model

Variations of MS series, MSN, MSY and MSR series are also available. See website for more details.

Assembly drawings



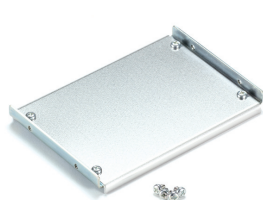
Included screws
M4-6 flat head screw, trivalent chromate x 4 pcs
M4-8 pan head screw, trivalent chromate x 8 pcs
M4-10 binding head screw, black trivalent chromate x 4 pcs

Components

No.	Part name	Pcs	Material	Color / Finish
1	Front panel	1	Aluminium A1100P t=2.0	Silver • Black / Anodized
2	Rear panel	1	Aluminium A1100P t=2.0	Silver • Black / Anodized
3	Side frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame	2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • Bottom cover	1 each	Steel SPCC t=1.0	Light gray • Black / Painted
7	Corner block	2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet	2	ABS UL94V-0	Gray • Black
9	Rubber feet	4	Polyurethane	Black

■ Front • Rear panels are covered with a protective film on one side.

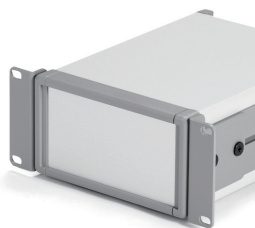
Accessories (Optional parts)



10 Mounting plate MSC series
See page 309



11 L-bracket MSCL series
See page 309



12 Rack mounting MSM series
See website



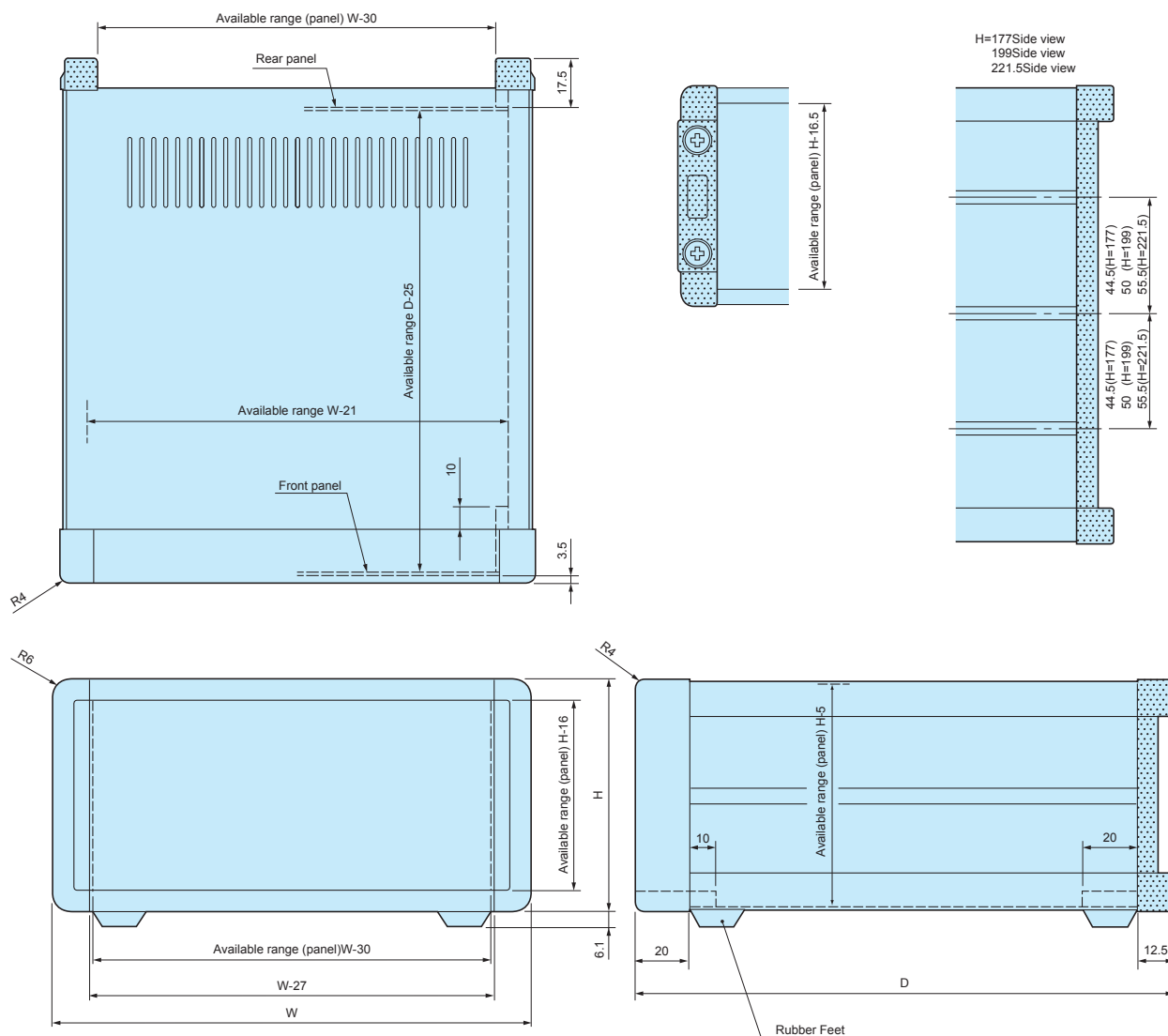
13 Tilt leg TL series
See page 310



Cable hook CBF series
See page 310

MS dimensions

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



■ Top • Bottom cover of sizes 160x160, 160x230, 160x280, 210x160 do not have ventilation holes.

Color Type

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

GS		B		BS	
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black

Product no. / Details

Product no.	H	W	D	Weight (kg)
MS 66-16-16□	66	160	160	1.0
MS 66-16-23□	66	160	230	1.3
MS 66-16-28□	66	160	280	1.6
MS 66-21-16□	66	210	160	1.2
MS 66-21-23□	66	210	230	1.6
MS 66-21-28□	66	210	280	1.8
MS 66-21-35□	66	210	350	2.2
MS 66-26-23□	66	260	230	1.8
MS 66-26-28□	66	260	280	2.1
MS 66-26-35□	66	260	350	2.6
MS 66-32-23□	66	320	230	2.1
MS 66-32-28□	66	320	280	2.5
MS 66-32-35□	66	320	350	3.0
MS 66-32-45□	66	320	450	3.7
MS 66-37-23□	66	370	230	2.4
MS 66-37-28□	66	370	280	2.8
MS 66-37-35□	66	370	350	3.3
MS 66-37-45□	66	370	450	4.1
MS 66-43-23□	66	430	230	2.7
MS 66-43-28□	66	430	280	3.1
MS 66-43-35□	66	430	350	3.7
MS 66-43-45□	66	430	450	4.6
MS 88-16-16□	88	160	160	1.1
MS 88-16-23□	88	160	230	1.5
MS 88-16-28□	88	160	280	1.7
MS 88-21-16□	88	210	160	1.3
MS 88-21-23□	88	210	230	1.8
MS 88-21-28□	88	210	280	2.1
MS 88-21-35□	88	210	350	2.5
MS 88-26-23□	88	260	230	2.0
MS 88-26-28□	88	260	280	2.5
MS 88-26-35□	88	260	350	2.8
MS 88-32-23□	88	320	230	2.3
MS 88-32-28□	88	320	280	2.8
MS 88-32-35□	88	320	350	3.2
MS 88-32-45□	88	320	450	4.0
MS 88-37-23□	88	370	230	2.6
MS 88-37-28□	88	370	280	3.0
MS 88-37-35□	88	370	350	3.6
MS 88-37-45□	88	370	450	4.4
MS 88-43-23□	88	430	230	2.9
MS 88-43-28□	88	430	280	3.4
MS 88-43-35□	88	430	350	4.0
MS 88-43-45□	88	430	450	5.0

