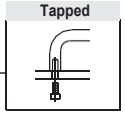
Round Bar Handles / Reinforcement Plates for Handles

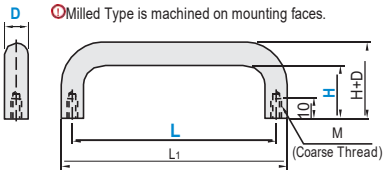
Tapped



Round Handle Dimension Selectable Type

RoHS 10

Type		Material	Surface Treatment
Standard Type	Milled Type		
(1) UWAN	UWANHM	1018 Carbon Steel or Equivalent	Chrome Plating
(2) UWANK	—		Black Oxide
(3) UWANS	UWANSHM	304 Stainless Steel	Buffed Surface
(4) UWANA	—	Aluminum Alloy	Buffed Surface
(5) UWANEA	—		Clear Anodize
(6) UWANB	—		Electrostatic Coating (Mat Black)



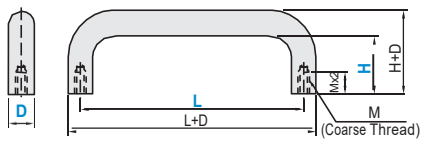
Part Number Type	D	L	H	L_1	M	Allowable Load (N)
UWAN UWANK UWANS UWANA UWANEA UWANB UWANHM Milled Type UWANSHM Milled Type	10	80	27 50	90	5	2500
		100	27 50	110		
		110	27 *30 50	120	6 5	
		120	27 *30 50	130	6 5	
		125	27 50	135		
		160	27 50	170		
		200	27 50	210		
		250	27 50	260		
	12	150	40 75	162	8	
		188	40 75	200		
		238	40 75	250		
		288	40 75	300		

* marked H dimension is available only with UWANS type. The default H dimension will be H27 for D10 and H40 for D12 unless specified.

L & H Dimensions Configurable Round Handles

RoHS 10

Type	Material	Surface Treatment
UWAF	1018 Carbon Steel or Equivalent	Chrome Plating
UWAFS	304 Stainless Steel	Buffed Surface
UWAFA	Aluminum Alloy	Buffed Surface
UWAFB		Electrostatic Coating (Mat Black)



Part Number Type	D	1 mm Increment L	1 mm Increment H	M (Coarse)	Allowable Load for Reference (N)
UWAF Steel UWAFS Stainless Steel UWAFA Aluminum UWAFB Aluminum, Black	6	80–200	27–40	4	500–1000
	7				600–1000
	8	80–300	27–50		
	9				
	10			5	1700–2500
	12		40–50	8	2700–3400

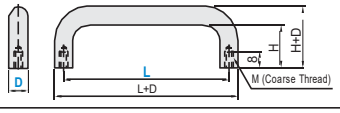
Part Number Example

Part Number	-	V	-	T
UWAN10	-	80	-	50
UWAF10	-	290	-	40

Small Handles

RoHS 10

Type	Material	Surface Treatment
UWANC	1018 Carbon Steel or Equivalent	Chrome Plating
UWANCS	304 Stainless Steel	Buffed Surface



Part Number Type	D	L	H	M	Allowable Load (N)	Mass (g)
UWANC Steel UWANCS Stainless Steel	6	48	37	4	3000	24
		66				28
	7	68	23	5		30
	8	48	37	4		45
		66				52
	9	48				63
		66				71

D=7 is not available for UWANC type.

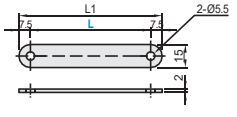
Part Number Example

Part Number	-	V
UWANC6	-	66

Reinforcement Plates for Handle

RoHS 10

UWANAT



Material: 304 Stainless Steel

Part Number Type	L	L_1	Applicable Handles	Reference Mass (g)
UWANAT	80	95	UWAN10-80	21
	100	115	UWAN10-100	26
	110	125	UWAN10-110	28
	120	135	UWAN10-120	31
	125	140	UWAN10-125	32

Applicable handles include part numbers of different materials and surface treatment.

Part Number

UWANAT80

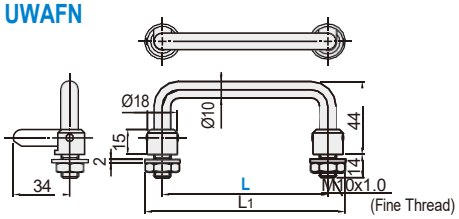
Handles

Folding / Threaded / Side Mount / T-Shaped

Folding

RoHS 10

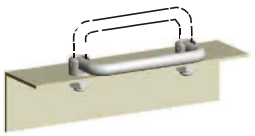
UWAFN



Material	Surface Treatment	Accessory
12L13 Carbon Steel	Chrome Plating	Washers (304 Stainless Steel), 2pcs.
		Nuts (304 Stainless Steel), 2pcs.

Part Number Type	L	L_1	Allowable Load (N)	Mass (g)
UWAFN	100	118	500	133
	120	138		156
	180	198		225

Application Example



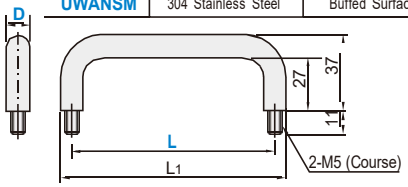
Part Number Example

Part Number: UWAFN100

Threaded

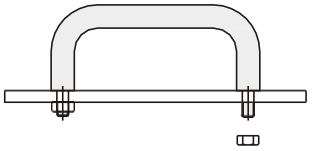
RoHS 10

Type	Material	Surface Treatment
UWANM	12L13 Carbon Steel or 12L14 Carbon Steel	Chrome Plating
UWANSM	304 Stainless Steel	Buffed Surface



Part Number Type	D	L	L_1	Allowable Load (N)	Mass (g)
UWANM Steel / UWANSM Stainless Steel	10	80	90	2500	76
		100	110		88
		110	120		94
		120	130		100
		125	135		103
		160	170		125
		200	210		150
		250	260		180

Application Example



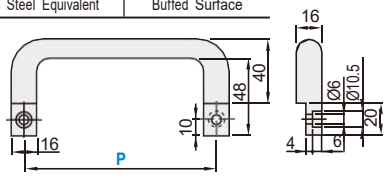
Part Number Example

Part Number: UWANM10 - L: 100

Side Mount

RoHS 10

Type	Material	Surface Treatment
UWANY	304 Stainless Steel Equivalent	Buffed Surface

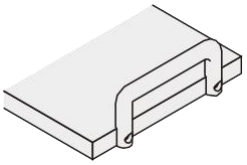


Part Number Example

Part Number: UWANY120

Part Number Type	P	Allowable Load (N)	Mass (g)
UWANY	120	500	270

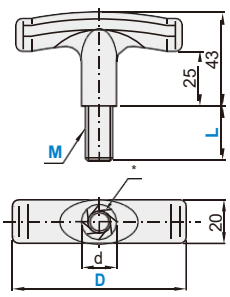
Application Example



T-Shaped

RoHS 10

Threaded **TSPM**



*There is a 0.2 mm protrusion to prevent looseness.

	Material	Surface Treatment
Handle	Glass Fiber Reinforced Nylon (Mat Black)	—
Thread	1018 Carbon Steel or Equivalent (Insert)	Trivalent Chromate

Part Number Type	D	M	L	D	Reference Mass (g)
Threaded TSPM	50	4	10	11	30
		5	15		32
		6	20		34
	80	6	15	16	53
		8	20		65
		10	25		69

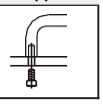
Part Number Example

Part Number: TSPM50 - M: 4 - L: 10

Angled Handles

Standard / Small Diameter Type

Tapped

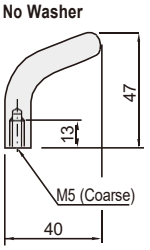


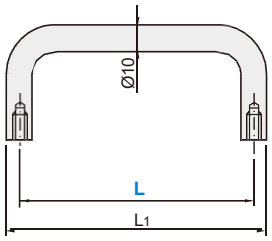
Standard Type

Type		Material	Surface Treatment
No Washer	With Washer		
UHFN	UHFNZ	12L13 Carbon Steel	Chrome Plating
UHFNS	UHFNSZ	304 Stainless Steel	Buffed Surface
UHFNA	UHFNAZ	Aluminum Alloy	Buffed Surface
UHFNEA	UHFNEAZ		Clear Anodize
UHFNB	UHFNBZ		Electrostatic Coating (Mat Black)

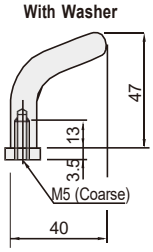
For single washers, refer to **P.3236**

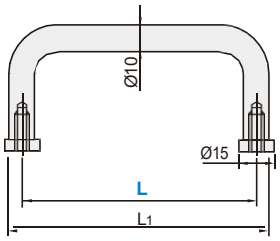
No Washer





With Washer





No Washer

Part Number		L_1	Allowable Load (N)	Reference Mass (g)
Type	L			
UHFN Steel UHFNS Stainless Steel UHFNA Aluminum UHFNEA Aluminum UHFNB Aluminum, Black	48	58	2000	90
	66	76		100
	88	98		114
	100	110		122
	110	120		127
	120	130		134
	125	135		136
	160	170		158

Part Number Example

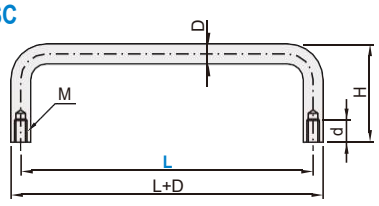
Part Number	-	Washer Selectable
UHFN66 UHFNZ100	-	G

With Washer

Part Number		Washer Selectable	L_1	Allowable Load (N)	Reference Mass (g)
Type	L				
UHFNZ Steel Stainless UHFNSZ Steel UHFNAZ Aluminum UHFNEAZ Aluminum UHFNBZ Aluminum, Black	48	G 12L13 Carbon Steel or Equivalent Chrome Plating B 12L13 Carbon Steel or Equivalent Electrostatic Coating / Black S 304 Stainless Steel	58	2000	90
	66		76		100
	88		98		114
	100		110		122
	110		120		127
	120		130		134
	125		135		136
	160		170		158

Small Diameter Type

UHFNSC



Material	Surface Treatment
304 Stainless Steel	Buffed Surface

Part Number		D	H	A	D	M	Allowable Load (N)	Reference Mass (g)
Type	L							
UHFNSC	60	6	30	16	7	4	392	23
	80		31.5					28
	100	8	32	18	10	5	490	54
	120		40					70

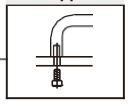
Part Number Example

Part Number
UHFNSC80

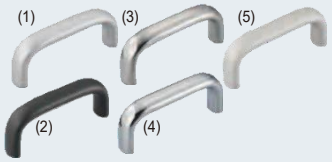
Bar Handles

Oval / Square Bar L Dimension Selectable & Configurable / Square Bar U-Shaped Type

Tapped

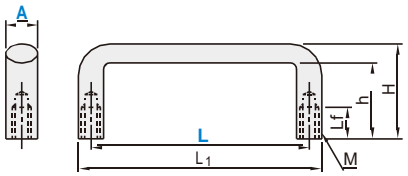


Oval Type



RoHS 10

Type	Material	Surface Treatment
(1) UABL	Aluminum Alloy	Tumble Polish
(2) UABR		Electrostatic Coating (Mat Black)
(3) UABLA		Buffed Surface
(4) UABLC	12L13/12L14 Carbon Steel or Equivalent	Chrome Plating
(5) UABS	304 Stainless Steel	Sandblasting

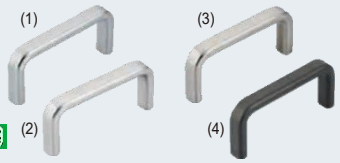


Part Number Type	A	L	L_1	Lf	H	h	M (Coarse)	Mass (g)	Allowable Load (N)
UABL Tumble Polish UABR Electrostatic Painted UABLA Buffed UABLC Steel UABS Stainless Steel	20	100	113	10	47	34	M6	84	1100
		112	125		49	36		96	
		120	133		51	38		100	700
		128	141					106	600
		160	173					126	470
	26	112	129	12	53	36	M8	157	2300
		120	137		55	38		162	1400
		128	145					178	1200
		160	177		57	40		209	600
		180	197					218	500
		192	209					242	470
		300	317					345	
		350	367					390	380
		400	417					440	300

Part Number Example

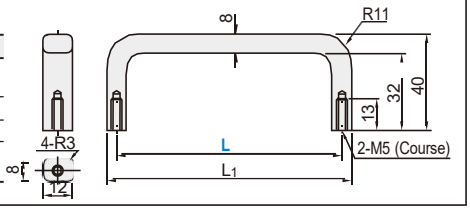
Part Number	-	L
UABL20		- 100

Square Bar L Dimension Selectable Type



RoHS 10

Type	Material	Surface Treatment
(1) USAN	1018 Carbon Steel or Equivalent	Chrome Plating
(2) USANS	304 Stainless Steel	Buffed Surface
(3) USANA	Aluminum Alloy	Buffed Surface
(4) USANB		Electrostatic Coating (Mat Black)



Part Number Type	L	L_1	Allowable Load (N)	Reference Mass (g)
USAN Steel USANS Stainless Steel USANA Aluminum USANB Aluminum, Black	80	88	2500	76
	100	108		88
	125	133		103
	160	168		125
	200	208		150
	250	258		180

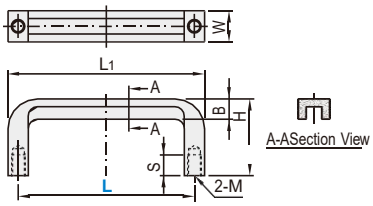
Part Number Example

Part Number
USAN80

Square Bar U-Shaped Type

RoHS 10

USANK



Material	Surface Treatment
Zinc Alloy	Chrome Plating

Part Number Type	L	L_1	W	H	B	S	M (Coarse)	Reference Mass (g)
USANK U-Shaped	68	76	12	30	8	8	M5	55
	100	108	14	30	8	8	M5	80
	110	120	16	40	10	8	M6	130
	120	130	16	40	10	8	M6	145
	188	200	18	50	12	10	M8	250

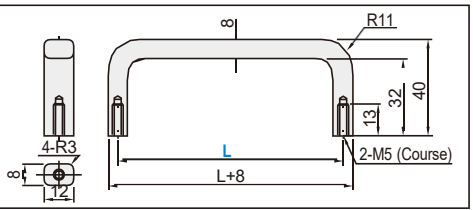
Part Number Example

Part Number
USANK100

Square Bar Type L Dimension Configurable

RoHS 10

Type	Material	Surface Treatment
USANSF	304 Stainless Steel	Buffed Surface



Part Number Type	L 1 mm Increment	Allowable Load (N)
USANSF	80–125	2500
	126–250	
	251–300	

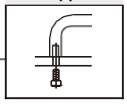
Part Number Example

Part Number	-	L
USANSF		- 85

Handles

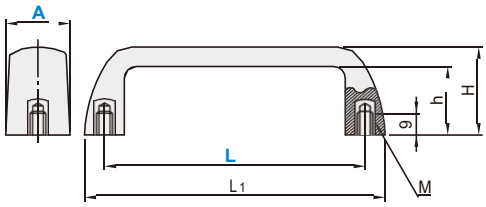
Nylon / For Plates / Rubber / T-Shaped Type

Tapped



Nylon Type

UPFN



	Material
Handle	Glass Fiber Reinforced Nylon 6
Threaded Section	Brass (Insert)

Part Number Type	Part Number A	L	Handle Colors	L1	H	h	M (Coarse)	Allowable Load (N)	Mass (g)
UPFN	26	105	B (Black) W (White) M (Orange) R (Red)	121	37	29	6	500	55
		110		133	40	32			60
		117					8		62

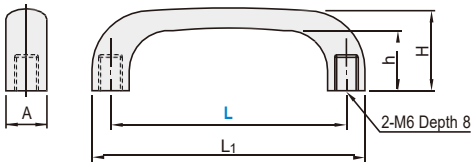
○ The default handle color will be black unless specified.

Part Number Example

Part Number	-	L	-	Handle Colors
UPFN26	-	105	-	B

For Plates

HHDS HHDSW HHDSA HHDSS



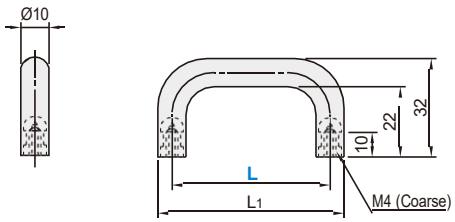
Type	Material	Surface Treatment
HHDS	Polycarbonate (Black)	—
HHDSW	Polycarbonate (White)	—
HHDSA	ADC12 Aluminum Alloy Cast	Baked Finish Silver Metallic
HHDSS	304 Stainless Steel Equivalent	Buffed Surface

Part Number Type	L	L1	H	h	A	Mass (g) HHDS / HHDSW	HHDSA	HHDSS
HHDS HHDSW HHDSA HHDSS	90	110	32	24	13	17	43	90
	104	127	37	27.7	16	25	65	150
	122	149	43.3	32.5	19	42	102	220

ⓘ There is no allowable load for the panel mounting handles.

Rubber Type

UGFN



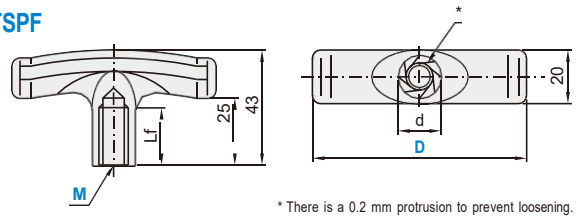
	Material
Handle	EPDM Synthetic Rubber Rubber (Mat Black)
Thread	Brass (Insert)

Part Number Type	L	L1	Mass (g)
UGFN Rubber Type	40	50	10
	53	63	12
	70	80	15

ⓘ The allowable load value not provided since unfeasible to measure.

T-Shaped

TSPF



* There is a 0.2 mm protrusion to prevent loosening.

	Material	Surface Treatment
Handle	Glass Fiber Reinforced Nylon (Mat Black)	—
Thread	1018 Carbon Steel or Equivalent (Insert)	Trivalent Chromate

Part Number Type	D	M	Lf	D	Mass (g)
TSPF	50	3	20	11	26
		4			28
		5			30
	80	5	25	16	46
		6			50
		8			56

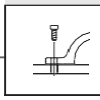
Part Number Example

Part Number	-	M
HHDS90		
UGFN70		
TSPF50	-	4

Handles

Aluminum / Sheet Metal / U-shaped

External

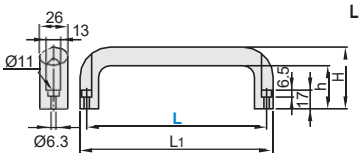


Aluminum Handles

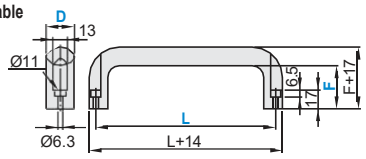
RoHS 10

Type		Material	Surface Treatment
L Dimension Selectable	L / F Configurable		
(1) UADL	UADLF	Aluminum Alloy	Tumble Polish
(2) UADR	UADRF		Electrostatic Coating (Matte Black)
(3) UADLA	—		Buffed Surface
(4) UADEL	—		Clear Anodize
(5) UADS	UADSF	304 Stainless Steel	Sandblasting

L Fixed



L / F Configurable



Part Number Type	L	L_1	H	h	Allowable Load (N)
L Fixed	100	114	47	30	1200
UADL	116	130	53	36	1200
UADR	132	146	55	38	800
UADLA	150	164	67	50	600
UADEL	164	178	57	40	600
UADS	196	210			390

L=100 and 150 are not available for UADLA and UADEL types.

Part Number Type	D	1 mm Increment L	1 mm Increment F	Allowable Load for Reference (N)
L / F Configurable UADLF UADRF UADSF	26	100–200	30–50	390–1200

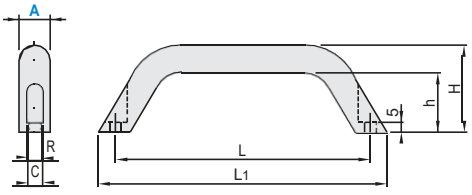
Part Number Example

Part Number	-	L	-	F
UADR		116		
UADLF26	-	100	-	40

"-" is not necessary for L Fixed Type.

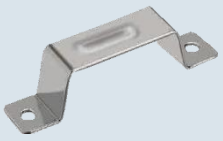
Aluminum Handles

Type	Material	Surface Treatment
(1) HHDF	Aluminum Alloy	Electrostatic Coating (Mat Black)
(2) HHDFL	Aluminum Alloy	Tumble Polish
(3) HHDFA	Aluminum Alloy	Buffed Surface



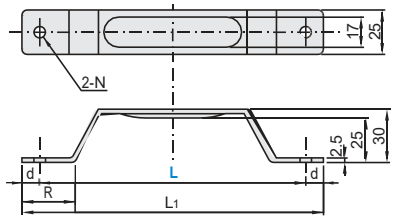
Part Number Type	A	Extrusions (Series)	L	L_1	H	h	R	C	Mass (g)	Screws / Nuts Screws	Quantity	Nuts	Quantity
HHDF	19	HFS5	90	107	41	29	5.3	9	64	CBM5-10	2	HNTT5-5	2
HHDFL	20	HFS6	93.5	112	44	31	6.5	10.5	110	CBM6-12		HNTT6-6	
HHDFA	26	HFS8 HFS8-45	130	149	57	40	8.5	13.3	250	CBM8-15		HNTT8-8	

Sheet Metal Handles



RoHS 10

Type	Material	Surface Treatment
UWDSU	1018 Carbon Steel or Equivalent	Chrome Plating
UWDSUS	304 Stainless Steel	Buffed Surface



Part Number Type	L	L_1	R	d	N	Allowable Load (N)	Mass (g)
UWDSU Steel	80	96	20	8	5.5	400	61
	100	116	23			380	70
UWDSUS Stainless Steel	150	170	30	10	6.5	160	93

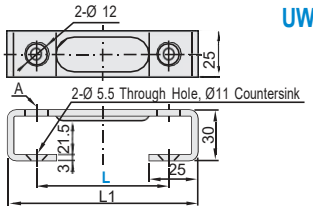
Part Number Example

Part Number
UWDSUS

Sheet Metal U-shaped Handles

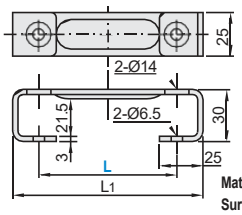
RoHS 10

UWASUS



There is a Ø12 through hole on A after spec. revision (after June 2010).

