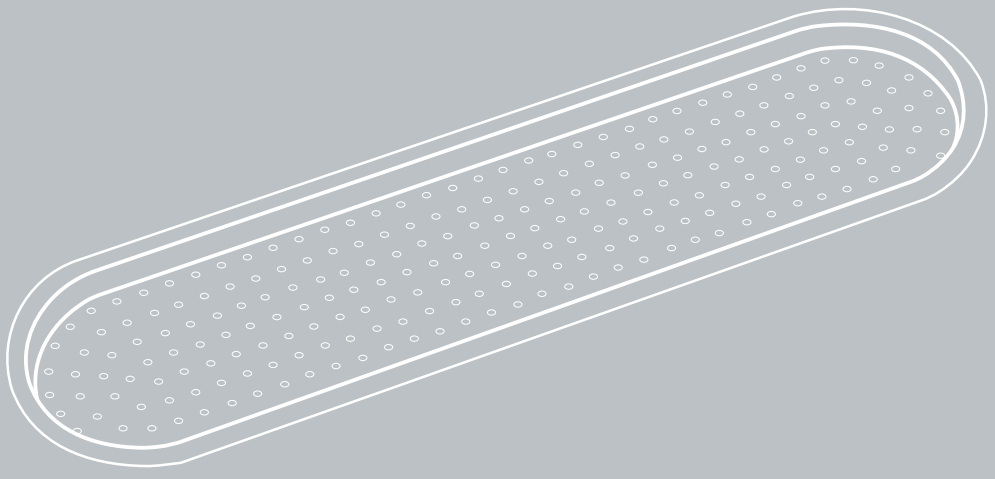
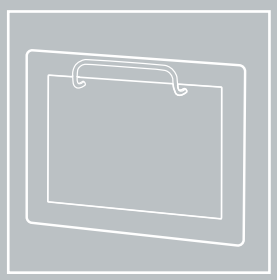
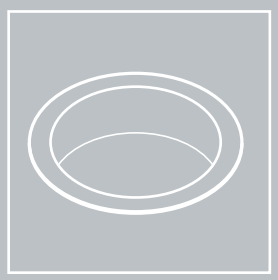


Functional Accessories.

Cable Grommets • Ventilators • Bathroom Accessories
Multi-Purpose Doors, Lids • Towel Bars, Racks









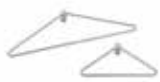
VENTILATORS

Picture	Item No.	Page
	SAM	798
	SAD	798
	ASM	798
	ASD	799
	AST	799
	AST-160, 210	799
	1-1122	800
	1-1212	800
	1-2211	801
	1-2222	801
	APK, APKL	802
	APD, APDL	802
	APD-KH	803
	APM	804
	APB	804

CABLE GROMMETS

Picture	Item No.	Page
	S445, S51, S60, S76, S89	806
	S165-76	806
	LS-50S-S	805
	V60, V80	807
	V2000	807
	LSU, LS	809
	CHC	808
	CHC-S	808
	LN72D	809
	LN72S	809

BATHROOM ACCESSORIES

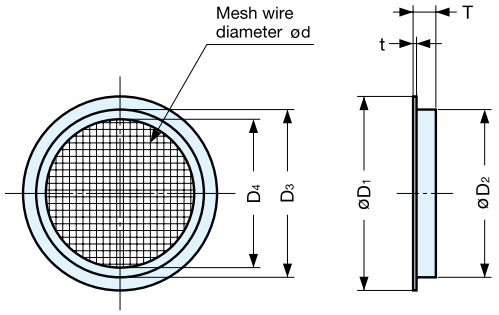
Picture	Item No.			Page
	ZL-3201 (TOWEL BAR)		STAINLESS 316 STEEL	811
	ZL-3202 (TOWEL BAR)		STAINLESS 316 STEEL	811
	KB-T (TOWEL BAR)		STAINLESS 303 STEEL	812
	DSR-01/18 (TOWEL BAR)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	812
	DST-06 (TOWEL BAR)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	813
	DSR-02 (TOWEL BAR)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	813
	DSR-08 (TOWEL RACK)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	814
	DSD-80 (TOWEL RACK)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	814
	DSB-01 (TOILET PAPER HOLDER)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	815
	DSB-03 (TOILET PAPER HOLDER)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	815
	DSB-04 (TOILET PAPER HOLDER)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	815
	DSB-09 (TOILET BRUSH/HOLDER)	STAINLESS 304 STEEL	STAINLESS 303 STEEL	816
	DSB-07 (TOILET PAPER HOLDER)		STAINLESS 304 STEEL	816

MULTI-PURPOSE DOORS, LIDS & GROMMETS

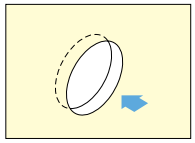
Picture	Item No.			Page
	AZ-GD231-HL	RoHS	STAINLESS 304 STEEL	817
	AZ-GD232-HL	RoHS	STAINLESS 304 STEEL	817
	AZ-GD	RoHS	STAINLESS 304 STEEL	818
	AZ-SLP	RoHS	STAINLESS 304 STEEL	819
	AZ-HD230/HL, AZ-HD310/HL	RoHS	STAINLESS 304 STEEL	819
	AD-KH	RoHS	STAINLESS 304 STEEL	820
	AN-KH	NSF COMPONENT RoHS	STAINLESS 304 STEEL	820
	AD-GD	RoHS	STAINLESS 304 STEEL	821
	AD-DH015-HL		STAINLESS 304 STEEL	821
	AZ-DD310/HL	RoHS	STAINLESS 304 STEEL	822
	AZ-ND	RoHS	STAINLESS 304 STEEL	822
	AN-DH, AN-LH	NSF COMPONENT RoHS	STAINLESS 304 STEEL	823
	AE-DH		STAINLESS 304 STEEL	822

VENTILATOR SAM





- 0.4 mm mesh wire diameter.
- Affix with glue.



Installation

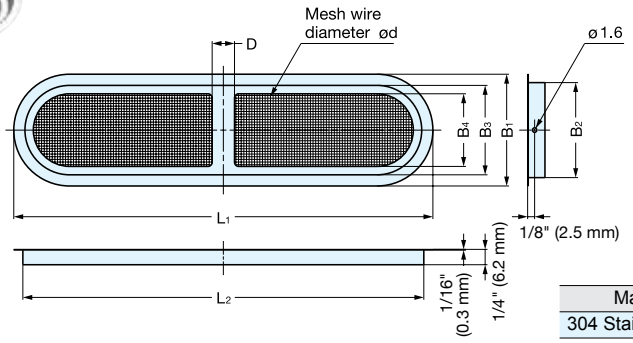
Material	Finish
304 Stainless Steel	Satin

Item No.	D1	D2	D3	D4	T	t	d	Weight (g)	Box (pcs)	Carton (pcs)
SAM-37	1-7/16" (36 mm)	1-1/4" (31.5 mm)	1-3/16" (30 mm)	1" (25 mm)	(5.2)	1/16" (0.3 mm)	1/16" (0.4 mm)	4.5	70	1400
SAM-45	1-13/16" (46 mm)	1-5/8" (41.5 mm)	1-9/16" (40 mm)	1-3/8" (35 mm)	(5.2)			6.0	60	1200
SAM-60	2-3/8" (60 mm)	2-1/8" (53.5 mm)	2-1/16" (52 mm)	1-13/16" (46 mm)	(6.5)			9.5	50	1000
SAM-85	3-3/8" (85 mm)	3-1/16" (77.8 mm)	3" (76.5 mm)	2-11/16" (68 mm)	(7.0)			16.5	30	600
SAM-120	4-3/4" (120 mm)	4-3/8" (110.5 mm)	4-1/4" (108 mm)	3-7/8" (99 mm)	(7.2)	(0.5)		46.5	20	200

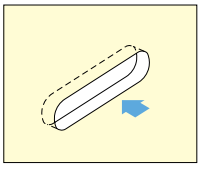
() units in mm.

VENTILATOR SAD





- 0.4 mm mesh wire diameter.
- Affix with glue or tack.



Installation

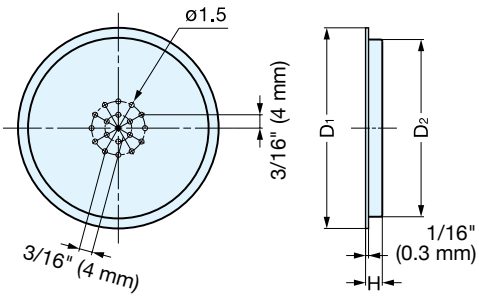
Material	Finish
304 Stainless Steel	Satin

Item No.	L1	B1	B3	B4	L2	B2	D	d	Weight (g)	Box (pcs)	Carton (pcs)
SAD-150	5-7/16" (150 mm)	1-9/16" (40 mm)	1-1/4" (32 mm)	1" (26 mm)	5-5/8" (143.5 mm)	(34)	(8)	1/32" (0.4)	18.5	30	600
SAD-200	7-7/8" (200.5 mm)	2" (50 mm)	1-5/8" (42 mm)	1-3/8" (35 mm)	7-5/8" (194 mm)	(44)	(10)		30		300

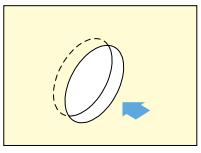
() units in mm.

VENTILATOR ASM





- 1.5 mm (1/16") diameter holes.
- Affix with glue.



Installation

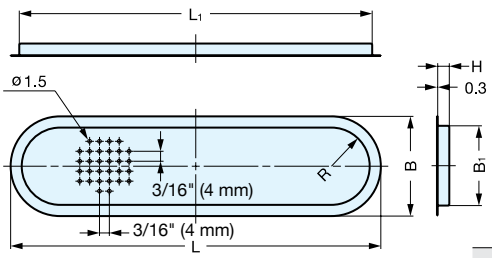
Material	Finish
304 Stainless Steel	Satin

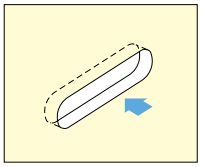
Item No.	D1	D2	H	Holes	Weight (g)	Box (pcs)	Carton (pcs)
ASM-37	1-7/16" (36 mm)	1-1/4" (31 mm)	3/16" (4.5 mm)	37	3.0	100	3600
ASM-45	1-13/16" (46 mm)	1-5/8" (41 mm)		59	5.0		
ASM-60	2-3/8" (60 mm)	2-1/16" (53 mm)	3/16" (5 mm)	127	8.0		2400
ASM-85	3-3/8" (85 mm)	3" (77 mm)		271	13.5	50	1000

VENTILATOR ASD



- 1/16" (1.5 mm) diameter holes.
- Affix with glue.




Installation

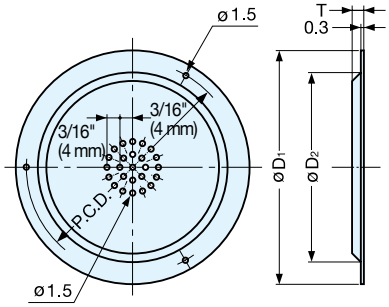
Material	Finish
304 Stainless Steel	Satin

Item No.	L	L1	H	B	B1	R	Holes	Weight (g)	Box (pcs)	Carton (pcs)
ASD-150	5-15/16" (150 mm)	5-5/8" (143 mm)	3/16" (5 mm)	1-9/16" (40 mm)	1-5/16" (33 mm)	(16)	268	14.5	80	1920
ASD-200	7-7/8" (200 mm)	7-5/8" (193 mm)		2" (50 mm)	1-11/16" (42.8 mm)	(21)	450	23	40	960

VENTILATOR AST



- 1/16" (1.5 mm) diameter holes.
- Supplied with tacks.



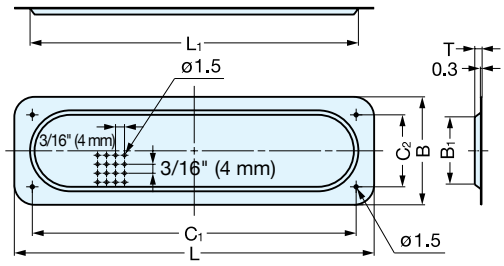
Material	Finish
304 Stainless Steel	Satin

Item No.	D1	D2	T	P.C.D.	Holes	Weight (g)	Box (pcs)	Carton (pcs)
AST-45	1-3/4" (45 mm)	1-5/16" (34 mm)	1/8" (3 mm)	1-9/16" (40 mm)	37	4	100	3600
AST-55	2-3/16" (55 mm)	1-3/4" (44 mm)		2" (50 mm)	59	5		
AST-70	2-3/4" (70 mm)	2-3/16" (55 mm)		2-1/2" (64 mm)	127	9		2400
AST-100	3-15/16" (100 mm)	3-3/16" (81 mm)	3/16" (4 mm)	3-9/16" (91 mm)	271	19	50	500

VENTILATOR AST-160, 210



- 1/16" (1.5 mm) diameter holes.
- Supplied with tacks.