Product no.	H	W	D	Weight (kg)
MS 99-16-16□	99	160	160	1.1
MS 99-16-23□	99	160	230	1.5
MS 99-16-28□	99	160	280	1.8
MS 99-21-16□	99	210	160	1.4
MS 99-21-23□	99	210	230	1.8
MS 99-21-28□	99	210	280	2.1
MS 99-21-35□	99	210	350	2.5
MS 99-26-23□	99	260	230	2.0
MS 99-26-28□	99	260	280	2.4
MS 99-26-35□	99	260	350	2.8
MS 99-32-23□	99	320	230	2.4
MS 99-32-28□	99	320	280	2.8
MS 99-32-35□	99	320	350	3.3
MS 99-32-45□	99	320	450	4.0
MS 99-37-23□	99	370	230	2.6
MS 99-37-28□	99	370	280	3.0
MS 99-37-35□	99	370	350	3.6
MS 99-37-45□	99	370	450	4.5
MS 99-43-23□	99	430	230	3.0
MS 99-43-28□	99	430	280	3.4
MS 99-43-35□	99	430	350	4.1
MS 99-43-45□	99	430	450	5.0
MS133-16-16□	132.5	160	160	1.3
MS133-16-23□	132.5	160	230	1.7
MS133-16-28□	132.5	160	280	2.0
MS133-21-16□	132.5	210	160	1.6
MS133-21-23□	132.5	210	230	2.1
MS133-21-28□	132.5	210	280	2.4
MS133-21-35□	132.5	210	350	2.9
MS133-26-23□	132.5	260	230	2.4
MS133-26-28□	132.5	260	280	2.8
MS133-26-35□	132.5	260	350	3.3
MS133-32-23□	132.5	320	230	2.7
MS133-32-28□	132.5	320	280	3.2
MS133-32-35□	132.5	320	350	3.7
MS133-32-45□	132.5	320	450	4.5
MS133-37-23□	132.5	370	230	3.0
MS133-37-28□	132.5	370	280	3.5
MS133-37-35□	132.5	370	350	4.1
MS133-37-45□	132.5	370	450	5.0
MS133-43-23□	132.5	430	230	3.4
MS133-43-28□	132.5	430	280	3.9
MS133-43-35□	132.5	430	350	4.6
MS133-43-45□	132.5	430	450	5.6

Product no. / Details

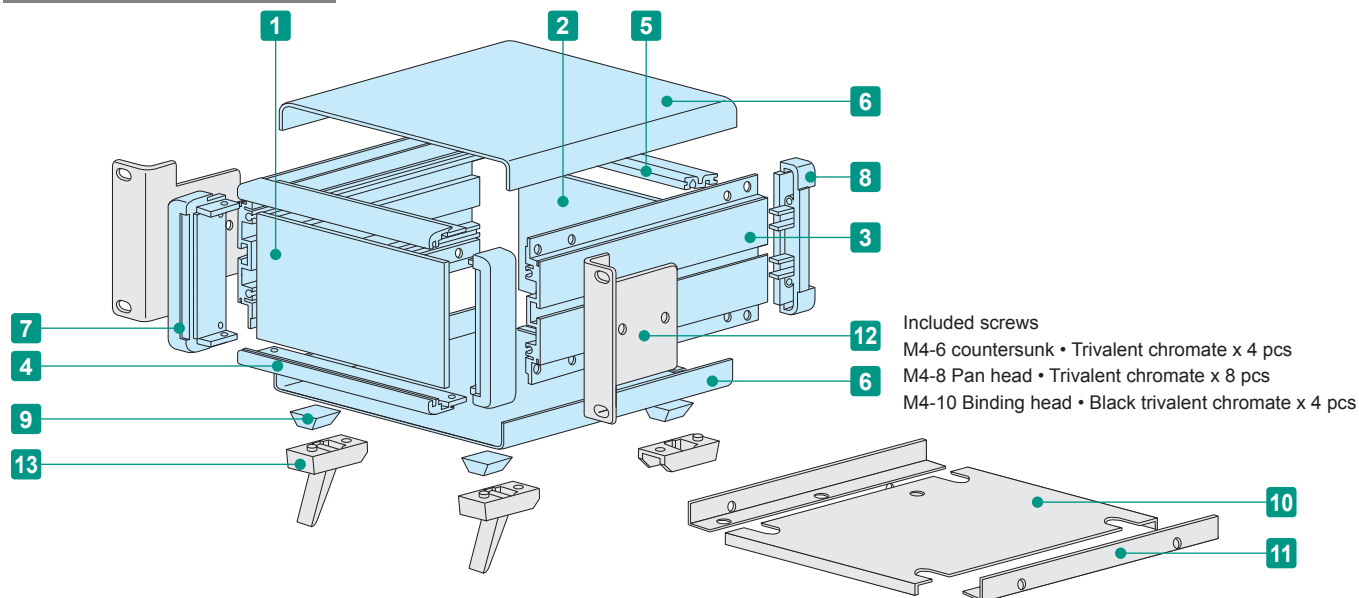
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MS149-16-23□	149	160	230	1.8
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MS149-21-16□	149	210	160	1.6
MS149-21-23□	149	210	230	2.1
MS149-21-28□	149	210	280	2.4
MS149-21-35□	149	210	350	2.9
MS149-26-23□	149	260	230	2.4
MS149-26-28□	149	260	280	2.8
MS149-26-35□	149	260	350	3.3
MS149-32-23□	149	320	230	2.7
MS149-32-28□	149	320	280	3.2
MS149-32-35□	149	320	350	3.8
MS149-32-45□	149	320	450	4.6
MS149-37-23□	149	370	230	3.0
MS149-37-28□	149	370	280	3.5
MS149-37-35□	149	370	350	4.1
MS149-37-45□	149	370	450	5.1
MS149-43-23□	149	430	230	3.4
MS149-43-28□	149	430	280	3.9
MS149-43-35□	149	430	350	4.6
MS149-43-45□	149	430	450	5.6
MS177-16-16□	177	160	160	1.6
MS177-16-23□	177	160	230	2.2
MS177-16-28□	177	160	280	2.5
MS177-21-16□	177	210	160	1.9
MS177-21-23□	177	210	230	2.7
MS177-21-28□	177	210	280	3.1
MS177-21-35□	177	210	350	3.6
MS177-26-23□	177	260	230	3.0
MS177-26-28□	177	260	280	3.4
MS177-26-35□	177	260	350	4.0
MS177-32-23□	177	320	230	3.3
MS177-32-28□	177	320	280	3.9
MS177-32-35□	177	320	350	4.5
MS177-32-45□	177	320	450	5.5
MS177-37-23□	177	370	230	3.6
MS177-37-28□	177	370	280	4.2
MS177-37-35□	177	370	350	4.9
MS177-37-45□	177	370	450	6.0
MS177-43-23□	177	430	230	4.0
MS177-43-28□	177	430	280	4.6
MS177-43-35□	177	430	350	5.4
MS177-43-45□	177	430	450	6.6

Product no.	H	W	D	Weight (kg)
MS199-16-16□	199	160	160	1.9
MS199-16-23□	199	160	230	2.4
MS199-16-28□	199	160	280	2.7
MS199-21-16□	199	210	160	2.1
MS199-21-23□	199	210	230	2.7
MS199-21-28□	199	210	280	3.1
MS199-21-35□	199	210	350	3.7
MS199-26-23□	199	260	230	3.1
MS199-26-28□	199	260	280	3.5
MS199-26-35□	199	260	350	4.1
MS199-32-23□	199	320	230	3.4
MS199-32-28□	199	320	280	3.9
MS199-32-35□	199	320	350	4.7
MS199-32-45□	199	320	450	5.7
MS199-37-23□	199	370	230	3.8
MS199-37-28□	199	370	280	4.3
MS199-37-35□	199	370	350	5.1
MS199-37-45□	199	370	450	6.0
MS199-43-23□	199	430	230	4.2
MS199-43-28□	199	430	280	4.8
MS199-43-35□	199	430	350	5.6
MS199-43-45□	199	430	450	6.9
MS222-16-16□	222	160	160	2.0
MS222-16-23□	222	160	230	2.5
MS222-16-28□	222	160	280	2.8
MS222-21-16□	222	210	160	2.2
MS222-21-23□	222	210	230	2.8
MS222-21-28□	222	210	280	3.2
MS222-21-35□	222	210	350	3.8
MS222-26-23□	222	260	230	3.2
MS222-26-28□	222	260	280	3.6
MS222-26-35□	222	260	350	4.3
MS222-32-23□	222	320	230	3.6
MS222-32-28□	222	320	280	4.1
MS222-32-35□	222	320	350	4.9
MS222-32-45□	222	320	450	6.0
MS222-37-23□	222	370	230	3.9
MS222-37-28□	222	370	280	4.5
MS222-37-35□	222	370	350	5.3
MS222-37-45□	222	370	450	6.4
MS222-43-23□	222	430	230	4.4
MS222-43-28□	222	430	280	5.0
MS222-43-35□	222	430	350	5.9
MS222-43-45□	222	430	450	7.2



- Available in 3 different colors and 176 different sizes.
- Lightweight aluminium system case.
- Suitable for use as measuring instruments, testing equipment, power supply controller, etc.

Assembly drawings

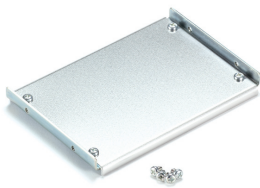


Components

No.	Part name	Pcs	Material	Color / Finish
1	Front panel	1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
2	Rear panel	1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame	2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame	2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • bottom cover	1 each	Aluminium A1100P t=1.0	Light gray • Black / Painted
7	Corner block	2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet	2	ABS UL94V-0	Gray • Black
9	Rubber feet	4	Polyurethane	Black

■ Note: Front / rear panels and top / bottom covers are covered with a protective film on one side. Remove before assembly.