UWSUSD



Material: 304 Stainless Steel
SurfaceTreatment: Finish Buffed

Part Number Type	L	L_1	Mass (g)
UWASUS UWSUSD	68	98	105
	100	130	120
	110	140	130
	120	150	135
	150	180	155
	188	218	185
	238	268	215
	288	318	235

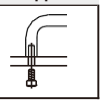
Part Number Example

Part Number
UWASUS100

Handles

Designer / Phenol Resin

Tapped

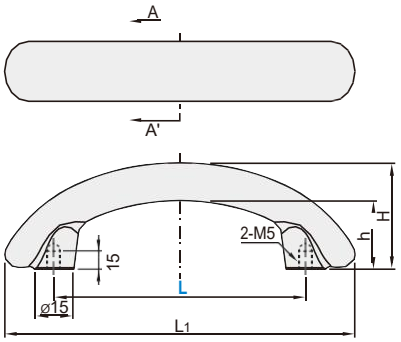


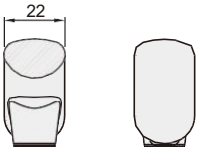
Designer Handles

RoHS 10

UWSY

Feature: Designed to be aesthetically pleasing and easy to grip.





Section View A-A'

Material: 304 Stainless Steel Equivalent
Surface Treatment: Buffed Surface

Part Number		L_1	H	h	Allowable Load (N)	Mass (g)
Type	L					
UWSY	100	138	42	27	500	351
	150	190	44	29		448

Application Example

Back Side

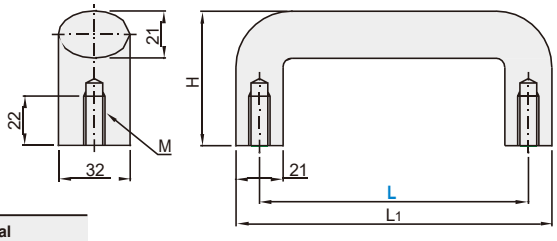
Part Number Example

Part Number: UWSY100

Phenol Resin Handles

RoHS 10

UPCFN



	Material
Handle	Phenol Resin
Thread	Brass (Insert)

Part Number		L_1	M	H	Mass (g)	Allowable Load (N)
Type	L					
UPCFN	90	110	6	50	90	1100
	114	132			105	1100
	120	142	8	60	140	700
	140	162			155	600
	160	182			170	600
	180	202			200	500
	200	222			210	470

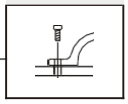
Part Number Example

Part Number: UPCFN114

Handles

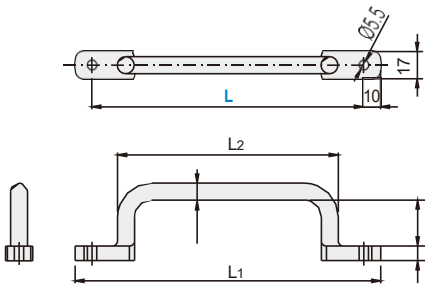
Round Bar Grip / Round with Tabs / Oval Grip

External



Round Bar Grip Handles

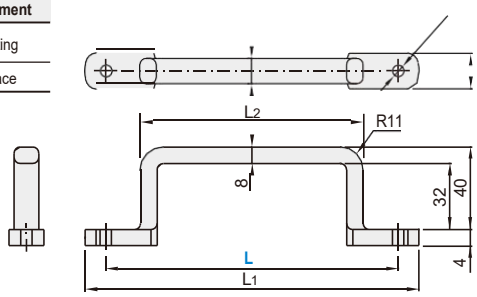
Type	Material	Surface Treatment
UWASN	12L13 Carbon Steel or Equivalent	Chrome Plating
UWASNB	12L13 Carbon Steel or Equivalent	Black Oxide
UWANSS	304 Stainless Steel	Buffed Surface



Part Number Type	L	P	L_1	Allowable Load (N)
UWANG Steel UWANSG Stainless Steel	80	104	118	2000
	100	124	138	
	110	134	148	
	120	144	158	
	125	149	163	
	160	184	198	
	200	224	238	
	250	274	288	

Oval Grip Handles

Type	Material	Surface Treatment
USAST	12L13 Carbon Steel or Equivalent	Chrome Plating
USASTS	304 Stainless Steel	Buffed Surface



Part Number Type	Part Number L	L_1	L_2	Mass (g)
USAST Steel USASTS Stainless Steel	110	130	78	126
	120	140	88	133
	125	145	93	137
	160	180	128	160
	200	220	168	188
	250	270	218	224

Part Number Example

Part Number
UWASN110
UWANSG200
USAST125

Handles

Designer / Cast

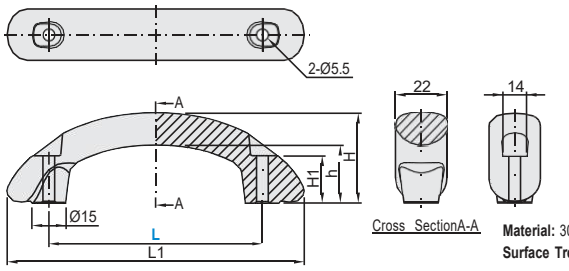
External

Feature: Designed to be aesthetically pleasing and easy to grip.

Designer Handles

RoHS 10

UWSD



Material: 304 Stainless Steel
Surface Treatment: Finish Buffed

Part Number		L_1	H	h	H_1	Allowable Load (N)	Mass (g)
Type	L						
UWSD	100	139	42	27	21	500	337
	150	190	44	29	17		434

Application Example

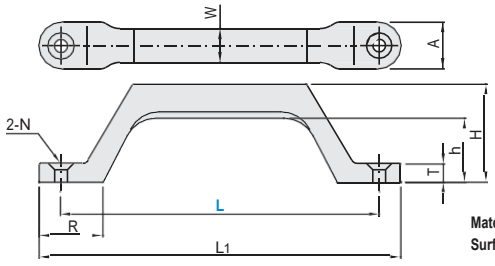
Part Number Example

Part Number
UWSD150

Cast Handles

RoHS 10

UWASND



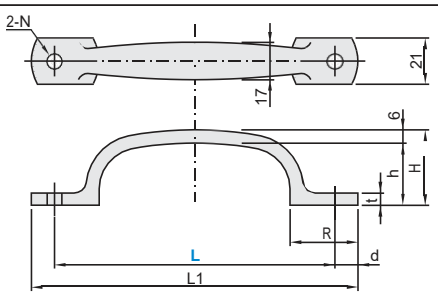
Material: 304 Stainless Steel Equivalent
Surface Treatment: Finish Buffed

Part Number		L_1	H	h	T	A	W	R	N		Allowable Load (N)	Mass (g)
Type	L								Through	Countersunk		
UWASND	80	96	32	20	6	18	12	20	4.5	8.5	500	97
	100	116						23				116
	150	170	46	30	9	22	16	30	6.5	12.5		301
	200	220	46	30	9	22	16	30	6.5	12.5		354

Cast Handles

RoHS 10

UWANDC



Material: 304 Stainless Steel Equivalent
Surface Treatment: Finish Buffed

Part Number		L_1	H	h	T	R	D	N	Allowable Load(N)	Mass (g)
Type	L									
UWANDC	105	120	30	24	5	25	7.5	5.5	13500	83
	115	130	33	27	5	26	7.5	5.5	12700	90
	125	145	34	28	5.5	30	10	6.5	12900	106

Part Number Example

Part Number
UWASND100
UWANDC125

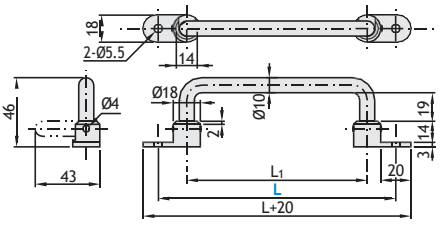
Handles

Folding / with Cap / Cap Nuts / Aluminum Hollow Type

External

Folding Handles

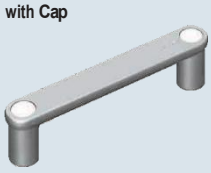
Type	Material	Surface Treatment
UWFASN	1045 Carbon Steel	Chrome Plating
UWFASNS	304 Stainless Steel	Buffed Surface



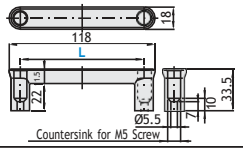
Part Number Type	L	L_1	Allowable Load (N)	Mass (g)
UWFASN Steel UWFASNS Stainless Steel	138	100	650	150
	158	120	550	160
	180	142	520	180
	218	180	500	200

Part Number Example — Part Number: UWFASN138

Handles with Cap



Type	Handles Material	Handles Surface Treatment	Cap Material	Cap Color
HHDG	ADC12 Aluminum Alloy Cast	Baked Finish	ABS Resin	White
HHDGS	304 Stainless Steel Equivalent	Buffed Surface	ABS Resin	White



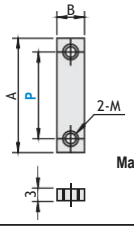
Tighten the screws firmly and press-fit caps before use.

Part Number Type	L	Mass (g)	Applicable Screws	
			Screws	Quantity
HHDG HHDGS	100	62	Flathead Screw M5	2

Part Number Example — Part Number: HHDG100

Cap Nuts for Handles

HHPUW



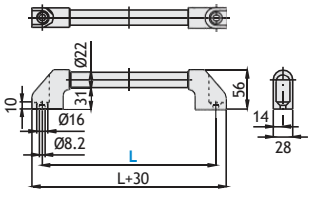
Material: 304 Stainless Steel

Part Number Type	P	B	A	M	Handle
HHPUW	90	10	100	6	UPCDG90
	100	12	110	5	HHDG100

Part Number Example — Part Number: HHPUW100

Aluminum Hollow Handles

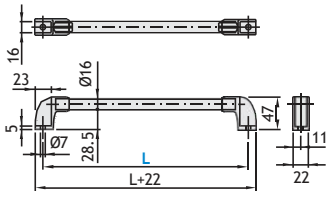
UWAPN
UWAPF L Dimension Configurable



Part Name	Material
Hollow	6063 Aluminum Alloy
Elbow	Glass Fiber Reinforced Nylon

Aluminum Hollow – Small Diameter

UWAPNC
UWAPFC L Dimension Configurable



Part Name	Material
Hollow	6063 Aluminum Alloy
Elbow	Polycarbonate

L Dimension Selectable

Part Number Type	L	Applicable Screws
UWAPN L Dimension Selectable	150	Countersunk Screws M8
	200	
	250	
	300	
	400	
	500	
	600	

L Dimension Configurable

Part Number Type	L 1 mm Increment	Applicable Screws
UWAPF L Dimension Configurable	100–150	Countersunk Screws M8
	151–200	
	201–250	
	251–300	
	301–400	
	401–500	
	501–600	

L Dimension Selectable

Part Number Type	L	Applicable Screws
UWAPNC L Dimension Selectable	100	Socket Head Cap Screws M6
	150	
	200	
	250	
	300	

L Dimension Configurable

Part Number Type	L 1 mm Increment	Applicable Screws
UWAPFC L Dimension Configurable	100–150	Socket Head Cap Screws M6
	151–200	
	201–250	
	251–300	

Part Number Example — Part Number: UWAPN150, UWAPFC-185

ⓘ - is not needed for L Dimension Selectable Type.

Handles / Mounting Plates for Handle

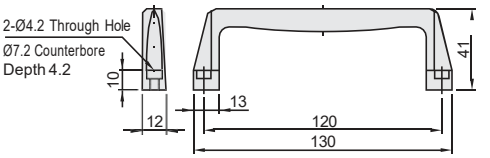
Small Resin External / Nylon 6

External

Small Resin External Handles

RoHS 10

UPCNN



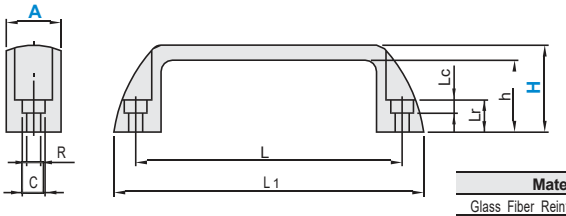
Material
Glass Fiber Reinforced Nylon 6

Part Number	Allowable Load (N)	Mass (g)
UPCNN	200	25

Part Number Example — Part Number: UPCNN

Handles – Nylon 6

UPCN



Material
Glass Fiber Reinforced Nylon 6

Part Number Type	A	Handle Colors	H	h	L	L_1	R	C	Lr	Lc	Allowable Load (N)	Mass (g)
UPCN	19	B (Black) W (White) M (Orange) R (Red) G (Green)	36	30	90	108.5	5.5	9.5	11	6	500	23
			51	45								24
	21		36	30	93.5	112	6.5	10.5	13	7		25
			51	45								28
	26		41	34	117	139	8.5	13.3	15	9		38
			57	50								48
	27		45	37	132	156			16			54
			63	55								62
	28		52	42	152	177	6.5	10.5	13	7		66
			50	42	179	204	8.5	13.3	17	9		68
			71	63								86

The default handle color will be black unless specified. The default H dimension will be A19-H36, A21-H36, A26-H41, A27-H45 and A28-H50 unless specified.
H=52 is available only with black color.

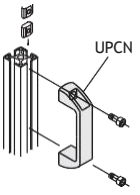
Part Number Example — Part Number: UPCN21 - B - 51

Part Number Alterations — Part Number: UPCN21 - B - 51 - SET

Alteration	Code	Spec.
Applicable Screws and Nuts Set	SET	
	SST	
	SEU	
	SSU	
	SEP	
	SSP	

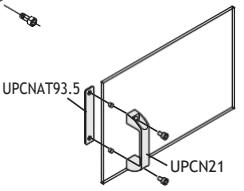
Application Example

How to mount on Aluminum Extrusions.



How to Use a Reinforcement Plate

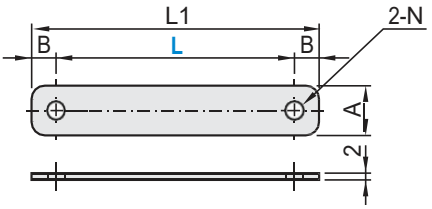
A reinforcement plate prevents cracks and distortions, and is effective for thin panels.



Mounting Plates for Handle

RoHS 10

UPCNAT



Material: 304 Stainless Steel

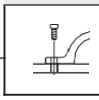
Part Number Type	L	L_1	A	B	N	Handles	Reference Mass (g)
UPCNAT	90	108.5	19	9.25	5.5	UPCN19	31
	93.5	112	21		6.5	UPCN21	36
	117	139	26	11	8.5	UPCN26	55
	132	156	27	12		UPCN27	64
	179	204	28	12.5		UPCN28	88

Part Number Example — Part Number: UPCNAT117

Angled Handles

Welded Round / With Mounting Tabs / With a Plate

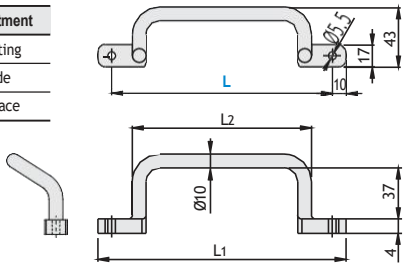
External



Welded Round Type

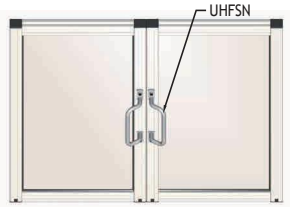
RoHS 10

Type	Material	Surface Treatment
UHFSN	12L13 Carbon Steel or Equivalent	Chrome Plating
UHFSNB	12L13 Carbon Steel or Equivalent	Black Oxide
UHFNSS	304 Stainless Steel Equivalent	Buffed Surface



Part Number Type	L	L_1	L_2
UHFSN Steel UHFSNB Steel UHFNSS Stainless Steel	110	130	80
	120	140	90
	125	145	95
	160	180	130
	200	220	170
	250	270	220

Application Example



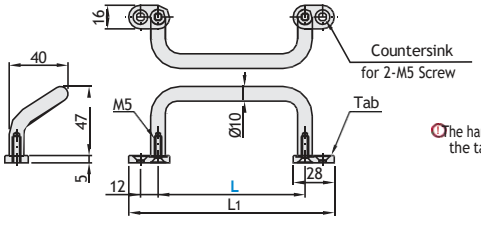
With Mounting Tabs

The tabs are rotatable in any desired position.

RoHS 10

Type	Material	Surface Treatment	Accessory				Thread
			Tab G		Tab S		
			Material	Surface Treatment	Material	Surface Treatment	Material
UHFNGG	12L13 Carbon Steel or Equivalent	Chrome Plating	Zinc Die Casting	Electrostatic Coating (Silver)	304 Stainless Steel	—	SHFBS5-12 **Material:** 304 Stainless Steel Equivalent
UHFNSG	304 Stainless Steel	Buffed Surface					
UHFNEAG	Aluminum Alloy	Clear Anodize					

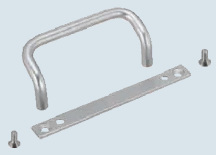
ⓘ 2 screws are included.



ⓘ The handles are shipped with the tabs uninstalled.

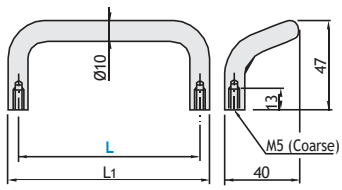
Part Number Type	L	Tab Selectable	L_1	Allowable Load (N)	Reference Mass (g)
UHFNGG Steel UHFNSG Stainless Steel UHFNEAG Aluminum	48	G (Zinc Diecast) S (304 Stainless Steel)	86	2000	90
	66		104		100
	88		126		114
	100		138		122
	110		148		127
	120		158		134
	125		163		136
	160		198		158

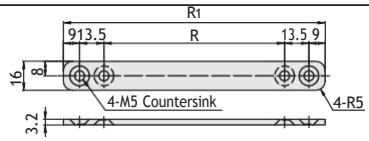
With a Plate



RoHS 10

UHFNG





Part Name	Material	Surface Treatment	Accessory
Handles	6063 Aluminum Alloy	Clear Anodize	**SHFBS5-12** **Material:** 304 Stainless Steel Equivalent
Plate		Clear Anodize	ⓘ 2 screws are included.

Part Number Type	L	L_1	R	R_1	Reference Mass (g)
UHFNG	100	110	100	145	50
	120	130	120	165	52.5
	125	135	125	170	54

ⓘ The default L dimension will be 100 unless specified.

Part Number Example

Part Number - M

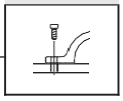
UHFSN160
UHFNGG100 - G
UHFNG120

Application Example

Angled Handles

Aluminum / Casting Offset / Aluminum Hollow / Small Diameter Aluminum Hollow Type

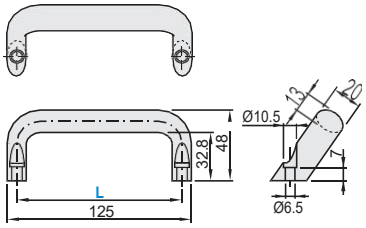
External



Aluminum Type

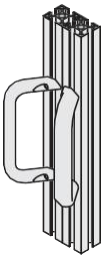
RoHS 10

HHDNFA



Material: Aluminum Alloy
Surface Treatment: Baking Finish

Application Example

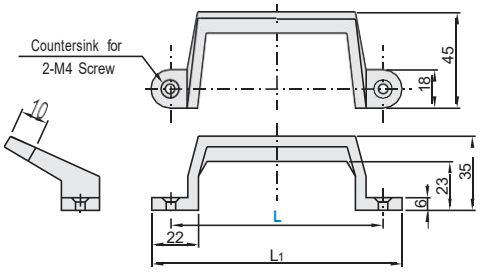


Part Number		Allowable Load (N)	Mass (g)
Type	L		
HHDNFA	112	1100	105

Casting Offset

RoHS 10

UWASNDF



Material: 304 Stainless Steel Equivalent
Surface Treatment: Finish Buffed

Part Number		L_1	Allowable Load (N)	Mass (g)
Type	L			
UWASNDF	80	98	500	100
	100	118		110
	150	168		130

Part Number Example

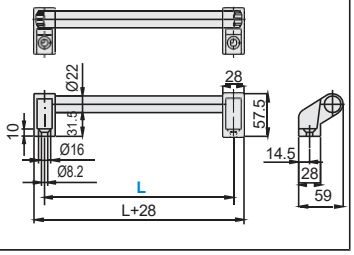
Part Number
HHDNFA112
UWASNDF100

Aluminum Hollow Type

RoHS 10

Part Name	Material
Hollow	6063 Aluminum Alloy
Elbow	Glass Fiber Reinforced Nylon

UHFAP
UHFAPF L Dimension Configurable

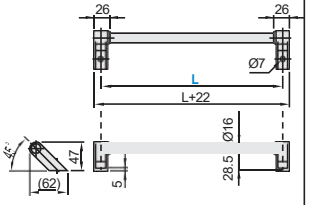


Small Dia. Aluminum Hollow Type

RoHS 10

Part Name	Material
Hollow	6063 Aluminum Alloy
Elbow	Polycarbonate

UHFAPC
UHFAPFC L Configurable Type



L Dimension Selectable

Part Number	L	Applicable Screws
Type		
UHFAP L Dimension Selectable	150	Countersunk Screws M8
	200	
	250	
	300	
	400	
	500	
	600	

L Dimension Configurable

Part Number	L 1 mm Increment	Applicable Screws
Type		
UHFAPF L Dimension Configurable	100–150	Countersunk Screws M8
	151–200	
	201–250	
	251–300	
	301–400	
	401–500	
	501–600	

L Fixed

Part Number	L 1 mm Increment	Applicable Screws
Type		
UHFAPC	100	Hex Socket Head Cap Screw M6
	150	
	200	
	250	
	300	

L Configurable

Part Number	L 1 mm Increment	Applicable Screws
Type		
UHFAPFC	100	Hex Socket Head Cap Screw M6
	150	
	200	
	250	
	300	

Part Number Example

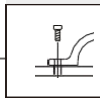
Part Number	-	L
UHFAP		150
UHFAPFC	-	225

"-" is not necessary for L Fixed Type.