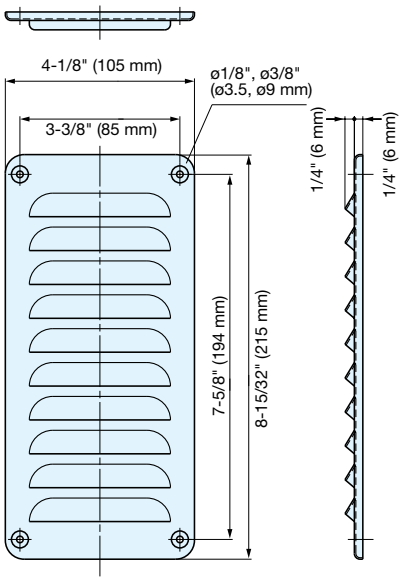
Material	Finish
304 Stainless Steel	Satin

Item No.	L	L1	B	B1	C1	C2	T	Holes	Weight (g)	Box (pcs)	Carton (pcs)
AST-160	6-5/16" (160 mm)	5-3/4" (146 mm)	1-7/8" (48 mm)	1-7/16" (36 mm)	5-11/16" (144 mm)	1-1/4" (32 mm)	1/8" (3 mm)	268	18	50	1000
AST-210	8-1/4" (210 mm)	7-3/4" (196 mm)	2-1/4" (58 mm)	1-13/16" (46 mm)	7-5/8" (194 mm)	1-5/8" (42 mm)	3/16" (4 mm)	450	28		200

VENTILATOR

STAINLESS 316 STEEL NO SCREW 1-1122





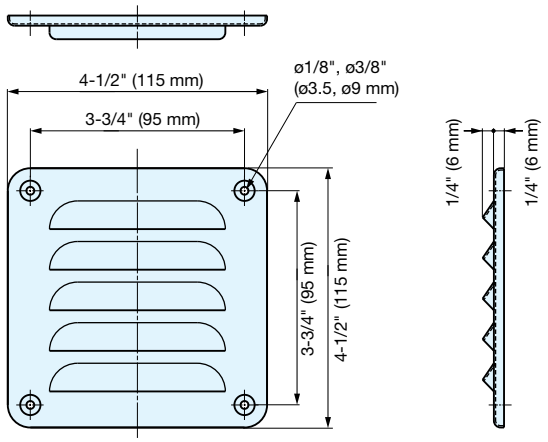
Item No.	Weight (g)	Box (pcs)	Carton (pcs)
1-1122	165	10	100

Material	Finish
316 Stainless Steel	Satin

VENTILATOR

STAINLESS 316 STEEL NO SCREW 1-1212





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
1-1212	165	10	100

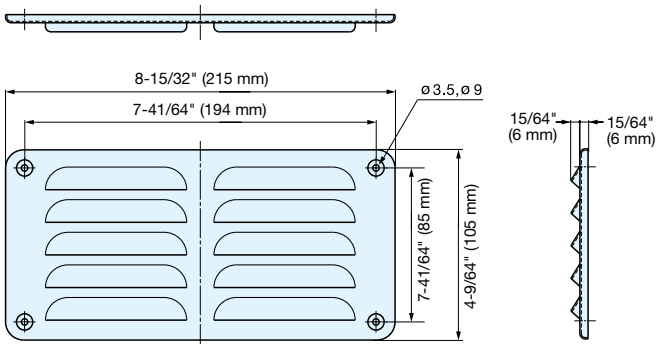
Material	Finish
316 Stainless Steel	Satin

VENTILATOR

STAINLESS 316 STEEL | NO SCREW

1-2211





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
1-2211	165	10	100

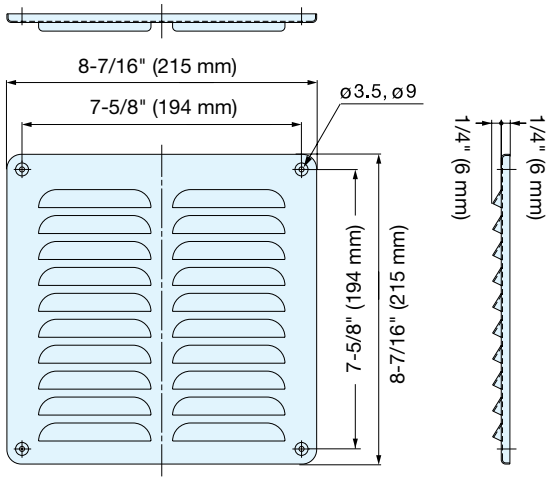
Material	Finish
316 Stainless Steel	Satin

VENTILATOR

STAINLESS 316 STEEL | NO SCREW

1-2222





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
1-2222	295	10	100

Material	Finish
316 Stainless Steel	Satin

VENTILATOR

RoHS compliant

APK, APKL

• ABS ventilator.



Black (BLK)



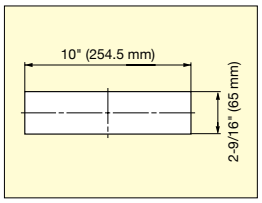
Brown (BRN)



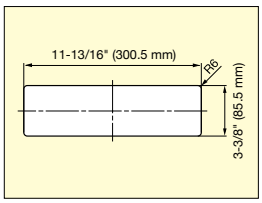
Ivory (IVY)



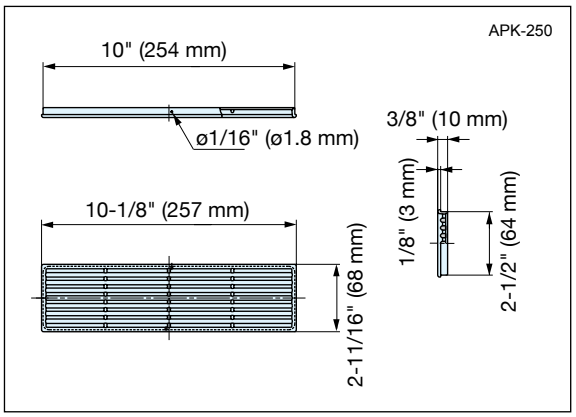
Chrome (CR)

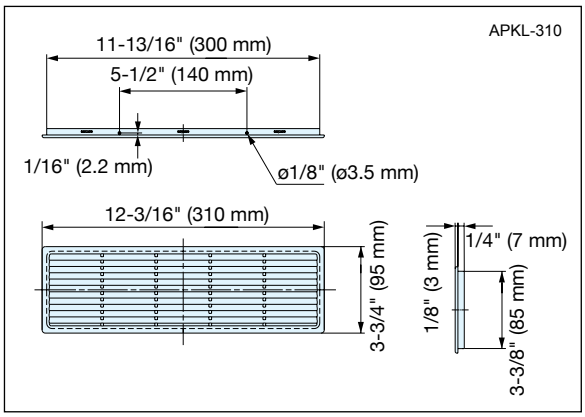


APK-250 Cut Out Dimensions



APKL-310 Cut Out Dimensions





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
APK-250	57	20	160
APKL-310	100	10	80

Material	Finish
ABS	Black (BLK), Brown (BRN), Ivory (IVY), Chrome (CR)-APK-250 type only

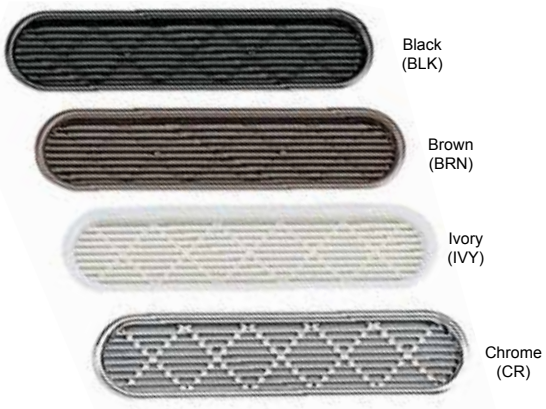
Please specify the finish when ordering.

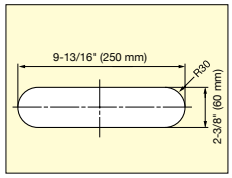
VENTILATOR

RoHS compliant

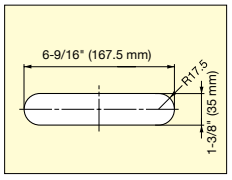
APD, APDL

• ABS ventilator.

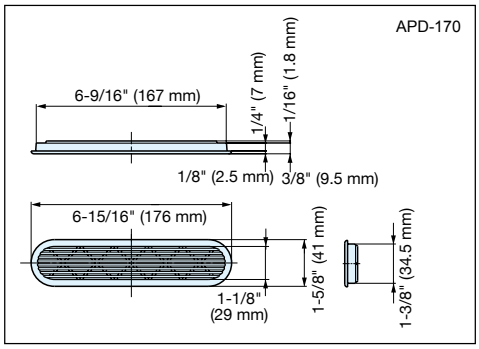


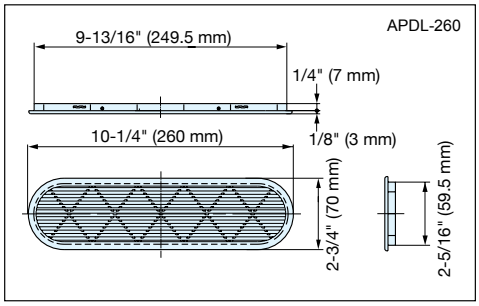


APDL-260 Cut Out Dimensions



APD-170 Cut Out Dimensions





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
APD-170	22	40	320
APDL-260	60	10	80

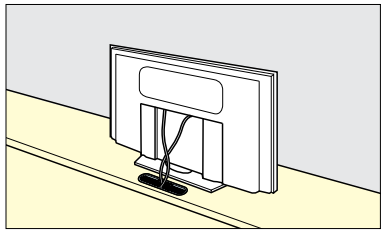
Material	Finish
ABS	Black (BLK), Brown (BRN), Ivory (IVY), Chrome (CR)-APD-170 type only

Please specify the finish when ordering.

VENTILATOR (W/CABLE GROMMETS) APD-KH



- ABS ventilator.
- Removable grommet inserts for excellent cable management.



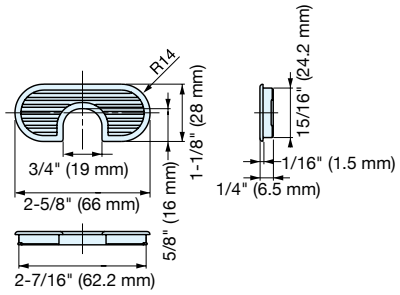

White


Brown

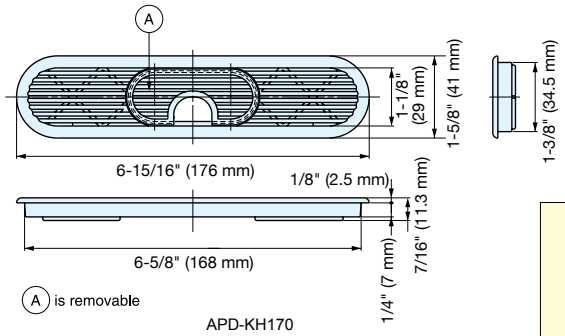

Black


Chrome

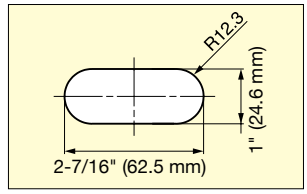

Ivory



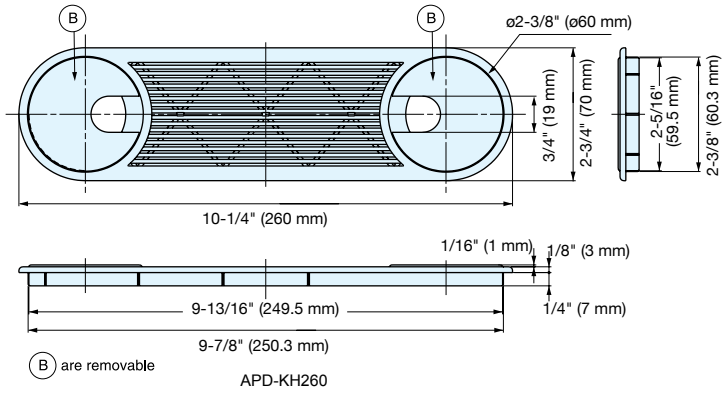
APD-KH66



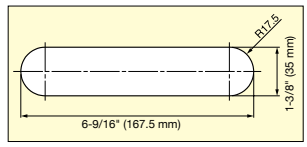
APD-KH170



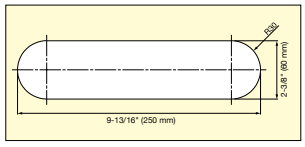
APD-KH66



APD-KH260



APD-KH170



APD-KH260

Cut Out Dimensions

Item No.	Material	Finish	Weight (g)	Box (pcs)	Carton (pcs)
APD-KH66-CR	ABS	Chrome	3.7	100	500
APD-KH66-IV		Ivory	3.0		
APD-KH66-BL		Black			
APD-KH66-BR		Brown			
APD-KH66-WT		White			
APD-KH170-CR		Chrome	24.0	40	320
APD-KH170-IV		Ivory	20.0		
APD-KH170-BL		Black			
APD-KH170-BR		Brown			
APD-KH170-WT		White			
APD-KH260-IV		Ivory	55.0	10	80
APD-KH260-BL		Black			
APD-KH260-BR		Brown			

VENTILATOR APM

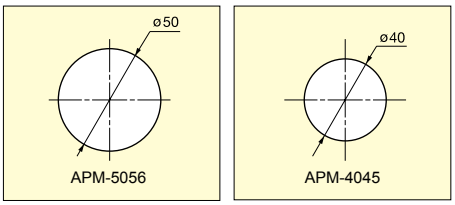


APM-5056/BRN

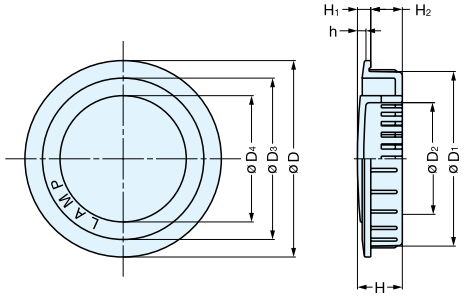


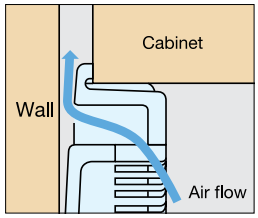
APM-5056/WHT

- Slits for ventilation cannot be seen from outside.



Bore Dimensions





Allows air flow even if the surface of the ventilator is directly on the wall.

Material	Finish
ABS	White (WHT), Brown (BRN)

Item No.	D	D1	D2	D3	D4	H	H1	H2	h	Bore Dimension	Weight (g)	Box (pcs)	Carton (pcs)
APM-4045	1-3/4" (45 mm)	1-9/16" (39.8 mm)	1" (24.6 mm)	1-7/16" (36.2 mm)	1-1/8" (28.2 mm)	7/16" (10.3 mm)	1/8" (3.3 mm)	1/4" (7 mm)	1/16" (1.6 mm)	40	5	150	900
APM-5056	2-3/16" (56 mm)	1-15/16" (49.8 mm)	1-1/4" (32 mm)	1-13/16" (46 mm)	1-7/16" (36 mm)	1/2" (12.8 mm)	1/8" (3.8 mm)	3/8" (9 mm)	1/16" (1.8 mm)	50	9	100	600

Please specify the finish when ordering.