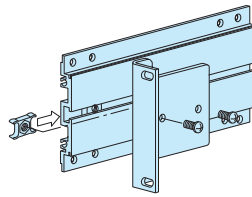
Accessories (Optional parts)



10 Mounting plate MSC series
See page MSC • MSCL-1



11 L-bracket MSCL series
See page MSC • MSCL-1



12 Rack mounting MSM series
See MSM • MZ-1



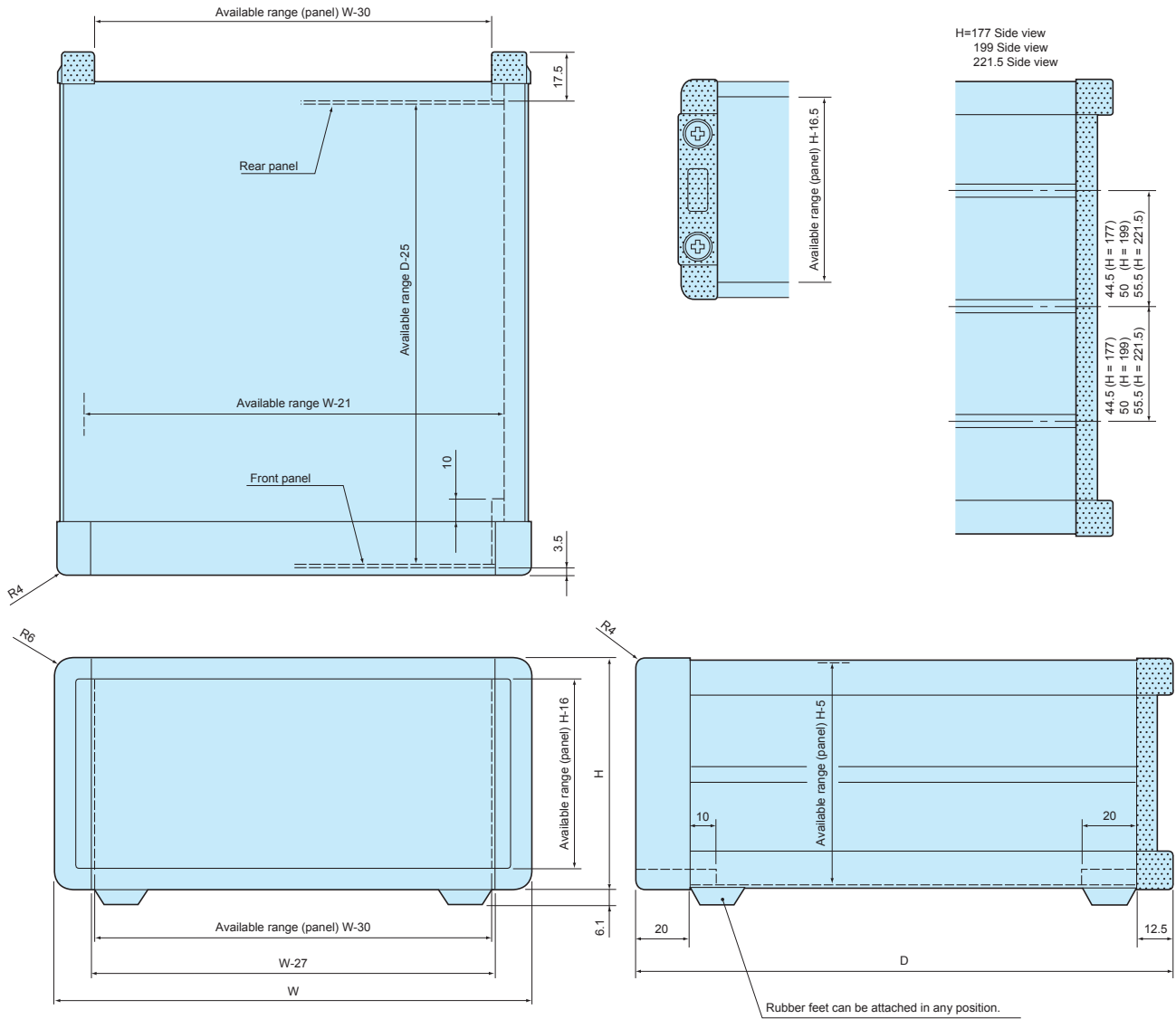
13 Tilt let TL series
See page TL • CBF-1



Cable hook CBF series
See page TL • CBF-1

MO dimensions

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



Color Type

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



Panel	Silver
Top • Bottom cover	Light Gray
Side frame	Gray

Panel	Black
Top • Bottom cover	Black
Side frame	Black

Panel	Silver
Top • Bottom cover	Black
Side frame	Black

Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MO 66-16-16 □	66	160	160	0.8
MO 66-16-23 □	66	160	230	1.0
MO 66-16-28 □	66	160	280	1.1
MO 66-21-16 □	66	210	160	0.9
MO 66-21-23 □	66	210	230	1.1
MO 66-21-28 □	66	210	280	1.3
MO 66-21-35 □	66	210	350	1.5
MO 66-26-23 □	66	260	230	1.3
MO 66-26-28 □	66	260	280	1.5
MO 66-26-35 □	66	260	350	1.7
MO 66-32-23 □	66	320	230	1.5
MO 66-32-28 □	66	320	280	1.7
MO 66-32-35 □	66	320	350	2.0
MO 66-32-45 □	66	320	450	2.4
MO 66-37-23 □	66	370	230	1.6
MO 66-37-28 □	66	370	280	1.9
MO 66-37-35 □	66	370	350	2.2
MO 66-37-45 □	66	370	450	2.6
MO 66-43-23 □	66	430	230	1.8
MO 66-43-28 □	66	430	280	2.1
MO 66-43-35 □	66	430	350	2.4
MO 66-43-45 □	66	430	450	2.9
MO 88-16-16 □	88	160	160	0.9
MO 88-16-23 □	88	160	230	1.1
MO 88-16-28 □	88	160	280	1.3
MO 88-21-16 □	88	210	160	1.0
MO 88-21-23 □	88	210	230	1.3
MO 88-21-28 □	88	210	280	1.5
MO 88-21-35 □	88	210	350	1.7
MO 88-26-23 □	88	260	230	1.5
MO 88-26-28 □	88	260	280	1.7
MO 88-26-35 □	88	260	350	2.0
MO 88-32-23 □	88	320	230	1.7
MO 88-32-28 □	88	320	280	1.9
MO 88-32-35 □	88	320	350	2.2
MO 88-32-45 □	88	320	450	2.7
MO 88-37-23 □	88	370	230	1.8
MO 88-37-28 □	88	370	280	2.1
MO 88-37-35 □	88	370	350	2.4
MO 88-37-45 □	88	370	450	2.9
MO 88-43-23 □	88	430	230	2.1
MO 88-43-28 □	88	430	280	2.3
MO 88-43-35 □	88	430	350	2.7
MO 88-43-45 □	88	430	450	3.2

Product no.	H	W	D	Weight (kg)
MO 99-16-16 □	99	160	160	0.9
MO 99-16-23 □	99	160	230	1.2
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MO 99-21-23 □	99	210	230	1.3
MO 99-21-28 □	99	210	280	1.5
MO 99-21-35 □	99	210	350	1.8
MO 99-26-23 □	99	260	230	1.6
MO 99-26-28 □	99	260	280	1.7
MO 99-26-35 □	99	260	350	2.0
MO 99-32-23 □	99	320	230	1.7
MO 99-32-28 □	99	320	280	2.0
MO 99-32-35 □	99	320	350	2.3
MO 99-32-45 □	99	320	450	2.8
MO 99-37-23 □	99	370	230	1.9
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MO 99-37-35 □	99	370	350	2.5
MO 99-37-45 □	99	370	450	3.0
MO 99-43-23 □	99	430	230	2.1
MO 99-43-28 □	99	430	280	2.4
MO 99-43-35 □	99	430	350	2.8
MO 99-43-45 □	99	430	450	3.4
MO133-16-16 □	132.5	160	160	1.1
MO133-16-23 □	132.5	160	230	1.4
MO133-16-28 □	132.5	160	280	1.6
MO133-21-16 □	132.5	210	160	1.3
MO133-21-23 □	132.5	210	230	1.6
MO133-21-28 □	132.5	210	280	1.8
MO133-21-35 □	132.5	210	350	2.1
MO133-26-23 □	132.5	260	230	1.8
MO133-26-28 □	132.5	260	280	2.0
MO133-26-35 □	132.5	260	350	2.4
MO133-32-23 □	132.5	320	230	2.0
MO133-32-28 □	132.5	320	280	2.3
MO133-32-35 □	132.5	320	350	2.7
MO133-32-45 □	132.5	320	450	3.2
MO133-37-23 □	132.5	370	230	2.2
MO133-37-28 □	132.5	370	280	2.5
MO133-37-35 □	132.5	370	350	2.9
MO133-37-45 □	132.5	370	450	3.4
MO133-43-23 □	132.5	430	230	2.5
MO133-43-28 □	132.5	430	280	2.8
MO133-43-35 □	132.5	430	350	3.2
MO133-43-45 □	132.5	430	450	3.8