Handles / Nuts for Handles

Phenol Resin / Cantilever / Resin Handles with Cap

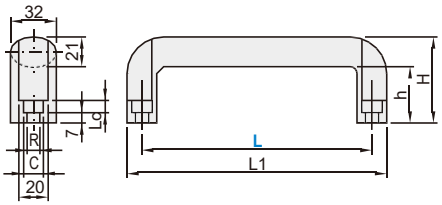
External



Phenol Resin Handles

RoHS 10

UPCFAN



Material: Phenol Resin

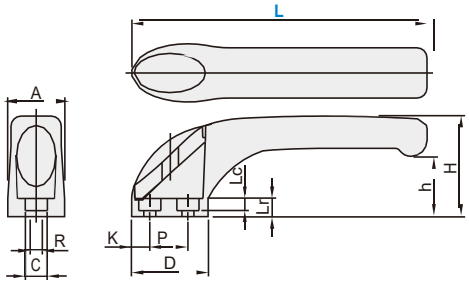
Part Number Type	L	L_1	h	H	R	C	Lc	Mass (g)
UPCFAN	90	111	29	50	6.5	10.5	6.5	88
	114	135						108
	120	141	39	60	8.5	13.5	8.5	116
	140	161						131
	160	181						145
	180	201						164
	200	221						178

Part Number Example Part Number: UPCFAN90

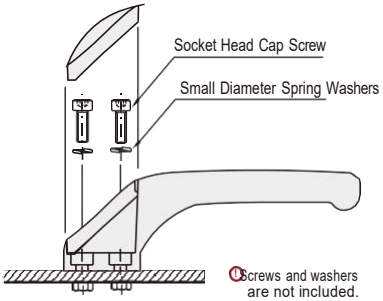
Cantilever Handles

RoHS 10

Type	Handles Material	Handles Surface Treatment	Cap Material
HHKP	Glass Fiber Reinforced Nylon (Mat Black)	—	Nylon 6 (Mat Black)
HHKA	ADC12 Aluminum Alloy Cast	Baked Finish (Silver)	Nylon 6 (Mat Gray)



Application Example

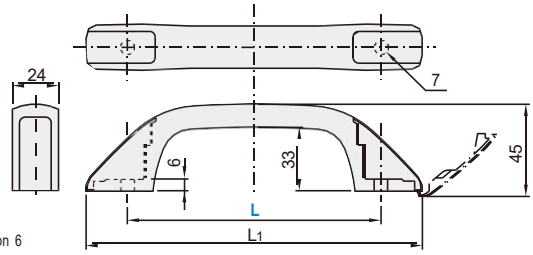


Part Number Type	L	H	h	A	R	C	Lr	Lc	D	P	K	Allowable Load (N) HHKP	Allowable Load (N) HHKA	Mass (g) HHKP	Mass (g) HHKA
HHKP Resin HHKA Aluminum	80	29	18	16	3	6	5	3	24	12	6	60	200	15	28
	100	35	19	20	4	8	6	4	28	12	8	90	320	29	56
	147	50.5	30	29	6	11	9	6	38	19	9	150	500	78	170

Resin Handles with Cap

UPCDG

Nylon 6



Material: Glass Fiber Reinforced Nylon 6

Part Number Type	L	L_1	Allowable Load (N)	Mass (g)
UPCDG	90	133	500	30
	94	136.5		33
	117	160		36
	132	175		39

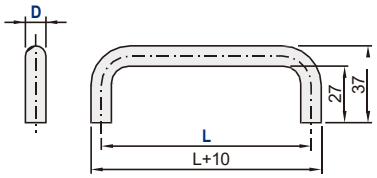
Part Number Example Part Number: UPCDG90

Handles

Weld / Spring Loaded / Stainless Steel Rotary

Weld Handles

UWANW



Antirust oil is applied to protect the raw material. **Material:** 12L13 Carbon Steel

Part Number		L	Mass (g)
Type	D		
UWANW	10	80	83
		100	95
		120	109

Part Number Example

Part Number: UWANW10 - 100

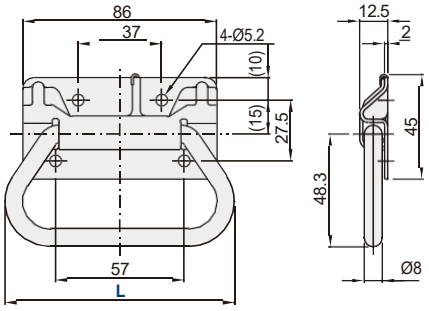
Application Example

Features

These handles have no tapped holes to cause any sputters from expanding air.

Spring Loaded Handles

UWUASP UWUASPS



When hands are released from the grip, the status will be as shown on the drawing due to the spring function.

Type	Material	Surface Treatment
UWUASP	Low Carbon Steel	Chrome Plating
UWUASPS	304 Stainless Steel	—

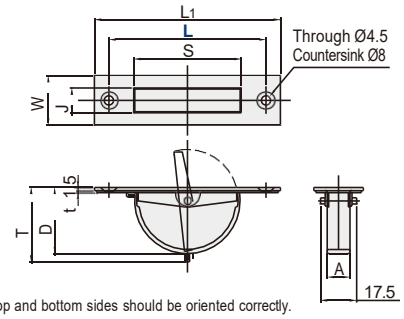
Part Number		Mass (g)
Type	L	
UWUASP Steel UWUASPS Stainless Steel	102	158

Part Number Example

Part Number: UWUASP102

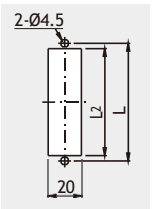
Stainless Steel Rotary Handles

UWAKS



In assembling, top and bottom sides should be oriented correctly.

Panel Mounting Hole Dimensions



Material: 304 Stainless Steel

Part Number		W	L_1	S	J	D	T	t	A	L_2	Mass (g)
Type	L										
UWAKS	76	24	90	52	12	32	36	1	11	60	49
	94		110	64	12	38	42	1	11	74	59
	115	25	135	90	12.2	50	55	1.2	12	102	88

Part Number Example

Part Number: UWAKS94

Embedded Handles

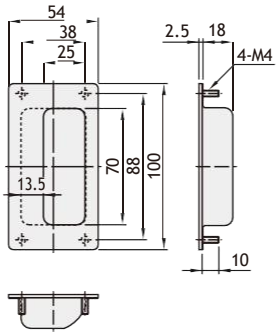
Stainless Steel

Embedded Handles

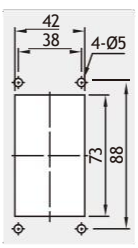
RoHS 10

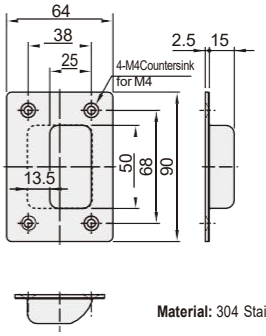
UWUANA

Threaded Type

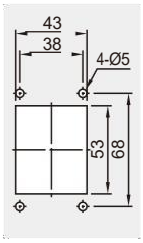


Panel Mounting Holes Countersink Dimensions





Panel Mounting Holes Dimensions



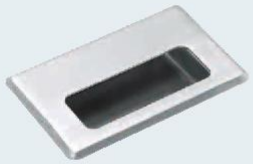
Material: 304 Stainless Steel

Part Number Type	Threaded Countersunk Hole Type	Mass (g)
UWUANA	B Threaded Type	85 Threaded Type
	S Countersunk Type	94 Countersunk Type

Part Number Example

Part Number	-	Type Selection
UWUANA	-	B

Embedded Handles

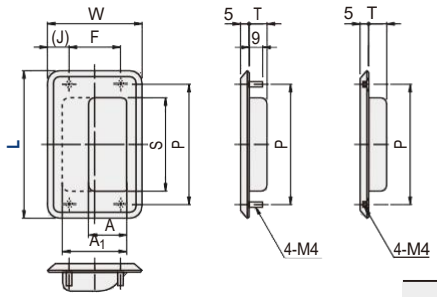


RoHS 10

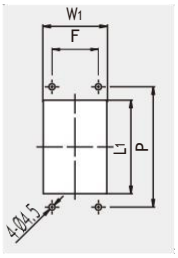
UWUAN

Threaded Studs Type

Nut Type

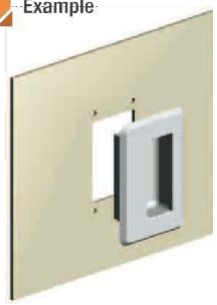


Panel Mounting Holes Dimensions



Material	Finish
304 Stainless Steel	Brushed

Application Example



Part Number Type	Part Number L	Threaded Studs Type Nut Type	W	P	F	S	A	A_1	T	(J)	L_1	W_1	Mass (g)
UWUAN	94	B Threaded Studs Type N Nut Type	60	76	32	61	25	43	12	14.5	63	43	80
	109.5		64	88	38	67.5	25	40	14.5	13	73	42	100
	138		88	110	65	96	35	62	21	11.5	99	64	170

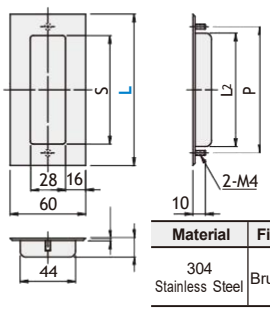
Part Number Example

Part Number	-	Threaded Studs Type Nut Type
UWUAN94	-	B

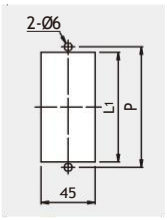
Embedded Handles

RoHS 10

UWAUNS



Dimensions of Panel Mounting Holes



Material	Finish	Accessories	
304 Stainless Steel	Brushed	Nuts 2pcs. Washers 2 pcs.	304 Stainless Steel

Part Number Type	Part Number L	P	S	L_1	L_2	Mass (g)
UWAUNS	90	74	58	61	60	30
	120	100	86	91	90	50

Part Number Example

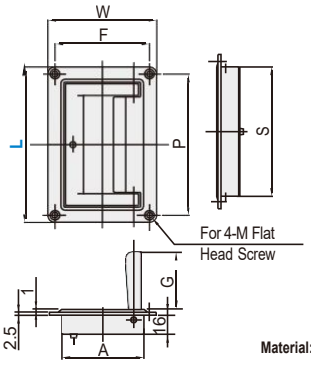
Part Number
UWAUNS120

Embedded Handles

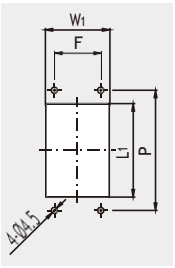
Folding / TPE / Resin

Folding Embedded Handles

UWUAFN



Dimensions of Panel Mounting Holes

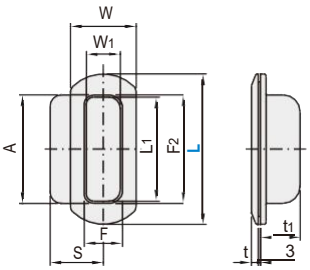


Material: ADC12 Aluminum Alloy Cast

Part Number		W	P	F	S	A	G	L_1	W_1	Mass (g)
Type	L									
UWUAFN	130	91	118	79	109	69	49.5	110	70	197
	200	80	184	50	169	71	51	171	73	286

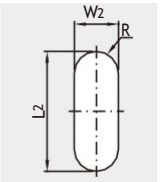
TPE Embedded Handles

UWAUNB



- 5 pcs./package Order quantity should be noted.
- Adhesive is recommended for mounting.
- Thickness of the applicable plate is 3 mm.

Dimensions of Panel Mounting Holes



Material: Non-PVC TPE

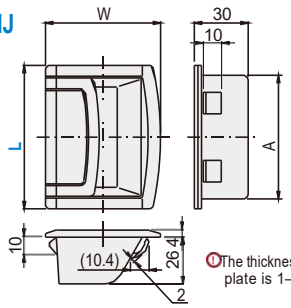
*TPE is thermoplastic elastomer, which has properties close to rubber at ambient temperature.

Part Number		W	L_1	W_1	A	S	F	F_2	T	t_1	L_2	W_2	R	Mass (g)
Type	L													
UWAUNB	62	34	40	18	44	29	23	53	4	18	54	24	11.5	30
	92	42	62	22	66	42	27	83	5	32	84	28	13.5	50
	133	58	92	30	96	47	39	119	6	35	120	40	19.5	110

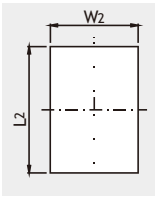
Embedded Resin Handles

RoHS 10

UWAUNJ



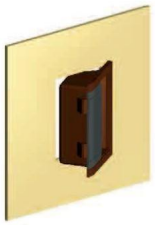
Dimensions of Panel Mounting Holes



- The thickness of the applicable plate is 1–1.2 mm.

Material: ABS Resin

Application Example



- Adhesive is recommended for mounting.

Part Number		W	L_2	W_2	A	Mass (g)
Type	L					
UWAUNJ	80	60	70	48.5	69	50
	120	82	108.5	70	108	70
	180	82	168.5	70	168	90

Part Number Example

Part Number
UWUAFN130
UWAUNB92
UWAUNJ80

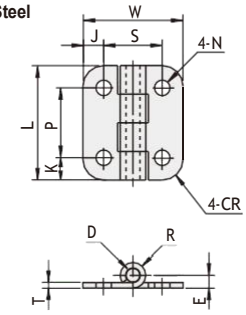
Hinges

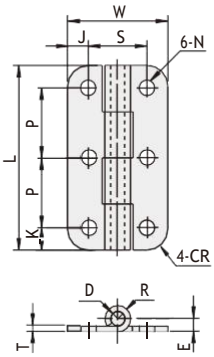
Stainless Steel / Steel

Stainless Steel Hinges

RoHS 10

SHHPS Stainless Steel
SHHPSK Stainless – Brushed Finish
SHHPT Steel





When the hinges are mounted onto an object such as a panel,hinge nuts are recommended as shown on **P.3255**

Type	Material	Surface Treatment
SHHPS	316 Stainless Steel	—
SHHPSK	304 Stainless Steel	Satin Finish
SHHPT	Low Carbon Steel	Chrome Plating

Part Number Type	No.	One Side No. of Holes	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	N	T	E	R	CR	D
SHHPS SHHPSK	5	2	9	88	43	41	36	8	25	7.5	21	5.5	2	4.6	4.6	7.5	5
		3	11	108	70	66											
	6	2	12	117	60	48	48	9	30	8	32	6.5					
		3	15	147	98	78											
	8	2	25	245	130	59	62	11	37	10	42		3	5.6	5.6	10	6
		3	38	372	230	96								6.1	6.1		
	845	2	30	294	190	70	80	13.5	43	16.5	47			5.6	5.6		5
		3	40	392	325	113								6.1	6.1		6

*The allowable load is the value when two pieces are used. Max. Opening Angle is 270°. No. 845 is only available for SHHPS.

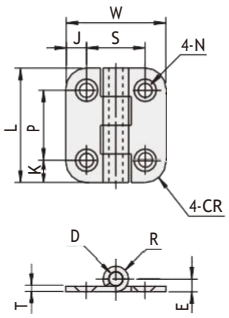
Part Number Type	No.	One Side No. of Holes	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	N	T	E	R	CR	D
SHHPT	5	2	9	88	36	41	36	8	25	7.5	21	5.5	2	4.6	4.6	4	5
		3	11	108	59	66											
	6	2	12	117	50	48	48	9	30	8	32	6.5					
		3	15	147	83	78											
	8	2	25	245	124	59	62	11	37	10	42		3.2	6.5	6.5	5	6
		3	38	372	207	96											
	845	2	30	294	181	70	80	13.5	43	16.5	47						
		3	40	392	298	113											

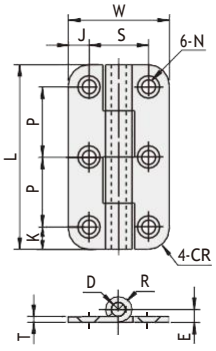
* The allowable load is the value when two pieces are used. Max. Opening Angle is 270°.

Flat Hinges – Countersunk Type

RoHS 10

SHHPSD
Stainless Steel, Countersunk Holes Type





Material: 304 Stainless Steel

Part Number Type	No.	One Side No. of Holes	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	Through	Countersink	T	E	R	CR	D
SHHPSD	5	2	9	88	34	41	36	8	25	7.5	21	5.5	8.6 For M4 Screws	2	4.6	4.6	4	5
		3	11	108	56	66												
	6	2	12	117	49	48	48	9	30	8	32							
		3	15	147	80	78												
	8	2	25	245	111	59	62	11	37	10	42	6.5	10.6 For M5 Screws	3	6.1	6.1	5	6
		3	38	372	185	96												
	845	2	30	294	162	70	80	13.5	43	16.5	47							
		3	40	392	266	113												

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number	-	Holes on One Side
SHHPS6	-	2
SHHPSD6	-	3

Part Number Alterations

Part Number	-	Holes on One Side	- (SET)
SHHPS6	-	3	- SET

Alteration	Code	Spec.	Hinge	No.	Number of Holes on One Side
Applicable Screw and Nut Set	SET	Applicable screws and nuts come in a set. Stainless steel screws and nuts are included.	SHHPS SHHPSK SHHPT SHHPSD	5	2
					3
				6	2
					3
				8	2
					3
				845	2
					3

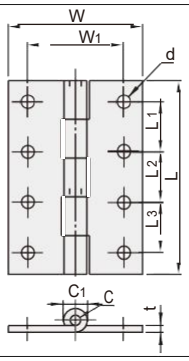
Hinges & Hinge Nuts

Hinges

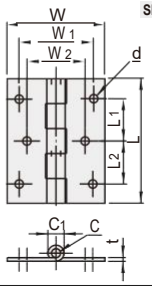
RoHS 10

HHS

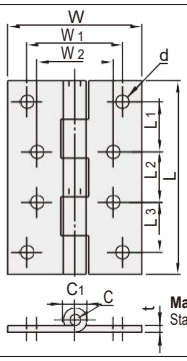
Shape No. A



Shape No. B



Shape No. C



Material: 304 Stainless Steel

Type	No.	L	Shape No.	W	W_1	W_2	L_1	L_2	L_3	C	C_1	t	D	Division	* Allowable Load (N)	Weight (g)
HHS	25	25	A	20	12	—	16	—	—	2	3.8	0.8	3.4	3	9.8	6
	30	30					22									7
	40	40		30	22		28			3	6.4	1.5			58.8	12
	50	50					36						4.5	5	68.6	16
	65A	65		50	30		23	23		4	8.5	2			127.4	25
	65		B		36	30	22	22								
	75A	75	A		30	—	27	27					5.5		147	46
	75		B		36	30	26	26								
	90A	90	A	60	38	—	35	35		6	12.7	3	6.6		245	68
	90		B		46	36	34	34								
	100A	100	A		38	—	26	26	26						294	100
	100		C		46	36										

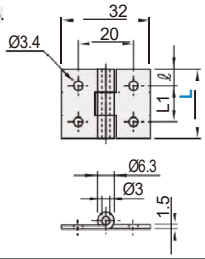
* The allowable load is the value when two pieces are used. Max. Opening Angle is 270°.

Hinges

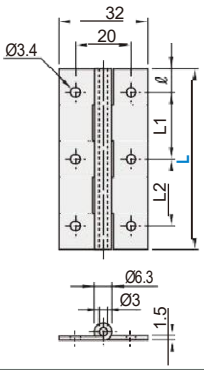
RoHS 10

HHKS

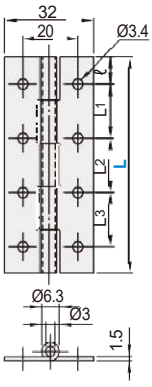
Shape No. A



Shape No. B



Shape No. C



Material: 304 Stainless Steel

Part Number Type	Part Number L	Shape No.	ℓ	L_1	L_2	L_3	Division	*Allowable Load (N)	Weight (g)
HHKS	25	A	6	13	—	—	3	29.4	13
	30		7	16	—	—		39.2	16
	40		8	24	—	—		58.8	21
	50		10	30	—	—		68.6	26
	65	B	8.5	24	24	—	5	98.0	34
	75		9.5	28	28	—		107.8	39
	90		10	35	35	—		127.4	47
	100	C	11	26	26	26		147.0	52

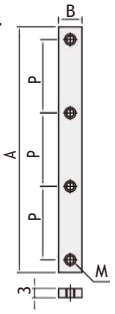
* The allowable load is the value when two pieces are used. Max. Opening Angle is 270°.