VENTILATOR APB



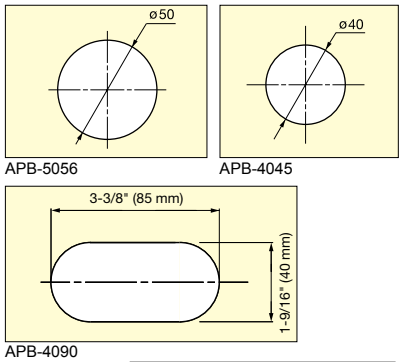
APB-5056/WHT

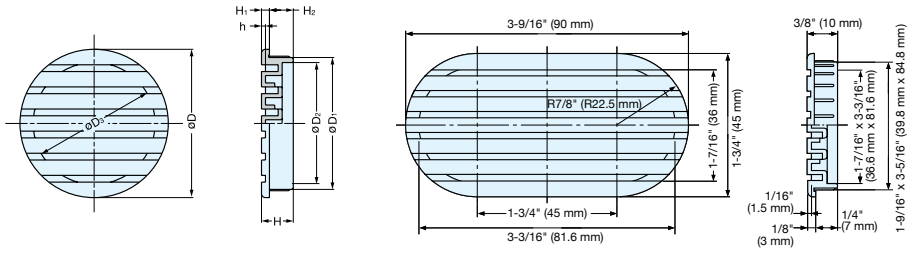


APB-4045/WHT

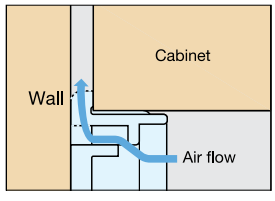


APB-4090/WHT





APB-4045, APB-5056 APB-4090



Allows air flow even if the surface of the ventilator is directly on the wall.

Material	Finish
ABS	White (WHT)

Item No.	D	D1	D2	D3	H	H1	H2	h	Bore Dimension	Weight (g)	Box (pcs)	Carton (pcs)
APB-4045	1-3/4" (45 mm)	1-9/16" (39.8 mm)	1-7/16" (36.6 mm)	1-7/16" (36.6 mm)	(10)	1/8" (3 mm)	(7)	(1.5)	40	7	150	900
APB-5056	2-3/16" (56 mm)	1-15/16" (49.8 mm)	1-13/16" (46 mm)	1-13/16" (46 mm)	(12)		(9)		50	11	100	600
APB-4090	-	-	-	-	(10)		(7)		40 × 85	16	80	480

() units in mm.

SPLIT CABLE GROMMET LS-50S-S



- Large 1-1/4" opening that can easily split apart to accept larger plugs or connectors.
- Zinc die cast grommet for greater durability and aesthetics.
- The lid is equipped with a unique locking system. Rubber stoppers on the back side prevent the lid from turning or coming off unintentionally.
- Smaller split cable grommet (CHC-S) is also available.



LS-50S-S-SN

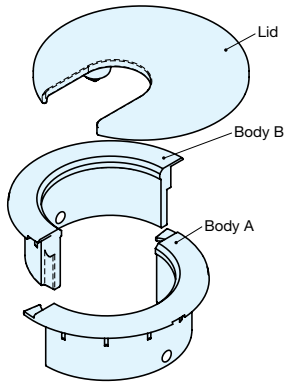


LS-50S-S-DB

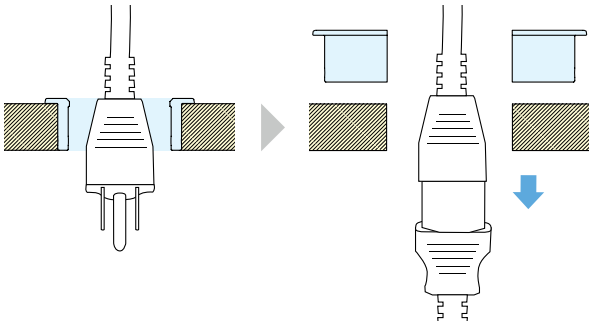


LS-50S-S-BL

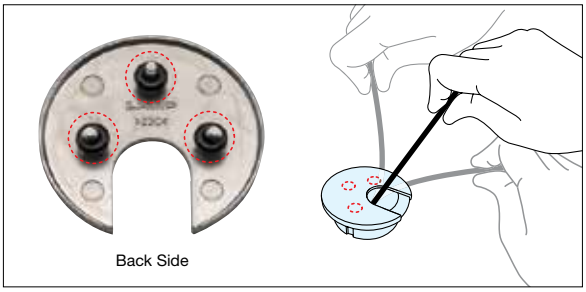
Components



Split System Easy to replace cables.

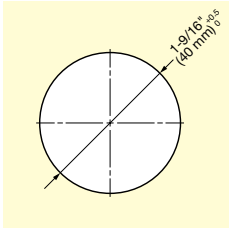


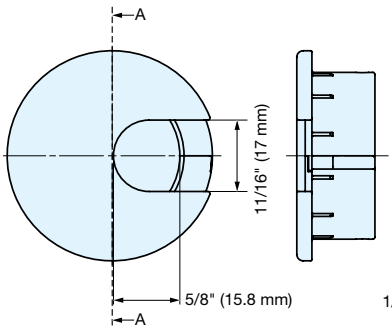
Securely Hold the Lid



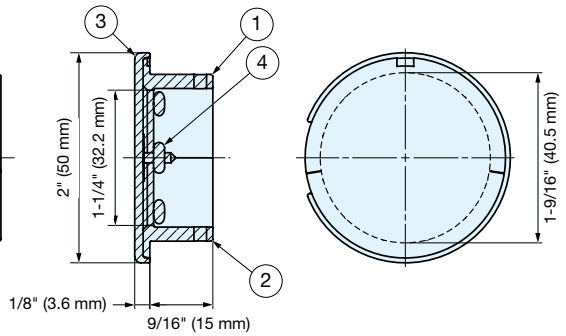
The rubber stoppers hold the lid in position even when cables are moved.

Cut Out Dimensions





Cross section A-A



No.	Part Name	Material	Finish
①	Body A	Zinc Alloy (ZDC)	Satin Nickel Antique Brass Chrome/Matte Black
②	Body B		
③	Lid		
④	Rubber Stoppers	Nitrile Rubber (NBR)	Black

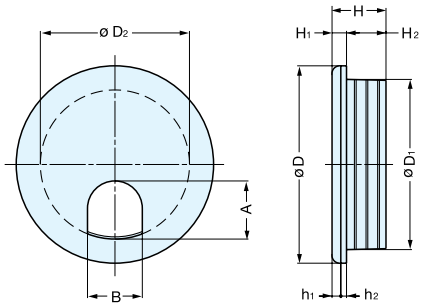
Item No.	Finish/Color	Weight (g)	Box (pcs)	Carton (pcs)
LS-50S-S-SN	Satin Nickel	64	20	160
LS-50S-S-DB	Antique Brass		20	160
LS-50S-S-BL	Chrome/Matte Black		20	160

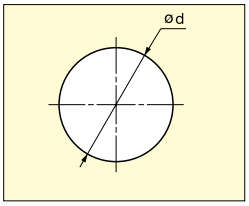
CABLE GROMMET

RoHS compliant

S445, S51, S60, S76, S89







Bore Dimensions

Material	Finish
ABS	White (WHT), Black (BLK)

Item No.	D	D1	D2	H	H1	H2	h1	h2	A	B	d	Weight (g)	Box (pcs)	Carton (pcs)
S445	1-3/4" (45 mm)	1-1/2" (38.8 mm)	1-5/16" (34 mm)	3/4" (19.7 mm)	1/8" (3.3 mm)	5/8" (16.4 mm)	1/16" (2 mm)	1/16" (1.3 mm)	11/16" (16.7 mm)	1/2" (12.5 mm)	1-1/2" (38.5 mm)	8.7	100	1200
S51	2" (51 mm)	1-3/4" (44.5 mm)	1-9/16" (39.7 mm)	3/4" (19.9 mm)	1/8" (3.6 mm)	5/8" (16.3 mm)		1/16" (1.6 mm)	3/4" (19 mm)	5/8" (15.5 mm)	1-3/4" (44.2 mm)	11.1		800
S60	2-3/8" (60.5 mm)	1-15/16" (48.8 mm)	1-3/4" (44 mm)	3/4" (19.8 mm)		5/8" (16.2 mm)			13/16" (20.8 mm)	3/4" (19 mm)	1-15/16" (48.5 mm)	13.7		600
S76	3" (76.5 mm)	2-9/16" (64.4 mm)	2-5/16" (59 mm)	13/16" (20.3 mm)	3/16" (4.2 mm)	5/8" (16.1 mm)	1/8" (2.6 mm)		7/8" (21.5 mm)	7/8" (21.5 mm)	2-1/2" (64.2 mm)	21.8	50	350
S89	3-1/2" (89.4 mm)	3" (76.5 mm)	2-13/16" (71.4 mm)	13/16" (20.6 mm)	3/16" (4.1 mm)	5/8" (16.5 mm)		1/16" (1.5 mm)	1" (25 mm)	7/8" (22 mm)	3" (76.5 mm)	30.3		250

Please specify the finish when ordering.

CABLE GROMMET

RoHS compliant

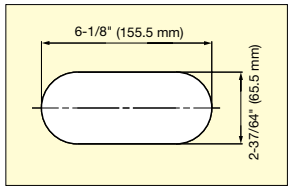
S165-76



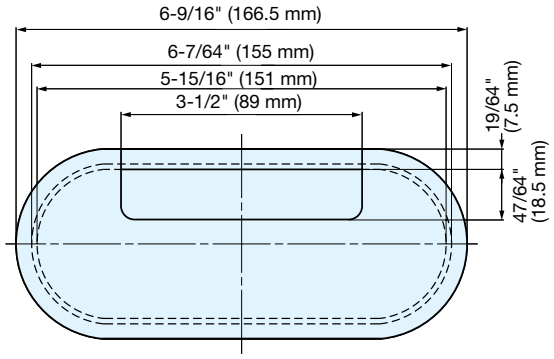
S165-76/BLK

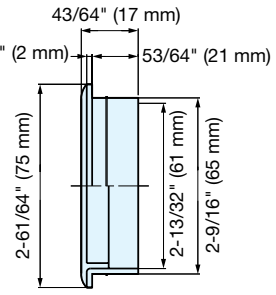


S165-76/WHT



Bore Dimensions





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
S165-76	47.7	150	1500

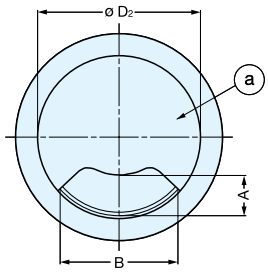
Material	Finish
ABS	White (WHT), Black (BLK)

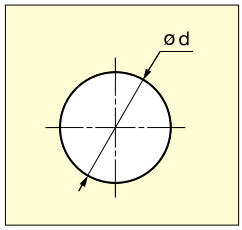
Please specify the finish when ordering.

CABLE GROMMET V60, V80


V60/WHT


V60/BLK

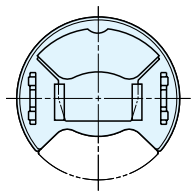




Bore Dimensions


V60/BE


V60/DBE


Backside of Cap (a)
(When lid open)

Material	Finish
Plastic	White (WHT)/ Black (BLK)/ Beige (BE)/ Dark Beige (DBE)

Item No.	Color	D	D1	D2	H	H1	H2	A	B	d	Weight (g)	Box (pcs)	Carton (pcs)
V60/BLK	Black	2-13/16" (72 mm)	2-3/8" (61 mm)	2-1/4" (56.7 mm)	1" (25 mm)	1/8" (3 mm)	7/8" (22 mm)	9/16" (14 mm)	1-5/8" (41 mm)	2-3/8" (60.5 mm)	25.5	90	900
V60/WHT	White												
V60/BE	Beige												
V60/DBE	Dark Beige												
V80/BLK	Black	3-5/8" (92 mm)	3-3/16" (80.5 mm)	3" (77 mm)					2" (50 mm)	3-1/8" (80 mm)	39.0	88	880
V80/WHT	White												
V80/BE	Beige												
V80/DBE	Dark Beige												

Please specify the finish when ordering.

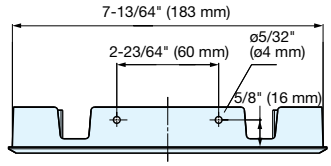
CABLE GROMMET V2000

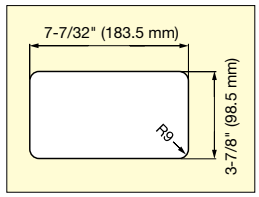

V2000/BLK


V2000/WHT

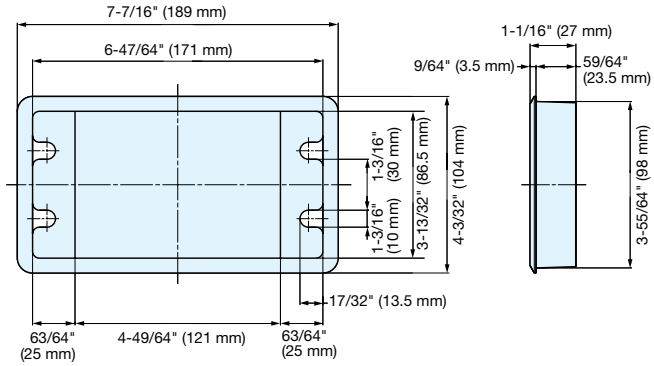

V2000/BE


V2000/DBE





Bore Dimensions



Item No.	Color	Weight (g)	Box (pcs)	Carton (pcs)
V2000/BLK	Black	102	33	330
V2000/WHT	White			
V2000/BE	Beige			
V2000/DBE	Dark Beige			

Please specify the finish when ordering.

Material	Finish
Plastic	White (WHT), Black (BLK), Beige (BE), Dark Beige (DBE)

CABLE GROMMET CHC



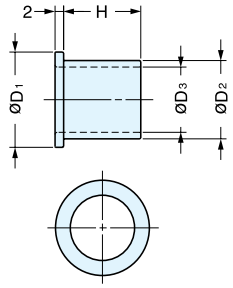
CHC-22/GB
(Antique Brass)

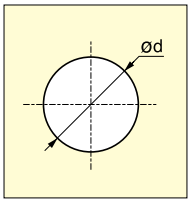


CHC-18/NI
(Nickel)



CHC-18/GA
(Gold)





Bore Dimensions

- Choose from 1/2" (12 mm) or 9/16" (15 mm) grommets, perfect for phone, fax, or LAN data cables.

Weight: CHC-18 8.3 g
CHC-22 14.5 g

Item No.	Material	Finish	H	D_1	D_2	D_3	d	Box (pcs)
CHC-18/NI	Brass	Satin Nickel	5/8" (16 mm)	11/16" (18 mm)	9/16" (14 mm)	1/2" (12 mm)	9/16" (14.5 mm)	120
CHC-18/GA		Gold						
CHC-18/GB		Antique Brass						
CHC-22/NI		Satin Nickel	11/16" (18 mm)	7/8" (22 mm)	11/16" (18 mm)	9/16" (15 mm)	11/16" (18.5 mm)	60
CHC-22/GA		Gold						
CHC-22/GB		Antique Brass						

SPLIT CABLE GROMMET CHC-S



CHC-S18GC CHC-S22DB CHC-S26BL

- Opening that can easily be split apart to accept larger plugs or connectors.
- The CHC series provides grommet openings that securely fit your cable size needs.
- High-end metal solution (zinc die casting) for greater durability than plastic grommets.
- CHC-S22 and CHC-S26 come with a guide that helps keep the parts aligned when being reassembled.
- Larger split cable grommet LS-50S-S is also available.