Product no. / Dimensions

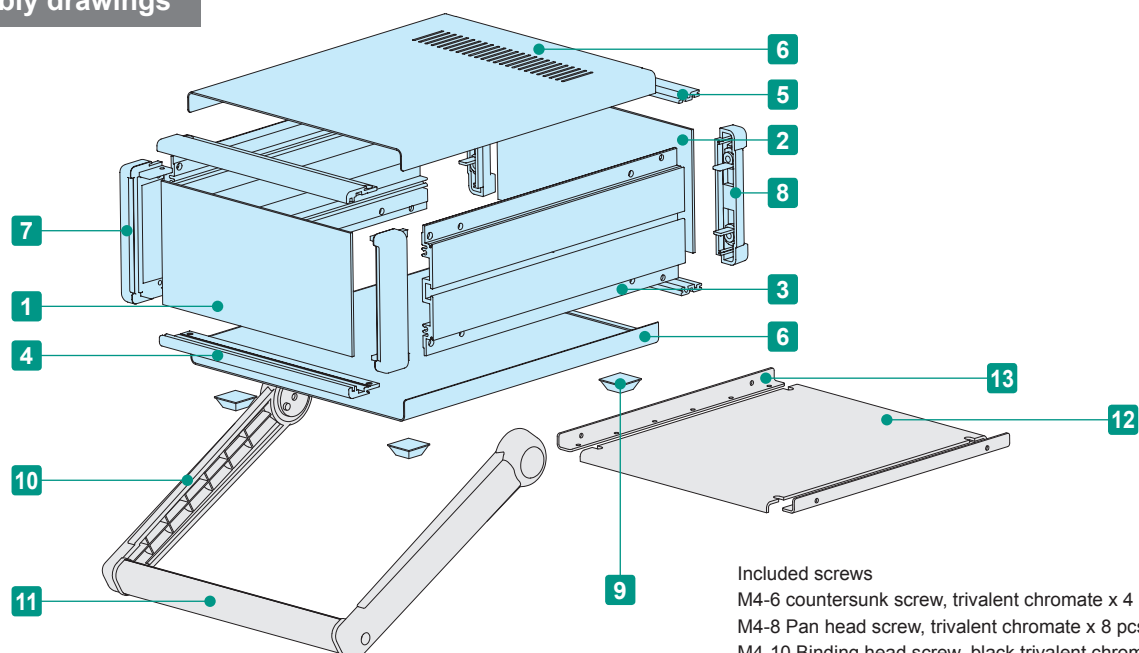
Product no.	H	W	D	Weight (kg)
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MO149-16-23 □	149	160	230	1.5
MO149-16-28 □	149	160	280	1.7
MO149-21-16 □	149	210	160	1.4
MO149-21-23 □	149	210	230	1.7
MO149-21-28 □	149	210	280	1.9
MO149-21-35 □	149	210	350	2.2
MO149-26-23 □	149	260	230	1.9
MO149-26-28 □	149	260	280	2.2
MO149-26-35 □	149	260	350	2.5
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MO149-37-23 □	149	370	230	2.4
MO149-37-28 □	149	370	280	2.6
MO149-37-35 □	149	370	350	3.0
MO149-37-45 □	149	370	450	3.6
MO149-43-23 □	149	430	230	2.6
MO149-43-28 □	149	430	280	2.9
MO149-43-35 □	149	430	350	3.3
MO149-43-45 □	149	430	450	4.0
MO177-16-16 □	177	160	160	1.5
MO177-16-23 □	177	160	230	1.9
MO177-16-28 □	177	160	280	2.1
MO177-21-16 □	177	210	160	1.7
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MO177-21-28 □	177	210	280	2.4
MO177-21-35 □	177	210	350	2.8
MO177-26-23 □	177	260	230	2.3
MO177-26-28 □	177	260	280	2.6
MO177-26-35 □	177	260	350	3.1
MO177-32-23 □	177	320	230	2.6
MO177-32-28 □	177	320	280	2.9
MO177-32-35 □	177	320	350	3.4
MO177-32-45 □	177	320	450	4.1
MO177-37-23 □	177	370	230	2.8
MO177-37-28 □	177	370	280	3.2
MO177-37-35 □	177	370	350	3.7
MO177-37-45 □	177	370	450	4.3
MO177-43-23 □	177	430	230	3.1
MO177-43-28 □	177	430	280	3.5
MO177-43-35 □	177	430	350	4.0
MO177-43-45 □	177	430	450	4.8

Product no.	H	W	D	Weight (kg)
MO199-16-16 □	199	160	160	1.6
MO199-16-23 □	199	160	230	2.0
MO199-16-28 □	199	160	280	2.3
MO199-21-16 □	199	210	160	1.8
MO199-21-23 □	199	210	230	2.2
MO199-21-28 □	199	210	280	2.5
MO199-21-35 □	199	210	350	2.9
MO199-26-23 □	199	260	230	2.5
MO199-26-28 □	199	260	280	2.8
MO199-26-35 □	199	260	350	3.2
MO199-32-23 □	199	320	230	2.7
MO199-32-28 □	199	320	280	3.1
MO199-32-35 □	199	320	350	3.6
MO199-32-45 □	199	320	450	4.2
MO199-37-23 □	199	370	230	3.0
MO199-37-28 □	199	370	280	3.3
MO199-37-35 □	199	370	350	3.8
MO199-37-45 □	199	370	450	4.5
MO199-43-23 □	199	430	230	3.3
MO199-43-28 □	199	430	280	3.6
MO199-43-35 □	199	430	350	4.2
MO199-43-45 □	199	430	450	4.9
MO222-16-16 □	221.5	160	160	1.7
MO222-16-23 □	221.5	160	230	2.1
MO222-16-28 □	221.5	160	280	2.4
MO222-21-16 □	221.5	210	160	1.9
MO222-21-23 □	221.5	210	230	2.4
MO222-21-28 □	221.5	210	280	2.6
MO222-21-35 □	221.5	210	350	3.1
MO222-26-23 □	221.5	260	230	2.6
MO222-26-28 □	221.5	260	280	2.9
MO222-26-35 □	221.5	260	350	3.4
MO222-32-23 □	221.5	320	230	2.9
MO222-32-28 □	221.5	320	280	3.2
MO222-32-35 □	221.5	320	350	3.8
MO222-32-45 □	221.5	320	450	4.5
MO222-37-23 □	221.5	370	230	3.2
MO222-37-28 □	221.5	370	280	3.5
MO222-37-35 □	221.5	370	350	4.1
MO222-37-45 □	221.5	370	450	4.8
MO222-43-23 □	221.5	430	230	3.5
MO222-43-28 □	221.5	430	280	3.8
MO222-43-35 □	221.5	430	350	4.4
MO222-43-45 □	221.5	430	450	5.3



- Available in 3 different colors and 176 different sizes.
- Stand handle can be shifted and locked at 30° intervals.
- Maximum load support of 25kg.

Assembly drawings



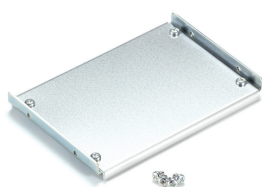
Included screws
 M4-6 countersunk screw, trivalent chromate x 4 pcs
 M4-8 Pan head screw, trivalent chromate x 8 pcs
 M4-10 Binding head screw, black trivalent chromate x 4 pcs

Components

No.	Part name		Pcs	Material	Color / Finish
1	Front panel		1	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
2	Rear panel		1	Aluminium A1050P t=2.0	Silver • Black / Anodized
3	Side frame		2	Extruded aluminium A6063S-T5	Gray • Black / Painted
4	Front frame		2	Extruded aluminium A6063S-T5	Gray • Black / Painted
5	Rear frame		2	Extruded aluminium A6063S-T5	Silver / Anodized
6	Top • Bottom cover		1 each	Steel SPCC t=1.0	Light gray • Black / Painted
7	Corner block		2	Diecast aluminium ADC12	Gray • Black / Painted
8	Rear feet		2	ABS UL94V-0	Gray • Black
9	Rubber feet		4	Polyurethane	Black
10	Stand handle	Bracket	2	ABS UL94HB	Light gray • Black
11		Grip	1	Extruded aluminium A6063S-T5	Silver • Black

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

Accessories (Optional parts)