Hinge Nuts

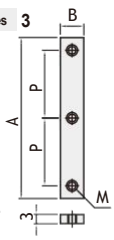
RoHS 10

HHST
HHKST

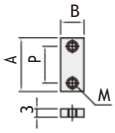
Number of Holes 4



Number of Holes 3



Number of Holes 2

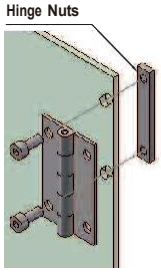


Material: 304 Stainless Steel

Part Number Type	Part Number No.	No. of Holes	B	A	P	M	Applicable Hinges
HHST	25	2	6	22	16	3	HHS25
	30		6	28	22	3	HHS30
	40		7	36	28	3	HHS40
	50		7	45	36	4	HHS50
	65	3	9	55	23	4	HHS65A
	75		11	65	27	5	HHS75A
	90		12	82	35	6	HHS90A
	100	4	12	90	26	6	HHS100A
HHKST	25	2	6	19	13	3	HHKS25
	30		6	22	16	3	HHKS30
	40		6	32	24	3	HHKS40
	50		6	39	30	3	HHKS50
	65	3	6	57	24	3	HHKS65
	75		6	65	28	3	HHKS75
	90		6	79	35	3	HHKS90
	100	4	6	87	26	3	HHKS100

Application Example

Hinge Nuts



Part Number Example

Part Number
HHS100
HHKS100
HHST30
HHKST75

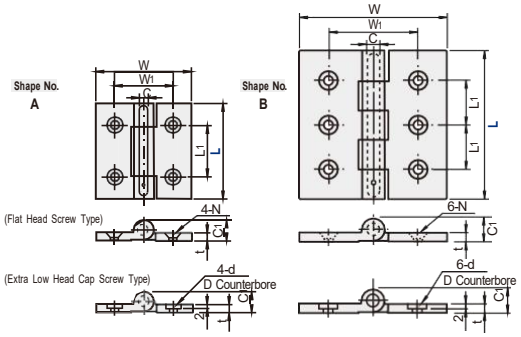
Hinges

for Heavy Loads / with Slotted Holes / Aluminum with Slotted Holes

Hinges for Heavy Loads

RoHS 10

Type		Material	Surface Treatment	
Flat Head Screw	Extra Low Head Cap Screws		Hinge Plate	Shaft
HHSZ	HHSZT	316 Stainless Steel	Buffed Surface	—
HHSZD	—	Zinc Die Casting	Chrome Plating	—



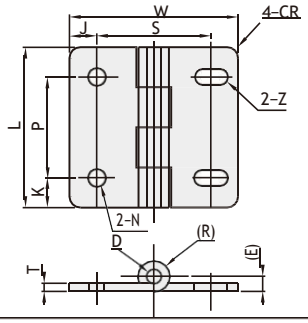
Part Number Type	L	Shape No.	W	W_1	L_1	C	C_1	t	HHSZ / HHSZD N Through	HHSZ / HHSZD N Countersink	HHSZT D	HHSZT d	Division	*Allowable Load (N)	Weight (g)
HHSZ HHSZD HHSZT	50	A	50	35	20	6	14	5	4.4	8.6	8.6	4.6	3	350	110
	65		65	40	35				5.6	10.6	9.6	5.6		450	190
	75		75	50	40									650	305
	100	B	100	60	30	8	16	6	6.6	12.6	10.6	6.6	5	850	500
	125		100	60	37.5	8	16	6	6.6	12.6	—	—	5	1000	650

* The allowable load is the value when two pieces are used. L=100 is not available for HHSZD type. L=125 is not available for HHSZD and HHSZT types.

Hinges with Slotted Holes

RoHS 10

SHPSNA



When the hinges are mounted onto an object such as a panel,hinge nuts are recommended as shown on **P.3255**

Material: 304 Stainless Steel

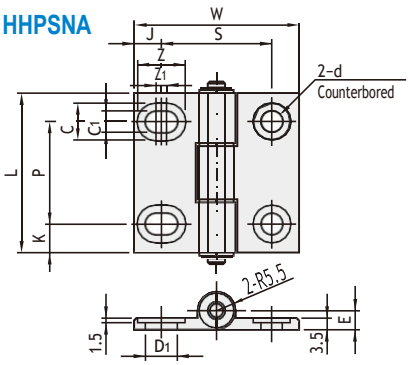
Part Number Type	No.	*Allowable Load kg	N	Mass (g)	L	W	K	P	J	S	N	Z	T	(E)	(R)	CR	D
SHPSNA	5	9	88	34	41	36	8	25	7.5	21	5.5	5.5x6.5	2	4.6	4.6	4	5
	6	12	117	48	48	48	9	30	8	32		5.5x10					
	8	25	245	111	59	62	11	37	10	42	6.5	6.5x10	3	6.1	6.1	5	6

* The allowable load is the value when two pieces are used.

Aluminum Hinges – Counterbored – One Side Slotted

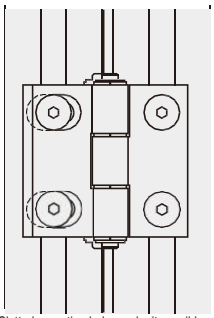
RoHS 10

HHPSNA



Material: 6063 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Clear Anodize

Application Example



Slotted mounting holes make it possible to adjust right and left positions.

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Part Number Type	No.	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	D Through	D Counterbored	D_1	C	C_1	Z	Z_1	E	Applicable Screws/Nuts for Aluminum Extrusion Screw	Qty	Nut	Qty
HHPSNA	5	10	98	22	47	36	11	25	7.5	21	5.5	10	7	10	5.5	11.5	1.5	5	CBSA5-6	4	HNTT5-5	4
	6			32		48	8.5	30	8	32	6.5	11	9.5	11	6.5	14	3	5.5	CBSA6-8		HNTT6-6	
	8			47	63	62	13	37	10	42			11.5			16	5		CBSA6-10		HNTT8-6	

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number
HHSZ65
SHPSNA5
HHPSNA8

Part Number Alterations

Part Number - (SET / SST)
HHPSDT6 - SST

Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. ( ) When -SET is specified, the material of the Flathead Screws is 4137 Alloy Steel and their surface treatment is Black Oxide.	SHPSNA	5 6 8
			HHPSNA	5 6 8

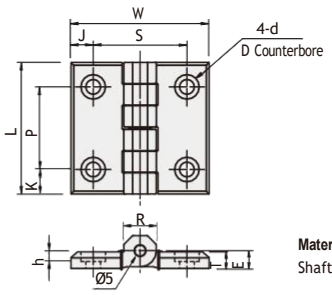
Hinges

Plastic / Compact Plastic / Low Particulate Generation

Plastic Hinges

RoHS 10

HHPSJ



When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Material: Hinge Plates: Nylon 6,
Shaft: 304 Stainless Steel

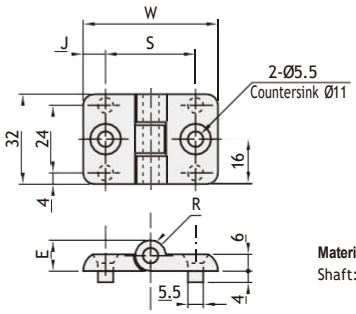
Part Number Type	No.	Color	* Allowable Load Kg	N	Mass g	L	W	K	P	J	S	D	D	T	E	R	h	Screws / Nuts Screws	Quantity	Nuts	Quantity
HHPSJ	6	B Black	10	96	21	48	47	9	30	8	32	9.5	5.5	6	6.5	12.6	3.8	CBS5-8	4	HNTT6-5	4
	8	W White	15	147	35	59	62	11	37	10	42	11	6.6	7.5	8	14.5	4.4	CBS6-12		HNTT8-6	
	845				44	70	80	13.5	43	16.5	47							CBS6-12		HNTT8-6	

* The allowable load is the value when two pieces are used. The default color will be black unless specified.

Compact Plastic Hinges

RoHS 10

HHPSJC



Material: Hinge Plates: Nylon 6,
Shaft: 304 Stainless Steel

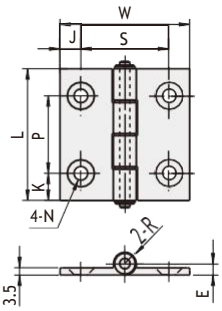
Part Number Type	No.	* Allowable Load kg	N	Mass (g)	W	J	S	E	R
HHPSJC	5	10	98	12.5	36	7.5	21	10	5
	6	10	98	15.8	48	8	32	11	5.5
	8	10	98	26.2	62	10	42	11	5.5

* The allowable load is the value when two pieces are used.

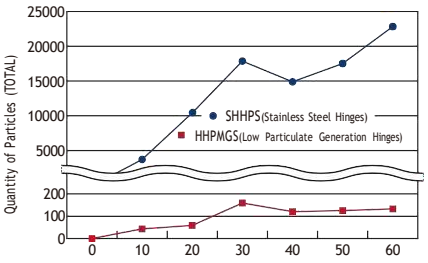
Low Particulate Generation Hinges

RoHS 10

HHPMGS



Material: 6063-T5 Aluminum Alloy
Bushing: Oil Soaked Polyacetal
Surface Treatment: Electroless Nickel Plating



Features

Excels in friction resistance and sliding. Has less dust compared with conventional hinges since the sliding section is made from the special material (oil embedded Polyacetal).

The aluminum part is electroless nickel plated instead of conventional clear anodizing. As a result, it prevents static charge buildup, resulting in less dust collection.

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Part Number Type	No.	* Allowable Load kg	N	Mass g	L	W	K	P	J	S	N Through	N Countersunk	E	R	Applicable Screws/Nuts for Aluminum Extrusion Screws	Quantity	Nuts	Quantity
HHPMGS	5	10	98	22	47	36	11	25	7.5	21	5.5	11	5	5	SHFBS5-8	4	HNTTSN5-5	4
	6			33		48	8.5	30	8	32	6.5	13	5.5	5.5	SHFBS6-10		HNTTSN6-6	
	8			48	63	62	13	37	10	42					SHFBS6-12		HNTTSN8-6	

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number	-	Color
HHPSJ6	-	B
HHPSJC8		
HHPMGS5		

Part Number Alterations

Part Number	-	(SET / SST)
HHPSN6	-	SST

Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. ( ) When -SET is specified, the material of the Flathead Screws is 4137 Alloy Steel and their surface treatment is Black Oxide.	HHPSDT	5 6 8
			HHPSNA	5 6 8

Detachable Hinges

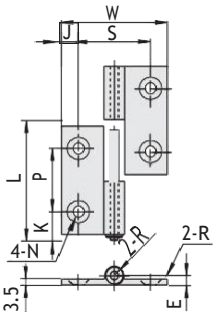
Aluminum / for Heavy Loads

Detachable Hinges – Aluminum

RoHS 10

HHPNL
For Left-hand Use

HHPNR
For Right-hand Use



(The drawing is for left hand use)

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Material: 6063-T5 Aluminum Alloy
Bushings: Polyacetal
Surface Treatment: Anodize

Part Number Type	No.	*Allowable Load kg	N	Mass (g)	L	W	K	P	J	S	N Through	N Countersunk	E	R	App. Screws/Nuts for Aluminum Extrusion Screws	Qty	Nuts	Qty
HHPNL	5	10	98	22	47	36	11	25	7.5	21	5.5	11	5	5	Flathead Screw 5-8		HNTT5-5	
For Left-hand Use HHPNR	6			33		48	8.5	30	8	32	6.5	13	5.5	5.5	Flathead Screw 6-10	4	HNTT6-6	4
For Right-hand Use	8			48	63	62	13	37	10	42					Flathead Screw 6-12		HNTT8-6	

* The allowable load is the value when two pieces are used.

Part Number Alterations

Part Number - (SET / SST)
SHHPSZ6 - SST

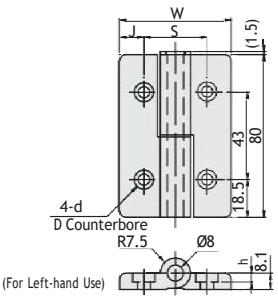
Alt.	Code	Spec.	Hinge	No.
App. Screw & Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified. screws and nuts will be in stainless steel. ( ) When - SET is specified, the material of the Flat head Screws is Black Oxide 4137 Alloy Steel	SHPSNA	5 6 8
			SHHPSZ	6 8 8-4
			HHPNL HHPNR	5 6 8

Detachable Hinges – Aluminum

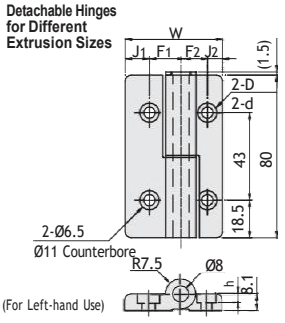
RoHS 10

	Type: Detachable Hinges	Type: Detachable Hinges for Different Extrusion Sizes	Hinge Plates: Material	Hinge Plates: Surface Treatment	Bushing: Material
For Left-Hand Use	HHPNLK	HHPNDLK	ADC12 Aluminum Alloy Cast	Shot Blasted	Polyacetal
	HHPNLK-B	—		Baked Finish (Black)	
	HHPNLK-S			Baked Finish (Silver Metallic)	
For Right-Hand Use	HHPNRK	HHPNDRK	ADC12 Aluminum Alloy Cast	Shot Blasted	Polyacetal
	HHPNRK-B	—		Baked Finish (Black)	
	HHPNRK-S			Baked Finish (Silver Metallic)	

Detachable Hinges



Detachable Hinges for Different Extrusion Sizes



When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Part Number Type	No.	*Allowable Load Kg	N	Mass (g)	W	J	S	D	d	h	Applicable Screws/Nuts for Aluminum Extrusion Screws	Qty	Nuts	Qty
Detachable Hinges HHPNLK HHPNRK	5-25	10	98	86	41	7.5	26	9.5	5.5	4.1	CBS5-8	4 Pcs.	HNTT5-5	4 Pcs.
	6			103	55	12	31	11	6.5	4.4	CBS6-12		HNTT6-6	
HHPNLK-B HHPNRK-B	8	15	147	120	73	16	41						HNTT8-6	
HHPNLK-S HHPNRK-S	8-45			130	83	18.5	46							

Part Number Type	No.	*Allowable Load Kg	N	Mass (g)	W	J 1	F 1	D	d	h	J 2	F 2	Applicable Screws/Nuts for Aluminum Extrusion Screws	Qty	Nuts	Qty
Detachable Hinges for Different Extrusion Sizes HHPNDLK HHPNDRK	6-5	10	98	95	48	12	15.5	9.5	5.5	4.1	7.5	13	CBS5-8, CBS6-12	2 pcs. each	HNTT5-5, HNTT6-6	2 pcs. each
	8-5	15	147	103	57	16	20.5				7.5	13	CBS5-8, CBS6-15		HNTT5-5, HNTT8-6	
	845-5			108	62	18.5	23				7.5	13				
	8-6			111	64	16	20.5	11	6.5	4.4	12	15.5	CBS6-12	4 pcs.	HNTT6-6, HNTT8-6	
	845-6			116	69	18.5	23				12	15.5				

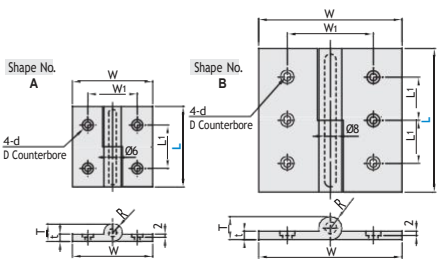
* The allowable load is the value when two pieces are used.

Detachable Hinges for Heavy Loads

RoHS 10

HNZL
For Left-hand Use

HNZR
For Right-hand Use



(The drawing is for left hand use)

	Material	Surface Treatment
Hinge Plates	316 Stainless Steel	Buffed Surface
Shaft		—
Bushing	Polyacetal	—

Part Number Type	L	Shape No.	W	W_1	L_1	T	R	T	D	D	*Allowable Load (N)	Weight (g)
HNZL HNZR	50	A	50	35	20	14	13.5	5	8.6	4.6	350	120
	65		65	40	35				9.6	5.6	450	185
	75		75	50	40	16	15.5	6	10.6	6.6	650	270
	100	B	100	60	30						650	450

* The allowable load is the value when two pieces are used.

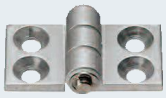
Part Number Example

Part Number
HHPNR5
HHPNLK6-5
HHPNDRK8-5
HNZL100

Aluminum Hinges

Short / Long Type / Protruded Aluminum

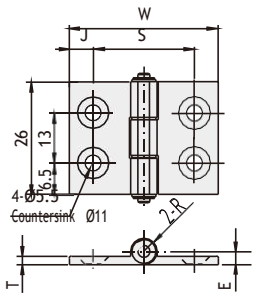
Aluminum Hinges
Short Type



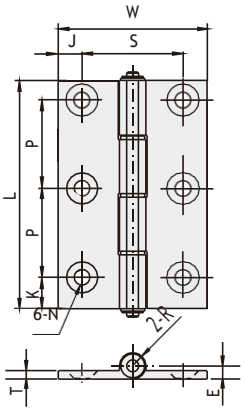
Long Type

RoHS

Short Type
HHPSNC
Clear Anodize
HHPBSNC
Black Anodize



Long Type
HHPSNL
Clear Anodize
HHPBSNL
Black Anodize



Material: 6063-T5 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Anodize

Part Number		*Allowable Load		Mass g	W	J	S	T	E	R	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	kg	N								Screws	Quantity	Nuts	Quantity
HHPSNC HHPBSNC Black Anodize	5	10	98	19	36	7.5	21	3.5	5	5	Flathead Screw 5-8	4	HNTT5-5	4
	6			24	48	8	32		5.5	5.5	Flathead Screw 5-10		HNTT6-5	
	8			27	62	10	42				Flathead Screw 5-12		HNTT8-5	
	8-45	15	147	36	80	16.5	47	4.5			Flathead Screw 5-15			

* The allowable load is the value when two pieces are used.

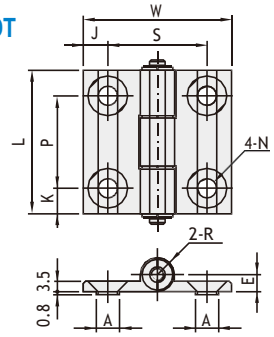
Part Number		*Allowable Load		Mass g	L	W	K	P	J	S	N		T	E	R	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	kg	N								Through	Countersunk				Screws	Quantity	Nuts	Quantity
HHPSNL HHPBSNL Black Anodize	5	15	147	49	66	36	8	25	7.5	21	5.5	11	3.5	5	5	Flathead Screw 5-8	6	HNTT5-5	6
	6			69	78	48	9	30	8	32	6.5	13		5.5	5.5	Flathead Screw 6-10		HNTT6-5	
	8			106	113	62	13.5	43	10	42						Flathead Screw 6-12		HNTT8-6	
	8-45	23	220	144		80			16.5	47			4.5			Flathead Screw 6-15			

* The allowable load is the value when two pieces are used.

Protruded Aluminum
Hinges

RoHS

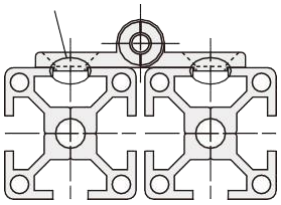
HHPSDT



Material: 6063 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Clear Anodize

Application Example

The protrusion prevents misalignment when assembling.



For a set of screws and nuts for an aluminum frame extrusion, refer to **P.2936**

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Part Number		*Allowable Load		Mass g	L	W	K	P	J	S	N		E	A	R	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	kg	N								Through	Countersunk				Screws	Quantity	Nuts	Quantity
HHPSDT	5	10	98	23	47	36	11	25	7.5	21	5.5	11	5	5.5	5	Flathead Screw 5-8	4	HNTT5-5	4
	6			35		48	8.5	30	8	32	6.5	13	5.5	7.5	5.5	Flathead Screw 6-10		HNTT6-6	
	8			51	63	62	13	37	10	42				9.5		Flathead Screw 6-12		HNTT8-6	

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number

HHPSNC5
HHPBSNL8-45
HHPSDT6

Part Number Alterations

Part Number - Color - (SET / SST)

HHPSJ6 - B - SST

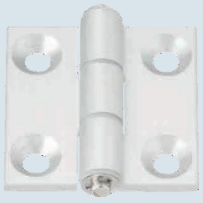
Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST Stainless Steel	Include applicable screws and nuts as a set. When SST is specified, screws and nuts will be in stainless steel. ( ) When -SET is specified, the material of the Flat head Screws is Black Oxide 4137 Alloy Steel	HHPSNC HHPBSNC	5 6 8 8-45
			HHPSNL HHPBSNL	5 6 8 8-45

Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. (Ex.) Screw: CBSST5-8 Nut: HNTTSN6-5	HHPSJ	5 6 845
			HHPSJC	5 6 8

Aluminum Hinges

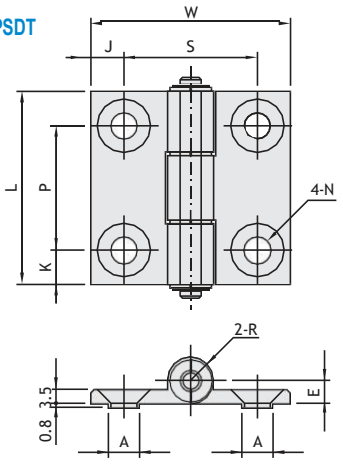
With Tabs / With Slotted Holes

Aluminum Hinges with Tabs



RoHS 10

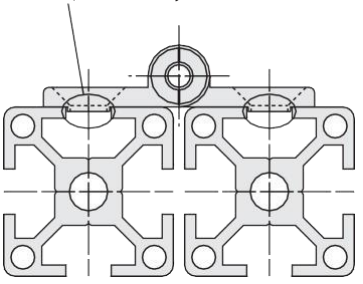
HHPSDT



Material: 6063 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Clear Anodize

Application Example

The protrusion prevents misalignment when attached.
Therefore, it can be easily mounted.