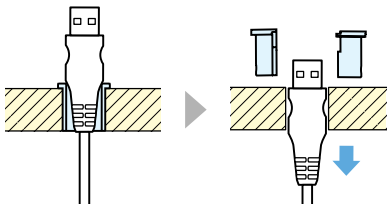
Cable Diameter

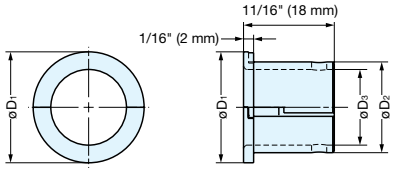
- CHC-S18: 1/2"~9/16" (12~14 mm) (LAN cable and RJ45 connector)
- CHC-S22: 9/16"~11/16" (15~18 mm) (USB cable)
- CHC-S26: 11/16"~7/8" (18~22 mm) (HDMI cable)

*Please check with actual cables before use.

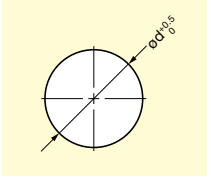


Split System Easy to replace cables.





Cut Out Dimension



Item No.	Material	Finish	D_1	D_2	D_3	d	Weight (g)	Box (pcs)	Carton (pcs)
CHC-S18DN	Zinc Alloy (ZDC)	Nickel	11/16" (18 mm)	9/16" (14 mm)	1/2" (12 mm)	9/16" (14 mm)	6	100	400
CHC-S18GC		Gold Plating							
CHC-S18DB		Antique Brass							
CHC-S18BL		Black							
CHC-S22DN		Nickel	7/8" (22 mm)	11/16" (18 mm)	9/16" (15 mm)	11/16" (18 mm)	10		
CHC-S22GC		Gold Plating							
CHC-S22DB		Antique Brass							
CHC-S22BL		Black							
CHC-S26DN		Nickel	1" (26 mm)	7/8" (22 mm)	11/16" (18 mm)	7/8" (22 mm)	16		
CHC-S26GC		Gold Plating							
CHC-S26DB		Antique Brass							
CHC-S26BL		Black							

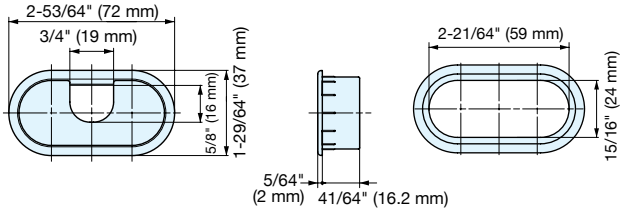
CABLE GROMMET LN72D

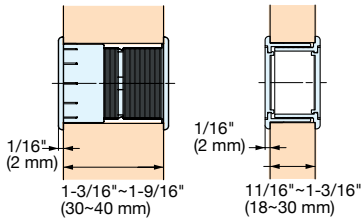

LN72D/WT

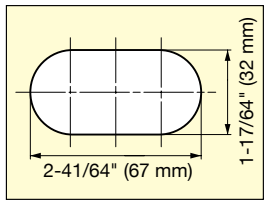

LN72D/BL



- Double-sided adjustable grommet
- For panel thickness 1-3/16" to 1-9/16" (30 to 40 mm); also for 23/32" to 1-3/16" (18 to 30 mm) by snapping off edge.
- Cover can be removed to increase the grommet opening.







Bore Dimensions

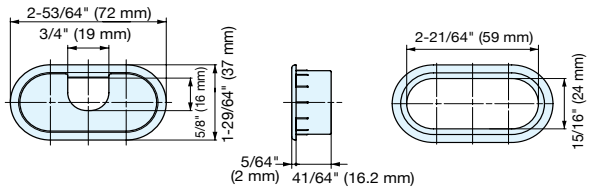
Item No.	Color	Material	Weight (g)	Box (pcs)	Carton (pcs)
LN72D/WT	White	ABS	19	40	320
LN72D/BL	Black				

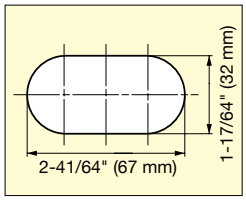
CABLE GROMMET LN72S


LN72S/WT


LN72S/BL

- Cover can be removed to increase the grommet opening.





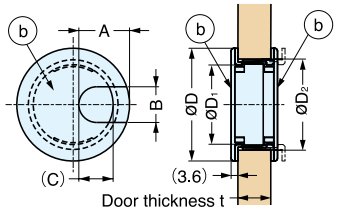
Bore Dimensions

Item No.	Color	Material	Weight (g)	Box (pcs)	Carton (pcs)
LN72S/WT	White	ABS	8	40	320
LN72S/BL	Black				

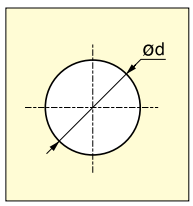
CABLE GROMMET LSU, LS


LS60WHT


LS60BLK



ⓑ are removable.



Bore Dimensions

- Double-sided grommets.

Item No.	Finish	Material	D	D1	D2	A	B	C	t	d	Weight (g)	Box (pcs)	Carton (pcs)
LSU60WT	White	ABS	2-3/8" (60 mm)	1-11/16" (42.5 mm)	1-15/16" (48.5 mm)	1-1/16" (27 mm)	3/4" (19 mm)	11/16" (18 mm)	1/2"~3/4" (12~18 mm)	1-15/16" (48.5 mm)	19	20	160
LSU60BL	Black												
LS60WT	White								3/4"~1" (18~24 mm)		20		
LS60BL	Black												
LS76WT	White		3" (76 mm)	2-5/16" (58.2 mm)	2-1/2" (64.2 mm)	1-5/16" (34 mm)	7/8" (22 mm)	1" (25.1 mm)	1"~1-9/16" (25~40 mm)	2-1/2" (64.2 mm)	25	12	96
LS76BL	Black												

CABLE GROMMET FOR SHEET METAL — LS50F, LS60F



LS50F-WT



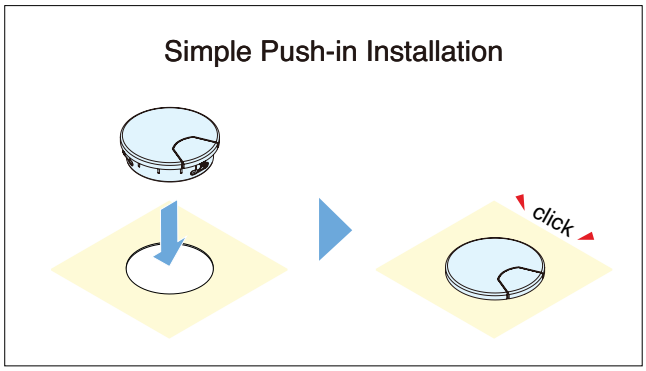
LS50F-GR



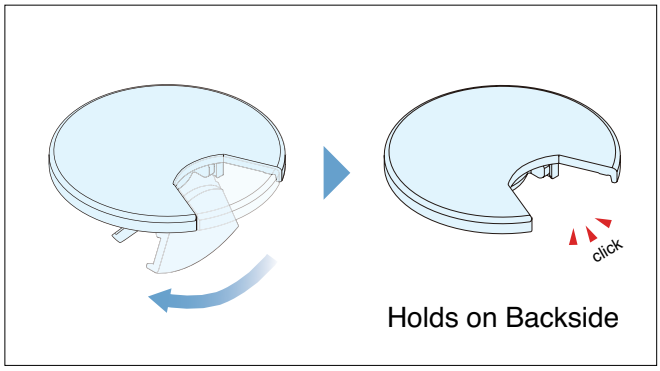
LS50F-BL

- One-touch easy installation on sheet metal.
- Folding flap can close the opening when not in use.
- Can be used for thickness 1/16" (0.8 to 2.0 mm).
- Compliant with flame retardancy standard UL94 V-0.
- Flap cover can snap open and lock in position.

Quick Installation to Sheet Metal

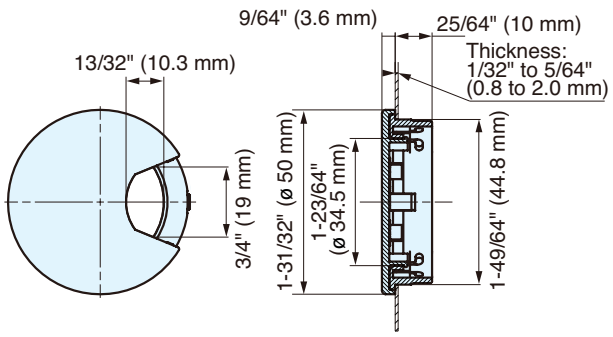


Flap Cover

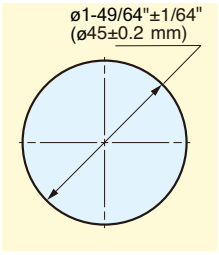


The cover can be folded and held on backside to prevent misplacement.
The whole cap is removable for a wider opening.

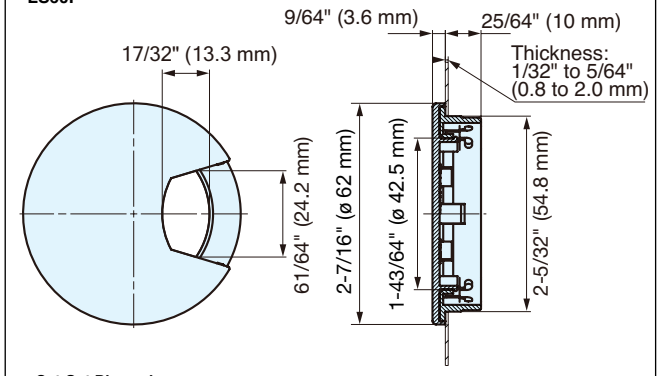
LS50F



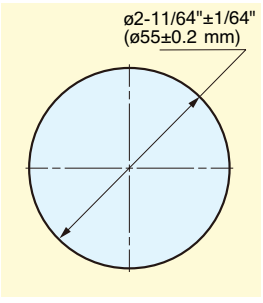
Cut Out Dimension



LS60F



Cut Out Dimension



Item No.	Color	Material	Available Thickness	Weight (g)
LS50F-WT	White	ABS	1/32" to 1/16" (0.8 to 2.0 mm)	9.8
LS50F-GR	Grey			
LS50F-BL	Black			

Item No.	Color	Material	Available Thickness	Weight (g)
LS60F-WT	White	ABS	1/32" to 1/16" (0.8 to 2.0 mm)	15.3
LS60F-GR	Grey			
LS60F-BL	Black			

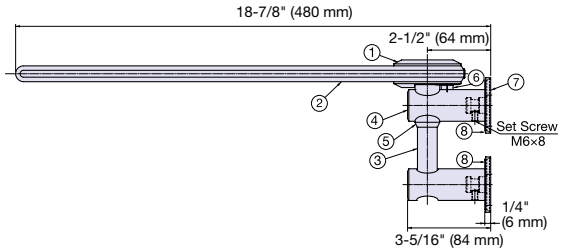
Zwei L Towel Bar

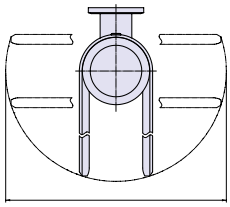
STAINLESS 316 STEEL

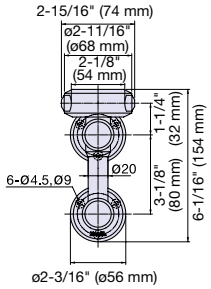
ZL-3201



- Supplied with stainless steel wood screw (4.1 x 32), anchor plug and 1/8" (3 mm) allen key.







Item No.	Weight (g)	Box (pcs)
ZL-3201	-	1

No.	Part Name	Material	Finish
①	Bracket	316 Stainless Steel	Zwei L
②	Arm		
③	Pin		Mirror
④	Post		Zwei L
⑤	Bushing	Polyacetal	Black
⑥	Swivel Stopper		
⑦	Base Plate	316 Stainless Steel	Plain
⑧	Cover		Zwei L

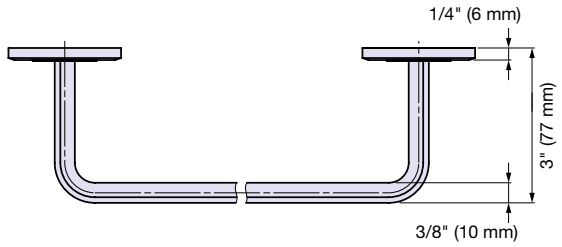
Zwei L Towel Bar

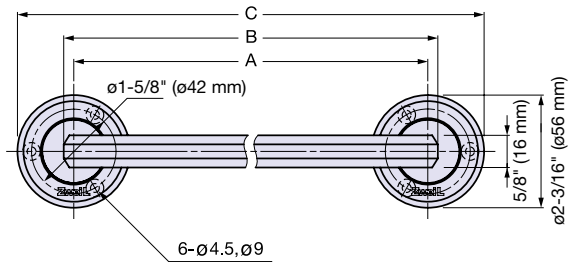
STAINLESS 316 STEEL

ZL-3202



- Supplied with stainless steel wood screws (4.1 x 25) and concrete anchor (for wood screw 4.1, ø6 mm hole).





Item No.	Material	Finish/Color	A	B	C
ZL-3202-480	316 Stainless Steel	Zwei L	18-7/8" (480 mm)	19-5/16" (490 mm)	21-1/8" (536 mm)
ZL-3202-640			25-3/16" (640 mm)	25-9/16" (650 mm)	27-3/8" (696 mm)

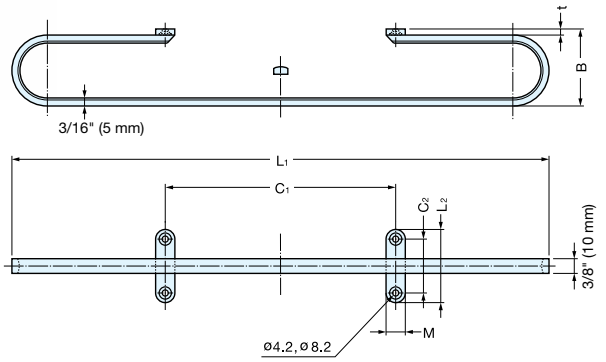
TOWEL BAR

STAINLESS 303 STEEL | 4×20 STAINLESS

KB-T

• Supplied with 4 x 20 stainless steel wood screws.