12 Mounting plate MSC series
See page MSC • MSCL-1

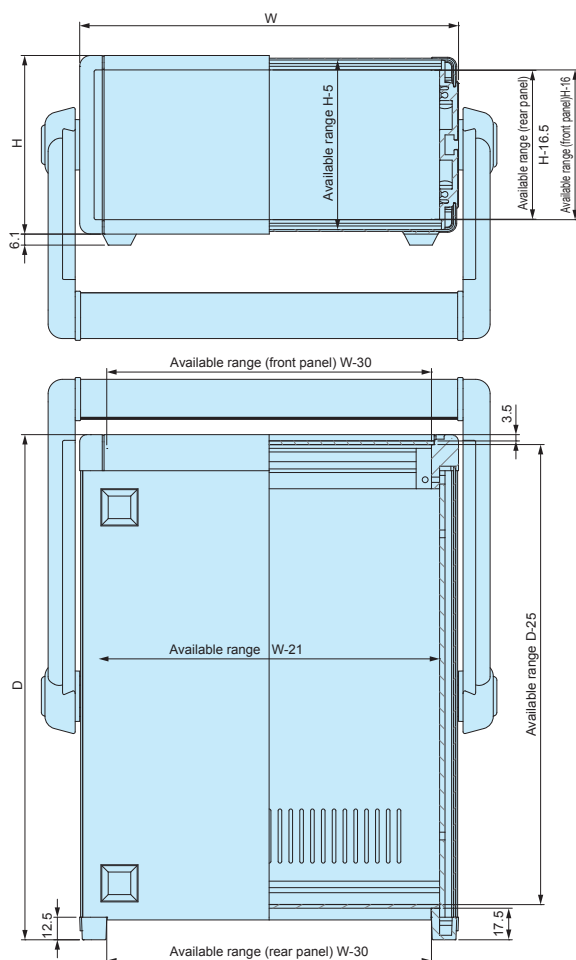


2 L-bracket MSCL series
See page MSC • MSCL-1

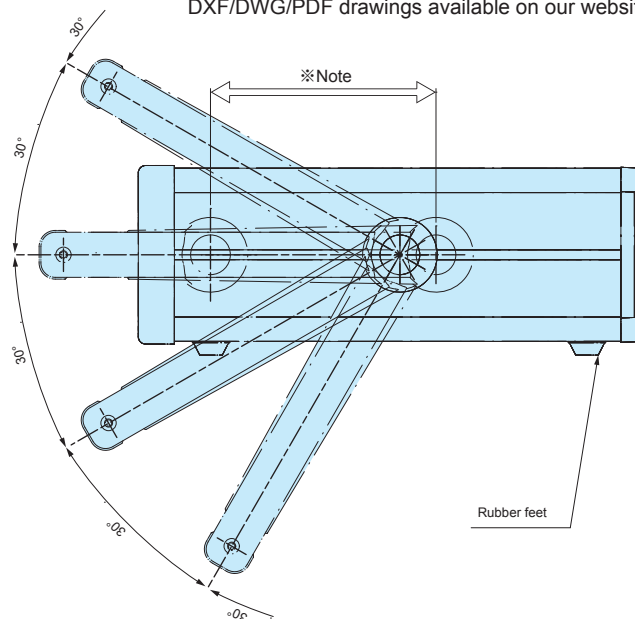


Cable hook CBF series
See page TL • CBF-1

MSN dimensions



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



※ Note
Stand handle location can be freely affixed within denoted range.

■ Top • Bottom cover of sizes 160x160, 160x230, 160x280, 210x160 do not have ventilation holes.

Color Type

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

[GS]		[B]		[BS]	
Panel	Silver	Panel	Black	Panel	Silver
Top • Bottom cover	Light gray	Top • Bottom cover	Black	Top • Bottom cover	Black
Side frame	Gray	Side frame	Black	Side frame	Black

Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSN 66-16-16 □	66	160	160	1.2
MSN 66-16-23 □	66	160	230	1.5
MSN 66-16-28 □	66	160	280	1.8
MSN 66-21-16 □	66	210	160	1.4
MSN 66-21-23 □	66	210	230	1.8
MSN 66-21-28 □	66	210	280	2.1
MSN 66-21-35 □	66	210	350	2.5
MSN 66-26-23 □	66	260	230	2.1
MSN 66-26-28 □	66	260	280	2.4
MSN 66-26-35 □	66	260	350	2.9
MSN 66-32-23 □	66	320	230	2.4
MSN 66-32-28 □	66	320	280	2.8
MSN 66-32-35 □	66	320	350	3.4
MSN 66-32-45 □	66	320	450	4.1
MSN 66-37-23 □	66	370	230	2.6
MSN 66-37-28 □	66	370	280	3.1
MSN 66-37-35 □	66	370	350	3.7
MSN 66-37-45 □	66	370	450	4.4
MSN 66-43-23 □	66	430	230	3.0
MSN 66-43-28 □	66	430	280	3.5
MSN 66-43-35 □	66	430	350	4.2
MSN 66-43-45 □	66	430	450	5.2
MSN 88-16-16 □	88	160	160	1.3
MSN 88-16-23 □	88	160	230	1.6
MSN 88-16-28 □	88	160	280	1.9
MSN 88-21-16 □	88	210	160	1.5
MSN 88-21-23 □	88	210	230	1.9
MSN 88-21-28 □	88	210	280	2.3
MSN 88-21-35 □	88	210	350	2.7
MSN 88-26-23 □	88	260	230	2.3
MSN 88-26-28 □	88	260	280	2.6
MSN 88-26-35 □	88	260	350	3.1
MSN 88-32-23 □	88	320	230	2.6
MSN 88-32-28 □	88	320	280	3.0
MSN 88-32-35 □	88	320	350	3.6
MSN 88-32-45 □	88	320	450	4.4
MSN 88-37-23 □	88	370	230	2.9
MSN 88-37-28 □	88	370	280	3.3
MSN 88-37-35 □	88	370	350	4.0
MSN 88-37-45 □	88	370	450	4.7
MSN 88-43-23 □	88	430	230	3.2
MSN 88-43-28 □	88	430	280	3.7
MSN 88-43-35 □	88	430	350	4.4
MSN 88-43-45 □	88	430	450	5.5

Product no.	H	W	D	Weight (kg)
MSN 99-16-16 □	99	160	160	1.3
MSN 99-16-23 □	99	160	230	1.7
MSN 99-16-28 □	99	160	280	2.0
MSN 99-21-16 □	99	210	160	1.6
MSN 99-21-23 □	99	210	230	2.0
MSN 99-21-28 □	99	210	280	2.3
MSN 99-21-35 □	99	210	350	2.8
MSN 99-26-23 □	99	260	230	2.3
MSN 99-26-28 □	99	260	280	2.7
MSN 99-26-35 □	99	260	350	3.2
MSN 99-32-23 □	99	320	230	2.6
MSN 99-32-28 □	99	320	280	3.1
MSN 99-32-35 □	99	320	350	3.7
MSN 99-32-45 □	99	320	450	4.5
MSN 99-37-23 □	99	370	230	2.9
MSN 99-37-28 □	99	370	280	3.4
MSN 99-37-35 □	99	370	350	4.1
MSN 99-37-45 □	99	370	450	4.8
MSN 99-43-23 □	99	430	230	3.3
MSN 99-43-28 □	99	430	280	3.8
MSN 99-43-35 □	99	430	350	4.5
MSN 99-43-45 □	99	430	450	5.6
MSN133-16-16 □	133	160	160	1.5
MSN133-16-23 □	133	160	230	1.9
MSN133-16-28 □	133	160	280	2.2
MSN133-21-16 □	133	210	160	1.8
MSN133-21-23 □	133	210	230	2.3
MSN133-21-28 □	133	210	280	2.6
MSN133-21-35 □	133	210	350	3.1
MSN133-26-23 □	133	260	230	2.6
MSN133-26-28 □	133	260	280	3.0
MSN133-26-35 □	133	260	350	3.5
MSN133-32-23 □	133	320	230	2.9
MSN133-32-28 □	133	320	280	3.4
MSN133-32-35 □	133	320	350	4.0
MSN133-32-45 □	133	320	450	4.9
MSN133-37-23 □	133	370	230	3.3
MSN133-37-28 □	133	370	280	3.8
MSN133-37-35 □	133	370	350	4.4
MSN133-37-45 □	133	370	450	5.2
MSN133-43-23 □	133	430	230	3.7
MSN133-43-28 □	133	430	280	4.2
MSN133-43-35 □	133	430	350	4.9
MSN133-43-45 □	133	430	450	6.0