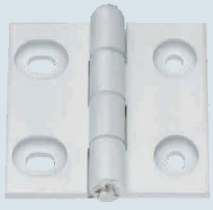


When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on **P.3255**

Part Number Type	No.	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	N Through	N Countersunk	E	A	R	Screws / Nuts Screws	Quantity	Nuts	Quantity
HHPSDT	5	10	98	23	47	36	11	25	7.5	21	5.5	11	5	5.5	5	Flathead Screw 5-8	4	HNTT5-5	4
	6			35		48	8.5	30	8	32	6.5	13	5.5	7.5	5.5	Flathead Screw 6-10		HNTT6-6	
	8			51	63	62	13	37	10	42				9.5		Flathead Screw 6-12		HNTT8-6	

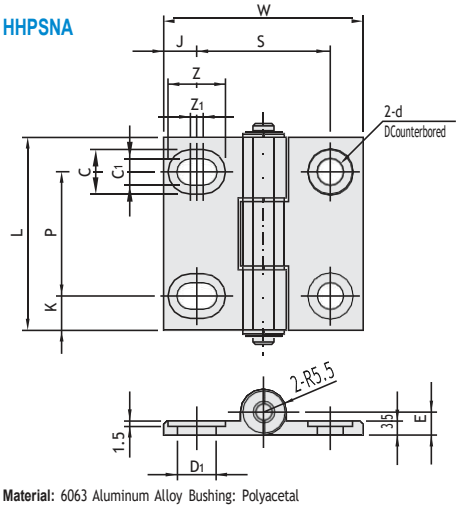
*The allowable load is the value when two pieces are used.

Aluminum Hinges with Slotted Holes



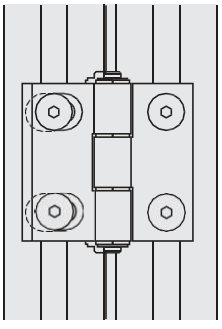
RoHS 10

HHPSNA



Material: 6063 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Clear Anodize

Application Example



Slotted mounting holes make it possible to adjust right and left positions.

When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on **P.3255**

Part Number Type	No.	*Allowable Load kg	N	Mass g	L	W	K	P	J	S	d Through	D Counterbore	D_1	C	C_1	Z	Z_1	E	Screws / Nuts Screws	Quantity	Nuts	Quantity
HHPSNA	5	10	98	22	47	36	11	25	7.5	21	5.5	10	7	10	5.5	11.5	1.5	5	CBSA5-6	4	HNTT5-5	4
	6			32		48	8.5	30	8	32	6.5	11	9.5	11	6.5	14	3	5.5	CBSA6-8		HNTT6-6	
	8			47	63	62	13	37	10	42			11.5			16	5		CBSA6-10		HNTT8-6	

*The allowable load is the value when two pieces are used.

Part Number Example

Part Number
HHPSDT6
HHPSNA6

Part Number Alterations

Part Number	-	(SET / SST)
HHPSDT6	-	SET

Alterations	Code	Spec.	Hinges	No.
Applicable Screw Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, stainless steel screw and nut are included. ⓘ HHPSNA is available for -SET only. (- When SET is specified, the material of the Flathead Screws is 4137 Alloy Steel and their surface treatment is Black Oxide.)	HHPSDT	5
				6
				8
			HHPSNA	5
				6
				8

Flag Hinges / Stop Hinges

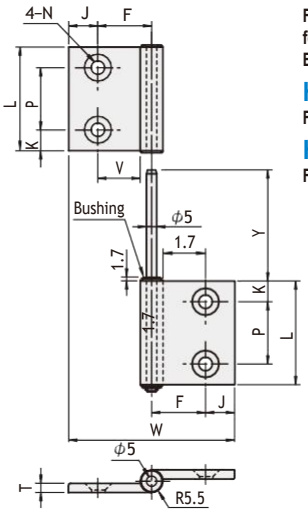
for Different Shape Frames

Flag Hinges

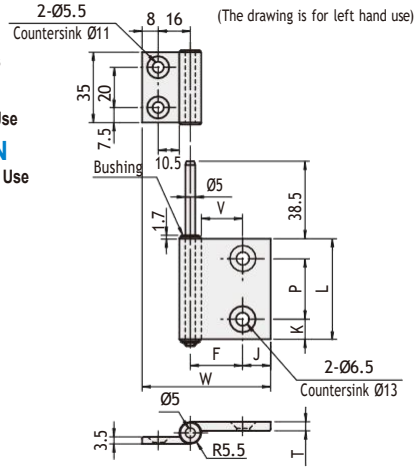
(Photo: Hinge for left-hand use)

RoHS 10 (Photo: Hinge for right-hand use)

Flag Hinges
HHPFLN
For Left-hand Use
HHPFRN
For Right-hand Use



Flag Hinges for Different Extrusion Sizes
HHPFDLN
For Left-hand Use
HHPFDRN
For Right-hand Use



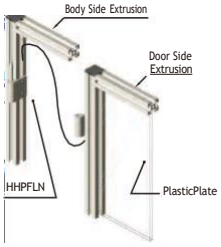
Material: 6063-T5 Aluminum Alloy Bushing: Polyacetal (White)
Surface Treatment: Anodize

Part Number		*Allowable Load		Mass	L	W	K	P	J	F	V	N		T	Y	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	Kg	N	(g)								Through	Countersunk			Screws	Quantity	Nuts	Quantity
HHPFLN HHPFRN	5	10	98	36	35	48	7.5	20	8	16	10.5	5.5	11	3.5	38.5	Flathead Screw 5-8	4	HNTT5-5	4
	6			46	40	62	7.5	25	10	21	15.5	6.5	13		43.5	Flathead Screw 6-10		HNTT6-6	
	8	15	147	74	50	80	10	30	14	26	20.5			4.5	53.5	Flathead Screw 6-15		HNTT8-6	
	8-45			74	50	80	10	30	11.5	28.5	23								
HHPFDLN HHPFDRN	6	10	98	42	55	40	7.5	25	10	21	15.5	—		3.5	—	Flathead Screw 6-10, Flathead Screw 5-8	2 pcs each	HNTT6-6 HNTT5-5	2 pcs each
	8	15	147	56	64	50	10	30	14	26	20.5			4.5		Flathead Screw 6-15, Flathead Screw 5-8		HNTT8-6 HNTT5-5	
	8-45					50	10	30	11.5	28.5	23								

* The allowable load is the value when two pieces are used.

Application Example

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**



Part Number Example

Part Number - (SET / SST)

HHPFLN5 - SET

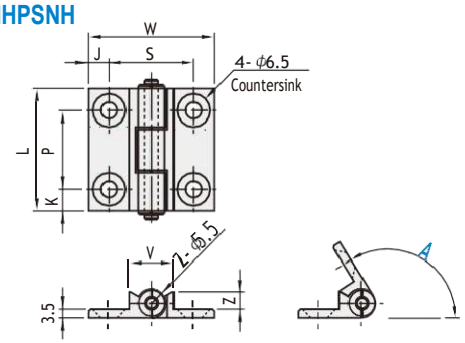
Alteration	Code	Spec	Hinge	No.
Applicable Screw and Nut Set	SET SST Stainless Steel	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. (Ex.) Screw: CBSST5-8 NUT: HNTTSN6-5 When - SET is specified, the material of the Screws is Steel with Black Oxide Finish.	HHPFLN	5
				6
			HHPFRN	8
				8-45
			HHPFDLN	6
				8
			HHPFDRN	8-45
				5
			HHPSNH	6
				8

When SET is specified, the product is not RoHS compliant.

Stop Hinges

RoHS 10

HHPSNH



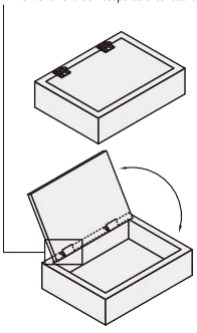
Material: 6063-T5 Aluminum Alloy Bushing: Polyacetal
Surface Treatment: Clear Anodize

Part Number		A	*Allowable Load		Mass	L	W	K	P	J	S	V	Z	App. Screws/Nuts for Alum. Extrusion			
Type	No.	(Angle)	kg	N	g									Screws	Quantity	Nuts	Quantity
HHPSNH	6	120	10	98	37	47	48	8.5	30	8	32	17	6.8	Flathead Screw 6-10	4	HNTT6-6	4
		135			36								5.4				
		150			35								4.2				
	8	120	10	98	58	63	62	13	37	10	42	21	7.3	Flathead Screw 6-12	4	HNTT8-6	4
		135			56								5.8				
		150			55								4.5				

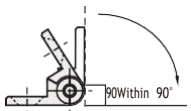
* The allowable load is the value when two pieces are used.

Application Example

The lid of the box stops at a constant bevel.



When the hinges are mounted on to an object such as a panel, hinge nuts are recommended as shown on **P.3255**



When a hinge is positioned within 90°, it automatically falls to be flat.

Part Number Example

Part Number - Angle

HHPSNH6 - 120

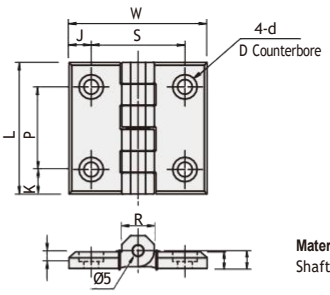
Hinges

Plastic / Compact Plastic / Low Particulate Generation

Plastic Hinges

RoHS 10

HHPSJ



When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Material: Hinge Plates: Nylon 6, Shaft: 304 Stainless Steel

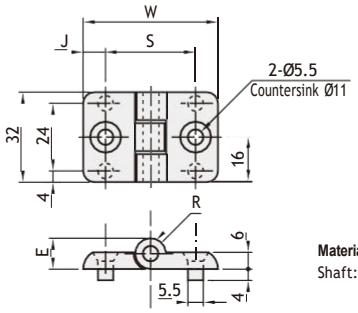
Type	No.	Color	Allowable Load Kg	Allowable Load N	Mass g	L	W	K	P	J	S	D	D	T	E	R	h	Screws	Quantity	Nuts	Quantity
HHPSJ	6	B Black	10	96	21	48	47	9	30	8	32	9.5	5.5	6	6.5	12.6	3.8	CBS5-8	4	HNTT6-5	4
	8	W White	15	147	35	59	62	11	37	10	42	11	6.6	7.5	8	14.5	4.4	CBS6-12		HNTT8-6	
	845				44	70	80	13.5	43	16.5	47							CBS6-12		HNTT8-6	

* The allowable load is the value when two pieces are used. The default color will be black unless specified.

Compact Plastic Hinges

RoHS 10

HHPSJC



Material: Hinge Plates: Nylon 6, Shaft: 304 Stainless Steel

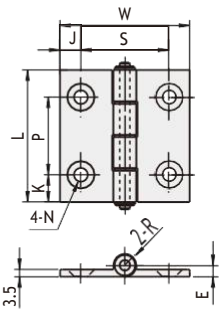
Part Number Type	No.	* Allowable Load kg	N	Mass (g)	W	J	S	E	R
HHPSJC	5	10	98	12.5	36	7.5	21	10	5
	6	10	98	15.8	48	8	32	11	5.5
	8	10	98	26.2	62	10	42	11	5.5

* The allowable load is the value when two pieces are used.

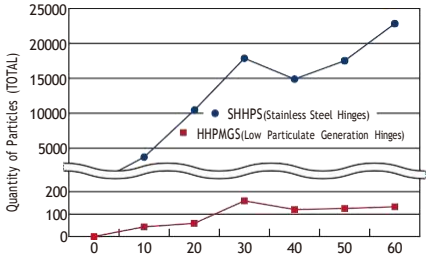
Low Particulate Generation Hinges

RoHS 10

HHPMGS



Material: 6063-T5 Aluminum Alloy
Bushing: Oil Soaked Polyacetal
Surface Treatment: Electroless Nickel Plating



Features

Excels in friction resistance and sliding. Has less dust compared with conventional hinges since the sliding section is made from the special material (oil embedded Polyacetal).

The aluminum part is electroless nickel plated instead of conventional clear anodizing. As a result, it prevents static charge buildup, resulting in less dust collection.

When the hinges are mounted onto an object such as a panel, hinge nuts are recommended as shown on **P.3255**

Part Number Type	No.	* Allowable Load kg	N	Mass g	L	W	K	P	J	S	N Through	N Countersunk	E	R	Applicable Screws/Nuts for Aluminum Extrusion Screws	Quantity	Nuts	Quantity
HHPMGS	5	10	98	22	47	36	11	25	7.5	21	5.5	11	5	5	SHFBS5-8	4	HNTTSN5-5	4
	6			33		48	8.5	30	8	32	6.5	13	5.5	5.5	SHFBS6-10		HNTTSN6-6	
	8			48	63	62	13	37	10	42					SHFBS6-12		HNTTSN8-6	

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number	-	Color
HHPSJ6	-	B
HHPSJC8		
HHPMGS5		

Part Number Alterations

Part Number	-	(SET / SST)
HHPSN6	-	SST

Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. ( ) When -SET is specified, the material of the Flathead Screws is 4137 Alloy Steel and their surface treatment is Black Oxide.	HHPSDT	5 6 8
			HHPSNA	5 6 8

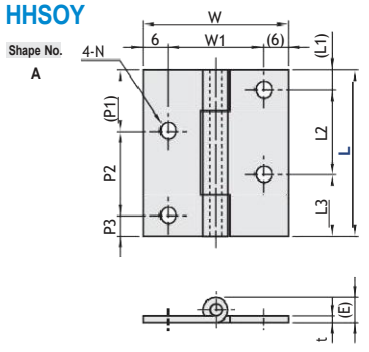
Hinges

with Offset Mounting Holes / Stepped Stainless Steel / Spring-Loaded

Hinges – Offset Mounting Holes

RoHS 10

HHSOY



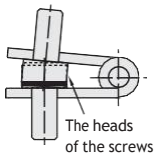
Material: 304 Stainless Steel

Part Number Type	L	Shape	L_1	L_2	L_3	W	W_1	P_1	P_2	P_3	N	t	E	*Allowable Load (N)	Weight (g)
HHSOY	40	A	5	20	15	35	23	15	20	5	4.2	1.5	6.3	58.8	21.6
	50		5.5	26	18.5			18.5	26	5.5				78.4	27.3
	75	B	23	40	12	50	30	12	40	23	5	2	8.8	147	75.7

* The allowable load is the value when two pieces are used.

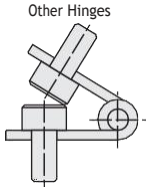
Application Example

Hinge with Staggered Holes



The heads of the screws do not contact.

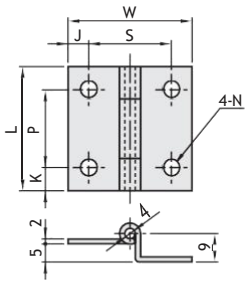
Other Hinges



Stepped Hinges – Stainless Steel

RoHS 10

HHPSSD



The hinge nuts on **P.3255** are recommended when mating to panels, etc.

Material: 304 Stainless Steel

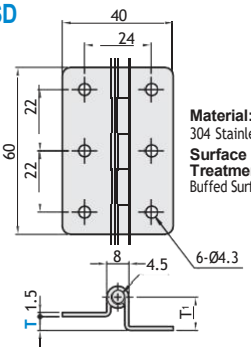
Part Number Type	No.	L	W	K	P	J	S	N	* Allowable Load (Kg)	Weight (g)
HHPSSD	5	41	36	8	25	7.5	21	5.5	4.5	32
	6	48	48	9	30	8	32	6.5	6	46

* The allowable load is the value when two pieces are used.

Stepped Hinges – Stainless Steel

RoHS 10

HHSD



Material: 304 Stainless Steel
Surface Treatment: Buffed Surface

Part Number Type	T	T_1	* Allowable Load (Kg)	Weight (g)
HHSD	1.2	8.2	7	38
	2.3	9.3		
	3.2	10		40
	5	12		42

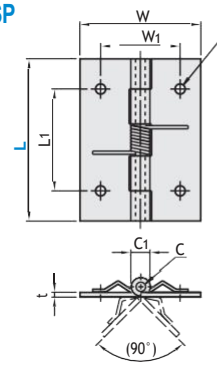
*The allowable load above is the value when two hinges are used.

Spring Loaded Hinges

The photo shows a spring-loaded hinge in an uninstalled condition (free state).

RoHS 10

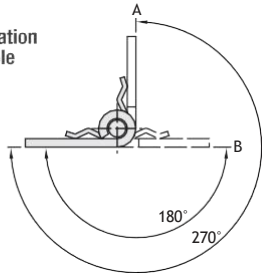
HHSP



No Hole for HHSP20 only

Material: 304 Stainless Steel
Surface Treatment: Gloss Tumble Polish

Application Example



Spring load is a value at (A) with the hinge plates folded at 270° as shown above.

HHSP20 (only) measures a value at (B) with the vanes at 180°.

Do not open the HHSP20 hinge plates beyond 180° (B). Small wire diameter spring may cause problems.

Part Number Type	L	W	W_1	L_1	C	C_1	t	*Spring Load (kgf)	Weight (g)
HHSP	20	14	—	—	1	(2.2)	0.5	0.38	11.5
	25	32	20	14	3	5.8	1.2	0.4	10
	38	32	20	26	3	6.5	1.5	1	25
	51	38	25	32	3	6.5	1.5	0.68	35

* The spring load is the value when two pieces are used.

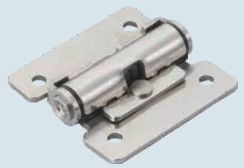
Part Number Example

Part Number
HHSOY40
HHPSSD6
HHSD3.2
HHSP38

Torque Hinges

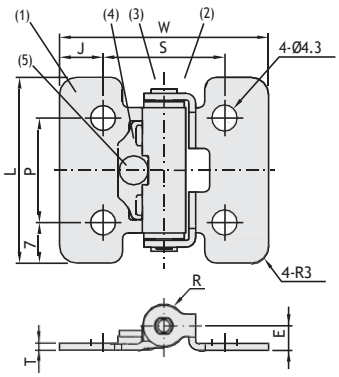
Fixed Torque / Adjustable Torque Type

Fixed Torque Type



RoHS 10

HHPT



Operating Temp. Range: -10-50°C
Operating Humidity Range: 90% RH or Low

Caution

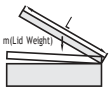
- Use two hinges.
- Align the axes of the two hinges.
- Do not use the hinges outdoors or in any places where oil or grease adheres to the hinges.
- Do not use the hinges in any places requiring continuous open-close movements.
- Vertical use is not assumed given product characteristics. For vertical use, adjust allowable load and torque value to the actual operating conditions.

Part Name	Material
(1) Vane	304 Stainless Steel
(2) Resin Barrel	Polyacetal
(3) Shaft	303 Stainless Steel
(4) Plate	304 Stainless Steel
(5) Swage Pin	JIS SUSXM7 Stainless Steel

Part Number		Rated Torque*		Mass	L	W	P	J	S	T	E	R	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	N m	kgf / cm	(g)									Screw	Quantity	Nut	Quantity
HHPT	3	0.35	3.4	15	32	36	18	7.5	21	1.2	4.25	7.5	Hex Socket Head Cap Screw 4-6	4	HNTT5-4	4
	7	0.7	6.9	28	40	48	26	8	32	1.2	4.75	8.5	Hex Socket Head Cap Screw 4-10		HNTT6-4	
	15	1.5	14.7	64	50	48	36	8	32	2	6.5	12				

* Rated torque has a margin of error between +40% and -20%.
* Rated torque value is for a single hinge.

How to Select a Torque Hinge



Basically, the lid is operated as shown on right. Calculate necessary torque according to the following formula before selecting a torque hinge that satisfies the specifications. (Assume that the lid's center of gravity lies in the middle.)

Formula

Max. Torque T = L / 2 x m (Weight: kg) x 9.8 (Newton: N)

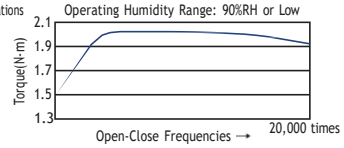
(Example) When L = 0.3 m and m = 2kg,

Max. Torque T = 0.3 / 2 x 2 x 9.8 = 2.94 N m.

→ Select two pieces of HHPT15

Application Example

Reference: Torque variations Ambient Temp.(20±15°C),



Data above are not guaranteed values but reference values of HHPT.
Open-Close intervals: 5 times /min. (Single open-close operation=0° ⇔160°)
* Considering torque deteriorations caused by aging, temperature and humidity variation, the torque value is set higher than the rated torque value at shipping.

