

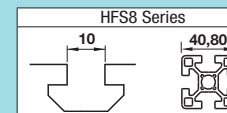


HFS8 Series Aluminum Frames 40 · 80mm Square

-2 or more slots-

Price Reduction

Up to 2%

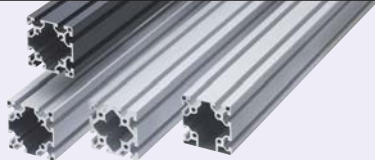


Fixing Parts			Others	
Brackets	Nuts	Joints	Extrusion End Caps	Alteration
P.563 ~ P.578	P.581 ~ P.588	P.627 ~ P.640	P.589	P.645 ~ P.658

CAD Data

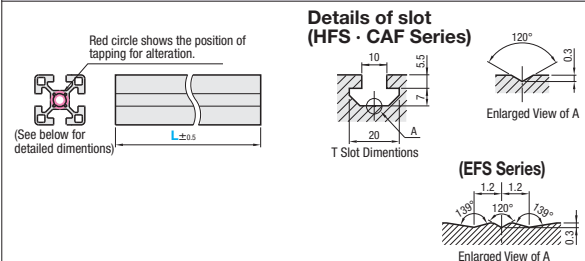
Features: Extrusions shaped with [2 x 2 slots] [2 x 4 slots] or etc. Effective for operations under high-loading environment.

RoHS



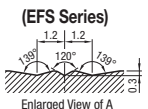
Type		Material	Surface Treatment
Configurable Length	Fixed Length		
HFS8	KHFS8	EN AC-51400/ AlMgSi0,7-T5	Clear Anodize
HFSB8	KHFSB8		Black Anodize
CAF8	-		Clear Coating (Clear Anodize + Clear Painting)

ⓈCut surface and altered parts are not surface treated.



Features of Extrusions

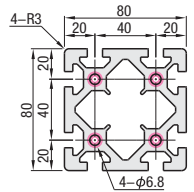
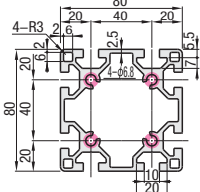
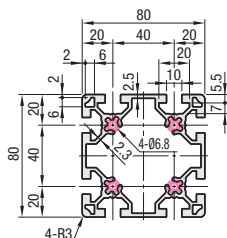
Cross Section Shape	HFS Extrusions	Standard cross section shape.
	EFS Extrusions	New shape with the same or higher rigidity as conventional HFS series. Weight saving and price reduction realized. Migration from HFS Series extrusions realizes cost savings.
Surface Treatment	Clear Anodize	Common surface treatment.
	Black Anodize	Effective in where light reflection is not desirable.
	Clear Coating	More luster and better appearance than anodizing.



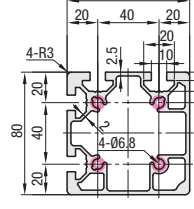
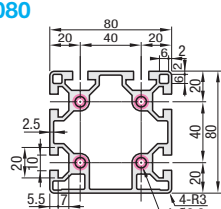
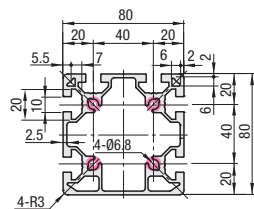
HFS8-8080

HFSB8-8080 (Black Anodize)
CAF8-8080 (Clear Coating)

HFSH8-8080 (Heavy Type)



HFSF8-8080



Configurable Length Extrusions

Part Number	L 0.5mm Increment	Mass kg/m	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price Less than 300mm	Volume Discount Less than 300mm	€ Unit Price/m 300mm or more	Volume Discount/m 300mm or more		
				ℓx	ℓy				1-9 pcs.	10-49	50-
HFS8	8080	50-4000	1649	130.0x10 ⁴	130.0x10 ⁴	-	10-49	50-	1-9 pcs.	10-49	50-
HFSB8 (Black Anodize)											
CAF8 (Clear Coating)											
HFSH8 (Heavy Type)											
HFSF8											
HFSF8											

Fixed Length Extrusions (Effective Length 4000mm)

ⓈPart numbers beginning with the character "K" indicate Fixed Length Extrusion.

Part Number	L mm	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price 1-9 pcs.	Volume Discount 10-19
			ℓx	ℓy		
	8080	1649	130.0x10 ⁴	130.0x10 ⁴	-	-
KHFS8						
KHFSB8 (Black Anodize)						
KHFSH8 (Heavy Type)						
KHFSF8						

Order Part Number - L
Example HFS8-8080 - 800
KHFS8-8080 - 4000

Days to Ship
6 Days 5 Days 7 Days

Configurable Length Extrusions
Up to 79 pcs.
ⓈShipping of 2nd business day is available for orders of 80-160 pcs.

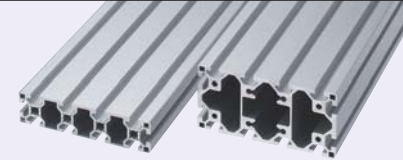
Price
When L = 300 or less Unit prices are indicated in the table regardless of the length.
ex: HFS8-8080-180=1300 EUR
When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Specified Full Length = Price
ex: HFS8-8080-600
43,60x0.6m=26,10 EUR
(Round down to ten Cent.)

Alterations
Alterations are available for Configurable Length Extrusions.
For details refer to P.645

Aluminum Frames with 4000mm or more
Applicable to 6000mm depending on products.
Refer to Information of Special Orders (P.97) and contact the person in charge of Special Orders at MISUMI QCT Center.
ⓈSome extrusions are not applicable.

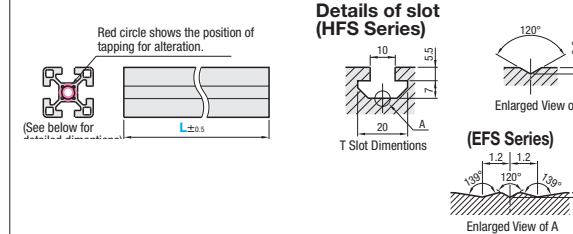
Features: Extrusions shaped with [2 x 2 slots] [2 x 4 slots] or etc. Effective for operations under high-loading environment.

RoHS



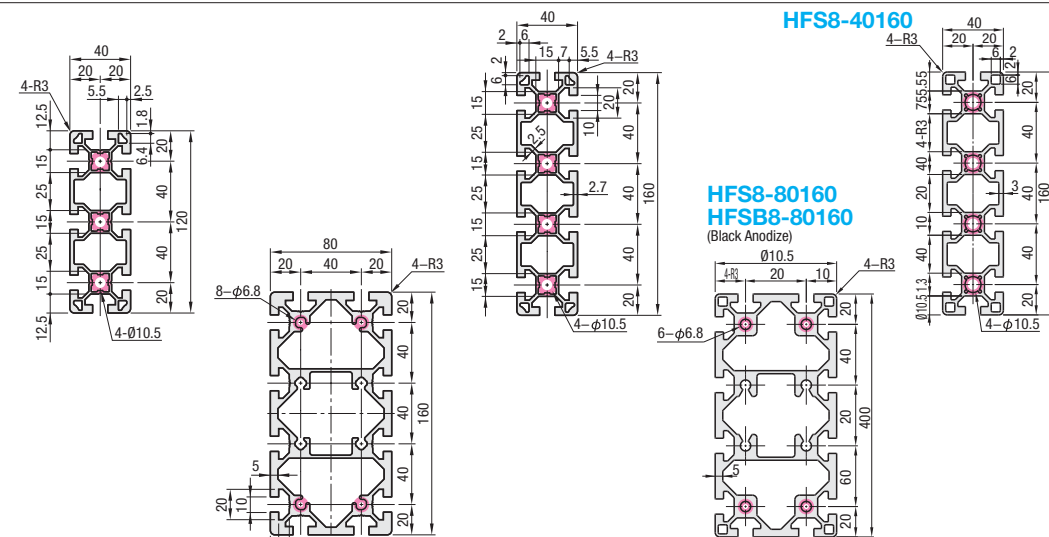
Type		Material	Surface Treatment
Configurable Length	Fixed Length		
HFS8	KHFS8	EN AC-51400/ AlMgSi0,7-T5	Clear Anodize
HFSB8	KHFSB8		Black Anodize

ⓈCut surface and altered parts are not surface treated.



Features of Extrusions

Cross Section Shape	HFS Extrusions	Standard cross section shape.
	EFS Extrusions	New shape with the same or higher rigidity as conventional HFS series. Weight saving and price reduction realized. Migration from HFS Series extrusions realizes cost savings.
Surface Treatment	Clear Anodize	Common surface treatment.
	Black Anodize	Effective in where light reflection is not desirable.



Configurable Length Extrusions

Part Number	L 0.5mm Increment	Mass kg/m	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price Less than 300mm	Volume Discount Less than 300mm	€ Unit Price/m 300mm or more	Volume Discount/m 300mm or more		
				ℓx	ℓy				1-9 pcs.	10-49	50-
(New Shape)	40120	3.98	1474	29.0x10 ⁴	223.5x10 ⁴	-	10-49	50-	1-9 pcs.	10-49	50-
(New Shape - Black Anodize)											
(New Shape)											
HFS8											
HFS8											
HFSB8 (Black Anodize)											

Fixed Length Extrusions (Effective Length 4000mm)

ⓈPart numbers beginning with the character "K" indicate Fixed Length Extrusion.

Part Number	L mm	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price 1-9 pcs.	Volume Discount 10-19
			ℓx	ℓy		
(New Shape)	40120	1474	29.0x10 ⁴	222.2x10 ⁴	-	-
(New Shape - Black Anodize)						
(New Shape)						
(New Shape - Black Anodize)						
KHFS8						
KHFS8						

Order Part Number - L
Example HFS8-80160 - 800
KEFS8-40120 - 4000

Days to Ship
6 Days

Configurable Length Extrusions
Up to 79 pcs.
ⓈShipping of 2nd business day is available for orders of 80-160 pcs.

Price
When L = 300 or less Unit prices are indicated in the table regardless of the length.
ex: HFS8-8080-180=13,00 EUR
When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Specified Full Length = Price
ex: HFS8-8080-600
43,60x0.6m=26,10 EUR
(Round down to ten Cent.)

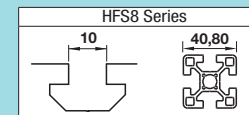
Alterations
Alterations are available for Configurable Length Extrusions. For details refer to P.645

Aluminum Frames with 4000mm or more
Applicable to 6000mm depending on products.
Refer to Information of Special Orders (P.97) and contact the person in charge of Special Orders at MISUMI QCT Center.
ⓈSome extrusions are not applicable.



HFS8 Series Aluminum Frames 40 · 80mm Square

-Other shapes-



Fixing Parts			Others	
Brackets	Nuts	Joints	Extrusion End Caps	Alteration
P563 ~ P578	P581 ~ P588	P627 ~ P640	P589	P645 ~ P658

CAD Data

Features: Can be used when making angles or making outer surface in radius.

Type	Type		Material	Surface Treatment
	Configurable Length	Fixed Length		
HFS_A8 HFS45TR8	KHFS_A8 KHFS45TR8		EN AC-51 400/ AlMgSi0,7	Clear Anodize

ⓈCut surface and altered parts are not surface treated.

Features: Can be used when making angles or making outer surface in radius.

Type	Type		Material	Surface Treatment
	Configurable Length	Fixed Length		
HFS8 HFS_8	KHFS8 KHFS_8		EN AC-51 400/ AlMgSi0,7	Clear Anodize

ⓈCut surface and altered parts are not surface treated.

Details of slot (HFS · CAF Series)

Features of Extrusions

Cross Section Shape	HFS Extrusions	Standard cross section shape.
EFS Extrusions	New shape with the same or higher rigidity as HFS series. Weight savings and cost reduction are realized. Transition from HFS extrusions realizes cost savings.	

(EFS Series)

Details of slot (HFS / CAF Series)

Features of Extrusions

Cross Section Shape	HFS Extrusions	Standard cross section shape.
EFS Extrusions	New shape with the same or higher rigidity as HFS series. Weight savings and cost reduction are realized. Transition from HFS extrusions realizes cost savings.	

(EFS Series)

HFS30A8-40

HFS45A8-40

HFS60A8-40

HFS45TR8-40

HFS8-808040

HFSR8-808040

HFSR8-4040

Configurable Length Extrusions

Part Number	L 0.5mm Increment	Mass kg/m	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price Less than 300mm	Volume Discount Less than 300mm		€ Unit Price/m 300mm or more	Volume Discount/m 300mm or more	
				ℓx	ℓy		1-9 pcs.	10-49		50-	1-9 pcs.
HFS30A8	40	1.88	694	9.89x10 ⁴	10.64x10 ⁴	1-9 pcs.	10-49	50-	1-9 pcs.	10-49	50-
HFS45A8		1.83	676	9.87x10 ⁴	10.37x10 ⁴						
HFS60A8		1.84	679	9.99x10 ⁴	10.53x10 ⁴						
HFS45TR8		2.74	1012	12.23x10 ⁴	38.19x10 ⁴						

Configurable Length Extrusions

Part Number	L 0.5mm Increment	Mass kg/m	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price Less than 300mm	Volume Discount Less than 300mm		€ Unit Price/m 300mm or more	Volume Discount/m 300mm or more	
				ℓx	ℓy		1-9 pcs.	10-49		50-	1-9 pcs.
HFS8	808040	4.00	1484	94.82x10 ⁴	94.82x10 ⁴	1-9 pcs.	10-49	50-	1-9 pcs.	10-49	50-
HFSR8		4.19	1550	94.2x10 ⁴	94.2x10 ⁴						
HFSR8		3.61	1339	80.99x10 ⁴	80.99x10 ⁴						
HFSR8		1.53	564	7.79x10 ⁴	7.79x10 ⁴						

Fixed Length Extrusions (Effective Length 4000mm)

ⓈPart numbers beginning with the character "K" indicate Fixed Length Extrusion.

Part Number	L mm	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price 1-9 pcs.	Volume Discount 10-19
			ℓx	ℓy		
KHFS30A8	40	4000	694	9.89x10 ⁴	10.64x10 ⁴	
KHFS45A8			676	9.87x10 ⁴	10.37x10 ⁴	
KHFS60A8			679	9.99x10 ⁴	10.53x10 ⁴	
KHFS45TR8			1012	12.23x10 ⁴	38.19x10 ⁴	

Fixed Length Extrusions (Effective Length 4000mm)

ⓈPart numbers beginning with the character "K" indicate Fixed Length Extrusion.

Part Number	L mm	Sectional Area mm ²	Cross Sectional Moment of Inertia mm ⁴		€ Unit Price 1-9 pcs.	Volume Discount 10-19
			ℓx	ℓy		
KHFS8	808040	4000	1484	94.82x10 ⁴	94.82x10 ⁴	
KHFSR8			1550	94.2x10 ⁴	94.2x10 ⁴	
KHFSR8			1339	80.99x10 ⁴	80.99x10 ⁴	
KHFSR8			564	7.79x10 ⁴	7.79x10 ⁴	

Order Example Part Number - L
KHFS30A8-40 - 800
KHFS30A8-40 - 4000

Days to Ship 6 Days P87

Configurable Length Extrusions 6 Days P87

Fixed Length Extrusions (Effective Length 4000mm) 7 Days P87

Price When L=300 or less Unit prices are indicated in the table regardless of the length. ex: HFS30A8-40-180=6.00 EUR When L is 300 or more Prices are calculated as follows: € Unit Price/m x Specified Full Length = Price ex: HFS8-808040-800 46.80x0.8m=6.00 EUR (Round down to ten Cent.)

Alterations Up to 79 pcs. Shipping of 2nd business day is available for orders of 80-160 pcs. Alterations are available for Configurable Length Extrusions. For details, refer to P645

Aluminum Frames with 4000mm or more Applicable to 6000mm depending on products. Refer to Information of Special Orders (P97), and contact the person in charge of Special Orders at MISUMI OCT Center. Some extrusions are not applicable.

Order Example Part Number - L
HFS8-808040 - 800
KHFSR8-4040 - 4000

Days to Ship 6 Days P87

Configurable Length Extrusions 6 Days P87

Fixed Length Extrusions (Effective Length 4000mm) 7 Days P87

Price When L=300 or less Unit prices are indicated in the table regardless of the length. ex: HFS30A8-40-180=6.00 EUR When L is 300 or more Prices are calculated as follows: € Unit Price/m x Specified Full Length = Price ex: HFS8-808040-800 46.80x0.8m=6.00 EUR (Round down to ten Cent.)

Alterations Up to 79 pcs. Shipping of 2nd business day is available for orders of 80-160 pcs. Alterations are available for Configurable Length Extrusions. For details, refer to P645

Aluminum Frames with 4000mm or more Applicable to 6000mm depending on products. Refer to Information of Special Orders (P97), and contact the person in charge of Special Orders at MISUMI OCT Center. Some extrusions are not applicable.



HFS8 Series

-Aluminum Extrusion with Milled Surface-

HFS8 Series		Fixing Parts			Others	
Brackets	Nuts	Joints	Extrusion End Caps	Alteration		
P563 P578	P581 P588	P627 P640	P589	P645 P658		

CAD Data

Features: Milled on surfaces. Usable for Linear Guides, etc.

Aluminum Frames with Milled Surface

RoHS

HFSP GFSP

Milled Surface

Milled Surface A

Milled Surface A

Milled Surface A

Milled Surface A

Milled surfaces and cut surfaces are not anodized.