Product no. / Dimensions

Product no.	H	W	D	Weight (kg)
MSN149-16-16 □	149	160	160	1.6
MSN149-16-23 □	149	160	230	2.0
MSN149-16-28 □	149	160	280	2.4
MSN149-21-16 □	149	210	160	1.8
MSN149-21-23 □	149	210	230	2.4
MSN149-21-28 □	149	210	280	2.7
MSN149-21-35 □	149	210	350	3.2
MSN149-26-23 □	149	260	230	2.7
MSN149-26-28 □	149	260	280	3.1
MSN149-26-35 □	149	260	350	3.6
MSN149-32-23 □	149	320	230	3.1
MSN149-32-28 □	149	320	280	3.5
MSN149-32-35 □	149	320	350	4.2
MSN149-32-45 □	149	320	450	5.1
MSN149-37-23 □	149	370	230	3.4
MSN149-37-28 □	149	370	280	3.9
MSN149-37-35 □	149	370	350	4.6
MSN149-37-45 □	149	370	450	5.4
MSN149-43-23 □	149	430	230	3.8
MSN149-43-28 □	149	430	280	4.4
MSN149-43-35 □	149	430	350	5.1
MSN149-43-45 □	149	430	450	6.3
MSN177-16-16 □	177	160	160	1.9
MSN177-16-23 □	177	160	230	2.4
MSN177-16-28 □	177	160	280	2.8
MSN177-21-16 □	177	210	160	2.2
MSN177-21-23 □	177	210	230	2.8
MSN177-21-28 □	177	210	280	3.2
MSN177-21-35 □	177	210	350	3.8
MSN177-26-23 □	177	260	230	3.2
MSN177-26-28 □	177	260	280	3.6
MSN177-26-35 □	177	260	350	4.2
MSN177-32-23 □	177	320	230	3.5
MSN177-32-28 □	177	320	280	4.0
MSN177-32-35 □	177	320	350	4.8
MSN177-32-45 □	177	320	450	5.8
MSN177-37-23 □	177	370	230	3.9
MSN177-37-28 □	177	370	280	4.4
MSN177-37-35 □	177	370	350	5.2
MSN177-37-45 □	177	370	450	6.1
MSN177-43-23 □	177	430	230	4.3
MSN177-43-28 □	177	430	280	4.9
MSN177-43-35 □	177	430	350	5.7
MSN177-43-45 □	177	430	450	7.0

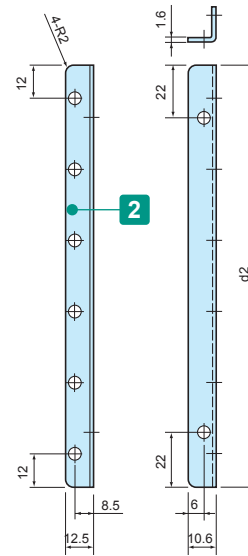
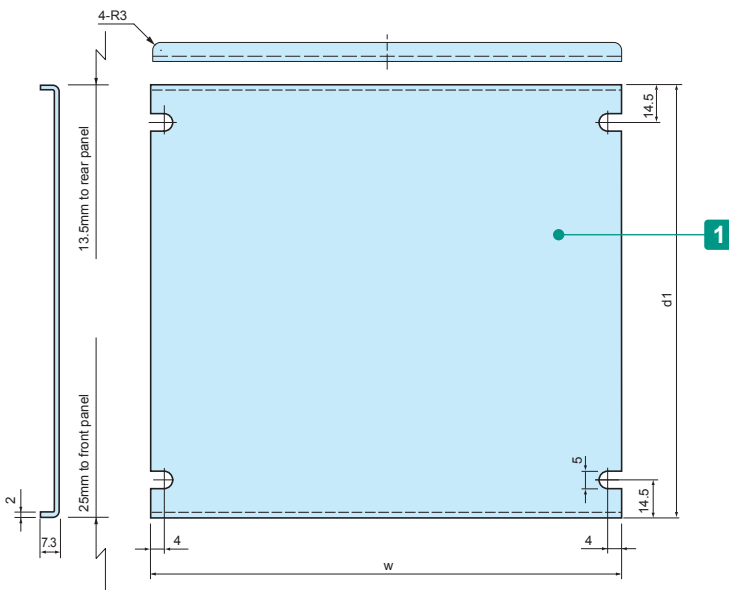
Product no.	H	W	D	Weight (kg)
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MSN199-16-23 □	199	160	230	2.6
MSN199-16-28 □	199	160	280	2.9
MSN199-21-16 □	199	210	160	2.3
MSN199-21-23 □	199	210	230	2.9
MSN199-21-28 □	199	210	280	3.3
MSN199-21-35 □	199	210	350	3.9
MSN199-26-23 □	199	260	230	3.3
MSN199-26-28 □	199	260	280	3.7
MSN199-26-35 □	199	260	350	4.4
MSN199-32-23 □	199	320	230	3.7
MSN199-32-28 □	199	320	280	4.2
MSN199-32-35 □	199	320	350	4.9
MSN199-32-45 □	199	320	450	5.9
MSN199-37-23 □	199	370	230	4.0
MSN199-37-28 □	199	370	280	4.6
MSN199-37-35 □	199	370	350	5.4
MSN199-37-45 □	199	370	450	6.3
MSN199-43-23 □	199	430	230	4.5
MSN199-43-28 □	199	430	280	5.1
MSN199-43-35 □	199	430	350	5.9
MSN199-43-45 □	199	430	450	7.2
MSN222-16-16 □	222	160	160	2.2
MSN222-16-23 □	222	160	230	2.7
MSN222-16-28 □	222	160	280	3.0
MSN222-21-16 □	222	210	160	2.5
MSN222-21-23 □	222	210	230	3.0
MSN222-21-28 □	222	210	280	3.4
MSN222-21-35 □	222	210	350	4.1
MSN222-26-23 □	222	260	230	3.4
MSN222-26-28 □	222	260	280	3.8
MSN222-26-35 □	222	260	350	4.5
MSN222-32-23 □	222	320	230	3.8
MSN222-32-28 □	222	320	280	4.3
MSN222-32-35 □	222	320	350	5.1
MSN222-32-45 □	222	320	450	6.2
MSN222-37-23 □	222	370	230	4.2
MSN222-37-28 □	222	370	280	4.8
MSN222-37-35 □	222	370	350	5.6
MSN222-37-45 □	222	370	450	6.6
MSN222-43-23 □	222	430	230	4.7
MSN222-43-28 □	222	430	280	5.2
MSN222-43-35 □	222	430	350	6.1
MSN222-43-45 □	222	430	450	7.5

MSC series

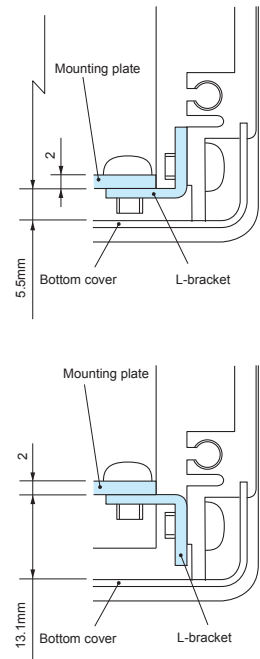
MOUNTING PLATE for MS

MSC dimensions

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



Mounting example



Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	L-bracket	2	Steel SPCC	Trivalent chromate

Included screws: M4-6 pan head, trivalent chromate x8

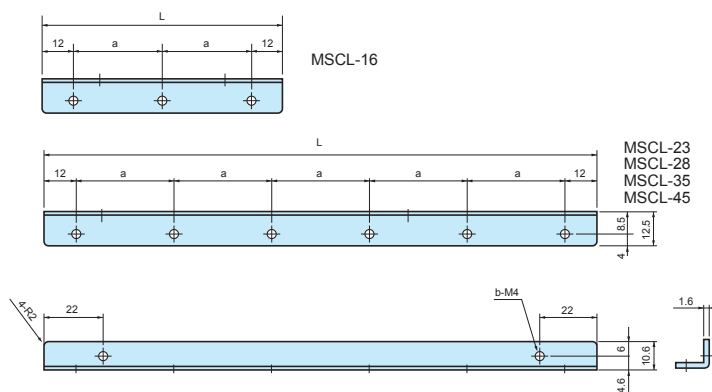
Product no. / Details

Product no.	w	d1	d2	Enclosure W×D	Weight (g)
MSC16-16	130	96.5	91.5	160 × 160	120
MSC16-23	130	166.5	161.5	160 × 230	210
MSC16-28	130	216.5	211.5	160 × 280	270
MSC21-16	180	96.5	91.5	210 × 160	150
MSC21-23	180	166.5	161.5	210 × 230	250
MSC21-28	180	216.5	211.5	210 × 280	330
MSC21-35	180	286.5	281.5	210 × 350	430
MSC26-23	230	166.5	161.5	260 × 230	300
MSC26-28	230	216.5	211.5	260 × 280	390
MSC26-35	230	286.5	281.5	260 × 350	510
MSC32-23	290	166.5	161.5	320 × 230	360

Product no.	w	d1	d2	Enclosure W×D	Weight (g)
MSC32-28	290	216.5	211.5	320 × 280	460
MSC32-35	290	286.5	281.5	320 × 350	600
MSC32-45	290	386.5	381.5	320 × 450	810
MSC37-23	340	166.5	161.5	370 × 230	410
MSC37-28	340	216.5	211.5	370 × 280	520
MSC37-35	340	286.5	281.5	370 × 350	680
MSC37-45	340	386.5	381.5	370 × 450	910
MSC43-23	400	166.5	161.5	430 × 230	460
MSC43-28	400	216.5	211.5	430 × 280	590
MSC43-35	400	286.5	281.5	430 × 350	770
MSC43-45	400	386.5	381.5	430 × 450	1,040

MSCL series

L-BRACKET for MS



- Use with your original mounting plate or PCB.
- 1 pair of L-bracket are included with each MSC mounting plate.