Part Number Example

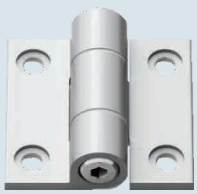
Part Number: HHPT7

Part Number Alterations

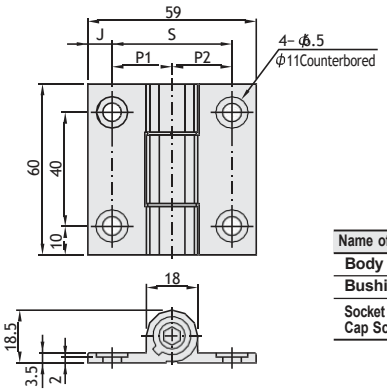
Part Number - (SET / SST)
~~HHPT7~~ - SET

Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET	Applicable screws and nuts come in a set. ○ Stainless steel screws and nuts are included.	HHPT	3
				7
				15

Adjustable Torque Type



HHPTF HHPTFB



Name of Parts	Material	Surface Treatment
Body	6063 Aluminum Alloy	Anodizing
Bushing	Polyacetal (White)	—
Socket Head Cap Screws	JIS SUSXM7 Stainless Steel	—

Part Number		*Allowable Load		** Rated Torque		Mass	S	P_1	P_2	J	Applicable Screws/Nuts for Aluminum Extrusion			
Type	No.	kg	N	N m	kgf / cm	(g)					Screws	Quantity	Nuts	Quantity
HHPTF HHPTFB Black Anodize	6	10	98	0-4.9	0-50	54	32	16	16	13.5	Socket Head Cap Screw 6-10	4	HNTT6-6	4
	8-6						37	16	21	13.5	Socket Head Cap Screw 6-10	2	HNTT6-6	2
											Socket Head Cap Screw 6-12	2	HNTT8-6	2
	8						42	21	21	8.5	Socket Head Cap Screw 6-12	4	HNTT8-6	4

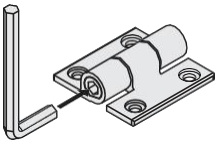
* The allowable load is the value when two pieces are used.
** Rated torque value is for a single hinge.

Part Number Example

Part Number: HHPTF8

Application Example

Use a hex wrench to adjust torque value.
! If tightened with a force of 1.5 N-m or more, a hex wrench might be damaged.



Part Number Alterations

Part Number - (SET / SST)
HHPTF6 - SET

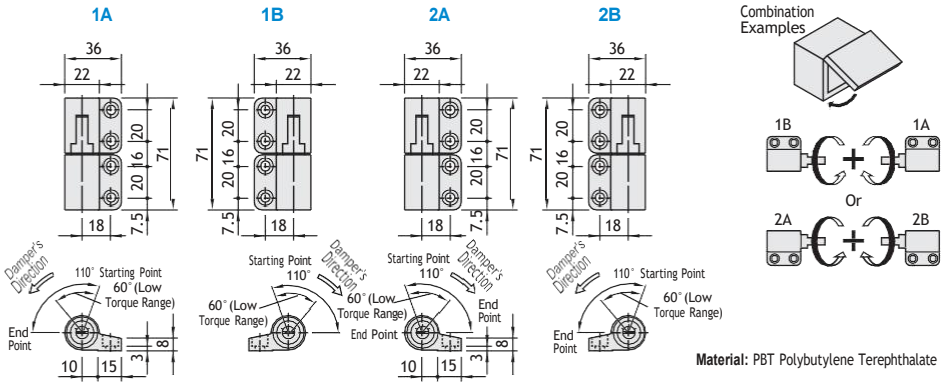
Alteration	Code	Spec.	Hinge	No.
Applicable Screw & Nut Set	SET SST (Stainless Steel)	Include applicable screws and nuts as a set. When SST is specified, screws and nuts will be in stainless steel. ○ When - SET is specified, the product is not RoHS compliant. (When - SET is specified, the material of the screws is Bright Chromate SCM35.	HHPTF HHPTFB	6
				8-6
				8

Damper Hinges

Damper Hinges

RoHS 10

HHPR



Material: PBT Polybutylene Terephthalate

Part Number		Reverse Torque (N-m) *	Max. Operating Angle	Operating Temp. Range (°C)	Mass (g)
Type	No.				
HHPR	1A	0.49-1.27	110	0-40	46
	1B				
	2A				
	2B				

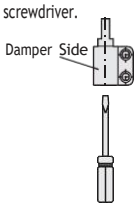
*Reverse Torque value is for a single damper hinge.

Application Example

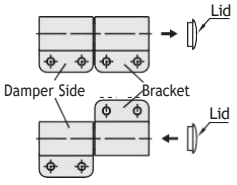
Part Number Example

Part Number
HHPR1B

How to adjust torque.
Torque can be easily adjusted with a flat-blade screwdriver.



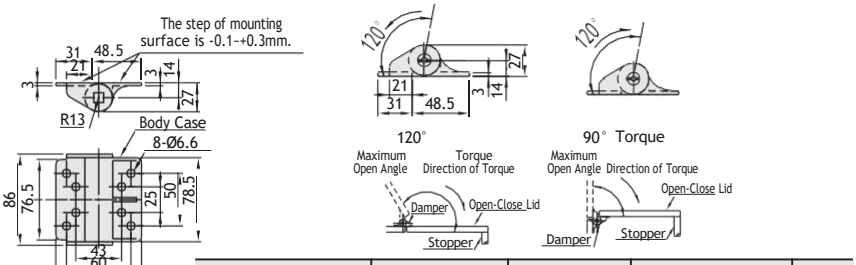
Bracket Position Change
Bracket mounting position can be adjusted.
The lid is removable.



Damper Hinges

RoHS 10

MSDH



Material		Surface Treatment	Max. Useable Angle	Operating Temp. Range (°C)	Mass (g)
Body Case (Zinc Die Cast)		Silver Painted	120	-5-50	410
Hinge (304 Stainless Steel)		—			

Part Number		Shaft Rotating Direction Selection	Max. Reverse Torque (N-m)
Type	Max. Usable Torque {N-m}		
MSDH	3	L Counterclockwise R Clockwise	0.4 or less
	5		0.6 or less
	7.5		0.8 or less
	10		1.0 or less

Torque value is for a single hinge.
Reverse torque is torque in the opposite direction.

Part Number Example

Part Number	-	Shaft Rotating Direction
MSDH3 -		L

Basic Principle

The rotation of the vanes compresses the oil and generates control (brake) force to act against work force.

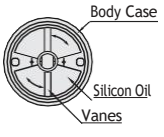
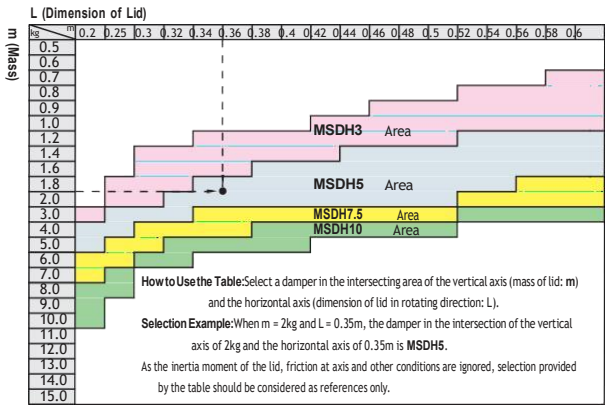


Table of Selection Guide

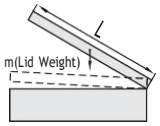


How to Use the Table: Select a damper in the intersecting area of the vertical axis (mass of lid: **m**) and the horizontal axis (dimension of lid in rotating direction: L).

Selection Example: When m = 2kg and L = 0.35m, the damper in the intersection of the vertical axis of 2kg and the horizontal axis of 0.35m is **MSDH5**.

As the inertia moment of the lid, friction at axis and other conditions are ignored, selection provided by the table should be considered as references only.

How to Select a Damper Hinge



The lid in a horizontal position generates maximum torque as shown on left. Calculate maximum torque according to the following formula before selecting a damper that satisfies the specifications.

Formula

Max. Torque T = L / 2 x m (Weight: kg) x 9.8 (Newton: N)

Example) When L = 0.4 m and m = 5 kg,

Max. Torque T = 0.4 / 2 x 5 x 9.8 = 9.8 N-m

→Select **MSDH10**

Note) The selection made by the calculation above is for reference only. The friction resistance and the effect of inertia moment at the hinge were not taken into consideration in the example above.

The viscosity of the oil in the damper changes depending on the temperature of the operating environment. Generally, the damping characteristic decreases with rising temperature, whereas it increases with lowering temperature.

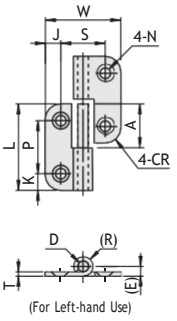
Detachable Hinges

Stainless Steel

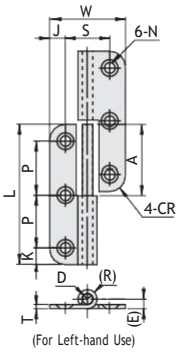
Detachable Hinges – Stainless Steel

RoHS 10

SHHPSL For Left-hand Use
SHHPSR For Right-hand Use

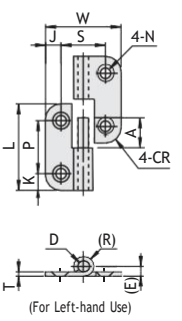


(For Left-hand Use)

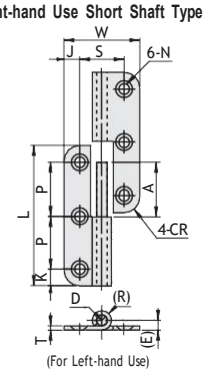


(For Left-hand Use)

SHHPSLC For Left-hand Use Short Shaft Type
SHHPSRC For Right-hand Use Short Shaft Type



(For Left-hand Use)



(For Left-hand Use)

Material: 304 Stainless Steel

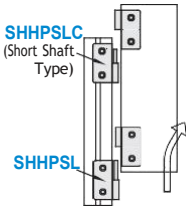
Part Number Type	No.	Holes on One Side	* Allowable Load kg	* Allowable Load N	Mass (g)	L	W	A: SHHPSL SHHPSR	A: SHHPSLC SHHPSRC	K	P	J	S	N: Through	N: Countersunk	T	(E)	(R)	CR	D	Applicable Screw: Screws	Applicable Screw: Quantity
SHHPSL SHHPSLC For Left-hand Use	5	2	9	88	34	41	36	19	14	8	25	7.5	21	5.5	8.6 For M4 Screws	2	4.6	4.6	4	5	SHFBS4-8	4
		3	11	108	55	66		31	26													6
	6	2	12	117	49	48	48	22	17	9	30	8	32								SHFBS4-10	4
		3	15	147	80	78		37	32													6
SHHPSR SHHPSRC For Right-hand Use	8	2	25	245	111	59	62	29	24	11	37	10	42	6.5	10.6 For M5 Screws	3	6.1	6.1	5	6	SHFBS5-12	4
		3	38	372	185	96		47	42													6
	845	2	30	294	162	70	80	34	29	13.5	43	16.5	47									4
		3	40	392	266	113		56	51													6

* The allowable load is the value when two pieces are used.

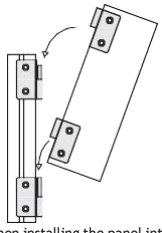
Application Example

SHHPSLC (Short Shaft Type)

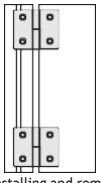
SHHPSL



1. Remove the panel from the frame.



2. When installing the panel into the frame, insert the lower hinge first as the shaft of the other hinge is shorter (the upper hinge in the above drawing).



3. Installing and removing the panel is easy since positioning is set first by the lower hinge, and then inserted into the upper hinge.

Part Number Example

Part Number	-	Holes on One Side
SHHPSL5	-	3

Part Number Alterations

Part Number	-	Number of Holes on One Side	- (SET / SST)
SHHPSL5	-	2	- SST

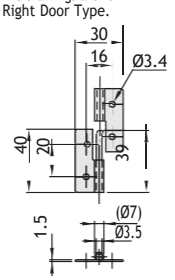
Alteration	Code	Spec.	Hinge	No.	Per Side Holes
Applicable Screw & Nut Set	SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, screws and nuts will be in stainless steel. (Ex.) Screw: SHFBS4-8 Nut: HNTTSN5-4	SHHPSL SHHPSLC SHHPSR SHHPSRC	5	2
					3
				6	2
					3
				8	2
					3
				845	2
					3

Detachable Hinges – Stainless Steel

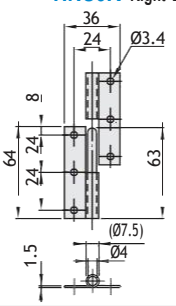
RoHS 10

HNS2L Left Door Type
HNS2R Right Door Type

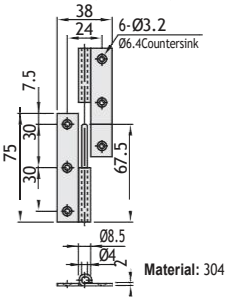
The drawings are for Right Door Type.



HNS3L Left Door Type
HNS3R Right Door Type



HNS4L Left Door Type
HNS4R Right Door Type



Material: 304 Stainless Steel

The Right Door Type has a door on the right side.

Part Number Type	*Allowable Load (N)	Weight (g)
HNS2L HNS2R	48	21
HNS3L HNS3R	68	44
HNS4L HNS4R	147	65

* The allowable load is the value when two pieces are used.

Part Number Example

Part Number
HNS2L

Detachable Hinges

Stepped / Vertical / Welded / Heavy Loads Welded

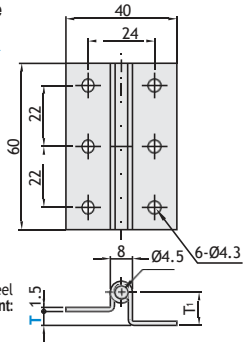
Stepped Detachable Hinges

(Left-hand Type)

HHSPDL
Left-Hand Type

HHSPDR
Right-Hand Type

(The drawing is for left-hand use.)

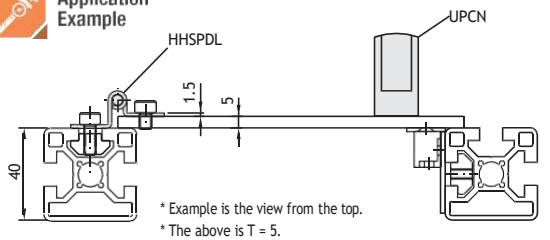


Material:
304 Stainless Steel
Surface Treatment:
Buffed Surface

Part Number		T_1	* Allowable Load (Kg)	Weight (g)
Type	T			
HHSPDL	3	10	7	45
HHSPDR	5	12		46

* The allowable load above is the value when two pieces are used.

Application Example

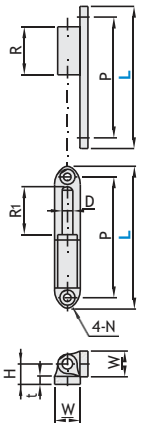


* Example is the view from the top.
* The above is T = 5.

The Right Door Type has a lid on the right side.

Vertical Detachable Hinges

HHSV



Material:
304 Stainless Steel
Surface Treatment:
Gloss Tumble Polished

Part Number		N		* Allowable Load (Kg)	Mass (g)
Type	L	Through	Countersunk		
HHSV	35	3.2	6.2	2	13
	51			4	30
	60	4.2	8.2	6	45
	80			10	95

L	W	P	D	H	t	R	R_1
35	8	27	3	6	2	9	8
51	11	40	4	8	2.5	15	14.4
60	13	48	5	9.5	3	18	18
80	14.5	68	6	11.5	4.5	27	27

* The allowable load above is the value when two pieces are used.

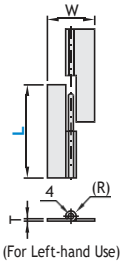
Part Number Example

Part Number
HHSPDL3
HHSV51

Welded Detachable Hinges

HHSML
For Left-hand Use

HHSMR
For Right-hand Use



(For Left-hand Use)

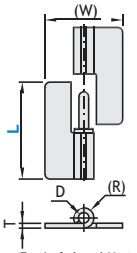
Material:
Main Body: Cold Rolled Steel
Shaft: Free-cutting Steel
Surface Treatment:
Trivalent Chromate

Part Number		W	T	(R)	* Allowable Load (Kg)	Weight (g)
Type	L					
HHSML For Left-hand Use HHSMR For Right-hand Use	50	32	1.6	7.5	7	30
	64	36	1.6	7.5	10	45
	75	38	2	8.5	15	65

* The allowable load above is the value when two pieces are used.

Heavy Loads Welded Detachable Hinges

Type	Material	Surface Treatment
HHSMZL HHSMZR	Low Carbon Steel	Trivalent Chromate
HHSMYL HHSMYR	304 Stainless Steel	Mirror Polishing



(For Left-hand Use)

Part Number		(W)	T	(R)	D	Allowable Load (Kg)	Weight (g)
Type	L						
HHSMZL	50	40	2.5	10.5	5	15	60
For Left-hand Use	65	50	2.5	10.5	5	20	89
HHSMZR	75	70	3	12.5	6	30	165
For Right-hand Use	100	72	4	16	8	50	347
HHSMYL	50	40	2.6	10.5	5	15	62
For Left-hand Use	65	50	2.6	10.5	5	20	95
HHSMYR	75	70	3.2	12	6	30	180
For Right-hand Use	100	72	4	16	8	50	335

* The allowable load above is the value when two pieces are used.
* The material for L = 75 and 100 of HHSMZL and HHSMZR is SPHC.

Part Number Example

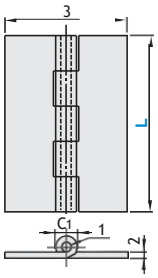
Part Number
HHSML50
HHSMYR75

Welded / Long Hinges

Stainless Steel / Steel / for Heavy Loads

Welded Hinges - Stainless Steel

HHSY



Material: 304 Stainless Steel
Surface Treatment: Buffed Surface
Mirror Polishing for HHSY40 only

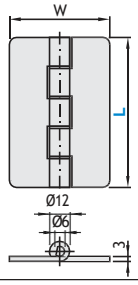
Part Number Type	L	W	C	C_1	T	*Allowable Load (kg)	Weight (g)
HHSY	40	35	3	6.3	1.5	6	25
	50	30	3	6.4	1.5	8	30
	65	50	4	8.5	2	13	66
	75					15	76
	90	60	6	12.7	3	25	190
	100					30	200

* The allowable load is the value when two pieces are used.

Welded Steel Hinges

RoHS 10

HHSYT



Material: Low Carbon Steel
Surface Treatment: Trivalent Chromate

Part Number Type	L	W	*Allowable Load (kg)	Divisions	Weight (g)
HHSYT	50	50	25	3	105
	90	60	40	5	180
	100	80	45	5	245

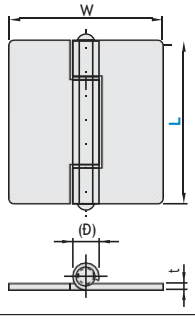
* The allowable load is the value when two pieces are used.

Welded Hinges for Heavy Loads

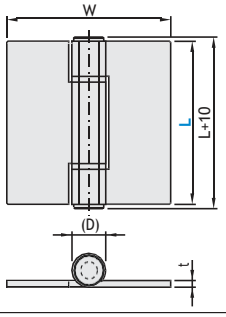
RoHS 10

HHSYZ

ShapeNo. A



ShapeNo. B



Material: 304 Stainless Steel
Surface Treatment: Brushed Finish

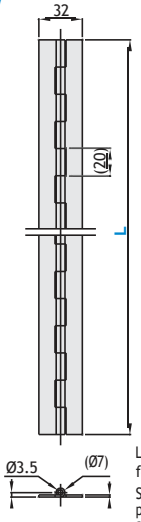
Part Number Type	L	W	(D)	t	Shape No.	* Allowable Load (Kg)	Weight (g)
HHSYZ	50	50	12	3	A	20	88
	60	64				25	120
	75	70				30	164
	100	100	20	4	B	60	512
	125	100				70	628
	150	120				90	834

*The allowable load is the value when two pieces are used.

Long Stainless Steel Hinges

RoHS 10

HHSLV



Long hinges can be cut for use.
Swage the shaft to prevent it from slipping, as required.

Material: 304 Stainless Steel

Part Number Type	L	Mass (g)
HHSLV	300	165
	350	190
	450	250
	600	335
	750	410
	850	470
	1000	580

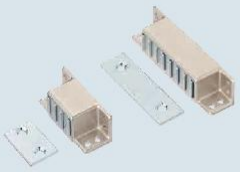
Part Number Example

Part Number
HHSY50
HHSYT90
HHSYZ100
HHSLV300

Magnetic Catches

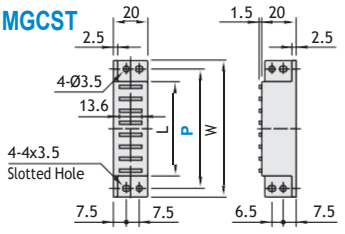
High Strength / Magnetic Force Selectable Type

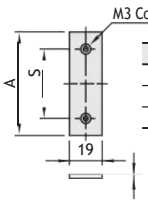
Magnetic Catches – High Strength



RoHS 10

MGCST





Part Name	Material	Surface Treatment
Main Body	Zinc Alloy	Nickel Plating
Catch Plate	Low Carbon Steel	Trivalent Chromate
Magnet	Ferrite	—

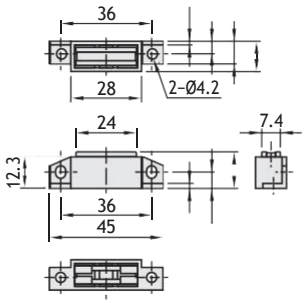
Part Number Type	P	W	L	A	S	Retention Force (kgf)	Mass (g)
MGCST	30	40	20	22	12	3	56
	40	50	27	29	18	7	74
	50	60	41	43	27	11	110
	70	80	55	60	40	14	140

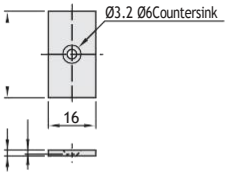
Part Number Example

Part Number: MGCST30

Magnetic Catches – Magnetic Force Selectable Type

MGCEJ





10 pcs. per package. Order quantity should be noted

Features

Magnetic Catches of selectable retaining forces with the same mounting pitch.