Milled Surface

0.1/100 D

L ± 0.5

Type	Material	Surface Treatment
HFSP8	EN AC-51400/AlMgSi0.7-T5	Clear Anodize
GFSP8	EN AW-6061/EN AW-AlMg1SiCu-T6	

For detailed dimensions and shapes EXCEPT the slots on the milled surface, A and T dimensions, please refer to the drawing of the product of the below Part Number Without "P". (Ex.) HFSP8-4040 - Ref. fig. HFS8-4040 (Refer to P553)

Square Type
HFSP8-4040
HFSP8-8080
HFSHP8-8080
GFSP8-4040

Rectangle Type (Horizontal)
HFSP8-8040
GFSP8-8040

Rectangle Type (Vertical)
HFSP8-4080
GFSP8-4080

L-Shaped Type
HFSP8-808040

Part Number	L 0.5mm Increment	Extrusions Series	T	A	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	Alteration Charge (€ Body+)		Tapping (P647)			
							Counterboring XA-XE (per row)	Drill Wrench Hole AV-EV (per row)	Tap Shape	Left LTP	Right RTP	Both TPW
HFSP8	4040	HFS8	39	40			Z6 d6.5 d11	D8 Ø8	M12 Depth 36			
	8040											
	4080											
	8080											
HFSHP8	8080	HFS8	79	80			Z8 d9 d14		M8 Depth 24			
	4040											
GFSP8	8040	GFSP8	39	40					M12 Depth 36			
	4040											

Order Example: Part Number - L - Days to Ship 8 Days - Price Volume Discount P87

When L < 300mm: € Unit Price = Price
When L ≥ 300mm: € Unit Price/m x Specified Over All Length = Price
(Ex.): HFS8-4040-600 36,70x0.6m=17,50 EUR (Round down to ten Cent.)

Alterations: Drilling hole at a specified position can be done. Nuts for Extrusion Please use nuts for aluminum extrusions. For the nuts, refer to P581-P588.

Alterations Code	Z Selection	Counterboring					D Selection	Wrench Hole				
		XA	XB	XC	XD	XE		AV	BV	CV	DV	EV
Spec.	Z	d	d1	Distance from The Left End Plane mm			D	Distance from The Left End Plane mm				
Specifications of Hole Size and Hole Position	6	6.5	11	7-L-7			8	7-L-7				

Counterboring Direction

Wrench Hole Machining Direction

Example: Linear Guide

Wrench Holes: BCB8-20, LFP8-4040

Installed button bolts temporarily in reference plane, then slide the frame to fixing position, passing bolt heads through frame slot.

Put wrench in the wrench hole and tighten the screw.

Order Example: HFSP8 - 808040 - 150 - Z6 - XA20 - XB45 - XC80 - XD120
HFSP8 - 4040 - 2000 - D8 - AV100 - BV120 - CV1000 - DV1880 - EV1900
HFSP8 - 8080 - 800 - LTP

HFS8 Series

-Curved Aluminum Frames - Slot Width Mixed Extrusions-

HFS8 Series		Fixing Parts			Others	
Brackets	Nuts	Joints	Extrusion End Caps	Alteration		
P563 P578	P581 P588	P627 P640	P589	P645 P658		

CAD Data

Features: Bending is applied to HFS8-4040.

Curved Aluminum Frames HFSMG

RoHS

Bending is applied after anodizing; therefore, bent section may slightly discolor and becomes white.

For R=140, the frame slot may be deformed and becomes narrower in width at the spot where the frame is bent. Therefore, slot nut cannot be used.

Material: EN AC-51 400/AlMgSi0.7-T5
Surface Treatment: Anodize

Example

HFS8-4040-200-LDH-RDH
D type Hole S Type Hole
HFSMG08-4040 R140-LSH
CBM6-50 (2 pcs.)
HDJRS/8 (P.637)
HDJFS/8 (P.637)

Part Number Type	A 1mm Increment	B 1mm Increment	R +	Series	Mass kg/m	Sectional Area mm²	Cross Sectional Moment of Inertia mm⁴
HFSMG 8-4040	200-1500	200-1000	140 300 500	HFS8	1.73	640	10.4x10⁴

Curved panels for R300 and R500 are not available.

Price Volume Discount (Round down to one Cent.) P87

Qty.	1-9 pcs.	10-49	50-
Discount Rate	€ Unit Price	5%	10%

Part Number Type	No.	€ Unit Price											
		R140				R300				R500			
HFSMG 8-4040	200-300												
	301-400												
	401-500												
	501-600												
	601-700												
	701-800												
	801-900												
	901-1000												

Alterations: Part Number - A - B - R - (LTP-RTP-TPW...etc.) - Days to Ship 10 Days

Blind Joints (Pre-Assy, Insertion Double Joint) Connecting Example

LDH (LCH) RDH (RCH) LDV (LCV) RDV (RCV) LCP RCP

Code Spec.	Tap (P647)			D type Hole (P654)			M type Hole (P656)			S type Hole (P655)			Wrench Hole (P651)							
	LTP	RTP	TPW	LDH	LDV	RDH	RDV	LMH	LMV	RMH	RMV	LSH	LSV	RSH	RSV	LCH	LCV	LCP	RCH	RCV
When the tapping and D, M S or wrench holes are specified in combination, tap depth is the distance to D - M - S or wrench holes.	Tapping to the center hole Tap Shape M12 Depth 36 LTP: Tapping on the Left End Face RTP: Tapping on the Bottom End Face TPW: Tapping on the Both Ends Ex. LTP			Adds D type hole in specified position. LDH, RDH: D hole is machined on the left (bottom) of the extrusion from the horizontal direction. Ex. LDH			Adds M type hole in specified position. LMH, RMH: M hole is machined on the left (bottom) of the extrusion from the horizontal direction. Ex. LMH			Adds S type hole in specified position. LSH, RSH: S hole is machined on the left (bottom) of the extrusion from the horizontal direction. Ex. LSH			Adds wrench hole on the left (bottom) of the extrusion from the horizontal direction. Ex. LCH							
Applicable Extrusions	HFSMG8-4040			2,70 5,40			1,20			1,20			3,90			1,20 2,40 1,20 2,40				

Features: Mixed Slot Width Extrusions of HFS6 and HFS8 series.

Aluminum Frames - Mixed Series (5 and 6), Mixed Base (20 and 30), Y Style

HFS8-6T-4040 HFS8-6H-4040 HFS8-5Y-2040

Part Number Type	Shapes	No.	L 0.5mm Increment	Mass kg/m	Sectional Area mm²	Cross Sectional Moment of Inertia mm⁴	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
HFS8-6	H	4040	50-4000	1.86	767	11.14x10⁴	11.04x10⁴	
	T	4040		1.90	704	10.74x10⁴	11.04x10⁴	
	Y	2040		1.12	418	1.70x10⁴	6.24x10⁴	

Order Example: Part Number - L - Days to Ship 6 Days

Price Volume Discount P87

When L is less than 300 Unit prices are indicated in the table regardless of the length. ex: HFS8-6T-4040-180 =6,10 EUR

When L is 300 or more Prices are calculated as follows: € Unit Price/m x Specified Full Length = Price ex: HFS8-6T-4040-500 20,50x0.5m=10,20 EUR (Round down to ten Cent.)

Alterations: HFS8-6T-4040 - 800 - TPW - Days to Ship 7 Days

Alterations Code	Tap Shape	Tapping (€ Body+)		
		Left LTP	Right RTP	Both TPW
HFS8-6	H	4040	M12 Depth 36	2,00 2,00 4,00

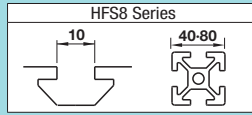
Material: EN AC-51 400/AlMgSi0.7-T5
Surface Treatment: Anodize

For details of tapping, refer to P647



Tabbed Brackets

-Slot Type: HFS8 Series (Aluminum Frames 40 · 80 Square)-

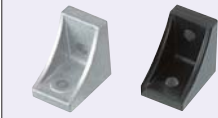


CAD Data

Features: Brackets with tabs to fit in slots of extrusions and stop rotating when tightening. Excels in work efficiency.

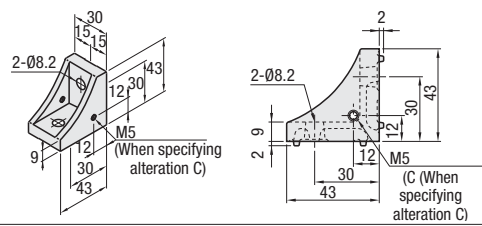
Tabbed Brackets

RoHS



Type	Material	Surface Treatment
HBLFSS8	EN AC-46100/ G-AISI12Cu	-
HBLFSB8	EN AC-46100/ G-AISI12Cu	Cathodic Electrodeposition Coating: Black

HBLFSS8
HBLFSB8
(Cathodic Electrodeposition Coating: Black)



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSS8 HBLFSB8* (Cathodic Electrodeposition Coating: Black)	54	CBM8-20	2	HNTT8-8	2	2058		

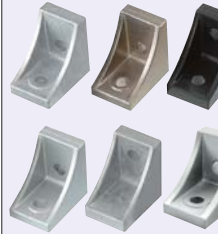


* For repairing black anodizing, refer to P748

Features: Tabbed Brackets to be connected by both L and Cross-Connections.

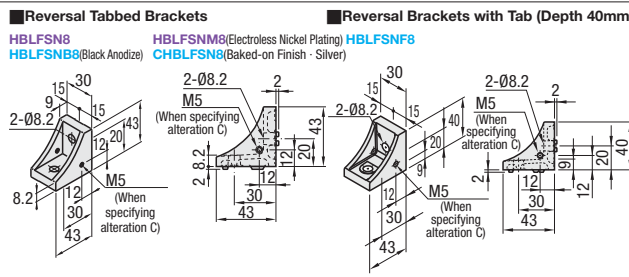
Reversal Tabbed Brackets

RoHS



Type	Material	Surface Treatment
HBLFSN8		-
HBLFSNB8		Black Anodize
HBLFSNM8	EN AC-46100/ G-AISI12Cu	Electroless Nickel Plating
CHBLFSN8		Baked-on Finish (Silver)
HBLFSNF8		-

* Baked-on Finish (Silver) is color coordinated with Clear Coating Extrusions.



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSN8 HBLFSNB8* (Black Anodize)	50	CBM8-20	2	HNTT8-8	2	2058		
HBLFSNM8 (Electroless Nickel Plating)								
CHBLFSN8 (Baked-on Finish - Silver)								
HBLFSNF8	48							

* For repairing black anodizing, refer to P748

Features: One-Sided Tabbed Rib Brackets. Easy to work with wrenches.

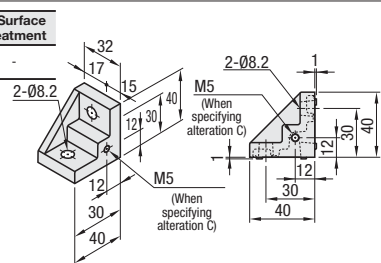
One-Side Rib Brackets

RoHS



Type	Material	Surface Treatment
HBLFSL8	EN AC-46100/ G-AISI12Cu	-

HBLFSL8



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSL8	46	CBM8-20	2	HNTT8-8	2	2058		

Features: Brackets with single side tabs. Plates can be mounted on the side with no tabs.

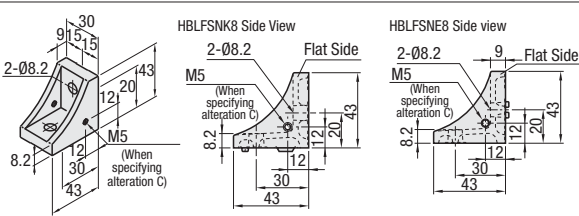
Brackets with Single Side Tab

RoHS



Type	Material	Surface Treatment
HBLFSNK8	EN AC-46100/ G-AISI12Cu	-
HBLFSNE8	EN AC-46100/ G-AISI12Cu	-

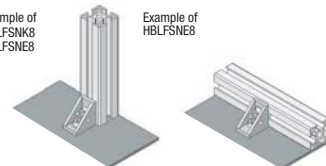
HBLFSNK8
HBLFSNE8



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSNK8 HBLFSNE8	50	CBM8-20	2	HNTT8-8	2	2058		



Can be mounted on plates directly.



Features: Brackets with Slotted Hole on one side. Hexagon Socket Head Cap Screws with Captured Washers can be used for mounting without interference between screw heads.

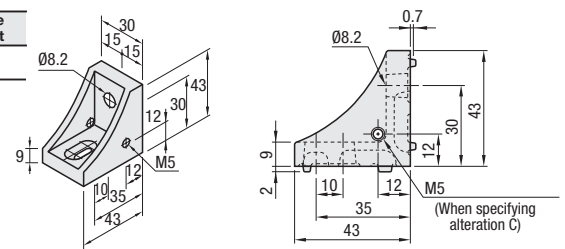
Brackets with Slotted Hole on one side

RoHS



Type	Material	Surface Treatment
HBLFSH8	EN AC-46100/ G-AISI12Cu	-

HBLFSH8



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSH8	52	CBM8-20	2	HNTT8-8	2	2058		

Features: Pressing nuts against the long tabs makes cumbersome hole positioning unnecessary.

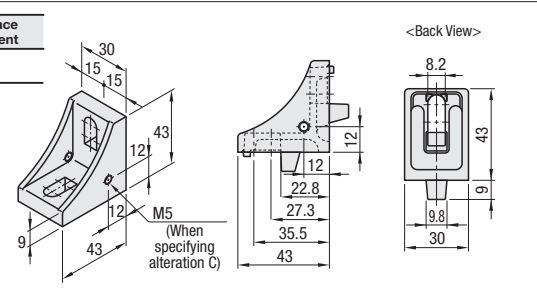
Nut-Fixing Brackets

RoHS



Type	Material	Surface Treatment
HBLFSR8	EN AC-46100/ G-AISI12Cu	-

HBLFSR8

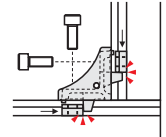


- Slotted holes are for various nut hole positions.
- Bracket tabs may be damaged when nuts are fallen on them.
- Use of washers are recommended. (Alteration SEC below)

Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.			
HBLFSR8	55	CBM8-20	2	HNTT8-8	2	2058		



When nuts are wedged through until the tab, hole positions of bracket and nuts are aligned and fine adjustment becomes unnecessary. Short Nuts, HNTM, HNTAM are not applicable.



Features: Reversal Tabbed Brackets with Cover. Designed to prevent dust build-up.

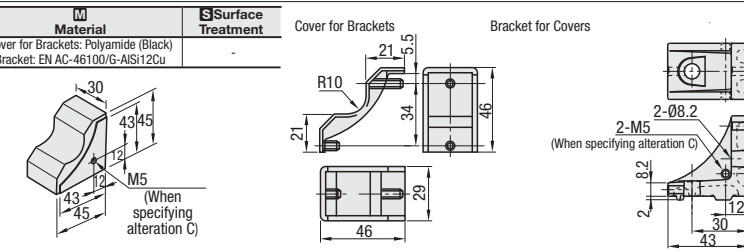
Brackets with Caps

RoHS



Type	Material	Surface Treatment
HBLFSNT8	Cover for Brackets: Polyamide (Black) Bracket: EN AC-46100/ G-AISI12Cu	-

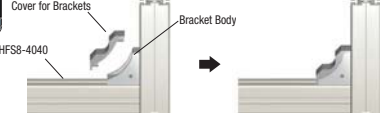
HBLFSNT8



Part Number	Mass (g)	Applicable Screw · T Nut				Accessory Components	Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount 100~
		Screw	Qty.	T Nut	Qty.				
HBLFSNT8	56	CBM8-20	2	HNTT8-8	2	Bracket 1 Cover for Brackets 1	2058		



Example of Mounting Covers to Brackets



Order Example: **Part Number HBLFSNK8**

Days to Ship: **6 Days** **2 Days** P87

Alterations: **Part Number HBLFSNK8** (C · SET · SST · SEU · SSU · SEP · SSP · SEC)

Alterations	Code	Spec.	Applicable Brackets	Price Adder
Mounting Holes for Cover	C	Adds a tap for a bracket for cover mounting. (M5 on Both Sides) (Mounting screw P644 HCBM)	HBLFSS8	0,30
			HBLFSB8	0,40
			HBLFSN8	0,30
			HBLFSNB8	0,40
			HBLFSNM8	0,30
			CHBLFSN8	0,45
			HBLFSNF8	
			HBLFSL8	0,30
			HBLFSNK8	
			HBLFSNE8	
			HBLFSH8	0,30
			HBLFSR8	0,30
			HBLFSNT8	0,40

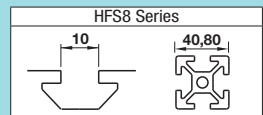
Alterations)	Code	Spec.	Applicable Brackets	Price Adder
Applicable Screws and Nuts as a set.	SET SSS (Stainless Steel) SEU (Pre-Assembly Insertion Spring Nuts) SSU (Pre-Assembly Insertion Spring Nuts) SEP (Post-Assembly Insertion Spring Nuts) SSP (Post-Assembly Insertion Spring Nuts) SEC (Captured Washer Screws Nuts)	Supplies a set of applicable screws and nuts for fixing the bracket to an extrusion. (Adds to the bracket price) (Ex.) When HBLFS8 is specified, (Screw Fastening) Nuts	HBLFSS8	1,12 1,20 1,38 2,02 1,38 1,60 1,80
			HBLFSB8	1,36 - 1,62 - - 1,62 - -
			HBLFSN8	1,12 1,20 1,38 2,02 1,38 1,60 1,80
			HBLFSNB8	1,36 - 1,62 - - 1,62 - -
			HBLFSNM8	1,15 1,41 1,41 1,41 1,83
			CHBLFSN8	
			HBLFSL8	1,12 1,20 1,38 2,02 1,38 1,60 1,80
			HBLFSNK8	
			HBLFSNE8	
			HBLFSH8	1,12 1,20 1,38 2,02 1,38 1,60 1,80

Screws for black anodized parts are HCBMTB (Trivalent Chromate Black). P641

When -SET, -SEU or -SEP is specified, it is not RoHS compliant.