Components

Part name	Material	Color / Finish
L-bracket	Steel SPCC	Trivalent chromate

Product no. / Details

Product no.	L	a	b	Sales unit
MSCL-16	91.5	33.75	5	1 set (2 pcs)
MSCL-23	161.5	27.5	8	1 set (2 pcs)
MSCL-28	211.5	37.5	8	1 set (2 pcs)
MSCL-35	281.5	51.5	8	1 set (2 pcs)
MSCL-45	381.5	71.5	8	1 set (2 pcs)

MSM SERIES

RACK MOUNT BRACKET

Components

Material	Color / Finish
Extruded aluminium A6063S-T5	Gray • Black / Painted

Included screws : M5-10 Flat head x 4 pcs / Black trivalent chromate + Nut x 4 pcs

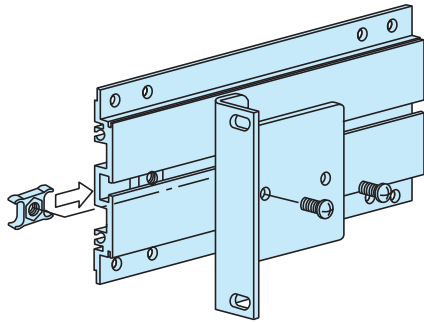
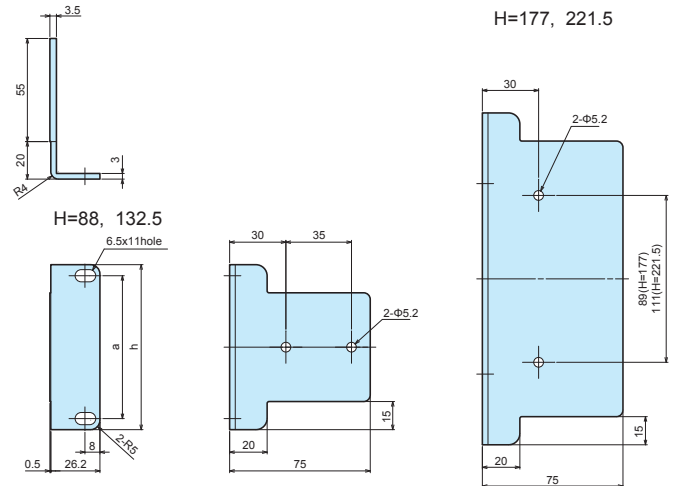
Color Type

Color code	Material	Color / Finish
G	Extruded aluminium A6063S-T5	Gray / Painted
B	Extruded aluminium A6063S-T5	Black / Painted

Product no. / Dimensions

Product no.	h (Enclosure H)	a	Pack of
MSM- 88□	88	76.2	2
MSM-133□	132.5	57.1	2
MSM-177□	177	101.6	2
MSM-222□	221.5	146	2

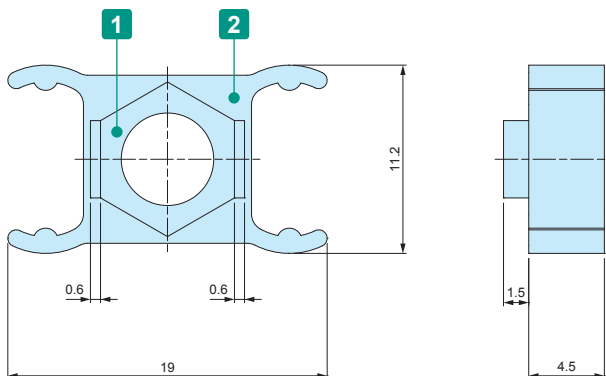
■ Please suffix color code at the end of the product number.



MZ SERIES

SIDE FRAME NUT

■ Side frame nut for MS • MSN • MSY • MSR • MO • MON • MOY • MOR series.

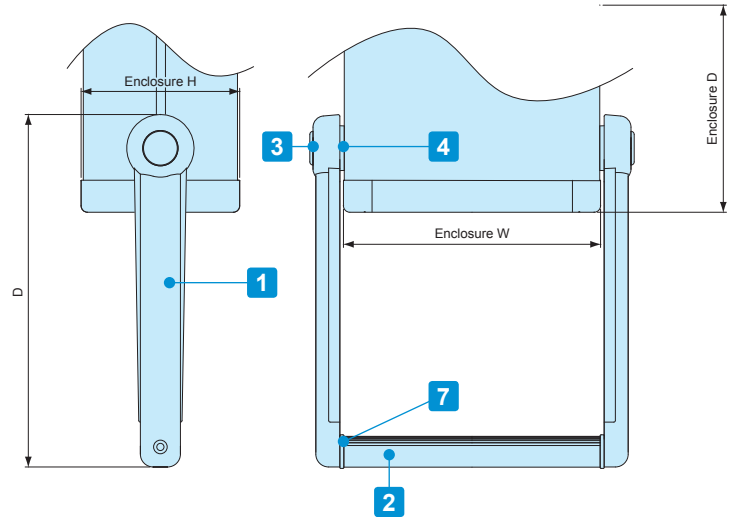


Components

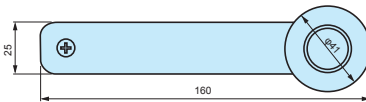
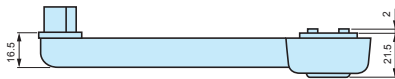
No.	Part name	Material	Color / Finish
1	Nut	Brass • Steel	Nickel plated
2	Holder	Polyethylene	Black

Product no. / Feature

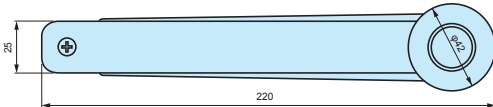
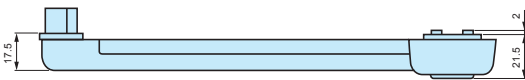
Product no.	Screw size	Nut material	Pack of
MZ-4	M4	Brass	10
MZ-5	M5	Steel	10

MN series**TIP-UP HANDLE for MS • MO****Bracket Details**

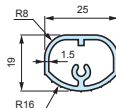
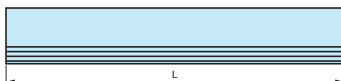
MN□-16



MN□-22



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

Grip Details**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2	ABS UL94HB	Light gray • Black
2	Grip	1	Extruded aluminium A6063S-T5	Silver anodized • Black anodized
3	Blind cap	2	Polyethylene	Light gray • Black
4	Stator	2	Diecast aluminium ADC12	Light gray • Black
—	Rotor	2	ABS UL94HB	Light gray • Black
—	Spring	2	Stainless steel	Unfinished
7	Spacer	2	Polyethylene	Light gray • Black
—	Self-tapping screw (M4-20)	2	Steel	Black trivalent chromate
—	Screw (M5-16 pan head with spring washer)	2	Steel	Trivalent chromate
—	Slide nut	2	Steel • Polyethylene	Nickel plated • Black

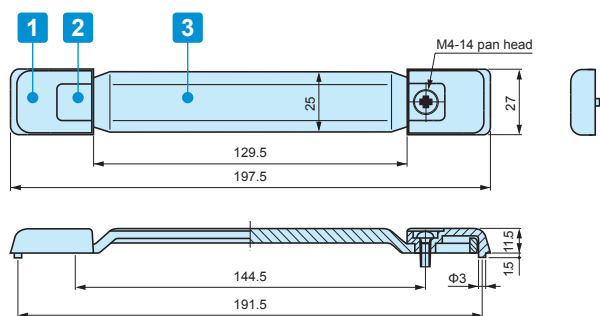
■ Caution : Blind cap cannot be re-attached once affixed.