Part Name	Material	Surface Treatment
Main Body	Polypropylene	—
Catch Plate	Low Carbon Steel	Trivalent Chromate

Part Number Type	No.	Retention Force (kgf)	Mass (g)
MGCEJ	1	1.4	18
	2	3.4	18
	3	8	18

10 pcs. per package.

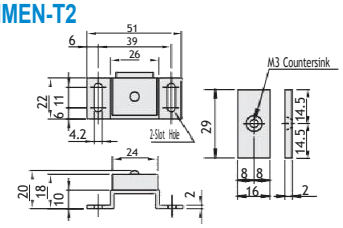
Part Number Example

Part Number: MGCEJ1

Magnetic Catches

RoHS 10

HMEN-T
HMEN-T2



Part Name	Material	Surface Treatment
Housing	304 Stainless Steel	Dark Brown Paint
Magnet	Ferrite	—
Plate	Low Carbon Steel	Chrome Plating

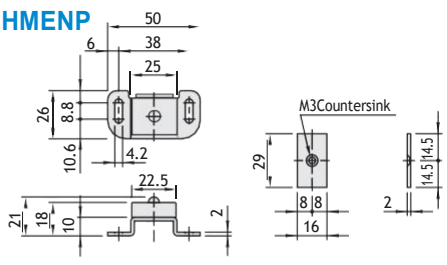
Part Number	Retention Force (kgf)	Mass (g)
HMEN-T	3	41
HMEN-T2	1.5	41

Part Number Example

Part Number: HMEN-T, HMENP

Magnetic Catches

HMENP

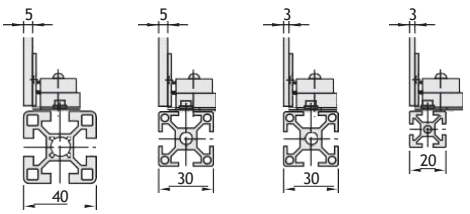


Part Name	Material	Surface Treatment
Housing	304 Stainless Steel	Dark Brown Paint
Magnet	Ferrite	—
Plate	Low Carbon Steel	Trivalent Chromate

Part Number	Retention Force (kgf)	Mass (g)
HMENP	2.8	39

Application Example

How To Apply HMENP Magnetic Catches To Aluminum Extrusions



When mounting a 5 mm-thick panel to 40-Square Type.

When mounting a 5 mm-thick panel to 30-Square Type.

When mounting a 3 mm-thick panel to 30-Square Type.

When mounting a 3 mm-thick panel to 20-Square Type.

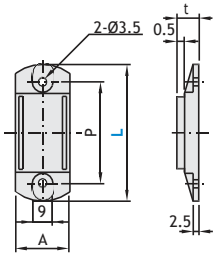
Magnetic Catches

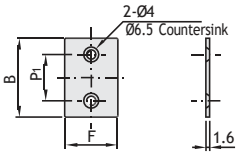
Thin / Ultrathin / Adjustable Type

Thin Magnetic Catches

RoHS 10

MGCBU





Part Name	Material	Surface Treatment
Main Body	ABS Resin	—
Catch Plate	Low Carbon Steel	Chrome Plating
Magnet	Ferrite	—

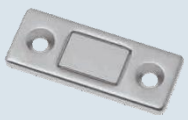
10 pcs. per package. Order quantity should be noted

Part Number Type	L	P	A	T	F	B	P_1	Retention Force (kgf)	Mass (g)
MGCBU	49	34	17	6.5	16.5	24	13	0.9	15
	59	44	23.5	6.7	23	34	20	2.0	33
	70	55	24.5	7.7	24	45	30	3.5	49

10 pcs. per package.

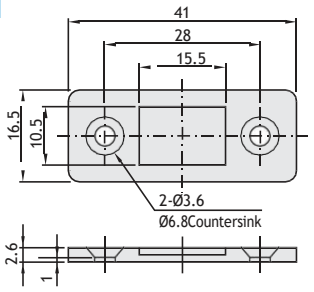
Part Number Example — Part Number: MGCBU49

Ultra Thin Magnetic Catches



RoHS 10

MGCM



Part Name	Material	Surface Treatment
Main Body	Low Carbon Steel	Nickel Plating
Magnet	Neodymium	Nickel Plating

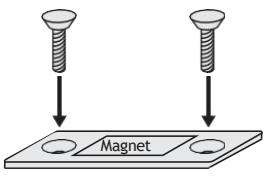
There is no catch plate.

Part Number Type	No.	Retention Force (kgf)	Mass (g)
MGCM	1	1.5	12
	2	4	12

Part Number Example — Part Number: MGCM2

Application Example

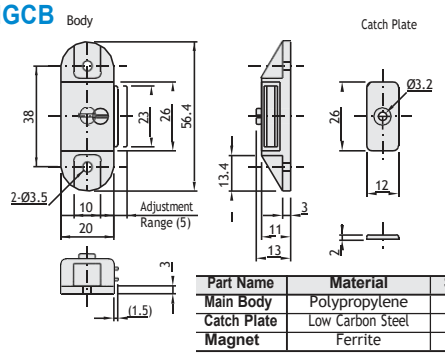
Use Countersink Screw M3



Magnetic Catches Adjustable Type

RoHS 10

AMGCB



Part Name	Material	Surface Treatment
Main Body	Polypropylene	—
Catch Plate	Low Carbon Steel	Chrome Plating
Magnet	Ferrite	—

Part Number Type	No.	Retention Force (kgf)	Mass (g)
AMGCB	1	3.1	15

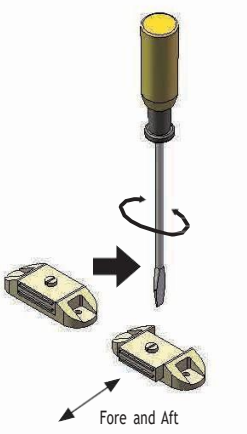
Features

The magnet position can be adjusted in 5 mm increments.

Part Number Example — Part Number: AMGCB1

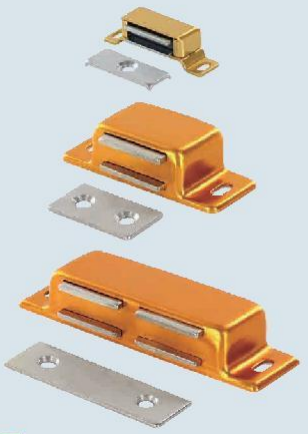
Application Example

The catch portion moves fore and aft when the adjusting screw is turned.



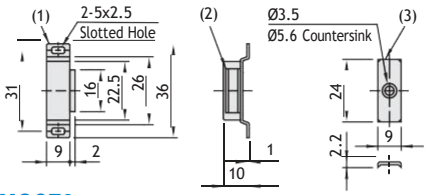
Magnetic Catches

Magnetic Catches

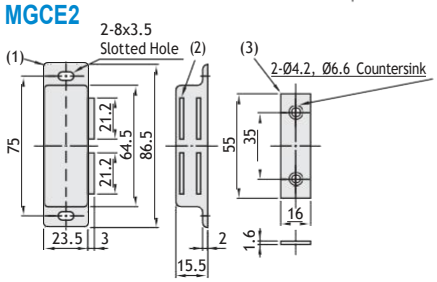


RoHS 10

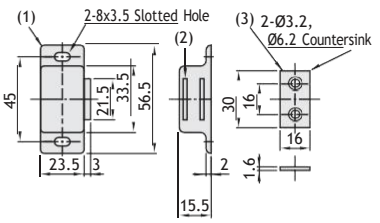
MGCE1S



MGCE2



MGCE1



No.	Part Name	Material	Surface Treatment
(1)	**Housing**	Aluminum Alloy	Anodizing
(2)	**Magnet**	Ferrite	—
(3)	**Catch Plate**	Low Carbon Steel	*Nickel Plating

* Trivalent Chromate for MGCE1 only

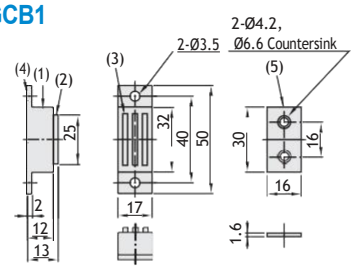
Part Number Type	No.	Retention Force (kgf)	Mass (g)
MGCE	1S	0.5	7.5
	1	5.5	36.7
	2	9	72

Part Number Example — Part Number: **MGCE2**

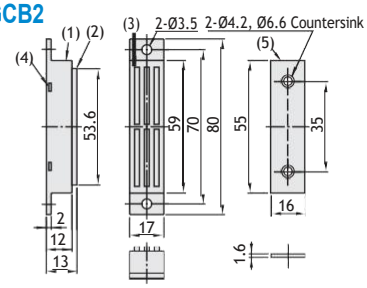
Magnetic Catches

RoHS 10

MGCB1



MGCB2

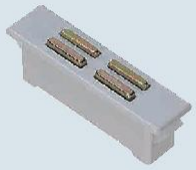


No.	Part Name	Material	Surface Treatment
(1)	**Housing**	BSP	Nickel Plating
(2)	**Yokes**	Low Carbon Steel	Nickel Plating
(3)	**Magnet**	Ferrite	—
(4)	**Base**	Aluminum Alloy	Anodizing
(5)	**Catch Plate**	Low Carbon Steel	Nickel Plating

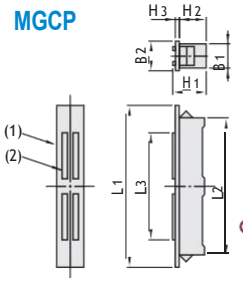
Part Number Type	No.	Retention Force (kgf)	Mass (g)
MGCB	1	7	32
	2	10	63

Part Number Example — Part Number: **MGCB1**

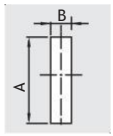
Magnetic Catches



MGCP



Mounting Hole Dimensions



MGCP1/ 2/ 3: Ferrite Magnet
MGCP 3H: Neodymium Magnet

Plate Thickness	Mounting Hole Dimensions					
	MGCP1		MGCP2 / MGCP3H		MGCP3	
t	A	B	A	B	A	B
0.5	22.5	8.3	—	—	—	—
0.8	—	—	34.1	8.2	55.0	8.2
1.0			34.1		55.0	
1.2			34.5		55.5	
1.6			35.0		56.0	
2.0			36.5		56.5	

No.	Part Name	Material	Surface Treatment
(1)	**Housing**	ABS Resin	—
(2)	**Base**	Low Carbon Steel	Trivalent Chromate

Part Number Type	No.	L_1	L_2	L_3	B_1	B_2	H_1	H_2	H_3	Retention Force (kgf)	Mass (g)
MGCP	1	24.2	22.4	15	8.2	9.6	12.3	10.9	0.9	1.3	5
	2	40	33.9	21.6	8	10	13.5	11	1.2	2.2	9
	3H									4.5	
	3	64	54.5	43			14	11.5	1.5		20

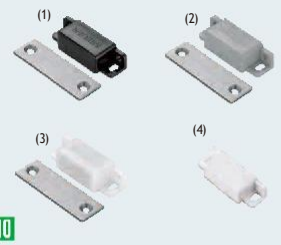
MGCP3H is a compact type of MGCP3 with the same retaining force.

Part Number Example — Part Number: **MGCP2**

Low Particulate Generation Magnetic / Resin Catches

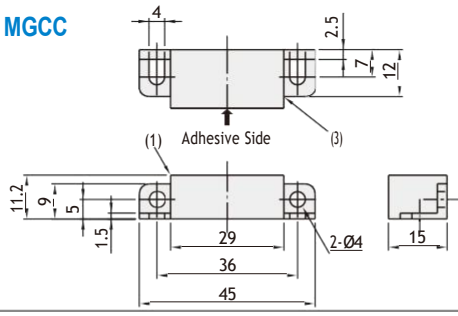
Thin

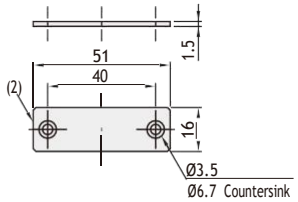
Low Particulate Generation Magnet Catches



RoHS 10

MGCC





No.	Part Name	Material
(1)	Main Body	Polyacetal
(2)	Catch Plate	430 Stainless Steel
(3)	Magnet	Neodymium Magnet

Part Number Type	No.	Retention Force (kgf)	Mass (g)	Color
MGCC	1	1.0	21	(1) Black
	2	1.4	22	(2) Gray
	3	2.0	24	(3) White
	4	3.3	25	(4) White

Features

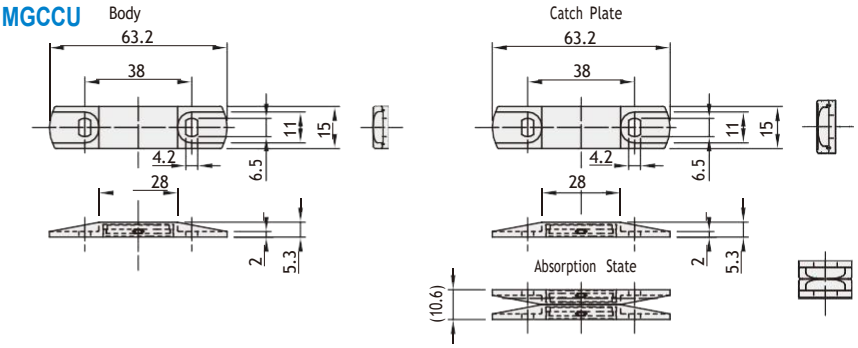
- The magnet encapsulated structure is effective for preventing rust and dust intrusions.
- These magnetic catches are the best suited for use in clean rooms.

Part Number Example

Part Number: MGCC3

Low Particulate Generation Thin Magnetic Catches

MGCCU



Part Name	Material
Main Body	Polyacetal
Catch Plate	430 Stainless Steel
Magnet	Neodymium Magnet

The catch plate is plastic coated.

Part Number Type	No.	Retention Force (kgf)	Mass (g)
MGCCU	1	1	14

Features

Catch plate is also plastic coated to reduce particle generation further.

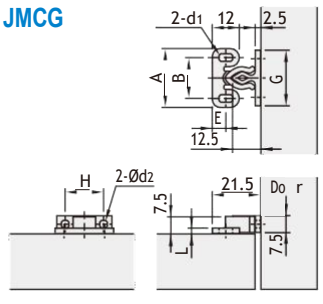
Part Number Example

Part Number: MGCCU1

Resin Catches

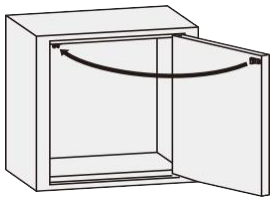
RoHS 10

JMCG



Part Name	Material
Female Side	Polyacetal
Male Side	Polyamide

Application Example



Part Number Type	No.	Retention Force (kgf)	Latching Force (kgf)	A	B	E	G	H	L	d_1	d_2	Mass (g)	Color
JMCG	1W	1.3	1.7	26	18	6	24.5	17	2.5	3.3 x 6	3.3	2	White
	2B	2.3	2.8	24	17	7	22	15.5	2	2.5 x 5.5	2.5	1.5	Black
	2W	2.3	2.8	24	17	7	22	15.5	2	2.5 x 5.5	2.5	1.5	White

Part Number Example

Part Number: JMCG1W

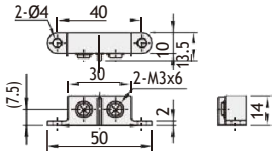
Door Limit Switches / Terminal Type / Magnetic Catches with Sensors

Door Limit Switches

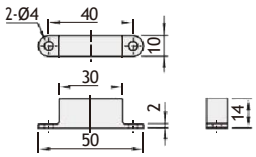
RoHS 10

BCWS

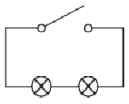
Body Side



Door Side



Wiring



Performance

Detection Distance	As Shown Below
Max. Operating Voltage	DC100V
Max. Operating Current	0.5A
Max. Operating Power	10W
Contact Resistance	150 mΩ
Withstand Voltage	DC200V 1min

AC Unusable

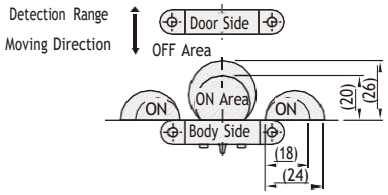
Part Name	Material
Main Body	ABS
Magnet	Ferrite
Terminal	304 Stainless Steel Equivalent

Part Number		Mass (g)
Type	No.	
BCWS	1	19

Part Number Example

Part Number: BCWS1

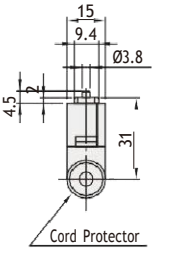
Application Example

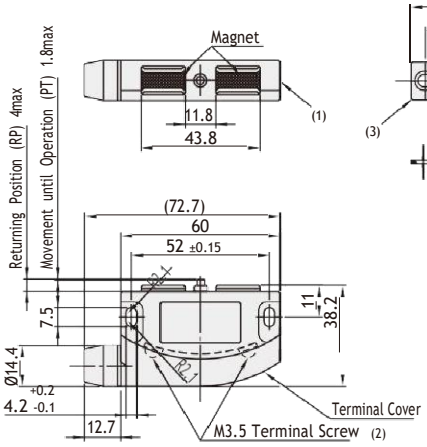


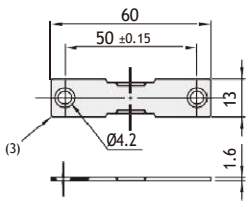
Terminal Type

No.	Part Name	Material	
(1)	Main Body	Polybuthyleneterephthalate (PBT)	—
(2)	Terminal Cover	Polycarbonate	—
(3)	Back Plate	Low Carbon Steel	Nickel Plating

MGST







Operating Properties of Switch

Operating Force (OF) (N{gf})	3.43{350} max.
Returning Force (RF) (N{gf})	0.49{50} min.
ON Distance (PT)	1.8 mm max.
Hysteresis Range (MD)	0.2-0.8 mm
Returning Position (RP)	4.0 mm max.

Rating

	Resistive Load	Lamp Load	Inductive Load
AC125V	5A	1.5A	3A
AC250V	5A	—	3A
DC30V	5A	—	1.5A

Part Number Type	No.	Operation	Retention Force (kgf)	Case Color	Mass (g)
MGST	1	OFF when attracted	3	Gray	52
	2	ON when attracted			

Part Number Example

Part Number: MGST1

Performance Overview

Electrical Perfor.	Insulation Resistance (Initial)	100MΩ or More (With 500 VDC Insulation Resistance Meter)
	Withstand Voltage	Between Contact Points: 1,000 VAC/min. (Initial) Between Each Terminal and Non-charging Metal Part: 2,100 VAC/min. Between each Terminal and Ground: 2,100 VAC/min.

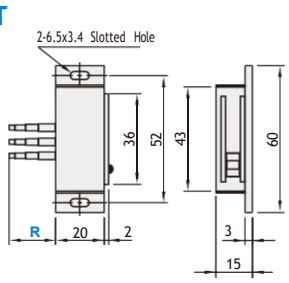
Life	Mechanical Life	100,000 Times or More (Open-Close Frequency: 60 times/min.)	
	Electrical Life	50,000 Times or More (Resistance Load 250 VAC, 5A) 30,000 Times or More (Lamp Load 125 VAC, 15A)	Open/Close Frequency: 20 times/min.
	Degree of Protection	IP40	

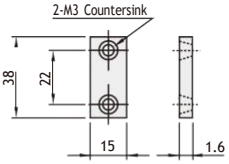
Operating Conditions	Operating Temp.	-20-+80°C (No freezing)
	Operation Environment Humidity	95% RH or Less
	Allowable Operating Frequency	Mechanical: 60 times/min., Electrical: 20 times/min.

Magnetic Catches with 3 Wires

RoHS 10

HMGR-T





When the main body and the plate are in contact, White/Red conducts.
When the main body and the plate are separated, White/Black conducts.

Max. Contact Capacity
AC250V3A
DC125V0.4A

Part Name	Material	Surface Treatment
Main Body	Polyethylene	—
Plate	Low Carbon Steel	Trivalent Chromate

Part Number Type	R	Retention Force (kgf)	Mass (g)
HMGR-T	150	2	43
	2000		

The default R dimension will be 150 unless specified.

Part Number Example

Part Number: HMGR-T - R: 150

Magnetic Catches / Ball Catches

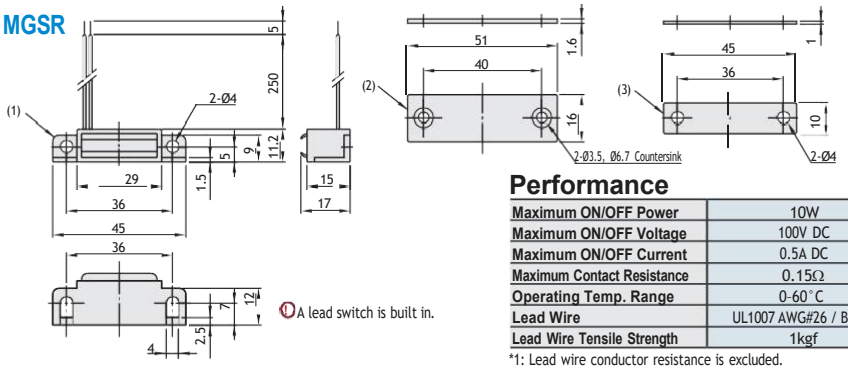
Wire Leads Type / with Switch

Wire Leads Type

RoHS 10

No.	Part Name	Material	
(1)	Main Body	Polycarbonate	—
(2)	Catch Plate	Low Carbon Steel	Nickel Plating
(3)	Back Plate		

MGSR



A lead switch is built in.