Post-Assy. Easy Brackets / Tabbed Brackets -for 1 slot / 2 slots-

-Slot Type: HFS8 Series (Aluminum Frames 40 · 80 Square)-



CAD Data

Features: 2 aluminum extrusions can be easily connected with tightening only 1 screw. Brackets can be mounted on the extrusion slots after assembly.

Brackets
RoHS

Components		Material	Surface Treatment
(1) Joint Plates		1.0330/DC01	Trivalent Chromate
(2) Joint Bracket		1.1191/C45E	
(3) Hexagon Socket Head Cap Screw		1.7220/34CrMo4	

HABL8 (1) Joint Plates

(2) Joint Bracket

(3) Hexagon Socket Head Cap Screw

Ⓢ Overtightening may cause deformation of joint plates.
(Reference Tightening Torque 15N·m)

Part Number	Mass (g)	Included Screw		Allowable Load (N)	€ Unit Price	Volume Discount
		Screw	Qty.			
HABL8	120	Hex Socket Head Cap Screws M8x15	1	800		

Connection Method

Step	Front View	Side view	Sketch Drawing
1			
2			
3			
4			

Order Example
Part Number: HABL8

Days to Ship
6 Days 2 Days P.87

Example

Holes are tapped on a bracket for cover mounting. For aluminum extrusions with 2 slots, brackets can be mounted on both sides.

Features: Brackets with twice as many screws. Extrusions can be connected more securely.

Reversal Tabbed Brackets
RoHS

Type	Material	Surface Treatment
HBLFSSW8	EN AC-46100/G-AISI12Cu	

HBLFSSW8

Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price	Volume Discount
		Screw	Qty.	T Nut	Qty.			
HBLFSSW8	105	CBM8-20	4	HNTT8-8	4	3087		

Order Example
Part Number: HBLFSSW8

Days to Ship
6 Days 2 Days P.87

Example

Can be connected in parallel and perpendicular directions to the extrusion slot.

CAD Data

Features: Tabbed Brackets for 2-slots. Since the tabs stop rotating the brackets when tightening, improves work efficiency.

Tabbed Brackets
RoHS

Type	Material	Surface Treatment
HBLFTD8	EN AC-46100/G-AISI12Cu	
HBLFUD8		

HBLFTD8

HBLFUD8

Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price	Volume Discount
		Screw	Qty.	T Nut	Qty.			
HBLFTD8	140	CBM8-20	4	HNTT8-8	4	3087		
HBLFUD8	370	CBM8-25	4	HNTT8-8	4	3920		

Example

Can be connected in parallel and perpendicular directions to the extrusion slot.

Features: Extrusions with 2-slots (HFS8-8080, etc.) can be connected with one bracket.

Reversal Tabbed Brackets
RoHS

Type	Material	Surface Treatment
HBLFSD8	EN AC-46100/G-AISI12Cu	

HBLFSD8

Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price	Volume Discount
		Screw	Qty.	T Nut	Qty.			
HBLFSD8	89	CBM8-20	4	HNTT8-8	4	3087		

Order Example
Part Number: HBLFSD8

Days to Ship
6 Days 2 Days P.87

Alterations
Part Number: HBLFSD8 - (C · SET · SST · SEU · SSU · SEP · SSP · SEC) SET

Alterations	Code	Spec.	Applicable Brackets	Price Adder
Mounting Holes for Cover	C	Adds a tap for a bracket for cover mounting. (M5 on Both Sides) (Mounting screw P644 HCBM)	HBLFSSW8 HBLFSD8 HBLFTD8 HBLFUD8	0,40

Example of Cover Mounting
Specify alteration code C.

Example

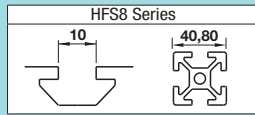
Alterations	Code	Spec.	Applicable Brackets						Price Adder									
			HBLFSSW8		HBLFSD8		HBLFTD8		HBLFUD8		SET		SST		SEU		SSU	
Applicable Screws and Nuts come as a set.	SET	Stainless Steel																
	SST	(Pre-assy. Insertion Spring Nuts)																
	SEU	(Pre-assy. Insertion Spring Nuts Stainless Steel)																
	SSU	(Post-Assy. Insertion Spring Nuts)																
	SEP	(Post-Assy. Insertion Spring Nuts Stainless Steel)																
	SSP	(Captured Washer Screws Nut)																
	SEC	(When specifying other than HBLFSSW8, check for the applicable screws and nuts.)																

Ⓢ Screws for black anodized parts are HCBMTB (Trivalent Chromate Black), P641
Ⓢ When -SET, -SEU or -SEP is specified, it is not RoHS compliant.



Extruded Brackets -for 1-slot-

-Slot type: HFS8 Series (Aluminum Frames 40, 80 Square)-



CAD Data

Features: Extruded Brackets with tabs to fit extrusions. Since the tabs stop rotating the brackets when tightening, improves work efficiency.

Thick Brackets (With Tab Type)

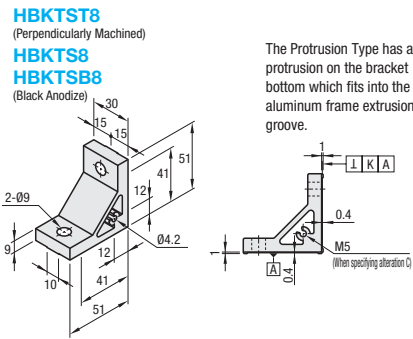
RoHS



HBK... series and HBLDSWT have tabs on the contact surfaces with extrusions.

Type	Material	Surface Treatment
HBKTST8	EN AC-51400/AlMgSi0.7	Anodize
HBKTS8		Black Anodize
HBKTSB8		Black Anodize

Part Number	Perpendicularity K
HBKTST8	0.03
HBKTS8	
HBKTSB8 (Black Anodize)	0.06



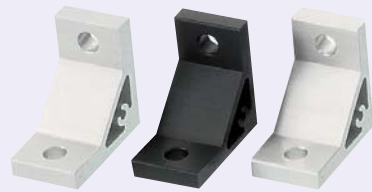
Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBKTST8	65.8	CBM8-20	2	HNTT8-8	2	2058		
HBKTS8								
HBKTSB8* (Black Anodize)								

* For repairing black anodizing, refer to P748

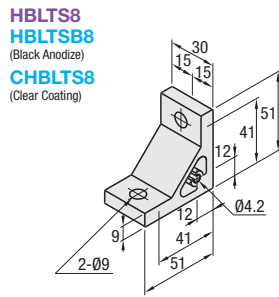
Features: Aluminum Extruded Brackets. Good appearance designed to prevent dust build up.

Thick Brackets

RoHS

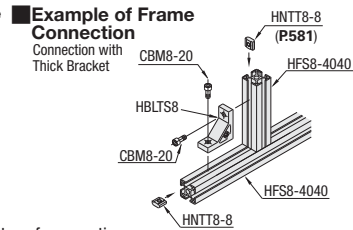


Type	Material	Surface Treatment
HBLTS8	EN AC-51400/AlMgSi0.7	Anodize
HBLTSB8		Black Anodize
CHBLTS8		Clear Coating (Anodize + Clear + Coating)



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBLTS8	65.8	CBM8-20	2	HNTT8-8	2	2058		
HBLTSB8* (Black Anodize)								
CHBLTS8 (Clear Coating)								

* For repairing black anodizing, refer to P748



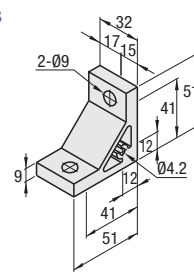
Features: Hole positions are offset. Can be combined with plates of 3mm and 5mm thickness when using taps for mounting covers.

Eccentric Brackets

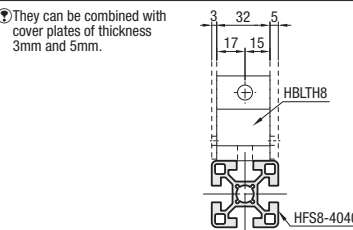
RoHS



Type	Material	Surface Treatment
HBLTH8	EN AC-51400-T5	Anodize



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBLTH8	68	CBM8-20	2	HNTT8-8	2	2058		



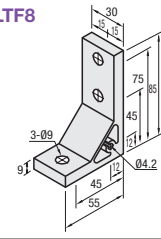
Features: Extruded Brackets with Unequal Sides. Effective when strength is required in narrow clearances between extrusions.

Scalene Brackets

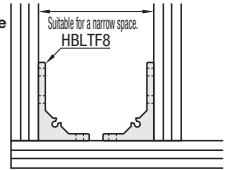
RoHS



Type	Material	Surface Treatment
HBLTF8	EN AC-51400/AlMgSi0.7	Anodize



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBLTF8	90	CBM8-20	3	HNTT8-8	3	2572		



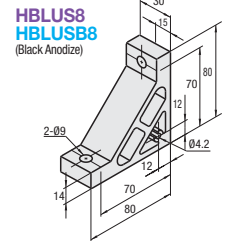
Features: Numbers of screws are the same as HBLTS8. Extrusions can be connected more securely.

Ultra Thick Brackets

RoHS



Type	Material	Surface Treatment
HBLUS8	EN AC-51400/AlMgSi0.7	Anodize
HBLUSB8		Black Anodize



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBLUS8	151	CBM8-25	2	HNTT8-8	2	2058		
HBLUSB8* (Black Anodize)								

* For repairing black anodizing, refer to P748

Features: Numbers of screws are the same as HBLKTS8. Extrusions can be connected more securely.

Ultra Thick Brackets (With Tabs)

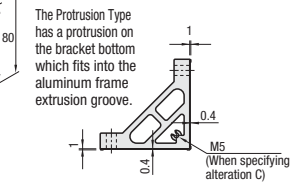
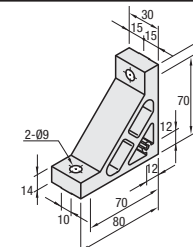
RoHS



HBK... series and HBLDSWT have tabs on the contact surfaces with extrusions.

Type	Material	Surface Treatment
HBKUS8	EN AC-51400/AlMgSi0.7	Anodize
HBKUSB8		Black Anodize

HBKUS8
HBKUSB8
(Black Anodize)



Part Number	Mass (g)	Applicable Screw · T Nut				Allowable Load (N)	€ Unit Price 1-99 pcs.	Volume Discount Rate 100-
		Screw	Qty.	T Nut	Qty.			
HBKUS8	151	CBM8-25	2	HNTT8-8	2	2058		
HBKUSB8* (Black)								

* For repairing black anodizing, refer to P748

Order Example: **HBLUS8** Days to Ship: **6 Days** **2 Days**

Alterations: **HBLUS8** (C · SET · SST · SEU · SSU · SEP · SSP · SEC)

Alterations	Code	Spec.	Applicable Brackets	Price Adder
Mounting Holes for Cover	C	Adds a tap for a bracket for cover mounting. (M5 on Both Sides) (Mounting screw P.644 HCBM)	HBLTS8	0,30
			CHBLTS8	0,50
			HBKTS8	
			HBLTH8	
			HBLTF8	0,30
			HBLUS8	

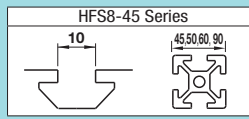
Alterations	Code	Spec.	Applicable Brackets	Price Adder
Applicable Screws and Nuts come as a set.	SET (Stainless Steel) SEU (Pre-Assy. Insertion Spring Nuts) SSU (Pre-Assy. Insertion Spring Nuts Stainless Steel) SEP (Post-Assy. Insertion Spring Nuts) SSP (Post-Assy. Insertion Spring Nuts Steel) SEC (Captured Washer Screws Nuts)	Supplies a set of applicable screws and nuts for fixing the bracket to an extrusion. (Adds to the bracket price)	HBLTS8	1,12 1,12 1,38 1,94 1,38 1,52 1,80
			HBLTSB8	1,36 - 1,62 - 1,62 - -
			CHBLTS8	1,20 2,02 1,60
			HBKTST8	
			HBKTS8	1,12 1,38 1,38
			HBKTSB8	1,12 1,94 1,52
			HBLTH8	
			HBLTF8	1,68 1,68 2,07 2,07 2,28 2,70
			HBLUS8	1,14 1,14 1,40 1,96 1,40 1,54 1,78
			HBLUSB8	1,38 - 1,64 - 1,64 - -
			HBKUS8	1,14 1,14 1,40 1,96 1,40 1,54 1,78
			HBKUSB8	1,38 - 1,64 - 1,64 - -

Ⓢ Screws for black anodized parts are HCBMTB (Trivalent Chromate Black). P.641
Ⓢ When -SET, -SEU or -SEP is specified, it is not RoHS compliant.



Pre-Assembly Insertion Nuts for Aluminum Frames · Stoppers Others

-For HFS8-45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-

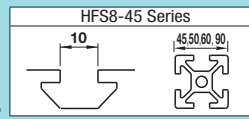


CAD Data



Post-Assembly Insertion Nuts for Aluminum Frames · Stoppers Standard

-For HFS8-45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-



CAD Data

Pre-Assembly Insertion Lock RoHS

M Material: 1.0301 Equivalent
S Surface Treatment: Trivalent Chromate

HNTC8

Reference Tightening Torque (N · m)	
M	1.0301 Equivalent
8	23.5

Example

Pre-Assembly Insertion Lock Nuts
The position of post-assy. insertion lock nuts can be held temporarily with the set screw.

Part Number	M	Accessory	€Unit Price	Volume Discount Rate
HNTC8	8	M4 Set screw 1 pc.	1-499 pcs.	500-749 750-999 1000-

Pre-Assembly Insertion Short Nuts RoHS

M Material: 1.0301 Equivalent
S Surface Treatment: Trivalent Chromate

HNTJ8

Example

• Overall length is shorter than Pre-Assy. Insertion Nuts HNTT. Suitable for installing sensors or other components closely in combination.
• Stopper is not included.

Part Number	M	L	€Unit Price	Volume Discount Rate
HNTJ8	3 4 8	8	1-499 pcs.	500-749 750-999 1000-
HNTJ8	8	12		

Pre-Assy. Insertion Eccentric Nuts RoHS

* Electrically conductive
M Material: 1.4401 Equivalent (Sintering)

HNTHSN8

Example

• The pre-assy. insertion offset nut, used in combination with a post-assy. insertion double joint, can be fixed in such a way that the nut, even if connected at the corner of the extrusion, does not protrude from the extrusion (frame).

Part Number	€Unit Price	Volume Discount Rate
HNTHSN8	1-99 pcs.	100-

Pre-Assembly Insertion Square Nuts RoHS

100 pcs. per package
Insert it into the extrusion upside down.
M Material: 1.0330
S Surface Treatment: Trivalent Chromate

HNKK8

Example

Part Number	M	€Unit Price	Volume Discount Rate
HNKK8	4 5 6 8	1-9 package	10-19 20-29

Metal Stoppers for Pre-Assembly Insertion Square Nuts RoHS

M Material: 1.4319
100 pcs. per package

HNKKST8

Example

Part Number	Applicable Pre-Assembly Insertion Nuts	€Unit Price	Volume Discount Rate
HNKKST8	HNKK8	1-9 package	10-19 20-29

Order Example

Part Number	M
HNTC8	8
HNTJ8	8
HNTHSN8	8
HNKK8	8
HNKKST8	8

Applicable Extrusions and Brackets (Ex.)