Material	Finish
303 Stainless Steel	Mirror

Item No.	B	C_1	C_2	L_1	L_2	M	t	Weight (g)	Box (pcs)	Carton (pcs)
KB-T-350	2" (50 mm)	5-15/16" (150 mm)	1-3/8" (35 mm)	13-3/4" (350 mm)	1-7/8" (48 mm)	1/2" (13 mm)	3/16" (4 mm)	240	1	10
KB-T-450		9-13/16" (250 mm)		17-3/4" (450 mm)				275		

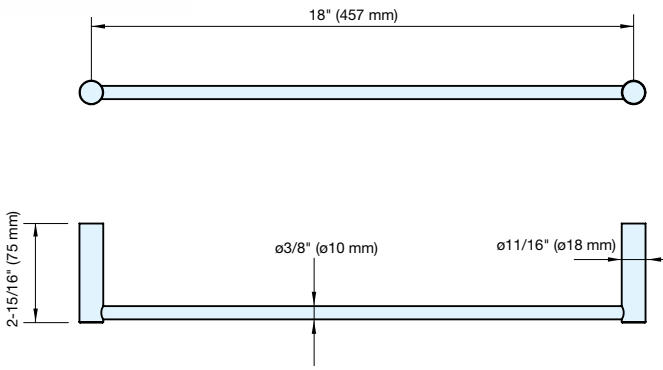
TOWEL BAR

STAINLESS 304 STEEL | STAINLESS 303 STEEL | STEEL

DSR-01/18

• Supplied with screws, brackets, plastic expansion anchors and allen key.





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSR-01/18	580	1	10

Material	Finish
303/304 Stainless Steel	Satin

TOWEL BAR

STAINLESS 304 STEEL | STAINLESS 303 STEEL | STEEL

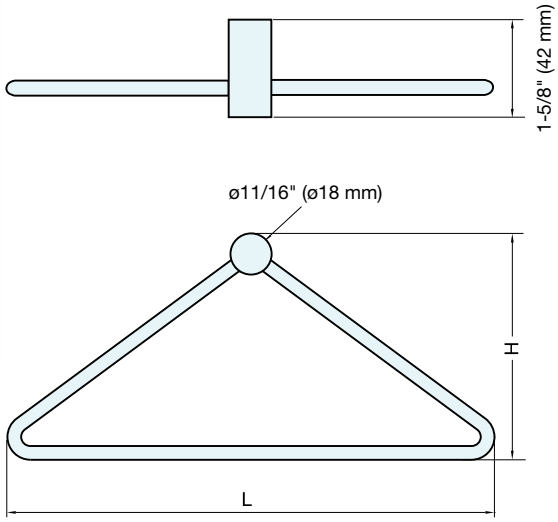
DST-06

- Supplied with screws, brackets, plastic expansion anchors and allen key.



DST-06/L

DST-06/S



Item No.	L	H	Weight (g)	Box (pcs)	Carton (pcs)
DST-06/S	8-3/8" (213 mm)	4-1/4" (108 mm)	173	1	10
DST-06/L	15-3/8" (390 mm)	4-15/16" (125 mm)	241		

Material	Finish
303/304 Stainless Steel	Satin

TOWEL BAR

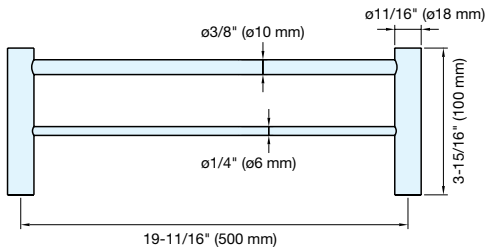
STAINLESS 304 STEEL | STAINLESS 303 STEEL | STEEL

DSR-02

- Supplied with screws, brackets, plastic expansion anchors and allen key.

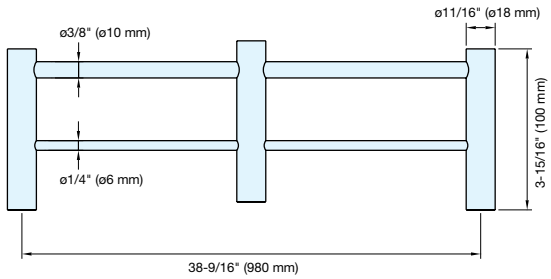


DSR-02/50





DSR-02/98



Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSR-02/50	777	1	10
DSR-02/98	1352		

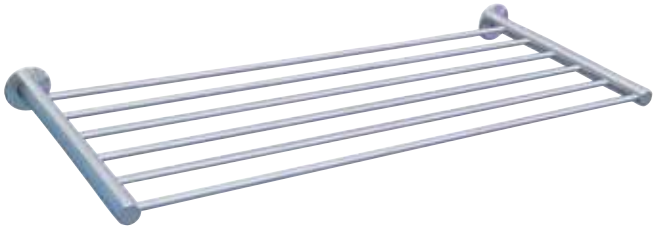
Material	Finish
303/304 Stainless Steel	Satin

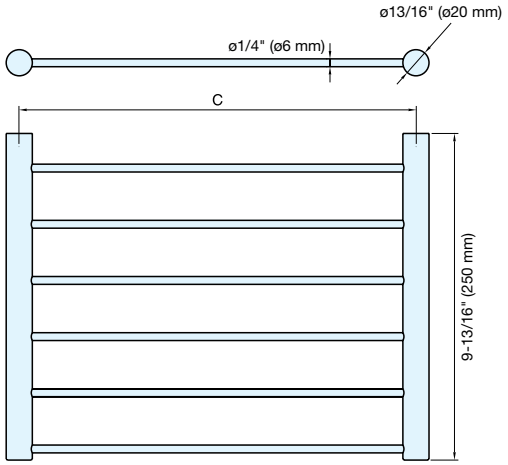
TOWEL RACK

STAINLESS 304 STEEL | STAINLESS 303 STEEL | STEEL

DSR-08

- Supplied with screws, brackets, plastic expansion anchors and allen key.





Item No.	C	Weight (g)	Box (pcs)	Carton (pcs)
DSR-08/45	17-3/4" (450 mm)	1423	1	10
DSR-08/60	23-5/8" (600 mm)	1778		

Material	Finish
303/304 Stainless Steel	Satin

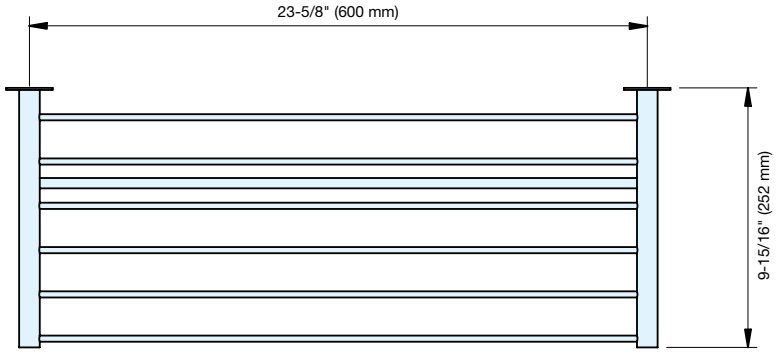
TOWEL RACK

STAINLESS 304 STEEL | STAINLESS 303 STEEL | STEEL

DSD-80

- Supplied with screws, brackets, plastic expansion anchors and allen key.





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSD-80	2700	1	10

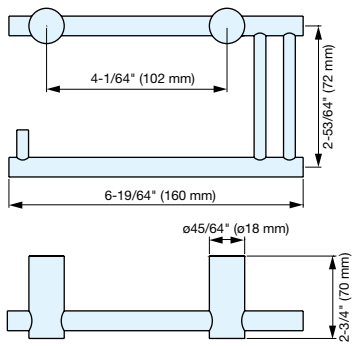
Material	Finish
303/304 Stainless Steel	Satin

TOILET PAPER HOLDER DSB-01





- Supplied with screws, brackets, plastic expansion anchors and allen key.



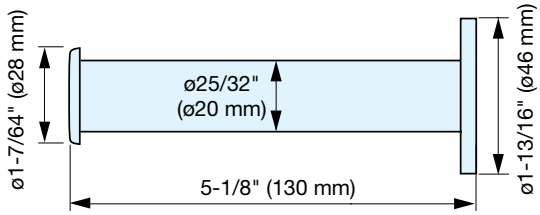
Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSB-01	456	1	10

Material	Finish
303/304 Stainless Steel	Satin

TOILET PAPER HOLDER DSB-03

- Toilet paper holder for side-wall mount.
- Supplied with screw and plastic expansion anchor.





Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSB-03	201	5	50

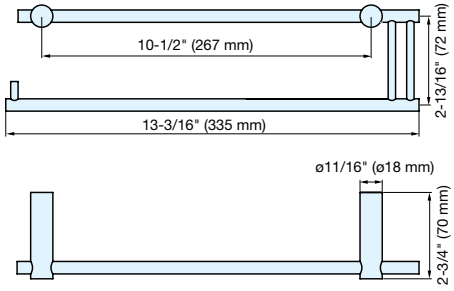
Material	Finish
303/304 Stainless Steel	Satin

PAPER TOWEL HOLDER DSB-04





- Paper towel holder, also can be used as towel bar.
- Supplied with screws, brackets, plastic expansion anchors and allen key.



Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSB-04	669	1	10

Material	Finish
303/304 Stainless Steel	Satin

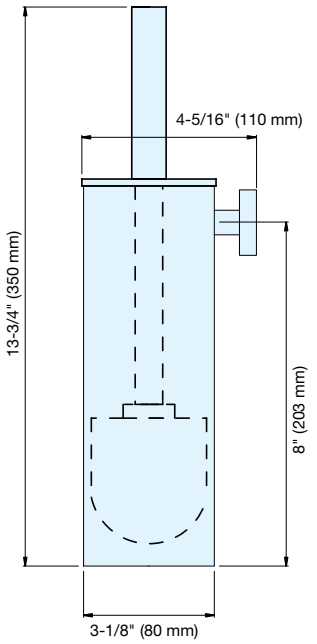
TOILET BRUSH/HOLDER

STAINLESS 304 STEEL | STAINLESS 303 STEEL | STAINLESS

DSB-09



- Removable plastic basket for easy cleaning.
- Supplied with screws, brackets, plastic expansion anchors and allen key.



Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSB-09	748	1	10

Material	Finish
303/304 Stainless Steel	Satin

TOILET PAPER HOLDER

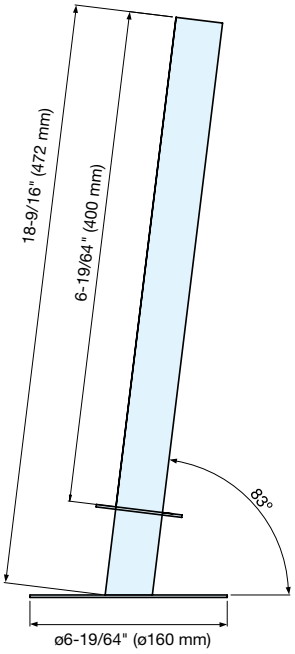
STAINLESS 304 STEEL

DSB-07





- Toilet paper stand ideal to keep stock organized.



Item No.	Weight (g)	Box (pcs)	Carton (pcs)
DSB-07	1009	1	10

Material	Finish
304 Stainless Steel	Satin

MULTI-PURPOSE LID W/DAMPER AZ-GD231-HL

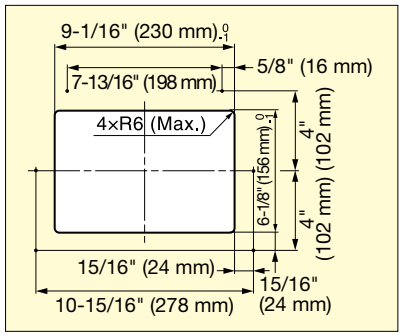
Soft close
"Smooth and soft closing"



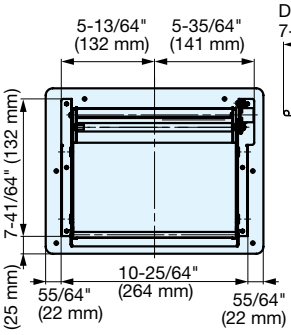


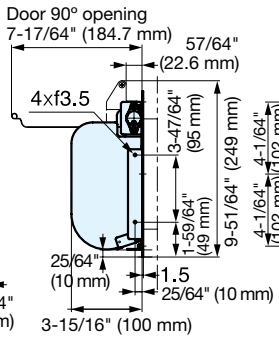


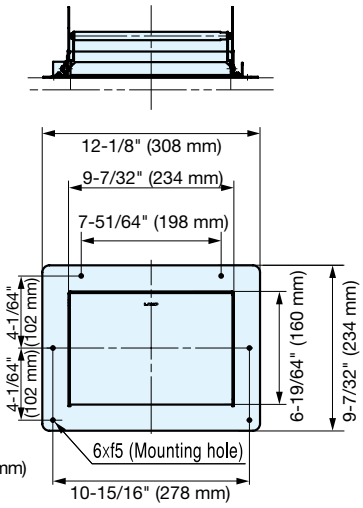
- Installed from the inside of the waste box for clean appearance.
- With damper to keep the lid from slamming shut.
- Integrated with anti-pinching plates.
- Corrosion resistant.
- Guide sold separately (AZ-SLP)



Cut Out Dimensions







Item No.	Weight (g)	Box (pcs)	Carton (pcs)
AZ-GD231-HL	1486	1	10

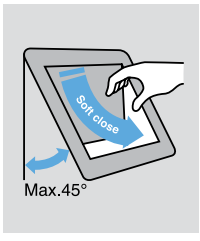
Material	Finish
304 Stainless Steel	Satin

MULTI-PURPOSE LID W/DAMPER AZ-GD232-HL

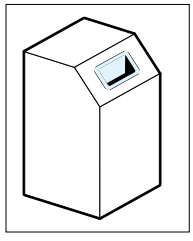
Soft close
"Smooth and soft closing"



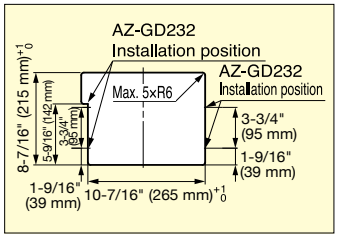
- Able to install the lid up to 45°.
- Inclined mount.
- Easy to adjust angle by changing the weight position.
- Integrated anti-pinching plates.
- Corrosion resistant.
- Guide sold separately.