Performance

Maximum ON/OFF Power	10W
Maximum ON/OFF Voltage	100V DC
Maximum ON/OFF Current	0.5A DC
Maximum Contact Resistance	0.15Ω
Operating Temp. Range	0-60°C
Lead Wire	UL1007 AWG#26 / Black
Lead Wire Tensile Strength	1kgf

*1: Lead wire conductor resistance is excluded.

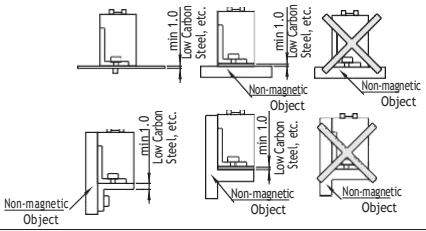
Part Number Type	Part Number No.	Operation	Retention Force (kgf)	Mass (g)
MGSR	1	OFF when attracted	3	28
	2	ON when attracted		

Part Number Example — Part Number: MGSR2

Application Example

Caution

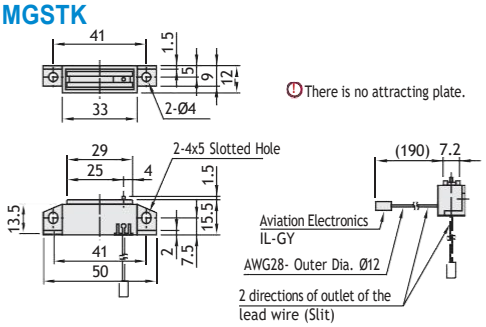
- Do not apply any strong impacts since a lead switch is used.
- Do not use or store in places with strong magnetic fields.
- Carefully keep magnetic materials (particles) and adhesive objects and etc. away from the attraction surface of the product. To mount it on a nonmagnetic object (wood, resin, glass, aluminum, etc.), mount the included back plate or a similar magnetic object on the mounting surface.



Magnetic Catches with Switch

RoHS 10

MGSTK



There is no attracting plate.

Part Name	Material	Surface Treatment
Main Body	Polypropylene	—
Magnet	Ferrite	—

Performance

Circuit Type	1 Circuit, 1 Contact, Normally Closed
Rating	30VDC 10mA (Resistive Load)
Maximum ON/OFF Voltage	500 VAC / min.
Maximum Contact Connection Resistance	100MΩ or more (500VDC)
Operating Temp. Range	-10- +70°C
Lead Wire	For IL-G of Japan Aviation Electronics
Lead Wire Tensile Strength	1kgf

Normally Closed: OFF when touching door, ON when not-touching door.

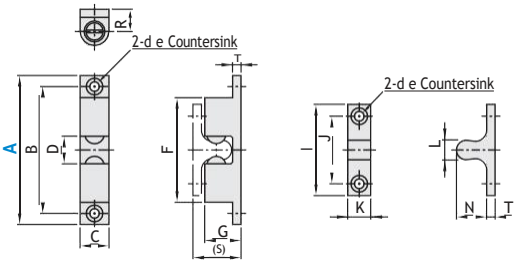
Part Number Type	Retention Force (kgf)	Case Color	Mass (g)
MGSTK	3	Black	13

Part Number Example — Part Number: MGSTK

Ball Catches

RoHS 10

BCAS Stainless Steel
BCASS Stainless Steel
BCASD Zinc Diecast



Type	Material	Surface Treatment
BCAS	316 Stainless Steel	—
BCASS	304 Stainless Steel	—
BCASD	Zinc Die Casting	Chrome Plating

Part Number Type	A	B	C	D	d	e	F	G	T	ℓ	J	K	N	L	R	(S)	Latching Force N (kgf)	Unlatching Force N (kgf)	Mass (g)
BCAS BCASS BCASD	32	25	8	4	3.2	6.2	18	9	2	18	11	8	6.5	3.2	6	11.5	17 (1.7)	8 (0.8)	12
	43	35	8	5.9	3.2	6.2	28.4	10	2.5	25	16	7.5	8.5	4.5	6	13.5	20 (2)	13 (1.3)	16
	50	40	10	7.5	4.2	8.2	31.5	12.2	2.9	30	20	9	10.3	6	7.7	15.9	23(2.3)	18 (1.8)	28
	70	60	13	13			51	17	4	42	30	10.5	15	10	10.5	23	56 (5.7)	38 (3.9)	78

There are some variations with Latching Force and Unlatching Force. Please use the values as reference.

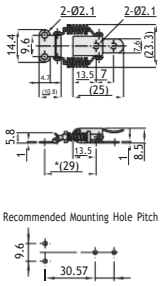
Part Number Example — Part Number: BCAS50

Snap Locks

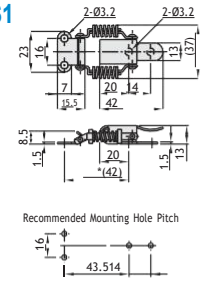
Snap Locks

RoHS 10

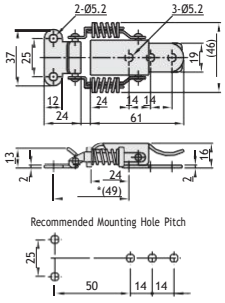
PKBSA



PKBS1



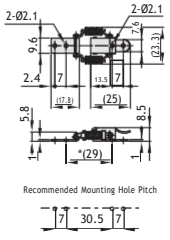
PKBS2



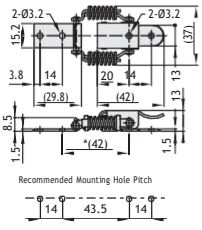
Material	Surface Treatment
304 Stainless Steel	Tumble Polish

*The dimensions are for 0 mm pull distance.
Please adjust the mounting dimensions as needed for lock tightness.

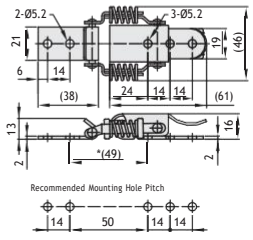
PKBSLA



PKBSL1



PKBSL2



Part Number Type	No.	*Pull Force N (kgf)	PKBS Mass (g)	PKBSL Mass (g)
PKBS PKBSL	A	20 (2)	10	10
	1	68 (7)	36	40
	2	170 (17.4)	78	90

* Pull force is the reference value for 1 mm pull distance.

Part Number Example

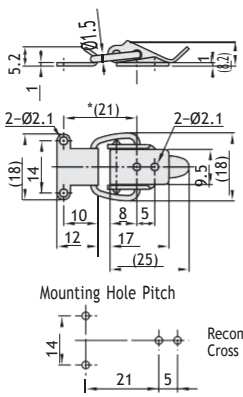
Part Number
PKBS1
PKBSL1

Snap Locks

RoHS 10

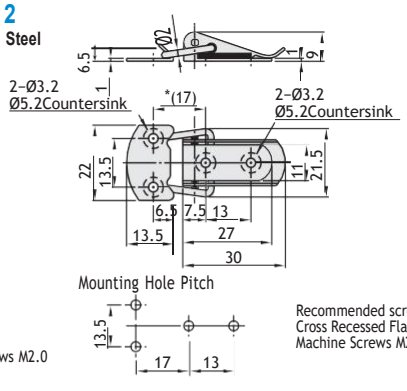
PKWS 1

Stainless Steel



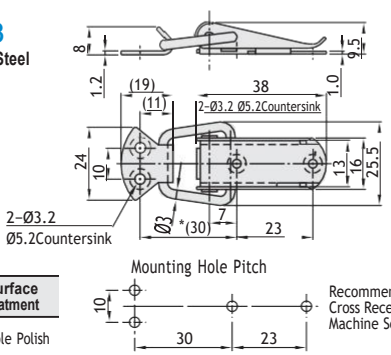
PKWS 2

Stainless Steel



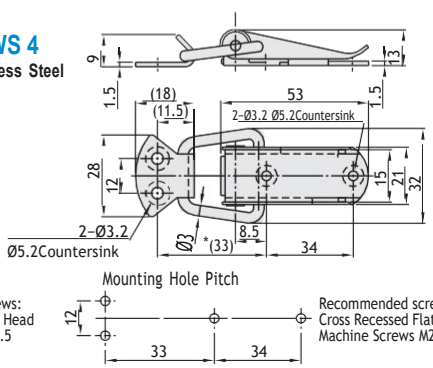
PKWS 3

Stainless Steel

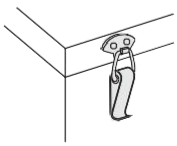


PKWS 4

Stainless Steel



Application Example



*The dimensions are for 0 mm pull distance.

Material	Surface Treatment
304 Stainless Steel	Tumble Polish

Part Number Type	No.	*Pull Force N (kgf)	Mass (g)
PKWS	1	49 (5)	11
	2	78 (8)	12
	3	98 (10)	18
	4	147 (15)	37

* Pull force is the reference value for 1 mm pull distance.

Part Number Example

Part Number
PKWS1

Snap Locks

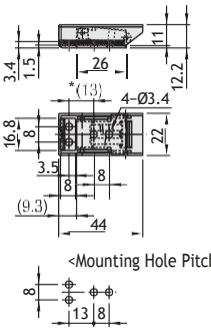
Covered / for Medium Loads

Covered
Snap Locks

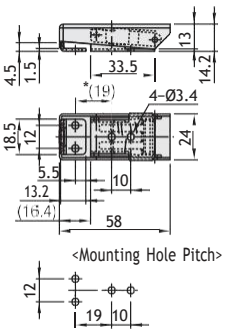
RoHS 10

Material	Surface Treatment
304 Stainless Steel	Tumble Polish

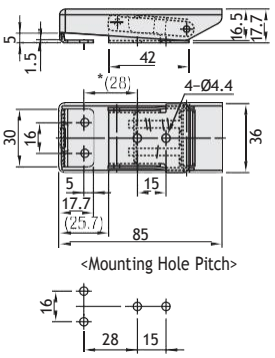
PKCS1



PKCS2



PKCS3



*The dimensions are for 0 mm tightening amount.

Part Number		*Pull Force N (kgf)	Mass (g)
Type	No.		
PKCS	1	12 (1.2)	25
	2	69 (7)	53
	3	81 (8.3)	115

*Pull force is the reference value for 1 mm pull distance.

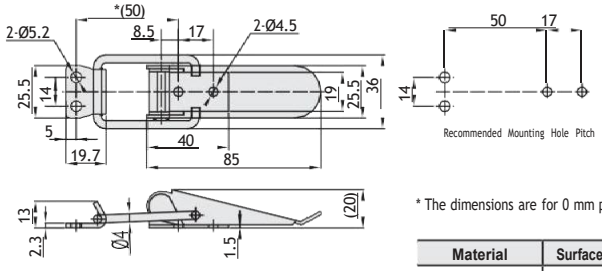
Part Number Example

Part Number
PKCS2

Stainless Steel Draw Latches
for Medium Loads

RoHS 10

PKWSA



* The dimensions are for 0 mm pull distance.

Material	Surface Treatment
304 Stainless Steel	Tumble Polish

Part Number		*Pull Force N (kgf)	Mass (g)
Type	No.		
PKWSA	1	245 (25)	80

*Pull force is the reference value for 1 mm pull distance.

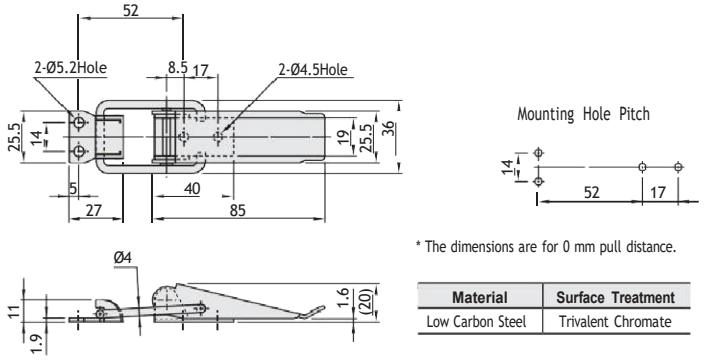
Part Number Example

Part Number
PKWSA1

Snap Locks
for Medium Loads

RoHS 10

PKWSZ



* The dimensions are for 0 mm pull distance.

Material	Surface Treatment
Low Carbon Steel	Trivalent Chromate

Part Number		*Pull Force N (kgf)	Mass (g)
Type	No.		
PKWSZ	1	245 (25)	79

*Pull force is the reference value for 1 mm pull distance.

Part Number Example

Part Number
PKWSZ1

Snap Locks / Key Locks

Adjustable / Corner

Features: Adjustable by approx. 23 mm when installing draw latches.

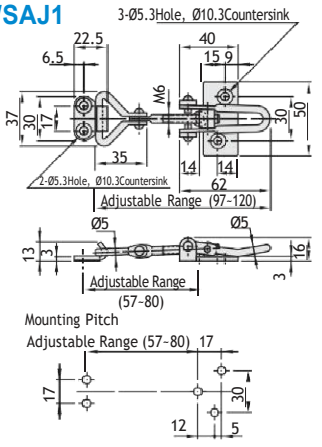
Adjustable Snap Locks

RoHS 10

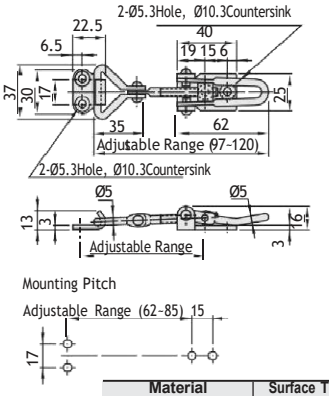
Part Number		*Pull Force N (kgf)	Mass (g)
Type	No.		
PKWSAJ	1	588 (60)	100
	2	588 (60)	90

*Pull force is for 1 mm pull distance.

PKWSAJ1



PKWSAJ2



Material	Surface Treatment
304 Stainless Steel	—

Corner Snap Locks

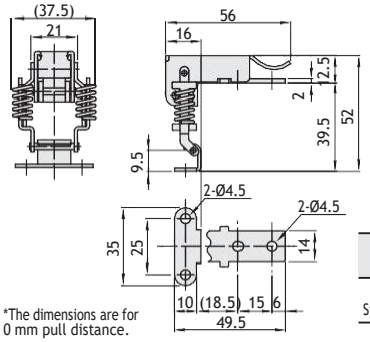
RoHS 10

Part Number		*Pull Force N (kgf)	Mass (g)
Type	No.		
PKBSK	1	44 (4.5)	56
	2		

*Pull force is for 1 mm pull distance.

In-line Catch Type

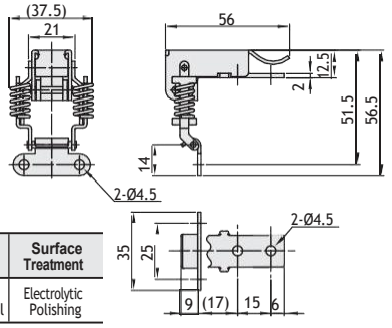
PKBSK1 Stainless Steel



*The dimensions are for 0 mm pull distance.

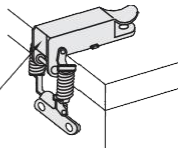
Right Angle Catch Type

PKBSK2 Stainless Steel



Material	Surface Treatment
304 Stainless Steel	Electrolytic Polishing

Application Example

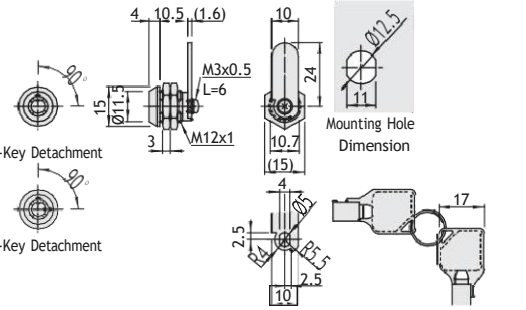


Key Locks

RoHS 10

- The cam must turn right or left when locked, and must face upward when unlocked.
- Avoid applying external force to the cam when locked.
- Do not insert or remove the key while rotating. Insert/remove at a predetermined position.

LOCNL

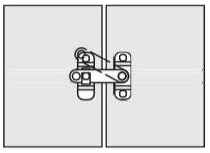


Part Name	Material	Surface Treatment
Main Body	Zinc Die Casting	Chrome Plating
Hex Nut	Low Carbon Steel	Trivalent Chromate
Lock Plate	Low Carbon Steel	Tin-Cobalt Plating
Keys (2 pcs. Included)	Low Carbon Steel	Tin-Cobalt Plating

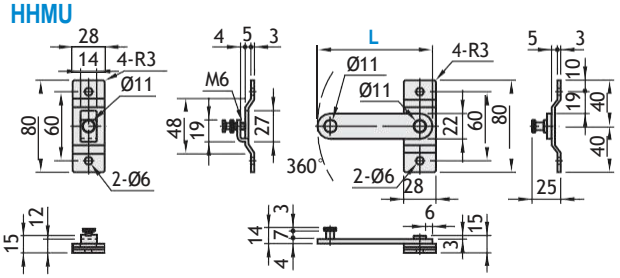
Part Number		Key Detachment
Type	No.	
LOCNL	1	1 Location
	2	2 Locations

Swing Bar Latches

Application Example



HHMU



Material	Surface Treatment
304 Stainless Steel	Electrolytic Polishing

Part Number		Mass (g)
Type	L	
HHMU	100	193
	150	219

Part Number Example

Part Number
PKWSAJ1
PKBSK2
LOCNL1
HHMU100

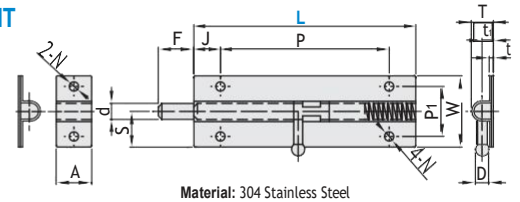
Locks / Hinges

Large Cabinet / With Slide Bolts / Square / Airtight

Hinges – With Slide Bolts

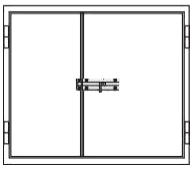
RoHS 10

HHMT



Material: 304 Stainless Steel

Application Example



Part Number Type	L	W	P	P_1	D	d	T	t	t_1	A
HHMT	90	40	60	28	7.5	9	12	2.4	5.7	20
	125	40	95	28	7.5	9	12	2.4	5.7	20
	180	60	140	40	10	13	16	3	8	25

Part Number Type	L	S	F	J	N	Mass (g)
HHMT	90	20	20	15	5	128
	125	20	20	15	5.2	167
	180	30	25	20	6.2	451

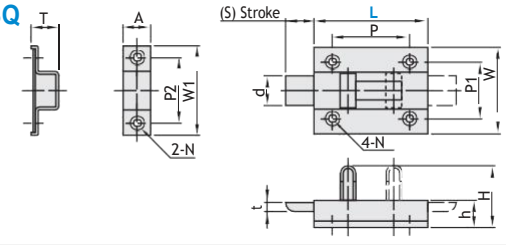
Part Number Example

Part Number
HHMT90
HHMSQ65

Square Latches

RoHS 10

HHMSQ



Material: 304 Stainless Steel

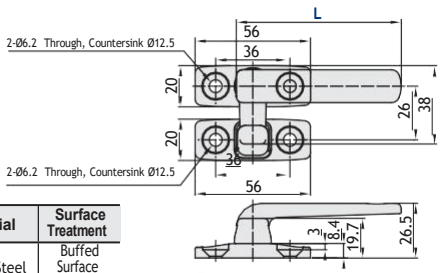
Part Number Type	L	P	P_1	P_2	W	W_1	D	(S)	A	T	t	H	h	N Through	N Countersink	Mass (g)
HHMSQ	50	34	25	28	38	38	13	12.5	12	12.5	4	27	12	3.5	7	58
	65	47	31	32	45	45	15	15	15	13.5	5	28	12.5	5	9	100

Retaining Latches

RoHS 10

Photo: Right-hand use

LCR
LCL



Material	Surface Treatment
304 Stainless Steel	Buffed Surface

The figure is for right-hand use

Part Number Type	L	Mass (g)
LCR For Right-Hand Use	80	100
LCL For Left-Hand Use	100	130

Part Number Example

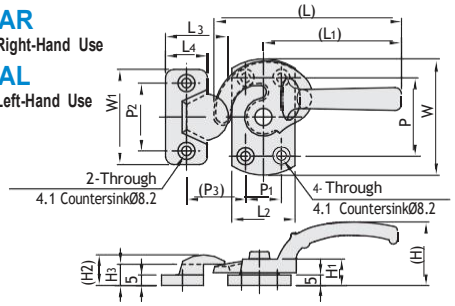
Part Number
LCR80

Airtight Latches

RoHS 10

Photo: Left-hand use

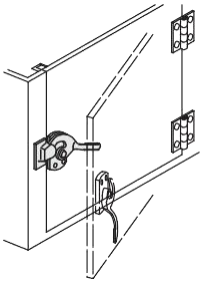
LCAR
For Right-Hand Use
LCAL
For Left-Hand Use



The figure is for right-hand use

Material	Surface Treatment
304 Stainless Steel	Buffed Surface

Application Example



Part Number Type	No.	(L)	(L_1)	L_2	L_3	L_4	W	W_1	(H)	H_1	(H_2)	H_3	P	P_1	P_2	(P_3)	Mass (g)
LCAR For Right-Hand Use	11	89	65.5	30	30	20	55	45	30	12.5	14.5	10	37	17	32	28	150
	16	113	85.5	30	30	20	60	45	40	13	14.5	10	40	20	32	28	194
LCAL For Left-Hand Use	20	125	98	32	31.5	23	65	50	40	14	17	11	43	22	35	30	210
	25	140	109	40	35	24	80	50	46.5	14.5	18	13	52	25	34	34	290
	30	170	127	45	40	28	90	52	50.8	16.8	19	14.5	70	34	40	43	450

Part Number Example

Part Number
LCAR16