Part Number	Pre-Assy. Insertion Nut	Pre-Assembly Insertion Stoppers	Extrusions	Brackets
HNTHSN8	HNTHSN8	HNTHSN8	HFS8	HBLFSN6

Days to Ship **6 Days** P87 **2 Days**

Post-Assembly Insertion Stopper Nuts RoHS

* Electrically conductive

Type	M	Material	Surface Treatment
(1) HNTA8	8	1.0301 Equivalent	Trivalent Chromate
(2) HNTAV8	8	1.0301 Equivalent	Trivalent Chromate
(3) HNTAZ8	8	1.0301 Equivalent	Trivalent Chromate
(4) HNTASN8*	8	1.4401 Equivalent (Sintering)	-
(5) HNTASS8	8	1.4305	-

HNTA8 (1.0301 Equivalent)
HNTAV8 (Thread Locking Adhesive · 1.0301 Equivalent)
HNTAZ8 (Thread Locking Resin Coating · 1.0301 Equivalent)
HNTASN8 (1.4401 Equivalent)
HNTASS8 (1.4305)

Reference Tightening Torque (N · m)	
M	1.0301 Equivalent · 1.4401 Equivalent (Sintering) · 1.4305
8	23.5

Details of Thread Locking Type P619

Example

• Post-Assembly Insertion Stopper Nuts

Part Number	M	T	€Unit Price	Volume Discount Rate
HNTA8 (1.0301 Equivalent)	4 5 6	8	1-499 pcs.	500-749 750-999 1000-
HNTAV8 (Thread Locking · 1.0301 Equivalent)	8	6.5		
HNTAZ8 (Thread Locking · 1.0301 Equivalent)	8	6.5		
HNTASN8 (1.4401 Equivalent, Sintering)	4 5 6 8	6.0		
HNTASS8 (1.4305)	8	6.5		

Order Example Part Number - M
HNTA8 - 8

Days to Ship **6 Days** P87 **2 Days**

Post-Assembly Insertion Nuts RoHS

* Electrically conductive

Type	M	Material	Surface Treatment
(1) HNTF8	8	1.0301 Equivalent	Trivalent Chromate
(2) HNTFV8	8	1.0301 Equivalent	Trivalent Chromate
(3) HNTFZ8	8	1.0301 Equivalent	Trivalent Chromate
(4) HNTFSN8*	8	1.4401 Equivalent (Sintering)	-

HNTF8 (1.0301 Equivalent)
HNTFV8 (Thread Locking Adhesive · 1.0301 Equivalent)
HNTFZ8 (Thread Locking Resin Coating · 1.0301 Equivalent)
HNTFSN8 (1.4401, Sintered)

Reference Tightening Torque (N · m)	
M	1.0301 Equivalent / 1.4401 Equivalent (Sintering)
8	23.5

Details of Thread Locking Type P619

Example

• Post-Assembly Insertion Nuts

Part Number	M	E	T	€Unit Price	Volume Discount Rate
HNTF8 (1.0301 Equivalent)	4 5 6 8	6.0	9.0	1-499 pcs.	500-749 750-999 1000-
HNTFV8 (Thread Locking · 1.0301 Equivalent)	8	6.0	9.0		
HNTFZ8 (Thread Locking · 1.0301 Equivalent)	8	6.0	9.0		
HNTFSN8 (1.4401, Sintering)	4 5 6 8	6.4	8.9		

Order Example Part Number - M
HNTF8 - 8

Days to Ship **6 Days** P87 **2 Days**

Post-Assembly Insertion Stoppers RoHS

* Electrically conductive

Type	Material
(1) HNA8	Polypropylene
(2) HNB8	1.4319

HNA8 (Polypropylene)
HNB8 (1.4319)

Part Number	Applicable Stopper Nuts	Color	L	B	L1	B1	€Unit Price	Volume Discount Rate
HNA8	HNTA8 HNTAV8 HNTAZ8 HNTASN8 HNTASS8	White	21	11.1	26	9.8	1-499 pcs.	500-999 1000-
HNB8	HNTA8 HNTAV8 HNTAZ8 HNTASN8 HNTASS8	-	23	12.5	28	8		

Post-Assembly Insertion Nut · Stopper Set RoHS

* Electrically conductive

Type	(B) Stopper Nuts	(A) Stoppers
HNTAT8	HNTA8	HNA8
HNTATS8*	HNTASN8	HNA8

HNTAT8 (1.0301 Equivalent Set)
HNTATS8 (1.4401 Equivalent Set)

Part Number	M	€Unit Price	Volume Discount Rate
HNTAT8	4 5 6	1-499 pcs.	500-749 750-999 1000-
HNTATS8	4 5 6 8		

Part Number	M	€Unit Price	Volume Discount Rate
HNTAT8	4 5 6	1-499 pcs.	500-749 750-999 1000-
HNTATS8	4 5 6 8		

Post-Assembly Insertion Nut · Metal Stopper Set RoHS

* Electrically conductive

Type	(B) Stopper Nuts	(A) Stoppers
HNTBT8	HNTA8	HNB8
HNTBTS8*	HNTASN8	HNB8

HNTBT8 (1.0301 Equivalent Set)
HNTBTS8 (1.4401 Equivalent Set)

Part Number	M	€Unit Price	Volume Discount Rate
HNTBT8	4 5 6	1-499 pcs.	500-749 750-999 1000-
HNTBTS8	4 5 6 8		

Part Number	M	€Unit Price	Volume Discount Rate
HNTBT8	4 5 6	1-499 pcs.	500-749 750-999 1000-
HNTBTS8	4 5 6 8		

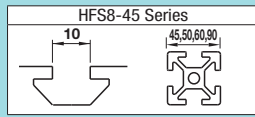
Order Example Part Number - M
HNTAT8
HNTATS8 - 8

Days to Ship **6 Days** P87 **2 Days**



Post-Assy. Insertion Nuts for Aluminum Frames With Temporary Holding Function

-For HFS8 · 45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-



CAD Data

Post-Assembly Insertion Nuts with Leaf Springs RoHS

Part	M	S
Body	1.0301/C10 Equivalent	Trivalent Chromate
Wing Part	1.4301/X5CrNi18-10	-

HNTAP8

Reference Tightening Torque (N · m)

M	S10C Equivalent
8	23.5

Example

Welded Leaf Springs prevent the nuts from slipping off even inserted into the vertically-placed extrusions.

Part Number	M	€ Unit Price		Volume Discount Rate	
		1-499 pcs.	500-749	750-999	1000~
HNTAP8	4 5 6 8				

Order Example: Part Number **HNTAP8** - M **8**

Days to Ship: **6 Days** P.87

Post-Assembly Insertion Spring Nuts RoHS

* Electrically conductive

Type	Body	Material	Ball	Surface Treatment
(1) HNTPB8	1.0301/C10 Equivalent	1.4301	JIS SWP-A	Trivalent Chromate
(2) HNTPZ8	1.0301/C10 Equivalent	1.4301	JIS SWP-A	Trivalent Chromate
(4) SHNTP8*	1.4401 - Equivalent (Sintering)	1.4301	1.4301-WP8	-

HNTPB8 (1.0301/C10 Equivalent)
HNTPZ8 (Thread Locking Resin Coating · 1.0301/C10 Equivalent)
SHNTP8 (1.4401/X5CrNiMo17-12-2 · Sintered)

Reference Tightening Torque (N · m)

M	1.0301/C10 Equivalent / 1.4401 - Equivalent (Sintering)
8	23.5

Example

The built-in spring prevents slips. Moves easily in the slot when pressed slightly by hand.

* Does not fall even if an extrusion is placed vertically.

Part Number	Type	M	L1	€ Unit Price		Volume Discount Rate	
				1-499 pcs.	500-749	750-999	1000~
HNTPB8(1.0301 Equivalent)		4 5 6 8	8				
HNTPZ8(Thread Locking - 1.0301 Equivalent)		8					
SHNTP8(1.4401 Equivalent, Sintering)		4 5 6 8		8.5			

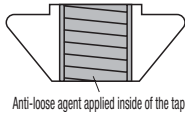
Bulk-packages are cost effective for in-house stock and large qty. uses. (P508)

Order Example: Part Number **HNTPB8** - M **8**

Days to Ship: **6 Days** P.87 **2 Days**

Thread Locking Type

It is a Nut with Thread locker applied on the inside of tap. Reduce loosening caused by vibration at transportation or operation of equipment. Thread Locking Adhesive is ---A microencapsulated anaerobic adhesive prevents thread loosening. Note that it requires a hardening time (72 hours at room temperature 25°C). The adhesive property is lost once loosened. Resin Coating ---Resin is coated along the threads. Although the thread locking effect may be less than adhesive type, it can be used repeatedly without hardening time required.



Effect of Thread Locker (Reference)

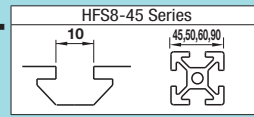
Loosening torque values are for reference. Difference may occur depending on the clearances between bolts and nuts.

	Features	Loosening torque after tightening (1st time)	Remarks
Without Thread Locker	-	17.9N · m	-
Thread Locking Adhesive Type	<ul style="list-style-type: none"> Prevents loosening effectively. Thread locking properties are lost once loosened. Requires a hardening time for adhesives (72 hours at room temperature 25°C) after tightening. 	25.6N · m	Test Conditions: Measured value (HNTPV8-8) when a bolt is loosened after drying for 72 hours at room temperature (25 °C), after tightened at 23.5N · m.
Thread Locking Resin Coating Type	<ul style="list-style-type: none"> Can be used repeatedly. (Thread locking effect decreases after repeated use.) Thread locking effect is immediately seen right after tightening. 	20.3N · m	Thread locking effect decreases after repeated use. 5th loosening torque: 19.1N · m Measurement with HNTAZ8-8



Post-Assy. Insertion Nuts, Others -Post-Assy. Insertion Lock Nuts · Short Nuts-

-For HFS8-45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-



CAD Data

Post-Assembly Insertion Lock Nuts with Leaf Springs RoHS

Part	M	S
Body	1.0301/C10 Equivalent	Trivalent Chromate
Wing Part	1.4301/X5CrNi18-10	-

HNTRP8

Reference Tightening Torque (N · m)

M	1.0301/C10 Equivalent
8	23.5

Part Number	M	Accessory	€ Unit Price		Volume Discount Rate	
			1-499 pcs.	500-749	750-999	1000~
HNTRP8	8	M4 Set screw 1 pc. Set Screw				

Post-Assembly Insertion Lock Nuts RoHS

Type	M	S
HNTR8	1.0301/C10 Equivalent	Trivalent Chromate
HNTRS8	1.4401 Equivalent (Sintering)	-

HNTR8 (1.0301/C10 Equivalent)
HNTRS8 (1.4401/X5CrNiMo17-12-2 Equivalent · Sintering)

Reference Tightening Torque (N · m)

M	1.0301/C10 Equivalent / 1.4401/X5CrNiMo17-12-2 Equivalent (Sintering)
8	23.5

Part Number	Type	M	T	Accessory	€ Unit Price		Volume Discount Rate	
					1-499 pcs.	500-749	750-999	1000~
HNTR8(1.0301/C10 Equivalent)		4 5 6 8	6.5	M4 Set screw 1 pc.				
HNTRS8(1.4401 Equivalent · Sintering)			6.0					

Order Example: Part Number **HNTR8** - M **8**

Days to Ship: **2 Days** P.87

Example

The nut can be fixed in place by itself by tightening the included set screw.

Welded Leaf Springs prevents nuts from slipping off even inserted into the vertically-placed extrusions, leading to easy positioning.

Also, the nut can be fixed in place by tightening the included set screw.

Post-Assembly Insertion Short Nuts RoHS

Part	M	S
Body	1.0301 Equivalent	Trivalent Chromate
Wing Part	1.4301	-

HNTAJ8

*Overall length is shorter than Pre-Assy. Insertion Nuts HNTT. Suitable for installing sensors or other components closely in together.

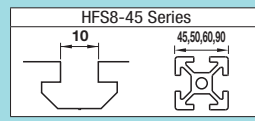
Part Number	M	L	€ Unit Price		Volume Discount Rate	
			1-499 pcs.	500-749	750-999	1000~
HNTAJ8	3 4 10 8 12					

Order Example: Part Number **HNTAJ8** - M **8**

Days to Ship: **6 Days** P.87

Pre-Assy. Insertion Bolts / Post-Assy. Insertion Bolts / Conductive Washers / Toothed Washer / Flanged Nuts

-For HFS8-45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-



CAD Data

Tightening Torque **P676**

Pre-Assembly Insertion Bolts **RoHS**

Material: Nuts: 1.4401/X5CrNiMo17-12-2 Equivalent (Sintering)
Bolts: 1.4301/X5CrNi18-10

HNTLSN8-8

Effective Length of Pre-Assy. Insertion Bolts

* Electrically conductive

Part Number	L	H	Applicable Extrusion (Series)	Reference Tightening Torque (N · m)	€ Unit Price	Volume Discount Rate
HNTLSN8-8	20	17.5	HFS8	23.5	1-299 pcs.	300-499 500~
	25	22.5				

Order Example: Part Number **HNTLSN8-8** - **L 20**

Days to Ship **2 Days** **P87**

Post-Assembly Insertion Bolts **RoHS**

Material: Nuts: 1.4401/X5CrNiMo17-12-2 Equivalent (Sintering)
Bolts: 1.4301/X5CrNi18-10

HATLSN8-8

Effective Length of Post-Assy. Insertion Bolts

* Electrically conductive

Part Number	L	H	Applicable Extrusion (Series)	Reference Tightening Torque (N · m)	€ Unit Price	Volume Discount Rate
HATLSN8-8	20	17.0	HFS8	23.5	1-299 pcs.	300-499 500~
	25	22.0				

Order Example: Part Number **HATLSN8-8** - **L 20**

Days to Ship **2 Days** **P87**

Conductive Washers **RoHS**

Material: 1.4301/X5CrNi18-10

HDW8

Conductivity between extrusions is achieved by combining HDW and HUZW.

Be careful not to injure your hand when fitting onto nut.

Part Number	Applicable Pre-Assy. Insertion Nut	€ Unit Price	Volume Discount Rate
HDW8	HNTT8	1-99 pcs.	100~

Order Example: Part Number **HDW8**

Days to Ship **2 Days** **P87**

Toothed Washer for Aluminum Frames **RoHS**

Material: 1.4301/X5CrNi18-10

HUZW8PACK

Part Number	€ Unit Price	Volume Discount Rate
HUZW8PACK	1-4 package	5~

Order Example: Part Number **HUZW8PACK**

Days to Ship **6 Days** **P87**

Flanged Nuts **RoHS**

Material: 1.4301/X5CrNi18-10

HTDN

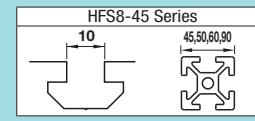
Part Number	€ Unit Price	Volume Discount Rate		
HTDN (Stainless Steel)	M 4	7	4.2	10
	M 5	8	5.5	12
	M 6	10	6.0	13
	M 8	12	7.5	17

Order Example: Part Number **HTDN6**

Days to Ship **2 Days** **P87**

Long Nuts

-For HFS8-45 Series Aluminum Frames 45 · 50 · 60 · 90 Square-



CAD Data

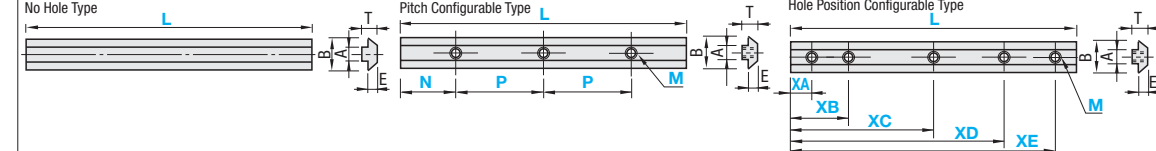
Tightening Torque **P676**

Long Nuts L Dimension Configurable Type **RoHS**

Type	Pre-Assy. Insertion	Post-Assy. Insertion	Material	Surface Treatment	Reference Tightening Torque (N · m)
HNTLF8	HNTALF8	HNTALP8	1.0301/C10 Equivalent	Trivalent Chromate	23.5
SHNTLF8	SHNTALP8	SHNTALS8	1.4305/X10CrNiS18-9		

Example

Linear Guides
Aluminum Extrusion with Milled Surfaces (P800)



No Hole Type

Part Number	L 1mm Increment	HNTLF		SHNTLF		HNTALF	
		€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
(Pre-Assy. Insertion) HNTLF8 SHNTLF8	(Post-Assy. Insertion) HNTALF8	(Pre-Assy. Insertion) 50-2000 (Post-Assy. Insertion) 50-1000					

Pitch Configurable Type

Part Number	L 1mm Increment	M	N 1mm Increment	P 1mm Increment	Number of taps S	HNTLP		SHNTLP		HNTALP		SHNTALP	
						€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
(Pre-Assy. Insertion) HNTLP8 SHNTLP8	(Post-Assy. Insertion) HNTALP8	(Pre-Assy. Insertion) 50-2000 (Post-Assy. Insertion) 50-1000	4 5 6 8	5≤N≤L-5	2M≤P≤2M	2≤S≤20							

Hole Position Configurable Type

Part Number	L 1mm Increment	M	XA-XE 1mm Increment	HNTLS		SHNTLS		HNTALS		SHNTALS	
				€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more	€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
(Pre-Assy. Insertion) HNTLS8 SHNTLS8	(Post-Assy. Insertion) HNTALS8	(Pre-Assy. Insertion) 50-2000 (Post-Assy. Insertion) 50-1000	4 5 6 8	5-L-5							

Number of tapped holes can be specified between 1 to 5.

Order Example

Part Number	L
HNTLF8	- 1800
HNTALF8	- 400

Part Number - L - M - N - P - S

Part Number	L	M	N	P	S
HNTLP8	- 460	- M5	- N30	- P100	- 4
HNTALP8	- 210	- M8	- N8	- P16	- 8

Part Number - L - M - XA - XB - XC - XD - XE

Part Number	L	M	XA	XB	XC	XD	XE
HNTLS8	- 1050	- M8	- XA20	- XB105			
SHNTLS8	- 1050	- M8	- XA20	- XB105	- XC250	- XD500	- XE755
HNTALS8	- 1000	- M8	- XA25	- XB55	- XC78	- XD975	- XE992

(Ex.) Pitch Configurable Type

Days to Ship **8 Days** Express A EUR 5.00/ piece **P88**

A flat charge of EUR 13.50 for 3 or more identical pieces.

Hole Machining Charge

Pitch Configurable Type	€ Unit Price / 1 Hole	Hole Position Configurable Type	€ Unit Price / 1 Hole
HNTLP - HNTALP		HNTLS - HNTALS	
SHNTLP - SHNTALP		SHNTLS - SHNTALS	

Price

The prices of Pitch Configurable Type and Hole Position Configurable Type are found by adding the unit prices in the table to the hole machining charges.

(Ex.) Part Number **HNTLS8** - L - M8 - XA10 - XB70

(€ Unit Price/m x Specified Full Length) + (Hole Machining Charge) = Price

7,70 x 0.4 + 3,20 x 2 = EUR 9,40 (Round down to ten cent.)

Long Nuts L Dimension Fixed Type **RoHS**

L Dimension Fixed without Holes: **HNTK8**

L Dimension Fixed with Holes: **HNTLG8 SHNTLG8**

Part Number	€ Unit Price	Volume Discount Rate
HNTK8	1-499 pcs.	500-999 1000~

Order Example: Part Number **HNTLG8**

Days to Ship **6 Days** **P87**

Alterations: Part Number **HNTLG8** - SET

Alteration	Code	Spec.	Type	Price Adder	
Hexagon Socket Set Screw Set	SET	Hexagon socket set screws come as a set.	HNTLG8	0,50	
		Type	Set Screw Qty.	SHNTLG8	0,85
		HNTLG	MSSK 4		
		SHNTLG	MSSU 4		

L Dimension Fixed without Holes

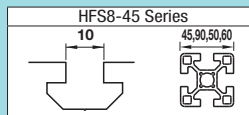
Part Number	€ Unit Price	Volume Discount Rate
HNTK8	1-499 pcs.	500-999 1000~

L Dimension Fixed with Holes

Part Number	€ Unit Price	Volume Discount Rate
HNTLG8 SHNTLG8 (Stainless Steel)	1-499 pcs.	500-999 1000~

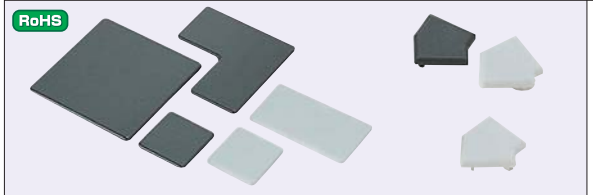
Extrusion End Caps

-HFS8-45 Series-



CAD Data

Features: Standard caps for protecting frame end faces. Alterations are not required. When the cap is hard to insert, tap with a wooden or plastic hammer.