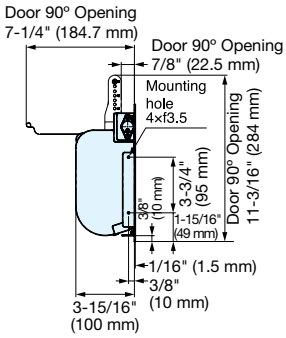


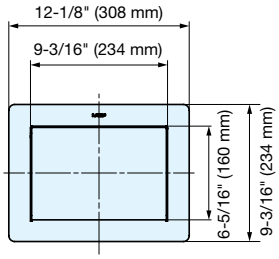
Installation

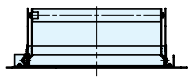


Cut Out Dimensions

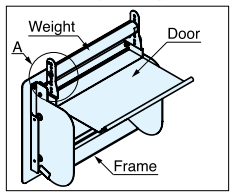




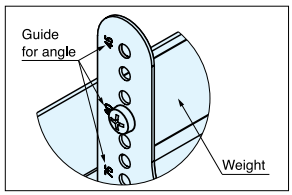




How To Adjust Angle



Detail A



Item No.	Weight (g)	Box (pcs)	Carton (pcs)
AZ-GD232-HL	2200	1	10

Material	Finish
304 Stainless Steel	Satin

MULTI-PURPOSE LID W/DAMPER

AZ-GD

Soft close
"Smooth and soft closing"



AZ-GD180-HL AZ-GD400-HL

Slim Frame



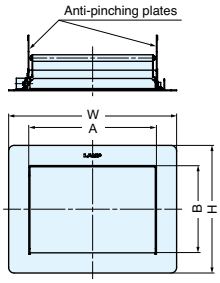
AZ-GD230-HL AZ-GD310-HL



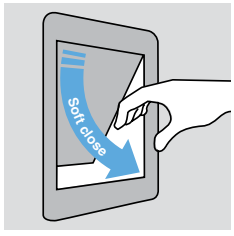
AZ-GD230-BL AZ-GD310-BL

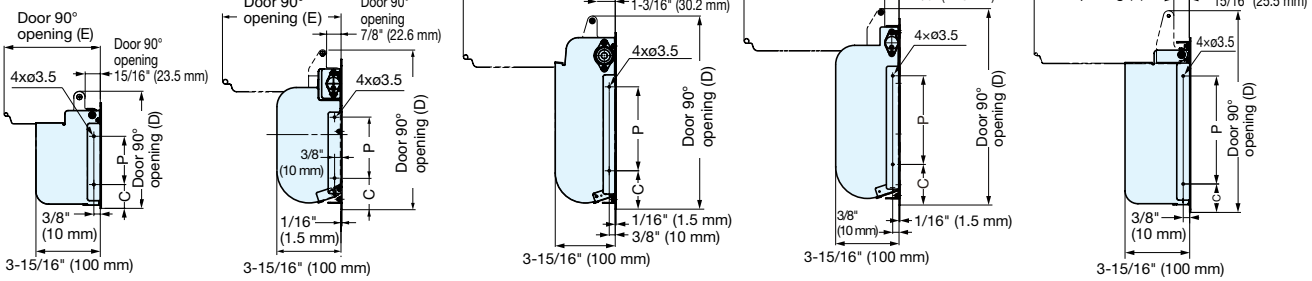
- Built in damper to keep the lid from slamming shut.
- Integrated anti-pinching plates.
- Vertical use only.
- Corrosion resistant.
- Guide sold separately.





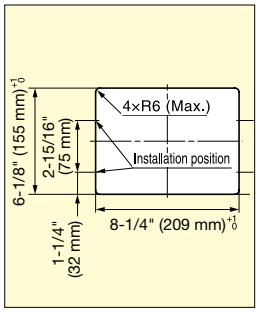




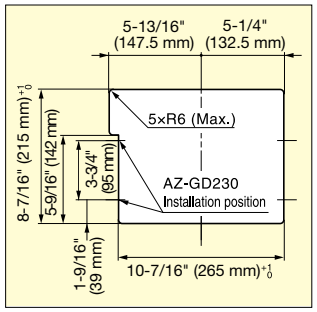


AZ-GD180-HL | AZ-GD230-HL AZ-GD230-BL | AZ-GD310-HL | AZ-GD310-BL | AZ-GD400-HL

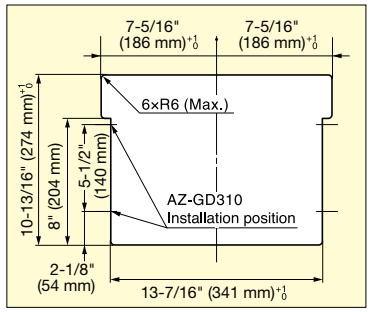
Cut Out Dimensions



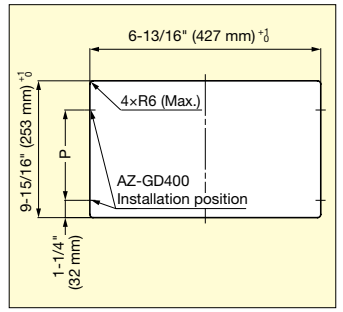
AZ-GD180-HL



AZ-GD230-HL
AZ-GD230-BL



AZ-GD310-HL
AZ-GD310-BL



AZ-GD400-HL

Material	Finish
304 Stainless Steel	Satin, Black

Item No.	A	B	W	H	C	D	E	P	Weight (g)	Box (pcs)	Carton (pcs)
AZ-GD180-HL	7-3/16" (182 mm)	5-1/16" (128 mm)	8-9/16" (218 mm)	6-7/16" (164 mm)	1-7/16" (37 mm)	7-3/16" (182 mm)	5-7/8" (149.5 mm)	2-15/16" (75 mm)	1042	1	10
AZ-GD230-HL AZ-GD230-BL	9-3/16" (234 mm)	6-5/16" (160 mm)	12-1/8" (308 mm)	9-3/16" (234 mm)	1-15/16" (49 mm)	9-13/16" (249 mm)	7-1/4" (184.7 mm)	3-3/4" (95 mm)	1486		
AZ-GD310-HL AZ-GD310-BL	12-3/16" (310 mm)	8-11/16" (220 mm)	15-1/8" (384 mm)	11-9/16" (294 mm)	2-1/2" (64 mm)	12-3/16" (310 mm)	9-5/8" (244.7 mm)	5-1/2" (140 mm)	2236		
AZ-GD400-HL	15-3/4" (400 mm)	8-11/16" (220 mm)	17-3/4" (450 mm)	10-5/8" (270 mm)	1-3/4" (44 mm)	12-1/4" (312 mm)	9-7/16" (240 mm)	6-9/16" (167 mm)	2236		

GUIDE FOR MULTI-PURPOSE LID AZ-SLP

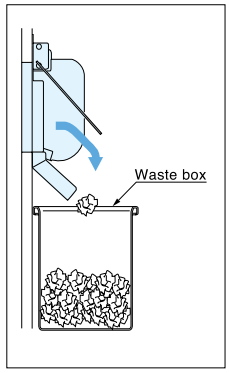


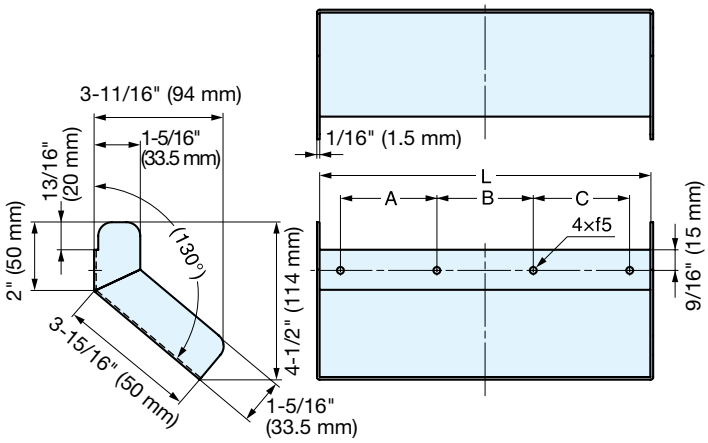
- Guide for garbage into waste basket.
- Use with AZ-GD, AZ-GD231-HL, AZ-GD232-HL and AZ-HD.

Application Example



Installation





Material	Finish
304 Stainless Steel	Satin

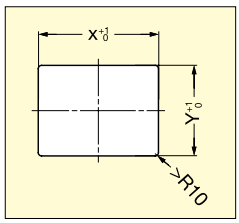
Item No.	A	B	C	L	Weight (g)	Box (pcs)	Carton (pcs)
AZ-SLP230	2-3/4" (70 mm)	2-3/4" (70 mm)	2-3/4" (70 mm)	9-1/2" (241 mm)	450	20	-
AZ-SLP310	3-1/8" (80 mm)	3-1/8" (80 mm)	3-1/8" (80 mm)	12-1/2" (317 mm)	570		

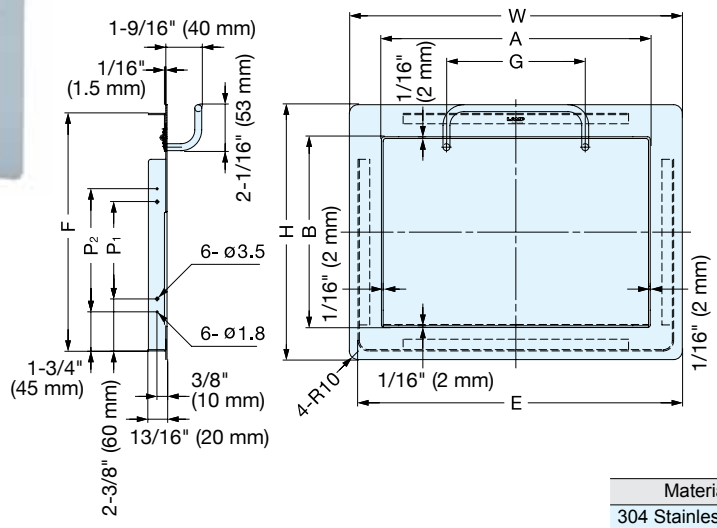
MULTI-PURPOSE LID (W/HANDLE) AZ-HD230/HL, 310/HL



- Easy to open with the handle.
- No need to put hands inside enclosure.
- 304 Stainless Steel lid, frame, and handle.

Cut Out Dimensions



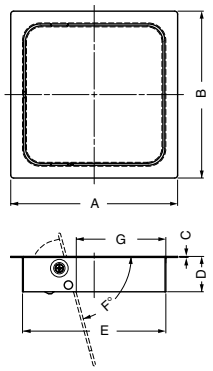


Material	Finish
304 Stainless Steel	Satin

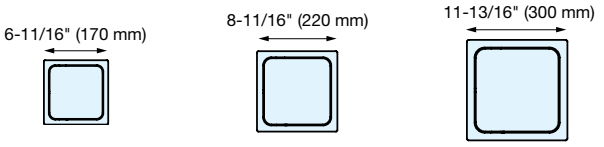
Item No.	A	B	W	H	E	F	G	P_1	P_2	X	Y	Weight (g)	Box (pcs)	Carton (pcs)
AZ-HD230/HL	9-3/16" (234 mm)	6-5/16" (160 mm)	12-1/8" (308 mm)	9-3/16" (234 mm)	11-5/16" (288 mm)	8-7/16" (214 mm)	4-3/4" (120 mm)	2-3/8" (60 mm)	3-9/16" (90 mm)	11-3/8" (289 mm)	8-7/16" (215 mm)	1800	1	10
AZ-HD310/HL	12-3/16" (310 mm)	8-11/16" (220 mm)	15-1/8" (384 mm)	11-9/16" (294 mm)	14-5/16" (364 mm)	10-13/16" (274 mm)	6-5/16" (160 mm)	4-7/16" (112 mm)	5-9/16" (142 mm)	14-3/8" (365 mm)	10-13/16" (275 mm)	2200		

MULTI-PURPOSE LID (W/DAMPER) AD-KH



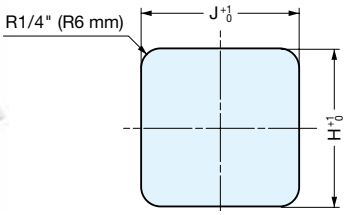


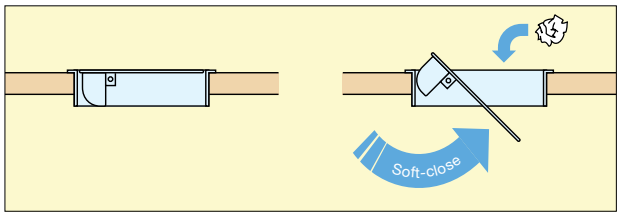
- Features damper to keep lid from slamming shut.
- Made of stainless steel for corrosion resistance.
- Wide opening.
- Balance weight restores lid to horizontal position.
- Operating temperature: 32°F - 104°F (0°C - 40°C).



AD-KH015-HL AD-KH020-HL AD-KH028-HL





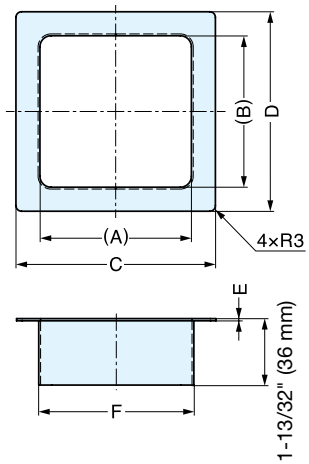


Item No.	Material	Finish	A	B	C	D	E	F	G	H	J	Weight (g)
AD-KH015-HL	304 Stainless Steel	Satin	6-11/16" (170 mm)	6-11/16" (170 mm)	1/16" (1.2 mm)	1-7/16" (36 mm)	5-3/4" (146 mm)	80°	3-11/16" (93 mm)	5-13/16" (147 mm)	5-13/16" (147 mm)	970
AD-KH020-HL			8-11/16" (220 mm)	8-11/16" (220 mm)	1/16" (1.2 mm)	2" (50 mm)	7-3/4" (196 mm)	77°	5" (127 mm)	7-3/4" (197 mm)	7-3/4" (197 mm)	1400
AD-KH028-HL			11-13/16" (300 mm)	11-13/16" (300 mm)	1/16" (1.2 mm)	2-13/16" (72 mm)	10-7/8" (276 mm)	80°	7-1/2" (191 mm)	10-15/16" (277 mm)	10-15/16" (277 mm)	2700

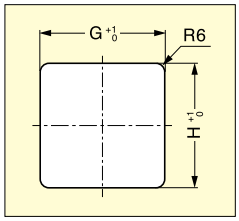
MULTI-PURPOSE GROMMET AN-KH

- Corrosion resistant.
- Ideal for small dustbin applications.