Product no. / Dimensions

Product no.		Dimensions	
● Light gray / Silver	● Black	L	D
MN16-16G	MN16-16B	160	160
MN16-22G	MN16-22B	160	220
MN21-16G	MN21-16B	210	160
MN21-22G	MN21-22B	210	220
MN26-16G	MN26-16B	260	160
MN26-22G	MN26-22B	260	220
MN32-16G	MN32-16B	320	160
MN32-22G	MN32-22B	320	220
MN37-16G	MN37-16B	370	160
MN37-22G	MN37-22B	370	220
MN43-16G	MN43-16B	430	160
MN43-22G	MN43-22B	430	220

Handle matching chart

Product no.	Enclosure W	Enclosure H	Enclosure D	Product no.	Enclosure W	Enclosure H	Enclosure D
MN16-16□	160	66,88,99	160,230	MN16-22□	160	66,88,99	280
		133,149,177	160			133,149,177,199,222	230,280
MN21-16□	210	66,88,99	160,230	MN21-22□	210	66,88,99	280,350
		133,149,177	160			133,149,177,199,222	230 ~ 350
MN26-16□	260	66,88,99	230	MN26-22□	260	66,88,99	280,350
						133,149,177,199,222	230 ~ 350
MN32-16□	320	66,88,99	230	MN32-22□	320	66,88,99	280 ~ 450
						133,149,177,199,222	230 ~ 450
MN37-16□	370	66,88,99	230	MN37-22□	370	66,88,99	280 ~ 450
						133,149,177,199,222	230 ~ 450
MN43-16□	430	66,88,99	230	MN43-22□	430	66,88,99	280 ~ 450
						133,149,177,199,222	230 ~ 450

MY series**CARRYING HANDLE for MS • MO**

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

Components

No.	Part name	Pcs	Material	Color / Finish
1	Holder	2	ABS	Gray • Black
2	Blind cap	2	Elastomer	Gray • Black
3	Grip	1	Elastomer	Gray • Black
4	Screw (M4-14 pan head)	2	Steel	Trivalent chromate
—	Slide nut	2	Brass • Polyethylene	Nickel plated • Black

Product no. / Dimensions

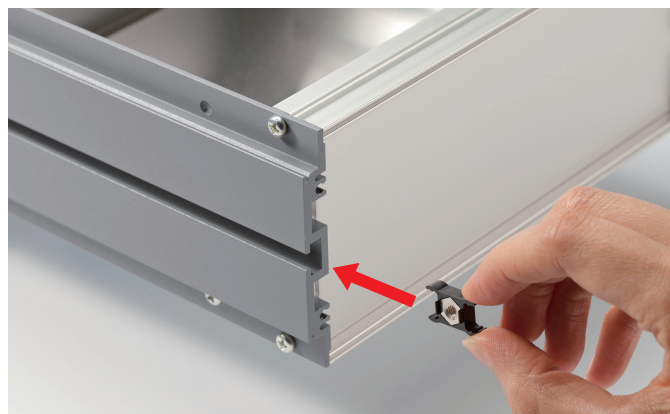
Product no.		Tensile Strength
● Gray	● Black	
MY-197G	MY-197B	20kgf

■ Not applicable for use on 160mm "D" dimension enclosures.

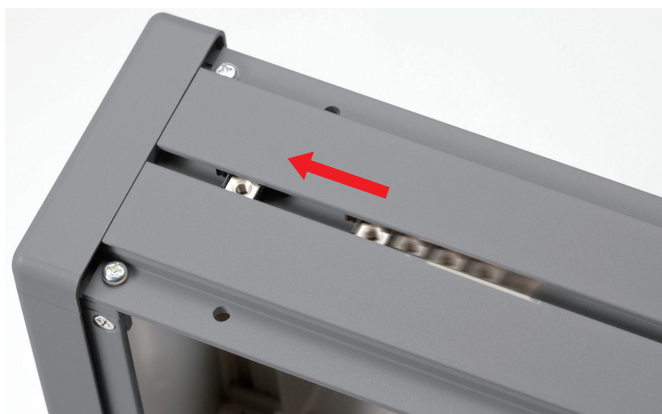
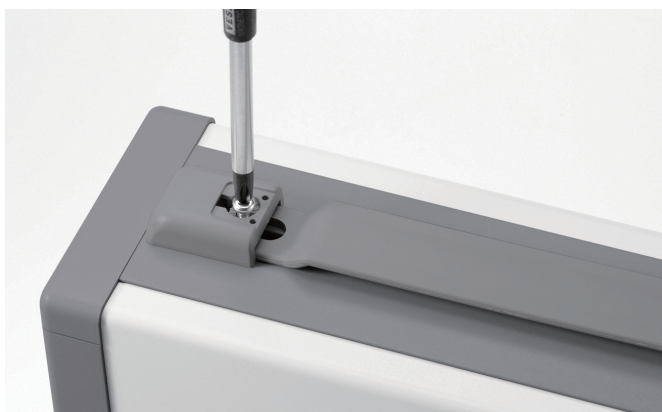
■ If chemicals, cutting oil, etc. adhere to or come into contact with areas where tensile stress is generated, there is a possibility that cracks may occur due to the synergistic effect of the chemicals and stress. Be careful of the usage environment and the handling of the product.

How to install MN • MY handles

Insert the nut into the groove on the side frame.



Slide the nut into position.

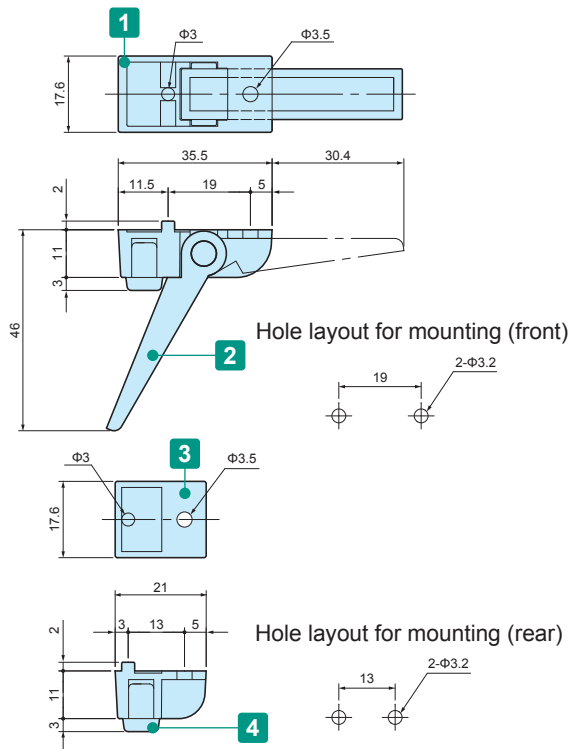
**MN handle installation****MY handle installation**

TL series

TILT LEG

TL dimensions

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



Components

* Maximum load = 7 kg

No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	ABS UL94HB	Black • Light gray • Dark gray
2	Leg	2	ABS UL94HB	Black • Light gray • Dark gray
3	Rear feet	2	ABS UL94HB	Black • Light gray • Dark gray
4	Rubber feet	4	EPDM	Gray • Black
-	Screw	4	Steel	Black trivalent chromate

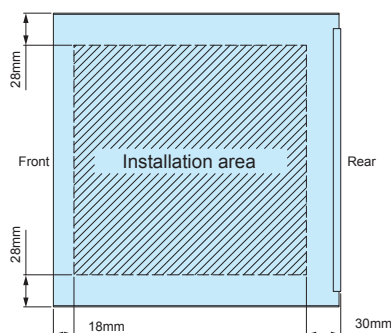
■ Included screws: M3-8 and M3 nut (with washer) set.

Product no. / Details

Product no.	Color (body)	Color (rubber feet)	Sales unit
● TL-45BB	Black	Black	1 set
○ TL-45SG	Light gray	Gray	1 set
● TL-45DG	Dark gray	Gray	1 set

■ EPDM (black) may have its color migrate onto the placement surface.

MS SERIES INSTALLATION AREA



CBF-1G

CABLE HOOK



- Used for wrapping and securing cords and wires.
- Can be used with a variety of different enclosure series and models.
- Requires a panel thickness of between 1.0 ~ 3.0mm.

Product no. / Details

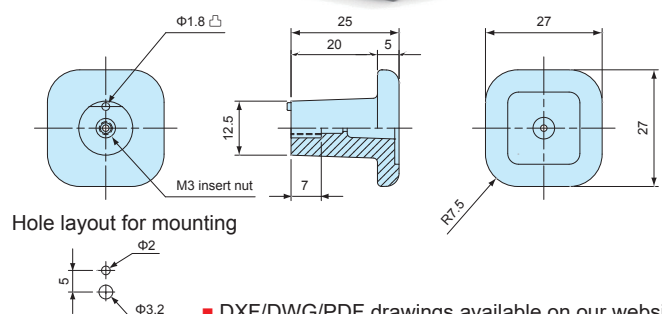
Product no.	Material	Color	Pack of
CBF-1G	ABS UL94HB	Gray	4

■ Included screws: M3-8 trivalent chromate (with washer) x 4 pcs



CBF dimensions

APPLICATION EXAMPLE



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