Type	Material
HFC	Polyamide
HFCL	Low Density Polyethylene

Some products are not required to specify colors, since there was no color configuration in the former catalogs. In that case, color is black. The pin's shape and numbers of extrusion end caps may be changed to prevent caps from easily falling off.

HFC8-4545
HFCL8-4545

Cross Section A-A

HFC8-4590
HFCL8-4590

Cross Section A-A

HFC8-9090

HFC8-909045

HFC30A8-45

HFC45A8-45

HFC60A8-45

HFCL8-4545

HFC8-5050

HFC8-50100

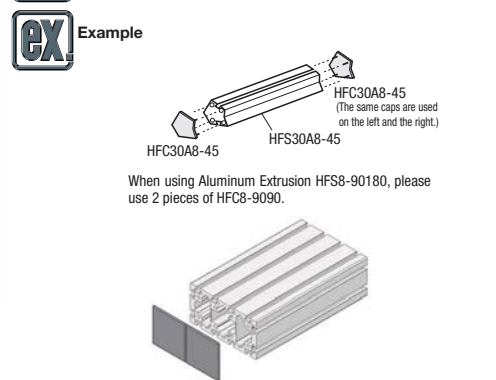
HFC6-8-6060

The shapes are changed to be less likely to fall off.
HFC: A tool is required to remove.
HFCL: Removable by hand.

Part Number	Color	€ Unit Price	Volume Discount Rate	Applicable Extrusions *
Type	No.	1-14 pcs.	15-19	20~
HFC8	4545			HFS8-4545
	4590			HFS8-4590
	9090			HFS8-9090
	909045			HFS8-909045
HFCL8	4545			HFS8-4545
	4590			HFS8-4590
HFC30A8-45				HFS30A8-45
				HFS45A8-45
				HFS60A8-45
				HFSR8-909045
HFC8	5050			HFS8-5050
	50100			HFS8-50100
HFC6-8	6060			HFS8-6060 (HFS6-6060)

Order Example: **Part Number** - **Color**
HFC30A8-45 - B

Days to Ship: **6 Days** P.87 **2 Days**



Features: Frame End Caps Screw Mounting Type. Excels in safety preventing caps from falling off without alterations.

Screw Mounted

HFCB8-4545 (Screw Fixing Type) **HFCB8-4590** (Screw Fixing Type)

The pin shape and numbers of extrusion caps may be changed to prevent caps from easily falling off.

Material: Polyamide (Black · Light Gray)

Part Number	Color	€ Unit Price	Volume Discount Rate	Applicable Extrusions *
Type	No.	1-14 pcs.	15-19	20~
HFCB8	4545	B (Black)		HFS8-4545
	4590	S (Light Gray)		HFS8-4590

Order Example: **Part Number** - **Color**
HFCB8-4545 - B

Days to Ship: **6 Days** P.87

Tapping on extrusion is not required.

Features: Frame caps only for High Rigidity Aluminum Frames. Alterations are required on the cross sections.

Plates for High Rigidity Type

HFCD8

Shape AA, Shape BB, Shape AC, Shape AD

Material: 1.4301/X5CrNi18-10

Part Number	Shapes Pattern	A	B	Applicable Screw	Applicable Extrusion	€ Unit Price	Volume Discount Rate	
Type	No.					1-9 pcs.	10~	
HFCD8	4545	AA	45	SHFBS12-20 (Not included)	GFS8-4545			
	4590	AB	90		GFS8-4590			
	5050	AA	50		GFS8-5050			
	50100	AB	100		GFS8-50100			
	6060	AA	60		GFS8-6060			
	9090	AC	90		45	GFS8-9090		
	100100		100		50	GFS8-100100		
	100200	AD	200		150	GFS8-100200		

Order Example: **Part Number**
HFCD8-4545

Days to Ship: **10 Days**

Special alteration is required on cross sections of extrusions to mount frame caps. (Refer to P.658)



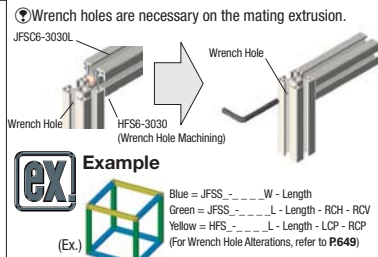
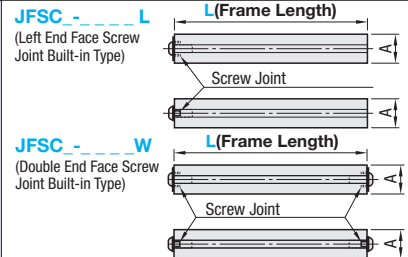
Aluminum Frames with Built-in Joints

CAD Data

Features: Screw joint installable without alterations. (Wrench holes are necessary on the mating extrusion)

Screw Joint Type

Name of Parts	Material	Surface Treatment
Aluminum Frames	EN AC-51 400/T5	Anodize
Screw	1.7220/34CrMo4	Trivalent Chromate
Joint Plate	1.0330/DC01	



Part Number	Joint Components	L 0.5mm Increment	Extrusions	Built-in Joint Component		A	Wrench required when tightening.	€ Extrusion Unit Price		€ Joints, Other
				Screw Joints	Qty.			Less than 300mm	300mm or more (€/m)	
5-2020	L (Left End Face Only) W (Double End Faces)	100-4000	HFSS-2020 (P477)	HCJ5 (P628)	1	20	For M5			
					2					
6-3030	L (Left End Face Only) W (Double End Faces)	100-4000	HFS6-3030 (P511)	HCJ6 (P628)	1	30	For M8			
					2					
8-4040	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4040 (P553)	HCJ8 (P628)	1	40	For M12			
					2					
8-4545	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4545 (P591)	HCJ8-45 (P628)	1	45	For M12			
					2					
8-6060	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-6060 (P599)	HCJ8-60 (P628)	1	60	For M12			
					2					

When L is less than 300 Unit prices are indicated in the table regardless of the length.
ex: -3030L-2,00=EUR 6,90

When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Configured L dimension + Joint or other € Unit Price = Price
ex: -3030L-18,00
8,30x1,8m+3,20=14,94+3,20 =EUR 18,14 (Round down to ten Cent.)

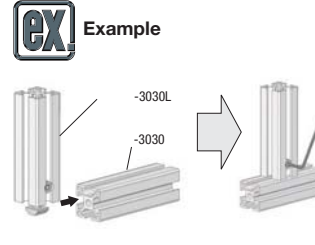
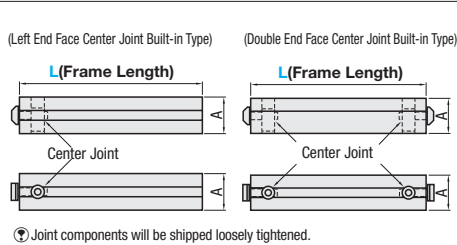
Order Example

Part Number - L
JFSC8-4040L - 1200

Features: Center joint installable without alterations. (No holes are required on the mating extrusion)

Center Joint Type

Name of Parts	Material	Surface Treatment
Aluminum Frames	EN AC-51 400/AlMgSi0,7-T5	Anodize
Center Post	1.4308/6-X6CrNi18-9	
Joint Guide	1.4301/X5CrNi18-10	
Set Screw	1.7220/34CrMo4	Blackening Film



Part Number	Joint Component	L 0.5mm Increment	Extrusions	Built-in Joint Component		A	Wrench required when tightening.	€ Extrusion Unit Price		€ Joints, Other
				Center Joint	Qty.			Less than 300mm	300mm or more (€/m)	
5-2020	L (Left End Face Only) W (Double End Faces)	100-4000	HFSS-2020 (P477)	HMJ5 (P629)	1	20	For M4			
					2					
6-3030	L (Left End Face Only) W (Double End Faces)	100-4000	HFS6-3030 (P511)	HMJ6 (P629)	1	30	For M6			
					2					
8-4040	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4040 (P553)	HMJ8 (P629)	1	40	For M6			
					2					
8-4545	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4545 (P591)	HMJ8-45 (P629)	1	45	For M6			
					2					

When L<300, Unit prices are indicated in the table regardless of the length.
ex: -3030L-2,00=€ 8,80

When L≥300, Prices are calculated as follows:
€ Unit Price/m x Configured L dimension + Joint or other € Unit Price = Price
ex: -3030L-18,00
⇒8,30x1,8m+5,10=14,94+5,10=€20,00 (Round down to ten Cent.)

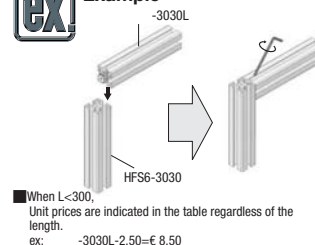
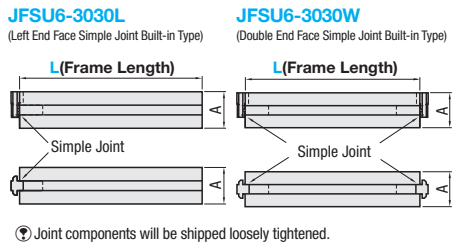
Order Example

Part Number - L
JFSM8-4040L - 1200

Features: Simple joint installable without alterations. (No holes are required on the mating extrusion)

Simple Joint Type

Name of Parts	Material	Surface Treatment
Aluminum Frames	EN AC-51 400/AlMgSi0,7-T5	Anodize
Body	1.1191/C45E	
Simple Dedicated Screws	1.7220/34CrMo4	Trivalent Chromate
Set Screw		Blackening Film



Part Number	Joint Component	L 0.5mm Increment	Extrusions	Built-in Joint Component		A	€ Extrusion Unit Price		€ Joints, Other
				Center Joint	Qty.		Less than 300mm	300mm or more (€/m)	
JFSU 6-3030	L (Left End Face Only) W (Double End Faces)	100-4000	HFS6-3030 (P511)	HUJ6 (P633)	1	30			
					2				

When L<300, Unit prices are indicated in the table regardless of the length.
ex: -3030L-2,50=€ 8,50

When L≥300, Prices are calculated as follows:
€ Unit Price/m x Configured L dimension + Joint or other € Unit Price = Price
ex: -3030L-14,00
8,30x1,4m+4,80=11,62+4,80 =€16,40 (Round down to ten Cent.)

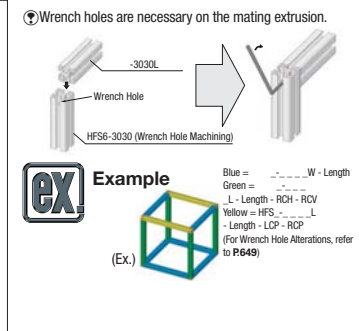
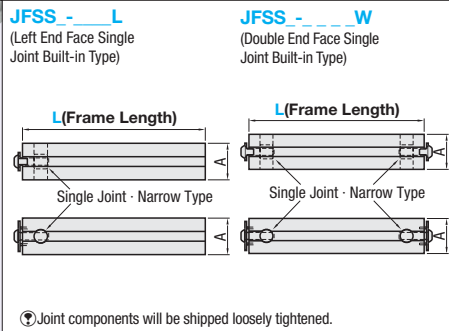
Order Example

Part Number - L
JFSU6-3030L - 1200

Features: Single joint installable without alterations. (Wrench holes are necessary on the mating extrusion)

Single Joint Type

Name of Parts	Material	Surface Treatment
Aluminum Frames	EN AC-51 400/AlMgSi0,7-T5	Anodize
Joint Plate	1.4301/X5CrNi18-10	
Joint Nuts	1.4401/X5CrNiMo17-12-2	
Hexagon Socket Button Head Cap Screw	1.4567/X3CrNiCu18-9-4	



Part Number	Joint Components	L 0.5mm Increment	Extrusions	Built-in Joint Component		A	Wrench required when tightening.	€ Extrusion Unit Price		€ Joints, Other
				Single Joint	Qty.			Less than 300mm	300mm or more (€/m)	
6-3030	L (Left End Face Only) W (Double End Faces)	100-4000	HFS6-3030 (P511)	HSJNS6 (P635)	1	30	For M6			
					2					
8-4040	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4040 (P553)	HSJNS8 (P635)	1	40	For M8			
					2					
8-4545	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4545 (P591)	HSJNS8-45 (P635)	1	45	For M8			
					2					

When L is less than 300 € Unit prices are indicated in the table regardless of the length.
ex: -3030W-2,00=€10,50

When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Configured L dimension + Joint or other € Unit Price = Price
ex: -3030W-15,00
⇒8,30x1,5m+6,80=12,45+6,80=EUR 19,20 (Round down to ten Cent.)

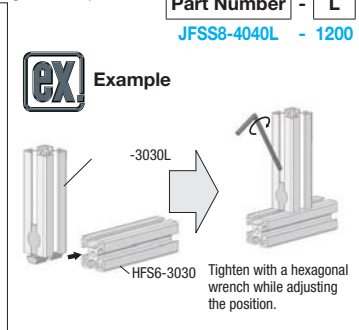
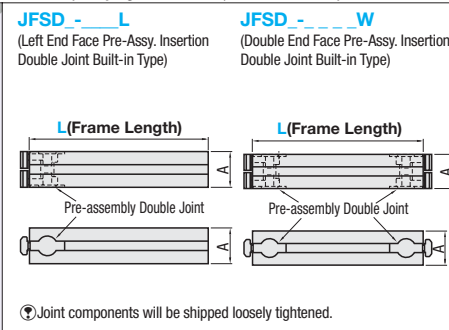
Order Example

Part Number - L
JFSS8-4040L - 1200

Features: Pre-Assy. Double Joint installable without specifying alterations. (No holes are required on the mating extrusion)

Pre-Assy. Insertion Double Joint Type

Name of Parts	Materials	Surface Treatment
Aluminum Frames	EN AC-51 400/AlMgSi0,7-T5	Anodize
Pre-Assembly Insertion Double Joint	1.4401/X5CrNiMo17-12-2 Equivalent	
Eccentric Nuts		
Hex Socket Head Cap Screws	1.4301/X5CrNi18-10	



Part Number	Joint Components	L 0.5mm Increment	Extrusions	Built-in Joint Component		A	Wrench required when tightening.	€ Extrusion Unit Price		€ Joints, Other
				Pre-Assembly Insertion Double Joint	Qty.			Less than 300mm	300mm or more (€/m)	
6-3030	L (Left End Face Only) W (Double End Faces)	100-4000	HFS6-3030 (P511)	HDJHSN6 (P637)	1	30	For M5			
					2					
8-4040	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4040 (P553)	HDJHSN8 (P637)	1	40	For M6			
					2					
8-4545	L (Left End Face Only) W (Double End Faces)	100-4000	HFS8-4545 (P591)	HDJHSN8-45 (P637)	1	45	For M6			
					2					

When L is less than 300 € Unit prices are indicated in the table regardless of the length.
ex: -4040L-2,50=€11,80

When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Configured L dimension + Joint or other € Unit Price = Price
ex: -4040L-12,00
⇒15,10x1,2m+7,30=18,12+7,30 =EUR 25,40 (Round down to ten Cent.)

Alterations 7 Days

Order Example Part Number - L
JFSD8-4040L - 1200 **Days to Ship** 7 Days

Alterations	Code	Spec.			€ Price Adder
		Extrusions	Tap	Depth	
Right End Face Tapping	RTP	5-2020	M5	15	
		6-3030	M8	24	
		8-4040	M12	36	
		8-4545	M12 (Heli-Coil Insert)	18	

Alterations	Code	Spec.		€ Price Adder
		Extrusions	Hole Dia.	
Right End Face Wrench Hole	RCH	5-2020	10	7.35
		6-3030	15	
		8-4040	20	8
		8-4545	22.5	

Alterations only on this page are available.

are only applicable.

Blind Joint Components

-Tapping Joints / TJ Plates / Torx Bits-

Alterations necessary to use this component

Wrench Hole
→P649

CAD Data

Features: Necessary alteration is only for wrench holes. Most economical Blind Joints. Dedicated Torx Bit is required for tightening.

Tapping Joints (Reference) Corner section when using this joint

HTJ

Materials:
JIS SWCH18A-C18 (Carburized)
Surface Treatment:
Trivalent Chromate
*JIS SWCH18A-C18 (Cold Forged JIS STKM Wire)

RoHS Tapping is not required.

Part Number Type	No.	Torx Bit	Applicable Extrusion (Pilot Hole Dia.)	Proper Tightening Torque (Max.)	A	(B)	E	F	L	€ Unit Price 1-99 pcs.	Volume Discount Rate 100~
HTJ	5	HTJXL25	Ø4.2	12N·m	11	3.84	2.25	0.25	20		
	6	HTJXL40	Ø6.8	24N·m	15	6.6	5	0.5	25		
	8		Ø10.5	74N·m	17		5.5		30		

Tapping Joints	Applicable Extrusion No.	[Exception] Extrusion Not Available
HTJ5	5-2020* 5-4040	5-2040 5-2060 5-2080 * Curved HFSR5-2020 is not applicable since wrench holes cannot be added.
HTJ6	6-3030* 6-5050 6-6060	6-3060 6-3090 6-30120 6-50100 6-100100 6-6090 6-60120 * Curved HFSR6-3030 is not applicable since wrench holes cannot be added.
HTJ8	8-4040*	8-4080 8-40120 8-40160 * Curved HFSR8-4040 is not applicable since wrench holes cannot be added.