Cut Out Dimensions



Material	Finish
304 Stainless Steel	Satin

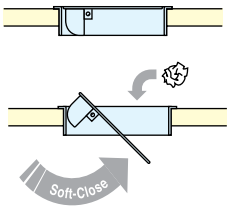
Item No.	Old Item No.	A	B	C	D	E	F	G	H	Weight (g)	Box (pcs)	Carton (pcs)
AN-KH005-HL	-	2-3/16" (56 mm)	2-3/16" (56 mm)	3-1/4" (82 mm)	3-1/4" (82 mm)	1/16" (1.2 mm)	2-1/4" (58 mm)	2-5/16" (59 mm)	2-5/16" (59 mm)	87	1	150
AN-KH008-HL	AN-KH001	3-1/4" (82 mm)	3-1/4" (82 mm)	4-1/4" (108 mm)	4-1/4" (108 mm)		3-5/16" (84 mm)	3-3/8" (85 mm)	3-3/8" (85 mm)	126		10
AN-KH015-HL	AN-KH017	5-11/16" (144 mm)	5-11/16" (144 mm)	6-11/16" (170 mm)	6-11/16" (170 mm)		5-3/4" (146 mm)	5-13/16" (147 mm)	5-13/16" (147 mm)	217		

MULTI-PURPOSE LID (SOFT CLOSE) AD-GD

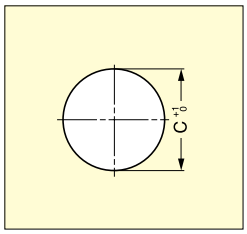


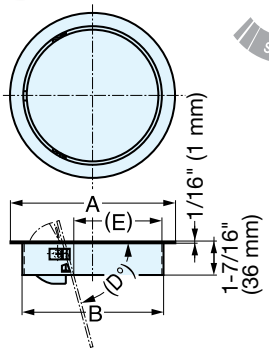


- Soft and slow closing movement with a built-in damper mechanism.
- Wide opening, self-leveling lid.
- Stainless steel for corrosion resistance.
- Operating temperature: 32°F - 104°F (0°C - 40°C)
- Horizontal use only.



Cut Out Dimensions





Material	Finish
304 Stainless Steel	Satin
303 Stainless Steel	
Polyacetal	
Steel	
CRC	
NBR (Rubber)	

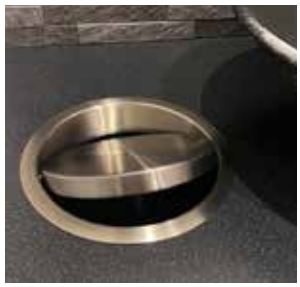
Item No.	A	B	C	D	E	Weight (g)	Box (pcs)	Carton (pcs)
AD-GD011-HL	5-3/8" (136 mm)	4-3/16" (106 mm)	4-3/16" (107 mm)	3-7/16" (87 mm)	2-7/16" (62 mm)	460	1	10
AD-GD015-HL	6-11/16" (170 mm)	5-3/4" (146 mm)	5-13/16" (147 mm)	2-15/16" (75 mm)	3-9/16" (90 mm)	1000		
AD-GD020-HL	8-11/16" (220 mm)	7-3/4" (196 mm)	7-13/16" (198 mm)	3-1/8" (80 mm)	5-1/16" (128 mm)	1060		6

MULTI-PURPOSE LID AD-DH015-HL



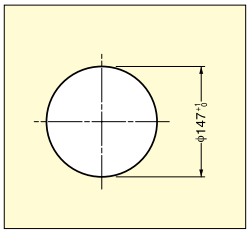




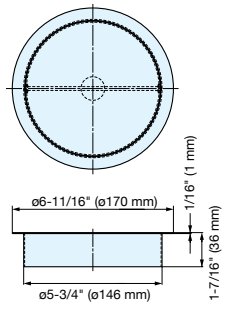


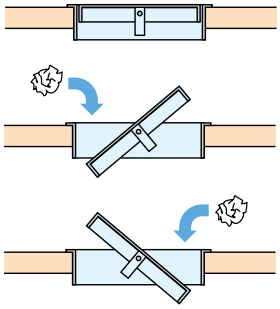


- Self-leveling lid.
- Horizontal use only.



Cut Out Dimensions



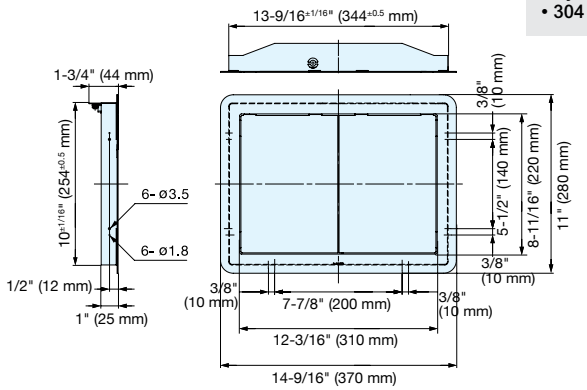


Item No.	Weight (g)	Box (pcs)	Carton (pcs)
AD-DH015-HL	554	1	10

Material	Finish
304 Stainless Steel	Satin

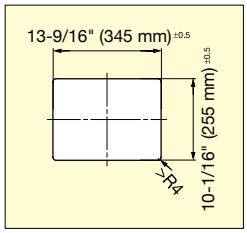
MULTI-PURPOSE LID (DOUBLE DOOR) AZ-DD310/HL





- Synchronized doors allow for easy opening.
- 304 Stainless Steel lid and frame.

Cut Out Dimensions



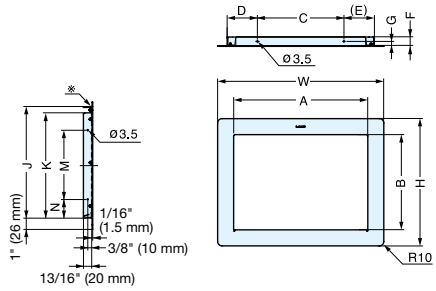
Item No.	Weight (kg)	Box (pcs)	Carton (pcs)
AZ-DD310/HL	2.2	1	10

Material	Finish
304 Stainless Steel	Satin

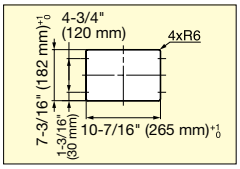
MULTI-PURPOSE LID (SQUARE BEZEL) AZ-ND



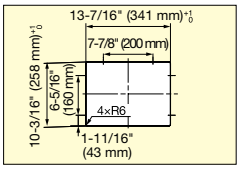
AZ-ND230HL AZ-ND310HL



- Corrosion resistant.
- 304 Stainless Steel



AZ-ND230HL
Cut Out Dimensions



AZ-ND310HL
Cut Out Dimensions

Item No.	Material	Finish	A	B	W	H
AZ-ND230	304 Stainless Steel	Satin	9-3/16" (234 mm)	6-5/16" (160 mm)	12-1/8" (308 mm)	9-3/16" (234 mm)
AZ-ND310HL			12-3/16" (310 mm)	8-11/16" (220 mm)	15-1/8" (384 mm)	15-1/2" (394 mm)

Item No.	C	D	E	F	G	J	K	M	N	Weight (kg)
AZ-ND230HL	-	-	-	-	-	-	6-11/16" (170 mm)	4-3/4" (120 mm)	1-3/16" (30 mm)	0.72
AZ-ND310HL	7-7/8" (200 mm)	2-3/4" (70 mm)	2-3/4" (70 mm)	13/16" (20 mm)	3/8" (10 mm)	10-1/8" (257 mm)	9-9/16" (243 mm)	6-5/16" (160 mm)	1-11/16" (43 mm)	1.05

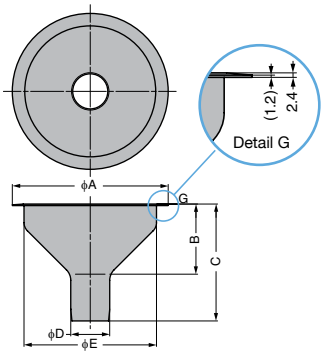
DRAIN SPOUT AE-DH



AE-DH020-MR

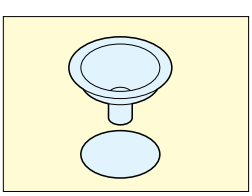


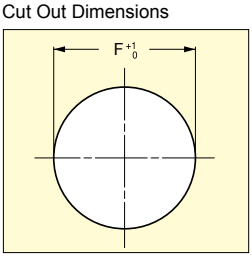
AE-DH020-HL



- Wide 6-11/16" diameter drain spout for use in food service environments.
- Lip outer diameter 7-7/8".
- Stainless steel construction for easy cleaning.
- 2" diameter tubing can be attached to the spout.

Cut Out Dimensions





Item No.	A	B	C	D	E	F	Hose Diameter	Weight (g)	Box (pcs)	Carton (pcs)
AE-DH015-MR	(150)	(55)	(95)	(38)	(120)	(121)	38	270	1	12
AE-DH015-HL										
AE-DH020-MR	(200)	(90)	(150)	(50)	(170)	(171)	50	490		
AE-DH020-HL										

Material	Finish
304 Stainless Steel	Polished Mirror/Satin

() units in mm.

MULTI-PURPOSE GROMMET

NSF COMPONENT | RoHS compliant | STAINLESS 304 STEEL

AN-DH, AN-LH

- Corrosion resistant.
- Wide range of sizes and finishes.

AN-DH005-HL



AN-DH008-GP



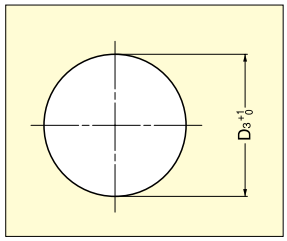


AN-DH011-MR



AN-DH015-HL





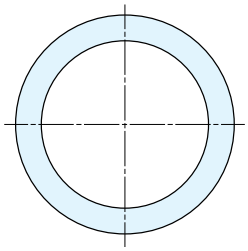
Cut Out Dimensions

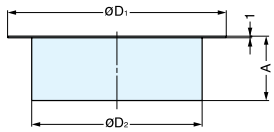


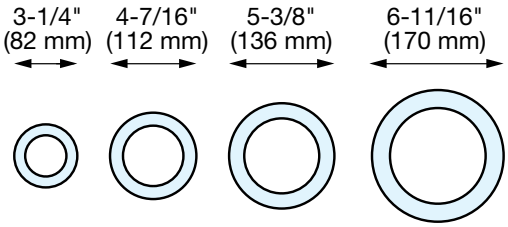
AN-DH:Deep Type



AN-LH:Shallow Type







Item No.	Old Item No.	A	D_1	D_2	D_3	Material	Finish	Weight (g)
AN-DH005-GP	-	1-7/16" (36 mm)	3-1/4" (82 mm)	2-1/4" (58 mm)	2-5/16" (59 mm)	304 Stainless Steel	Gold	66
* AN-DH005-MR	-						Mirror	
* AN-DH005-HL	-						Satin	
AN-DH008-GP	AN-DH001-GP		4-7/16" (112 mm)	3-1/4" (82 mm)	3-1/4" (83 mm)		Gold	107
* AN-DH008-MR	AN-DH001-MR						Mirror	
* AN-DH008-HL	AN-DH001-HL						Satin	
AN-DH011-GP	-	1-9/16" (40 mm)	5-3/8" (136 mm)	4-3/16" (106 mm)	4-3/16" (107 mm)		Gold	137
* AN-DH011-MR	-						Mirror	
* AN-DH011-HL	-						Satin	
AN-DH015-GP	-	1-7/16" (36 mm)	6-11/16" (170 mm)	5-3/4" (146 mm)	5-13/16" (147 mm)		Gold	182
* AN-DH015-MR	-						Mirror	
* AN-DH015-HL	-						Satin	

Item No.	Old Item No.	A	D_1	D_2	D_3	Material	Finish	Weight (g)
AN-LH005-GP	-	7/8" (22 mm)	3-1/4" (82 mm)	2-1/4" (58 mm)	2-5/16" (59 mm)	304 Stainless Steel	Gold	50
* AN-LH005-MR	-						Mirror	
* AN-LH005-HL	-						Satin	
AN-LH008-GP	AN-LH001-GP		4-7/16" (112 mm)	3-1/4" (82 mm)	3-1/4" (83 mm)		Gold	77
* AN-LH008-MR	AN-LH001-MR						Mirror	
* AN-LH008-HL	AN-LH001-HL						Satin	
AN-LH011-GP	-		5-3/8" (136 mm)	4-3/16" (106 mm)	4-3/16" (107 mm)		Gold	92
* AN-LH011-MR	-						Mirror	
* AN-LH011-HL	-						Satin	
AN-LH015-GP	-		6-11/16" (170 mm)	5-3/4" (146 mm)	5-13/16" (147 mm)		Gold	122
* AN-LH015-MR	-						Mirror	
* AN-LH015-HL	-						Satin	

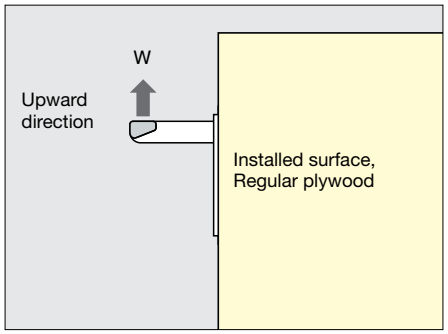
*NSF Certified

TEST METHODS

■ **About Test Methods**

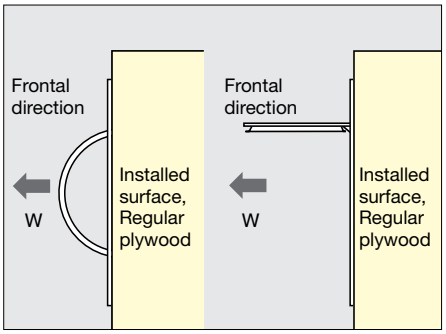
Various values about products with Test logo, such as the load capacity, hanging load capacity, catch force and retaining force, are determined by the tests performed by our company as described below. Values are to provide guidance for the safe use of our products. Product without Test logo may not be based on these criteria in some cases.