Torx Bit HTJXL

Material: 1.6511/36CrNiMo4

Part Number Type	No.	Applicable Drive for Torx Bit	(B)	L	E	F	€ Unit Price 1-9 pcs.	Volume Discount Rate 10~
HTJXL	25	T25	3.84	75	9	6.35		
	40	T40	6.6					

Order Example Part Number HTJ6 HTJXL40 Days to Ship 6 Days P87



How to Connect Tapping Joints (Female Thread holes are not required for extrusion connection.)

Step	1	2	3
Explanation	Tighten temporarily the tapping joint on frame end face. (Refer to appropriate tightening torque above.)	Pass the head of tapping joint through the slot of Extrusion (B), and slide it down to the bottom of (A). TJ plate goes through the slot of frame (B) too.	Pass the Torx bit through wrench hole, and tighten it by motorized screw driver.
Tapping Joints			
	* Female Thread holes are not required.	* Part below neck of HTJ8 is thinned so as to be engaged with slot width of 10 mm (HFS8 Series).	

Blind Joint Components

-Screw Joints-

Alterations necessary to use this component

Tapping
→P647 Wrench Hole
→P649

CAD Data

Features: Including Rotation Stoppers, available from EUR 1,40. Cost saving Blind joints.

Screw Joints

HCJ (Trivalent Chromate)
SHCJ (Stainless Steel)

(A) Screw Bolt
Screw Bolt M5, M8
Screw Bolt M12

(Reference) Corner section when using this joint

(B) Joint Plate
<Joint Plate for 8-60>

Type	Components	Material	Surface Treatment
HCJ	Screw Bolt	1.7220/ 34CrMo4	Trivalent Chromate
	Joint Plate	1.0330/DC01	
	Screw Bolt	1.4301- Equivalent	
	Joint Plate	1.4301/ X5CrNi18-10	

Part Number Type	No.	(A) Screw Bolt	(B) Joint Plate	€ Unit Price 1-99 pcs.	Volume Discount Rate 100~	€ Unit Price 1-99 pcs.	Volume Discount Rate 100~
HCJ (Trivalent Chromate)	5	M5	5				
	6	M8	6				
	8	M12	8				
SHCJ (Stainless Steel)	8-45	M12	8-45				
	8-60		For 8-60				

Screw Joints	Applicable Extrusion No.	[Exception] Extrusion Not Available
HCJ5	5-2020* 5-4040	5-2040 5-2060 5-2080 * Curved HFSR5-2020 is not applicable since wrench holes cannot be added.
HCJ6 SHCJ6	6-3030* 6-5050 6-6060	6-3060 6-3090 6-30120 6-50100 6-100100 6-6090 6-60120 * Curved HFSR6-3030 is not applicable since wrench holes cannot be added.
HCJ8	8-4040*	8-4080 8-40120 8-40160 * Curved HFSR8-4040 is not applicable since wrench holes cannot be added.
HCJ8-45	8-4545* 8-4590*	8-45180 *Not applicable to HFSL (light type). *Curved HFSR8-4545 is not applicable since wrench holes cannot be added. For GFS8-100100 and GFS8-100200, bracket connection is recommended as they are heavy.
HCJ8-60	8-6060	

For SHCJ, No.6 only.

(A) Screw Bolt	MxP	L	A	E	B	(c)	d	(e)	(B) Joint Plate	N	A	B	E	L	T	t	K
M5	5x0.8	15	9.5	2.75	3	1.56	-	1.6	5	5.5	4	10	2	14	5	0.8	8.2
M8	8x1.25	20	14	4.4	5	2.6	-	3.5	6	8.3	5	15	3	24	7.5	1.5	12.2
M12	12x1.75	29.4	18	4.5	6	3.6	9.8	8.4	8	12.3	6	18	3.5	24	12	2.0	15.2
									8-45				39		19.2		

For the detailed dimensions of joint plate for HCJ8-60, refer to the diagram.

Order Example Part Number HCJ8-45 SHCJ6 Days to Ship 6 Days P87

How to Connect Screw Joints (Female Thread holes or wrench holes are required on the extrusion.)

Step	1	2	3
Explanation	Mount a screw joint on the tapped hole on the extrusion end face.	Pass the head of screw joint through the slot of Extrusion (B), and slide it down to the bottom of (A).	Insert the hexagonal wrench into the wrench hole and tighten it.
Screw Joints			

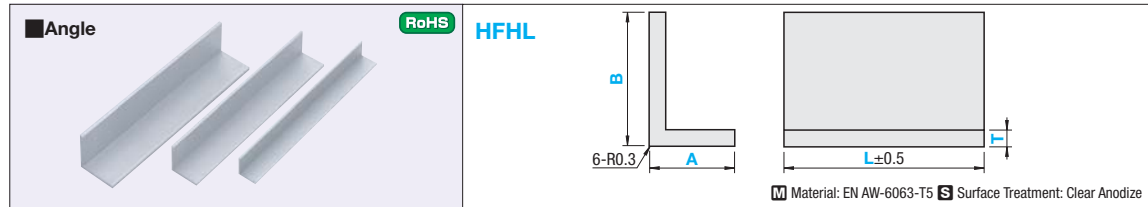
Aluminum Frames

-Angles / Channels / Flat Bars / Square Tubing-

Price Reduction

Up to 30%

CAD Data



Type	Part Number		T	L 1mm Increment	Mass kg/m	Sectional Area mm ²		Second Moment of Inertia of Cross Section $\xi \times 10^4$		€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
	A	B				ξ_{xx}	ξ_{yy}				
HFHL (Angle)	15	30	2	50-2000	0.232	86	0.14	0.807			
	20	20	2		0.206	76	0.288	0.288			
	20	40	2		0.301	111	0.403	0.403			
	25	25	3		0.315	116	0.348	1.964			
	25	50	3		0.464	171	0.489	2.82			
	30	30	3		0.381	141	0.819	0.819			
	30	40	3		0.583	216	0.993	5.661			
	30	50	3		0.315	116	1.019	1.019			
	40	40	3		0.464	171	1.458	1.458			
	40	60	5		0.745	275	2.21	2.21			
	50	50	3		0.412	156	2.47	2.47			
	50	75	5		0.626	231	3.58	3.58			
	60	60	5		1.016	375	5.56	5.56			
	75	75	6		0.785	291	7.15	7.15			
	100	100	6		1.553	575	19.9	19.9			
150	150	6	2.333	864	46.88	46.88					
			3.143	1164	114.3	114.3					
			4.763	1764	397.5	397.5					

Order Example Part Number - T - L
HFHL3030 - 3 - 800

Days to Ship 6 Days

Price When L is less than 300 Unit prices are indicated in the table regardless of the length.
ex: HFHL3030-2-180=1,80 EUR
When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Specified Full Length = Price
ex: HFHL3030-2-800 6,00x0,8m=1,80 EUR (Round down to ten Cent.)

Alterations Part Number - T - L - N - (XA, ... YA, ...)
HFHL2040 - 2 - 90 - N8 - XA42-XB62-YA20-YB42

Days to Ship 8 Days

Alterations Through Hole

Spec. Adds through holes on the extrusion. N is a nominal diameter.

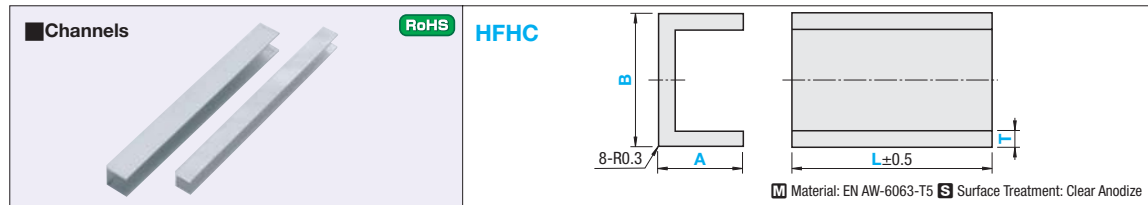
Plane of Extrusion	N (Selection)
X	3 4 5 6 8
Y	3 4 5 6 8

Hole Machining Details: N (Through Hole), d, N

Ordering Code: Specification of Hole Size and Hole Position(Ex.)

Machining Plane: N (Select from the table) Plane of Flame. Hole machining on this plane (in the order of A, B and C) Distance from the end (1mm increment)

5+N/2 is needed from an end.
Only 1 Dia. is selectable for N.
When A=15, only N3, N4 and N5 are available.
One face has up to five holes.



Type	Part Number		T	L 1mm Increment	Mass kg/m	Sectional Area mm ²		Second Moment of Inertia of Cross Section $\xi \times 10^4$		€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
	A	B				ξ_{xx}	ξ_{yy}				
HFHC (Channels)	15	15	2	50-2000	0.222	82	0.1433	0.227			
	20	30	2		0.304	112	0.232	1.471			
	20	40	2		0.304	112	0.453	0.719			
	25	25	3		0.412	152	0.576	3.688			
	25	50	3		0.381	142	1.479	0.911			
			0.761	282	1.640	10.42					

Order Example Part Number - T - L
HFHC1515 - 2 - 800

Days to Ship 6 Days

Price When L is less than 300 Unit prices are indicated in the table regardless of the length.
ex: HFHC2020-2-180=1,90 EUR
When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Specified Full Length = Price
ex: HFHC2020-2-800 6,50x0,6m=1,90 EUR (Round down to ten Cent.)

Alterations Through Hole

Spec. Adds through holes on the extrusion. N is a nominal diameter.

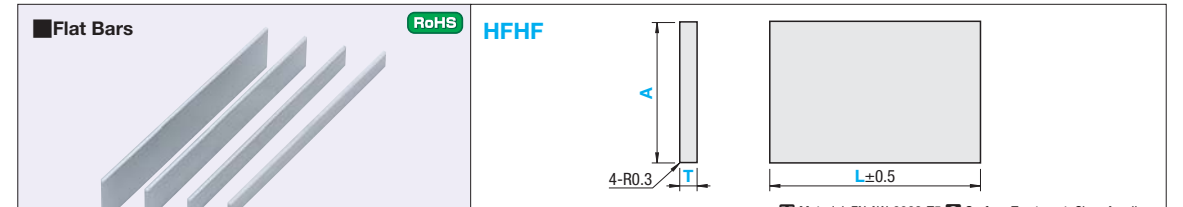
Plane of Extrusion	N (Selection)
X	3 4 5 6 8
Y	3 4 5 6 8
Z	3 4 5 6 8

Hole Machining Details: N (Through Hole), d, N

Ordering Code: Specification of Hole Size and Hole Position(Ex.)

Machining Plane: N (Select from the table) Plane of Flame. Hole machining on this plane (in the order of A, B and C) Distance from the end (1mm increment)

5+N/2 is needed from an end.
Only 1 Dia. is selectable for N.
When A and B dimensions are 15, only N3, 4 and 5 can be selected.
One face has up to five holes.



Type	Part Number	T	L 1mm Increment	€ Unit Price Less Than 300mm			More than 300mm € Unit Price		
				2	3	5	2	3	5
HFHF (Flat Bars)	10	3	50-2000						
	15	3							
	20	3							
	25	3							
	30	3							
	40	3							
	50	3							

A	Mass kg/m			Sectional Area mm ²			Cross Sectional Moment of Inertia $\xi_x \times 10^4$			Cross Sectional Moment of Inertia $\xi_y \times 10^4$		
	2	3	5 (6)	2	3	5 (6)	2	3	5 (6)	2	3	5 (6)
10	-	0.081	-	-	-	-	-	0.003	-	-	0.023	-
15	0.08	0.122	-	30	45	-	0.001	0.003	-	0.056	0.084	-
20	0.108	0.163	0.271	40	60	100	0.001	0.005	0.021	0.133	0.200	0.333
25	0.135	0.202	0.338	75	125	184	0.002	0.006	0.026	0.029	0.389	0.649
30	0.163	0.244	0.406	60	90	150	0.002	0.007	0.031	0.450	0.675	1.125
40	-	0.330	0.542	-	120	200	-	0.009	0.042	-	1.600	2.670
50	-	0.405	0.675	-	150	250	-	0.011	0.052	-	3.125	5.208

Alterations Part Number - T - L - N - (YA, ...)
HFHF20 - 2 - 90 - N8 - YA20-YB55

Days to Ship 8 Days

Alterations Through Hole

Spec. Adds through holes on the extrusion. N is a nominal diameter.

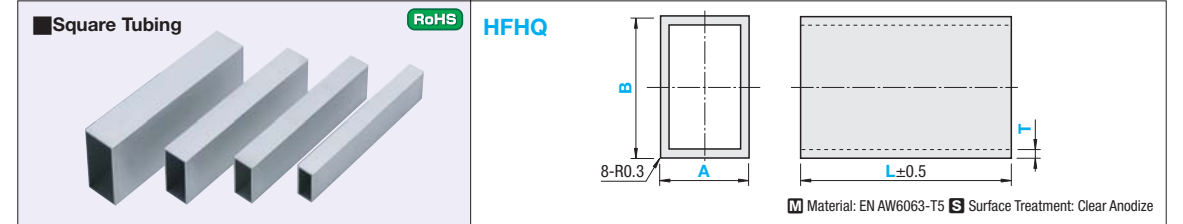
Plane of Extrusion	N (Selection)
Y	3 4 5 6 8

Hole Machining Details: N (Through Hole), d, N

Ordering Code: Specification of Hole Size and Hole Position(Ex.)

Machining Plane: N (Select from the table) Plane of Flame. Hole machining on this plane (in the order of A, B and C) Distance from the end (1mm increment)

5+N/2 is needed from an end.
Only 1 Dia. is selectable for N.
When A=10, only N3, N4 and N5 are available.
One face has up to five holes.



Type	Part Number		T	L 1mm Increment	Mass kg/m	Sectional Area mm ²	Second Moment of Inertia of Cross Section $\xi \times 10^4$		€ Unit Price Less than 300mm	€ Unit Price/m 300mm or more
	A	B					ξ_{xx}	ξ_{yy}		
HFHQ (Square Tubing)	15	15	1.5	50-2000	0.220	81	0.249	0.249		
	20	20	2		0.342	126	0.454	1.406		
	20	40	2		0.390	144	0.797	0.787		
	25	25	3		0.607	224	1.437	4.445		
	25	50	3		0.497	194	1.634	1.634		
	30	30	2		0.766	284	2.96	9.007		
	30	60	2		0.607	224	2.941	2.941		
	40	40	2		0.934	344	5.297	15.94		
	40	80	2		0.824	304	7.336	7.336		
	50	50	2		1.257	464	13.11	38.97		
			1.036	384	14.77	14.77				

Order Example Part Number - T - L
HFHQ3030 - 2 - 800

Days to Ship 6 Days

Price When L is less than 300 Unit prices are indicated in the table regardless of the length.
ex: HFHQ3060-2-180=5,20 EUR
When L is 300 or more Prices are calculated as follows:
€ Unit Price/m x Specified Full Length = Price
ex: HFHQ3060-2-800 17,60x0,5m=5,20 EUR (Round down to ten Cent.)

Alterations Through Hole

Spec. Adds through holes on the extrusion. N is a nominal diameter.

Plane of Extrusion	N (Selection)
X	3 4 5 6 8
Y	3 4 5 6 8
Z	3 4 5 6 8
Q	3 4 5 6 8

Hole Machining Details: N (Through Hole), d, N

Ordering Code: Specification of Hole Size and Hole Position(Ex.)

Machining Plane: N (Select from the table) Plane of Flame. Hole machining on this plane (in the order of A, B and C) Distance from the end (1mm increment)

5+N/2 is needed from an end.
Only 1 Dia. is selectable for N.
When A and B dimensions are 15, only N3, 4 and 5 can be selected.
One face has up to five holes.

Extrusion Load Capacity Calculations

Deflection Calculations

The following pages assist in optimum extrusion type selections by providing a quick Load vs. Deflection Chart (below) and calculation formulas (right page). In general, load calculations are typically based on beam's both ends supported for structural safety.

Selection Example

Values used for this example
 Load 800N
 Extrusions HFS8-4040
 Length 500 mm

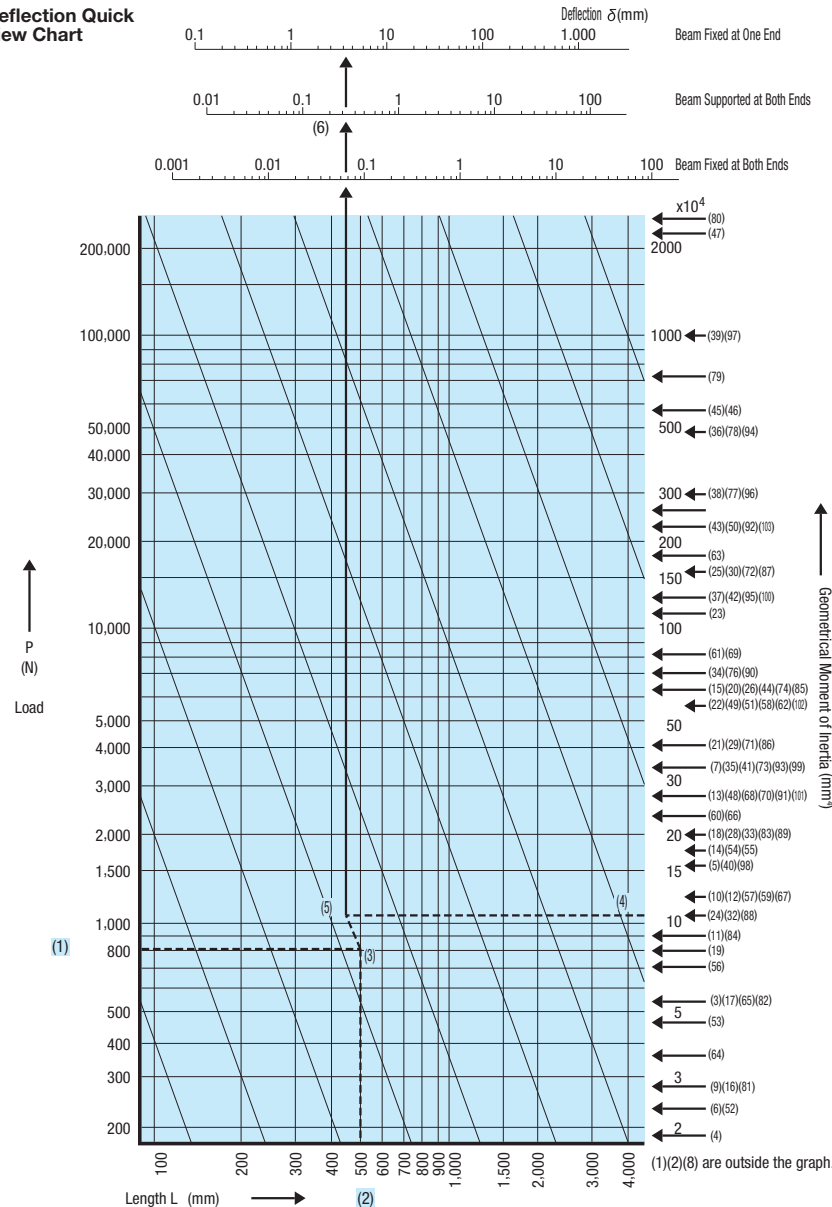
- Step** (1) Find a point (1) on the Y (Load) axis for the applied load P (Unit: N).
 (2) Find a point (2) on the X (Length) axis for the extrusion length.
 (3) Draw a horizontal line from (1) and a vertical line from (2), and name the intersection of the two as (3).
 (4) Find a point (4) on the right hand Y axis for the Cross Sectional Moment of Inertia of the extrusion used.
 (5) Draw a horizontal line from (4), and draw a parallel line to the graph's diagonal lines from (3).
 (6) Name the intersection of the lines as (5).
 (7) Draw a line UP from (5) and locate an intersection (6) corresponding to the extrusion support method used.

Result: According to the example values used and the calculation based on the values, the deflection amount would be 0.3mm when the extrusion is supported at both ends.

*1) Conversion: 1kgf=9.80665N (Ex.) 81.6kgf=800N

•MISUMI defines the Load Capacity (Max Allowable Load) to be a deflection 1/1000 of the extrusion length.

- Deflection Quick View Chart



- (1): Load 800N
 (2): Frame Length
 (3): Intersection of (1) and (2): Applicable extrusion HSF8-4040
 (5): Intersection of a parallel line from (3) and (4)

The numbers in O corresponds to the extrusion numbers on P670-671 left hand tables.

- Deflection Calculations

	1	2	3	
Cantilever				means that the load is equally distributed.
Deflection δ	$\delta = \frac{P \cdot L^3}{3E \cdot I}$	$\delta = \frac{P \cdot a^3}{3E \cdot I}$	$\delta = \frac{P \cdot L^3}{8E \cdot I}$	
	4	5	6	7
Both Ends Supported				
Deflection δ	$\delta = \frac{P \cdot L^3}{48E \cdot I}$	$\delta = \frac{P \cdot L^3}{(48 + \frac{29m}{L}) \cdot E \cdot I}$	$\delta = \frac{5P \cdot L^3}{384E \cdot I}$	$\delta = \frac{P \cdot a^2 \cdot b^2}{3E \cdot I \cdot L}$

Example of No.4 as "Beam Supported on Both Ends"

P (N) Load
 L (mm) Extrusion Length
 E (N/mm²) Young's Modulus
 I (mm⁴) Second Moment of Inertia of Cross Section
 δ (mm) Deflection

When the selection is calculated as "Beam Supported on Both Ends"

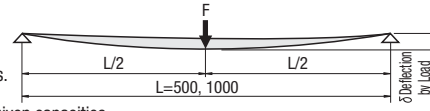
$$\delta = \frac{800 \times 500^3}{48 \times 69,972 \times 10.4 \times 10^4} \approx 0.29 \text{ (mm)}$$

	8	9
Both Ends Fixed		
Deflection δ	$\delta = \frac{P \cdot L^3}{192E \cdot I}$	$\delta = \frac{P \cdot L^3}{384E \cdot I}$

Aluminum Frames Load Capacity Guideline

Load Capacity Calculations

1. Calc. Conditions: Calculations are based on centralized loads on both ends supported extrusions.
2. The load capacities (allowable loads) are defined as: Load that generates a deflection amount 1/1000 of the extrusion length. These loads are the allowed maximum. Use within the given capacities.



Red Prints: Added Spec.

Part Number	Type	Extrusions	Height x Width (mm)	Section Modulus x10 ³ (mm ³)	Sectional Moment of Inertia x10 ⁴ (mm ⁴)	For 500mm Extrusion Length		For 1000mm Extrusion Length	
						Allowable Load (N)	(kgf)	Allowable Load (N)	(kgf)
HFS5	2020	(1)	20x 20	0.74	0.74	99	10	24	2
		(2)	20x 40	1.35	1.35	182	18	45	4
		(3)	40x 20	2.55	5.11	687	70	171	17
	2060	(4)	20x 60	1.97	1.97	264	26	66	6
		(5)	60x 20	5.32	15.96	2144	218	536	54
	2080	(6)	20x 80	2.58	2.58	347	35	86	8
		(7)	80x 20	9.02	36.11	4851	494	1212	123
	2525	(8)	25x 25	1.36	1.71	229	23	57	5
	2550	(9)	25x 50	2.37	2.96	398	40	99	10
		(10)	50x 25	5.09	12.74	1711	174	427	43
	4040	(11)	40x 40	4.45	8.9	1196	122	299	30
		(12)	40x 60	6.3	12.62	1695	172	423	43
	4060	(13)	60x 40	9	27	3627	369	906	92
		(14)	40x 80	9.18	18.38	2469	251	617	62
		(15)	80x 40	15.87	63.49	8529	869	2132	217
HFS6	3030	(16)	30x 30	1.89	2.83	381	38	95	9
		(17)	30x 60	3.55	5.33	716	73	179	18
		(18)	60x 30	6.84	20.53	2758	281	689	70
	3090	(19)	30x 90	5.62	8.43	1133	115	283	28
		(20)	90x 30	14.71	66.19	8892	906	2223	226
	6060	(21)	60x 60	13.78	41.35	5555	566	1388	141
		(22)	60x 90	17.53	52.59	7065	720	1766	180
	6090	(23)	90x 60	24.77	111.5	14979	1527	3744	381
		(24)	30x120	7.52	11.29	1516	154	379	38
	30120	(25)	120x 30	25.55	153.3	20595	2100	5148	525
		(26)	60x120	23.06	69.18	9294	947	2323	236
	60120	(27)	120x 60	41.18	247.1	33196	3385	8299	846
	5050	(28)	50x 50	8.66	21.66	2909	296	727	74
		(29)	50x100	16.98	42.44	5701	581	1425	145
	50100	(30)	100x 50	30.63	153.2	20581	2098	5145	524
(31)		100x100	53.08	265.4	35655	3635	8913	908	
HFS8	4040	(32)	40x 40	5.24	10.48	1407	143	351	35
		(33)	40x 80	9.95	19.91	2674	272	668	68
		(34)	80x 40	18.07	72.26	9707	989	2426	247
	40160	(35)	40x160	19.36	38.72	5201	530	1300	132
		(36)	160x 40	61.89	496.3	66676	6799	16669	1699
	8080	(37)	80x 80	32.45	129.8	17438	1778	4359	444
		(38)	80x160	73.95	295.8	39739	4052	9934	1013
	80160	(39)	160x 80	125.2	1002	134614	13726	33653	3431
		(40)	45x 45	6.77	15.25	2048	208	512	52
	4545	(41)	45x 90	14.44	32.5	4366	445	1091	111
		(42)	90x 45	27.9	125.5	16860	1719	4215	429
	9090	(43)	90x 90	46.78	210.5	28279	2883	7069	720
		(44)	45x180	27.14	61.05	8201	836	2050	209
	45180	(45)	180x 45	89.87	808.8	108659	11080	27164	2770
		(46)	90x180	133.3	600	80607	8219	20151	2054
90180	(47)	180x 90	237.9	2141	287635	29330	71908	7332	
	(48)	50x 50	10.91	27.28	3665	374	916	93	
5050	(49)	50x100	20.66	51.67	6942	707	1735	177	
	(50)	100x 50	42.23	211.1	28383	2894	7093	723	
6060	(51)	60x 60	17.3	51.91	6973	711	1743	177	
HFSL6	3030	(52)	30x 30	1.78	2.68	360	36	90	9
		(53)	30x 60	3.24	4.87	654	66	163	16
	3060	(54)	60x 30	5.95	17.88	2402	244	600	61
		(55)	50x 50	7.51	18.79	2524	257	631	64
HFSL8	4040	(56)	40x 40	3.77	7.54	1013	103	253	25
		(57)	40x 80	6.71	13.43	1804	183	451	45
	4080	(58)	80x 80	13.25	52.98	7117	725	1779	181
		(59)	45x 45	5.21	11.73	1575	160	393	40
4590	(60)	45x 90	10.15	22.85	3069	313	767	78	
	(61)	90x 45	19.26	86.68	11645	1187	2911	296	
HFSG6	6060	(62)	60x 60	18.09	54.28	7292	743	1823	185
HFSL8	8080	(63)	80x 80	45.83	183.3	24625	2511	6156	627
GFS6	3030	(64)	30x 30	2.32	3.47	466	48	117	12
		(65)	30x 60	3.96	5.9	792	81	199	20
	3060	(66)	60x 30	7.95	23.78	3194	326	798	81
GFS8	4040	(67)	40x 40	6.83	13.76	1848	188	462	47
		(68)	40x 80	12.56	25.21	3384	345	846	86
		(69)	80x 40	22.47	90.87	12208	1245	3052	311
	4545	(70)	45x 45	10.42	23.64	3172	323	793	81
		(71)	45x 90	18.87	42.99	5772	589	1443	147
	4590	(72)	90x 45	35.67	163.4	21792	2222	5448	556
		(73)	50x 50	15.23	38.16	5124	523	1281	131
	50100	(74)	50x100	27.23	68.08	9147	932	2286	223
		(75)	100x 50	54.62	273.1	36706	3742	9173	935
	6060	(76)	60x 60	26.58	79.86	10728	1094	2682	273
		(77)	90x 90	71.17	320.2	43016	4386	10754	1097
	100100	(78)	100x100	93.48	465.8	62576	6381	15644	1595
(79)		100x200	174.8	874.3	117507	11982	29365	2994	
100200	(80)	200x100	317.7	3179	427334	43576	106791	10890	

Part Number	Type	Extrusions	Height x Width (mm)	Section Modulus x10 ³ (mm ³)	Sectional Moment of Inertia x10 ⁴ (mm ⁴)	For 500mm Extrusion Length		For 1000mm Extrusion Length		
						Allowable Load (N)	(kgf)	Allowable Load (N)	(kgf)	
EFS5	3030	(81)	30x 30	1.89	2.85	382	39	95	9	
		3060	(82)	30x 60	3.66	5.48	736	75	184	19
			(83)	60x 30	6.86	20.46	2758	281	689	70
	3090	(84)	30x 90	5.86	8.80	1181	120	295	30	
		(85)	90x 30	15.19	69.0	9185	2296	936	234	
	30120	(86)	30x120	7.65	11.46	1583	161	395	40	
		(87)	120x 30	26.29	157.62	20628	2103	5157	525	
EFS8	4040	(88)	40x 40	5.24	10.49	1409	144	352	35	
		(89)	40x 80	9.96	19.93	2677	273	669	68	
	4080	(90)	80x 40	18.13	72.55	9745	994	2436	248	
		(91)	40x120	14.5	29.0	3940	401	985	100	
	40120	(92)	120x 40	37.03	223.51	29958	3054	7489	763	
		(93)	40x160	19.47	38.8	5203	530	1300	132	
	40160	(94)	160x 40	63.17	506.0	67114	6843	16778	1710	
		(95)	80x 80	32.55	130.0	17494	1783	4373	445	
	80160	(96)	80x160	75.85	304.4	40708	4151	10177	1037	
		(97)	160x 80	125.86	1007	134584	13723	33646	3430	
	4545	(98)	45x 45	6.85	15.42	2071	211	517	53	
		(99)	45x 90	14.52	32.67	4389	448	1097	112	
	4590	(100)	90x 45	27.84	125.3	16860	1719	4215	430	
(101)		50x 50	10.79	26.98	3665	374	916	93		
50100	(102)	50x100	21.2	53	7120	726	1780	182		
	(103)	100x 50	42.24	211.2	28385	2894	7094	723		

Aluminum Frames Load Capacity Guideline

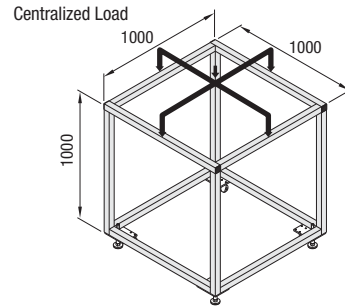
Load Capacity Guideline for Extrusion Frame Units

Condition: Calculated as: Loads causing 1mm deflection at the center of each extrusion of a 1000mm x 1000mm square frame.

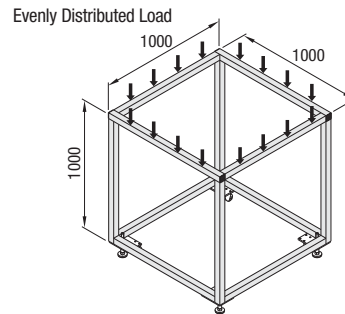
Red Prints: Added Spec.

Part Number	Height x Width (mm)	Allowable Load (N)				
		Centralized Load		Evenly Distributed Load		
Type	Extrusions	(N)	(kgf)	(N)	(kgf)	
HFSS	2020	20x 20	99	10	199	20
	2040	20x 40	182	18	364	37
		40x 20	687	70	1375	140
	2060	20x 60	264	26	529	53
		60x 20	2144	218	4288	437
	2080	20x 80	347	35	694	70
		80x 20	4851	494	9702	989
	2525	25x 25	229	23	459	46
		25x 50	398	40	797	81
	2550	50x 25	1711	174	3423	349
		40x 40	1196	121	2393	244
	4040	40x 60	1695	172	3390	345
60x 40		3627	369	7254	739	
4080	40x 80	2469	251	4938	503	
	80x 40	8529	869	17059	1739	
HFSS6	3030	30x 30	380	38	762	77
	3060	30x 60	716	73	1433	146
		60x 30	2758	281	5516	562
	3090	30x 90	1133	115	2266	231
		90x 30	8892	906	17784	1813
	6060	60x 60	5555	566	11110	1132
		60x 90	7065	720	14130	1440
	6090	90x 60	14979	1527	29959	3054
		30x120	1516	154	3033	309
	30120	120x 30	20594	2100	41190	4200
		60x120	9293	947	18588	1895
	60120	120x 60	33196	3385	66393	6770
		5050	50x 50	2909	296	5819
	50100	50x100	5701	581	11403	1162
		100x 50	20581	2098	41163	4197
100100	100x100	36654	3635	71310	7271	
HFSS8	4040	40x 40	1407	143	2815	287
	4080	40x 80	2674	272	5349	545
		80x 40	9707	989	19415	1979
	40160	40x160	5201	530	10403	1060
		160x 40	66674	6798	133352	13598
	8080	80x 80	17437	1778	34876	3556
		80x160	39738	4052	79479	8104
	80160	160x 80	134611	13726	269229	27453
		4545	45x 45	2048	208	4097
	4590	45x 90	4366	445	8732	890
		90x 45	16859	1719	33720	3438
	9090	90x 90	28279	2883	56559	5767
		45x180	8201	836	16403	1672
	45180	180x 45	108656	11079	217318	22160
		90x180	80605	8219	161215	16439
90180	180x 90	287627	29329	575270	58661	
	5050	50x 50	3665	374	7330	747
50100	50x100	6942	707	13883	1415	
	100x 50	28383	2894	56721	5783	
6060	60x 60	6973	711	13947	1422	
	3030	30x 30	360	36	720	73
3060	30x 60	654	66	1309	133	
	60x 30	2402	244	4804	489	
5050	50x 50	2524	257	5048	514	
HFSL8	4040	40x 40	1013	103	2027	206
	4080	40x 80	1804	183	3608	367
		80x 40	7124	726	14235	1451
	4545	45x 45	1575	160	3151	321
4590	45x 90	3071	313	6139	626	
9045	90x 45	11648	1187	23290	2374	
HFSG6	6060	60x 60	7292	743	14584	1487
HFSG8	8080	80x 80	24622	2510	49251	5022
GFS6	3030	30x 30	466	48	932	95
	3060	30x 60	792	81	1585	162
		60x 30	3194	326	6389	651
GFS8	4040	40x 40	1848	188	3696	377
	4080	40x 80	3384	345	6768	690
		80x 40	12208	1245	24416	2490
	4545	45x 45	3172	323	6344	647
	4590	45x 90	5772	589	11544	1177
		90x 45	21792	2222	43584	4444
	5050	50x 50	5124	523	10248	1045
	50100	50x100	9147	932	18292	1865
		100x 50	36706	3742	73380	7482
	6060	60x 60	10728	1094	21456	2188
9090	90x 90	43016	4386	86032	8773	
100100	100x100	62576	6381	125152	12762	
100200	100x200	117507	11982	234918	23955	
200200	200x100	427334	43576	854170	87101	

Centralized Load: Concentrated load is applied at the center.