TEST 1 LOAD CAPACITY TEST (TEST 1)



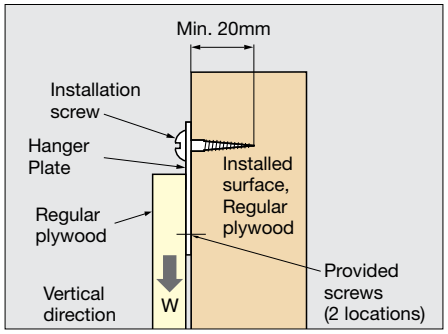
The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.

TEST 2 LOAD CAPACITY TEST (TEST 2)



The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure. Product may fail or distort if the force is applied in a direction other than the frontal direction. Please do not use on application other than in the pull direction.

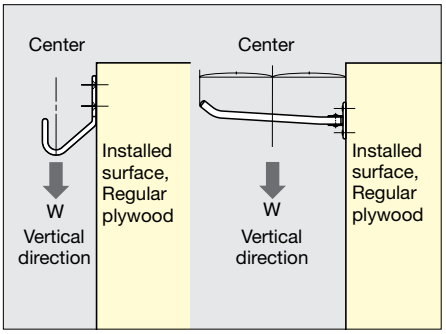
TEST 3 HANGING-LOAD CAPACITY TEST (TEST 3)



The hanging-load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure. This value will vary according to the diameter / length of the screw(s) used and strength of the installed surface.

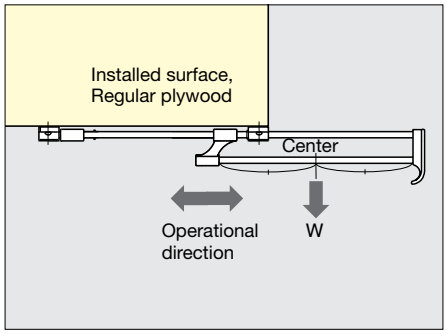
Hanging load of 10kg (22 lbs), in case of using round-head wood screw 3.8 x 25.

TEST 4 HANGING-LOAD CAPACITY TEST (TEST 4)



The hanging-load capacity is measured when the force (W) is gently applied at the center of the product in the direction of the arrow under the condition indicated by the figure.

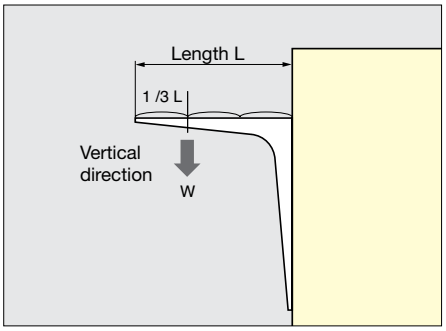
TEST 5 MAXIMUM HANGING-LOAD TEST (TEST 5)



The maximum hanging-load capacity is measured when the force (W) is gently applied in the direction of the arrow and operated under the condition indicated by the figure.

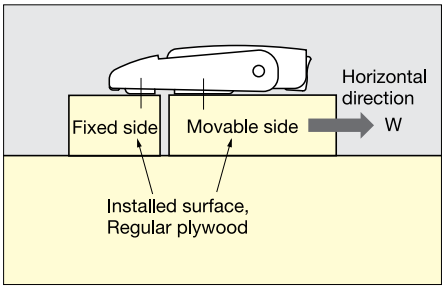
If the load is concentrated at the front tip of the hanger, the front tip may sag or the movement may become heavy.

TEST 6 LOAD CAPACITY TEST (TEST 6)



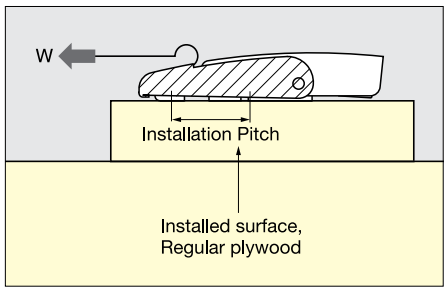
The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure. (This is based on the force (W) applied at the center of the shelf board with its length 4/3 times longer than the shelf bracket or angle bracket.)

TEST 7 LOAD CAPACITY TEST (TEST 7)



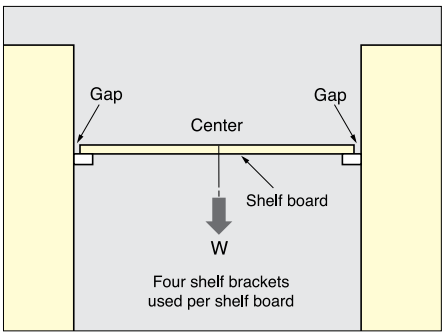
The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.

TEST 8 CLAMPING FORCE TEST UNDER STANDARD INSTALLATION (TEST 8)



The capacity of the clamping force under standard installation is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure, and when the shaded portion begins to slide.

TEST 9 LOAD CAPACITY TEST (TEST 9)

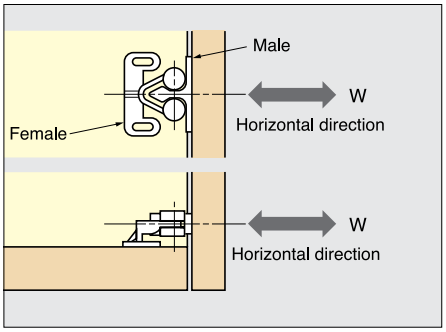


The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.
Follow the conditions below to prevent the shelf bracket or shelf board from falling off.

1: The total gap between the shelf board and side board shall be 1mm or less.

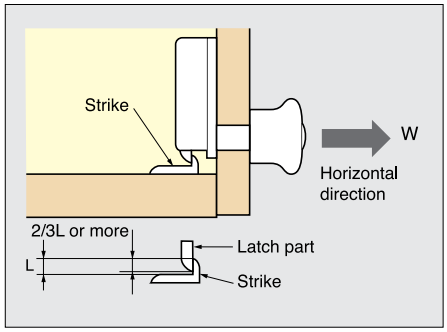
2: Use shelf board which has sufficient durability.

TEST 10 CATCH FORCE TEST (TEST 10)



The catch force is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.
Note: Misalignment of the male and female parts may cause the catch force to decrease or parts failure.

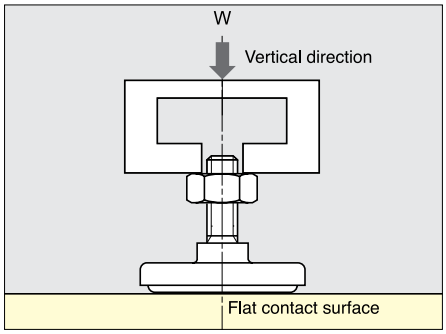
TEST 11 RETAINING FORCE TEST (TEST 11)



The retaining force is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.
Note: Latch and strike must be engaged at least 2/3L or more. (See the figure.)

TEST METHODS

TEST 12 LOAD CAPACITY TEST (TEST 12)



The load capacity is measured when the force (W) is applied in the direction of the arrow under the condition indicated in the figure. Product may break or distort if the contact surface is not flat.

TEST 13 LOAD CAPACITY OF CASTER (TEST 13)

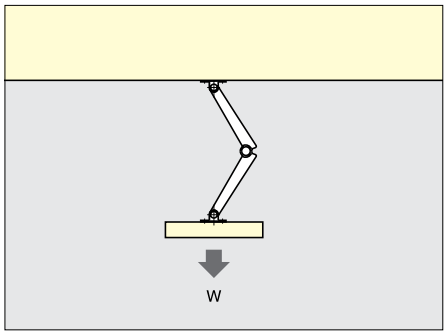
The load capacity is based on a flat steel floor surface. Following is the safety factor which should be taken into consideration in case of using four casters:

Proper load kg (lbs) = Load capacity value kg (lbs) x 4 (each) x 0.75

The safety factor will vary depending on the conditions of use such as the rolling surface, rolling speed, etc.

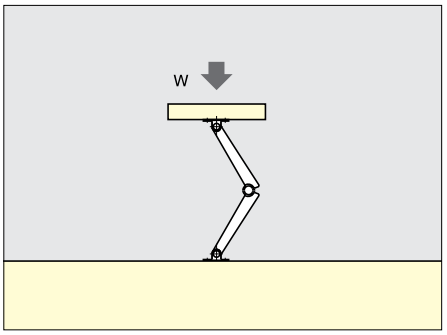
When using under adverse conditions, please test the casters in the intended application.

TEST 14 PULL LOAD TEST (TEST 14)



The pull load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.

TEST 15 COMPRESSION LOAD TEST (TEST 15)



The compression load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.

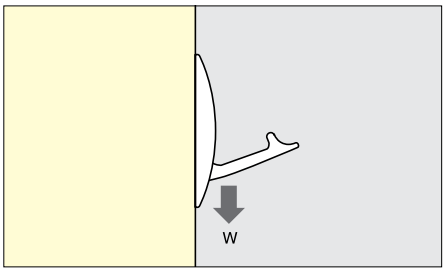
TEST 16 PERMISSIBLE LOAD OF FASTENER (TEST 16)

The permissible load is based on the following safety factor:

Permissible load kg (lbs) = Ultimate Load ÷ 3

The safety factor will vary depending on the conditions of use. When used under adverse conditions, please test the fastener in intended application.

TEST 17 HOOK LOAD CAPACITY TEST (TEST 17)



The load capacity is measured when the force (W) is gently applied in the direction of the arrow under the condition indicated by the figure.

The load capacity is based on the following safety factor:

Load capacity kg (lbs) = Ultimate Load ÷ 3

However, the safety factor will vary depending on the conditions of use. When used under adverse conditions, please test the hook in intended application.

MATERIALS

Material	Type	Characteristics
430 Stainless Steel	Ferretic	18% Chromium (Cr) added to steel. Commonly used because of its excellent formability and cost performance. Low corrosion resistance compared to 304 grade.
304 Stainless Steel	Austenitic	Most common grade which contains 18% chromium and 8% nickel, also called 18/8 stainless steel. Low carbon content, excellent formability and weldability with good corrosion resistance.
316 Stainless Steel	Austenitic	Nickel (Ni) and Molybdenum (Mo) added to maximize corrosion resistance. Better acid and pitting resistance than 304 grade. Also has high strength at high temperature.
Zinc Alloy	-	This is an alloy having zinc (Zn) as main component along with other materials such as aluminum (Al), copper (Cu), magnesium (Mg), iron (Fe), etc. This alloy is widely used along with aluminum alloy for die-casting. Zinc alloy facilitates the manufacturing of product with high dimensional accuracy, beautiful cast surface, and it can be plated for superior corrosion resistance. Zinc Alloy also has superior mechanical characteristics such as high tensile strength, compressive strength, hardness, bend (flexural) strength, modulus of elasticity, etc. Also zinc alloy can be plated with good corrosion resistance.
Aluminum Alloy	-	This is an alloy having aluminum (Al) as a main component along with other materials such as copper (Cu), silicon (Si), iron (Fe), magnesium (Mg), zinc (Zn), etc. Aluminum alloy is the most widely used material today for die-casting. This alloy facilitates the manufacturing of lightweight product having appropriate mechanical characteristics and corrosion resistance. Also it has good physical characteristics such as fine thermal conductivity, and also the characteristics do not change at low temperature.
Brass	-	Brass is an alloy having copper (Cu) and zinc (Zn) as the main components. It has yellow (or golden) color and good cutting characteristics. This alloy is easy to fabricate and is often used for the body of locks, hinges, handles, etc.

Material	Acronym	Characteristics
ABS Resin	**ABS**	**Thermal plastic developed to enhance the impact resistance of polystyrene. ABS can be plated.**
Polyamide	**PA**	**Very resistant to wear and abrasion suitable for parts like gears and bearings. Also has good chemical and oil resistance.**
Polypropylene	**PP**	**Strong against organic solvent. Difficult for adhesion and painting. Resistant to bending stress ideal for bending applications.**
Polyacetal	**POM**	**Superior abrasion resistance. Good tensile/bending strength and elasticity.**
Polyethlene	**PE**	**Low material cost. Excellent formability usable for various application. Has very low water absorption rate, suitable for water resistant purpose.**
Polycarbonate	**PC**	**High impact resistance and good dimensional stability for high precision. Also has high transparency.**

SURFACE TREATMENT

Name	Characteristics
Zinc Plating	Zinc plating is commonly used on steel to prevent oxidation. Chromate is generally applied over zinc to enhance corrosion resistance.
Chromate Conversion Coating	Major coating mainly applied on parts after zinc plated or cadmium plated. Parts are immersed in a solution mainly consisting of chromic acid or heavy chromic acid to create the coating. This is used to improve corrosion resistance and appearance of metals, metal coloration, and is also used as a pre-treatment for painting. Various chromate coatings are developed such as yellow chromate (rainbow color), clear chromate, black chromate, green chromate, etc.
Chrome Plating	Common electroplating for various industrial purposes. Reflective finish can be achieved by polishing. High hardness and good corrosion resistance along with thermal resistance, abrasion resistance and good adhesion characteristics. Generally used as final finish for various decorative parts and products due to its uniquely deep coloration.
Nickel Plating	Nickel is commonly used for decorative and anti-corrosion purpose because of its stability against air or humidity compared to iron. However, since the surface of the nickel plating will slightly discolor through exposure to air, chrome is often used after nickel to keep the finish/color. Nickel plating has moderate hardness / corrosion-resistance and widely used on industrial application.
Alumite or Anodizing (Anodic Oxidation Film Processing)	Also called the “anodic oxidation film processing”. This process thickens and toughens natural oxide layer on metal, commonly applied to aluminum for corrosion resistance and dyeing. In aluminum anodizing, aluminum object serves as the anode (the positive electrode) when electrolyzed in the sulfuric acid. This will create a layer of porous oxide film which has high electric insulation and abrasion resistance. The film is normally transparent when it is thin, although it becomes dull as the thickness increases. The pores produced by anodizing are closed by a process called sealing, which is done by high-pressurized or boiling-hot deionized water. This process fills the pores and creates a thin layer that is corrosion resistant, suitable for various aluminum parts / products.

*** Hexavalent-Chromium (CR6) Free**

Sugatsune is strictly controlling the use of chemicals that would adversely impact the environment. We are designing and developing products with minimum use of materials which has adverse environmental impact. Hexavalent chromium compound is especially known for its adverse effects on the human body. We are eagerly substituting this Hexavalent-chromium (CR6) with the less toxic substance Trivalent-chromium (CR3).