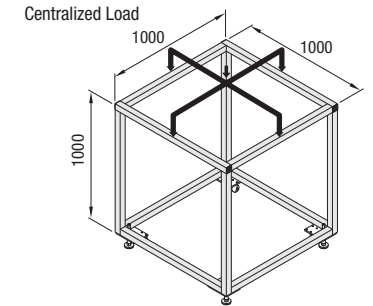


Evenly Distributed Load: When the load is evenly distributed over the extrusion.

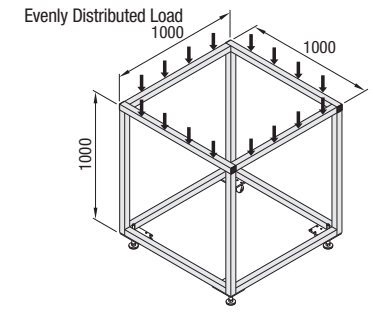


Part Number	Height x Width (mm)	Allowable Load (N)				
		Centralized Load		Evenly Distributed Load		
Type	Extrusions	(N)	(kgf)	(N)	(kgf)	
EFS8	3030	30x 30	382	39	765	78
	3060	30x 60	736	75	1472	150
		60x 30	2758	281	5516	562
	3090	30x 90	1181	120	2362	240
	30120	90x 30	9185	2296	18371	1873
		30x120	1583	161	3166	322
EFS8	120x 30	20628	2103	41257	4207	
	4040	40x 40	1409	144	2818	287
	4080	40x 80	2677	273	5355	546
		80x 40	9745	994	19493	1988
	40120	40x120	3940	401	7881	803
		120x 40	29958	3054	59916	6109
	40160	40x160	5203	530	10407	1061
		160x 40	67114	6843	134228	13687
	8080	80x 80	17494	1783	34988	3567
		80x160	40708	4151	81417	8302
	16080	160x 80	134584	13723	269168	27447
		4545	45x 45	2071	211	4143
	4590	45x 90	4389	448	8778	895
		90x 45	16860	1719	33720	3438
	5050	50x 50	3665	374	7330	747
		50x100	7120	726	14240	1452
	10050	100x 50	28385	2894	56748	5787

Centralized Load: Concentrated load is applied at the center.



Evenly Distributed Load: When the load is evenly distributed over the extrusion.



Prior to Beginning

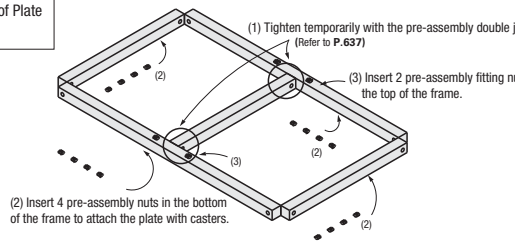
1. Provide a large and flat work space for the assembly.
2. Sort the extrusions into parts and sizes.
3. Count and confirm the qty. of the nuts to be pre-inserted.

*Insert any Pre Assy. nuts needed at this point if mounting a top plate and/or covers also. This assy. example also shows installation of Plate Type Adjusters and Casters.

Assembly of Single Joint connected type.

1 Bottom Frame Assy.

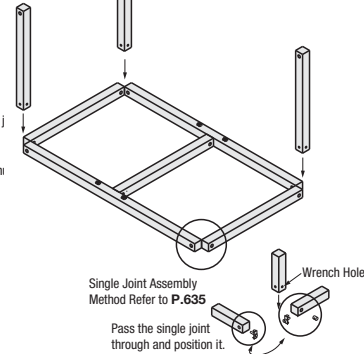
- (1) Begin assembling with the Bottom Frame.
- (2) Center joint is connected with Pre Assy. Ins. Double Joints.
- (3) Insert the nuts prior to assembly.



* Do not forget to insert the nuts.

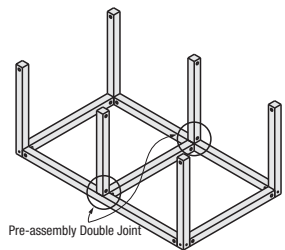
2 Mount the Posts.

Connect the corners with Single Joints,



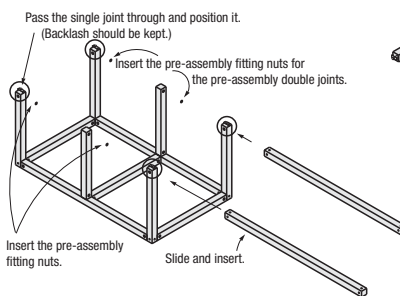
3 Mount the Middle Posts.

Connect the middle extrusions with Pre Assy. Ins. Double Joints.

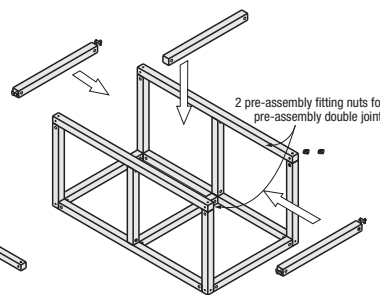


4 Top Frame Assy. (1)

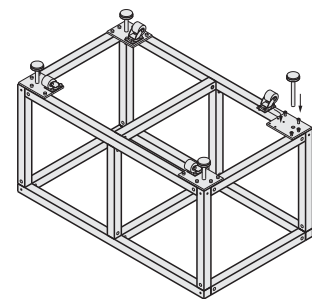
Pre-install Single Joints on the ends of four posts.



5 Top Frame Assy. (2)

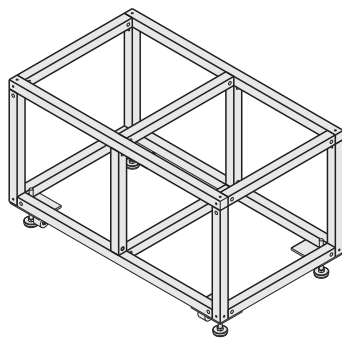


6 Adjuster and Caster Mounting



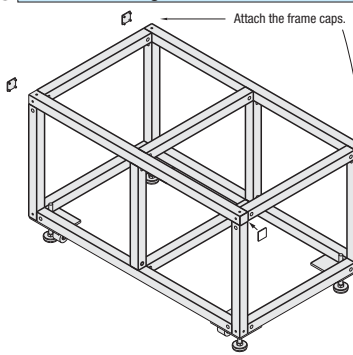
Invert the unit and mount the adjusters and casters. (Adjusters and Casters are sold separately P.705)

7 Final Tightening



Fully tighten while adjusting the extrusion positions.

8 Surface Cleaning



Wipe clean the surfaces with alcohol, etc. after the assy. work.

Aluminum Extrusion Q&A

Q. I want to size aluminum extrusions, what's a guideline?

AMISUMI Aluminum Frames are comprised of the following product series.

- Slot Width 6: HFS5 Series (20, 40mm square) for small coverings, parts racks...
 - Slot width 8: HFS6 Series (30, 50, 60mm square) for medium coverings, conveyor frames...
 - Slot Width 10: HFS8 Series (40, 80mm square), HFS8-45 Series (45, 90mm square), HFS8-50 Series (50, 100mm square), HFS8-60 (60mm square) for larger clean booths, equipment bases and structural material...
- Find the weight that will apply on the extrusion frame, and select the extrusions from the tables on P.671

Q. I want to size some brackets, what's a guideline?

- A** Applicable brackets and load capacity guidelines for each extrusion type are separately listed on bracket product pages.
- If brackets interfere with panels and etc., use Blind Brackets (P.495 etc.), Simple Joint (P.633), Tapping Joint (P.627), Screw Joint (P.628), Single Joint (P.635), Center Joint (P.629), Post Assy. Insertion Double joint (P.631), Pre Assy. Insertion Double Joint (P.637).

Q. What is the aluminum material used?

- A** EN AW-6063/AlMg0,7Si (JIS) is used. High rigidity material with more strength compared to an aluminum alloy EN AW-6063/AlMg0,7Si typically used for extrusions. For detailed data for this material, see Alum. Extrusion Material Data. (P.476)
- * The High Rigidity type is made with EN AW-6061/EN AW-Al-mg1SiCu-T6 with more strength.

Q. What is cutting tolerance?

- A** Within ± 0.5 mm of customer specified length.

Q. What are the surface treatment methods used?

- A** The extrusion surfaces are anodized (9 μ m or more). Cut surfaces are not treated.
- * Glossy clear coated extrusions are pre-anodized (9 μ m or more), then clear paint coat (7 μ m) is applied.

Q. How are the extrusions cut?

- A** The extrusions are cut with carbide tipped saws for soft steel material. Use the Frame Caps (P.509 etc.) to cover the open cut ends after assembly.

Q. What is the cut's perpendicularity?

- A** Since the extrusions do not have any datums, perpendicularity of cuts are not defined.

Q. Can JIS standard hex nuts and square nuts be used with the extrusions?

- A** No, they cannot be used. Our dedicated nuts are designed with larger seating areas to prevent aluminum from buckling under load.
- * Flat Extrusions (P.661-663) can be used with standard nuts.

Q. The nuts fall within extrusion slots when the extrusions are vertically positioned.

- A** Use Pre Assy. Insertions Nuts with "Stoppers (P.500-543-581-615), then insert into the slots. Post Assy. Insertion Nut and Stopper Sets (P.503-546-584-618) are also available. When many nuts are required, Pre Assy. Insertion Spring Nuts (P.501-544-582-616) and Post Assy. Insertion Spring Nuts (P.504-547-585-619) are more convenient to use.

Q. What are the proper tightening torques for the nuts and hex socket cap screws?

- A** See the tightening torque (Nm) references on various nut listing pages.
- Post Assy. Simple Bracket \rightarrow P.485-525-565, Pre Assy. Ins. Nuts \rightarrow P.500-543-581-615, Post Assy. Ins. Nuts \rightarrow P.503-546-584-618, Long Nuts \rightarrow P.507-550-588-622, Flanged Nuts \rightarrow P.506-549-587-621
- * Conditions vary depending on bracket and washer uses. Use as approximated references.

Q. I want to mount resin panels on extrusion frames...

- A** There are following methods to mount resin panels. Select an applicable method specific to your application. (P.680)
- (1) Mounting panels on brackets within the frames. This method results in aesthetically good appearance, and makes for easy install/remove of the panels. Recommended for Safety Covers, etc.
 - (2) Fitting in the extrusion slots. Requires no panel drilling or screws, and recommended for applications where designed appearance is of high priority. (Some notching of the panels may be required depending on the type of brackets in use.)
 - (3) Mounting panels on the outside of the frames. Pre-insert nuts with stoppers in the extrusion slots, and use Panel Mounting Screws (P.641-644) to mount the panels. Specify M5 tap for the nuts to be used (Ex. HNTT6-5)

Q. How can I mount doors on my extrusion frame?

- A** There are following methods to mount doors. Select an applicable method specific to your application.
- Resin plate doors... Hinges, Handles, etc. (P.719-728)
- Extrusion frame doors... Use Cover Plates and HFS5-2020/HFS6-3030 extrusions to construct the doors.
- * Extrusions for Doors HFTF Series (P.761) can be used in place for the HFS Series for even easier door creation.

Q. I want to mount adjusters and casters...

- A** Casters useable for each extrusion size are offered (P.703-715)

Q. Any precautions on the assembly?

- A**
- Provide a flat and ample space for the assembly work.
 - For orthogonality checks and face leveling during the assembly, use plates (assembly jigs on P.748) for your convenience.
 - We recommend that you purchase some Post Assy. Ins. Nuts prior to the assembly work as spares.
 - Be sure to check the screw torques after the assembly is complete.

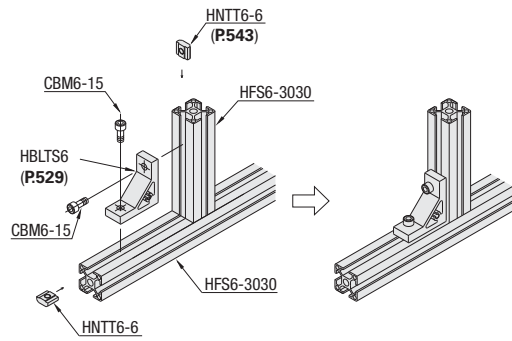
Q. Is Express-T for extrusions free of charge?

- A** Yes, and we intend on keeping it free. If a same day shipping is desired, simply specify as Express-T. There is no additional charge for the service. (Extrusions for Brackets (P.660), General Purpose Extrusions (P.667-668), Fence Extrusions (P.665) are not subject to free Express-T service.)

Alum. Extrusion Assy. Examples

Example of Frame Connection

Connection with Thick Bracket



Blind Bracket Connections

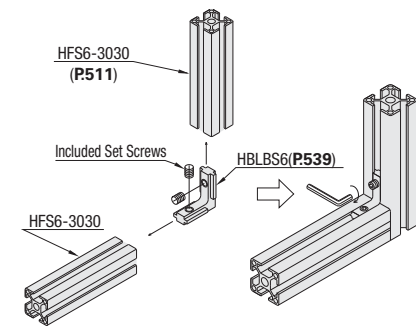
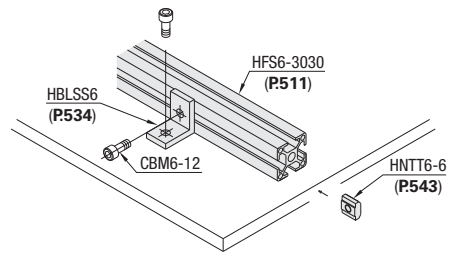
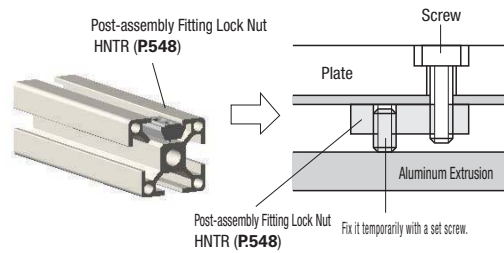


Plate on Extrusion Mounting

Thin Bracket Connections

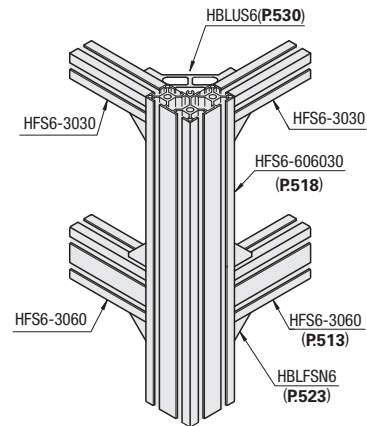


Post Assy. Ins. Locknut Connections

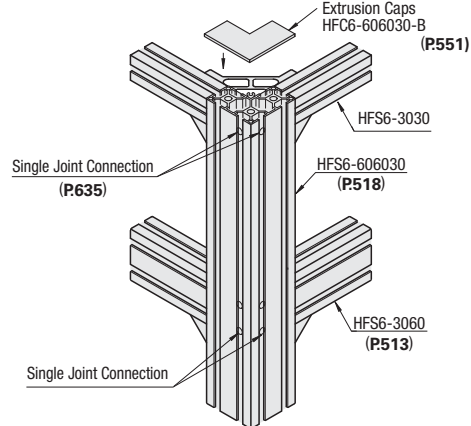


Example of L-Shaped Extrusion

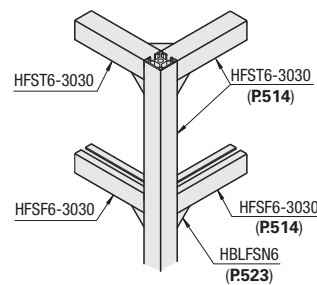
Bracket Connections



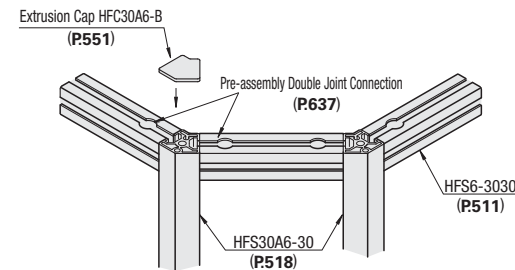
Single Joint Connections



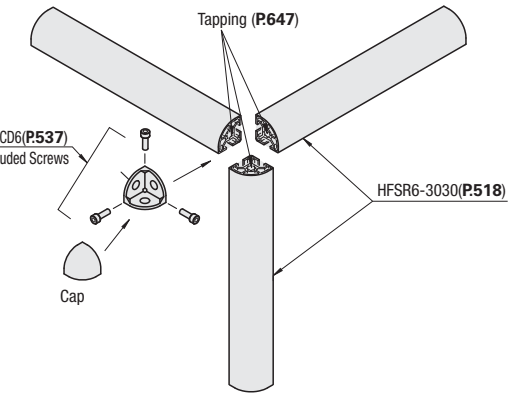
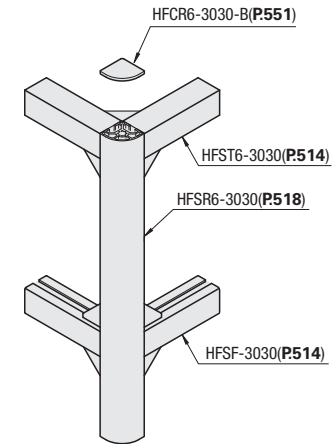
1 and 2 Smooth Sided Extrusions



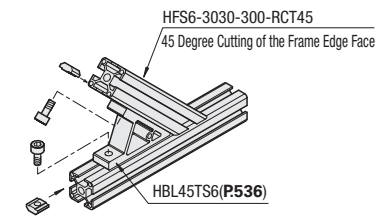
Angled Extrusions



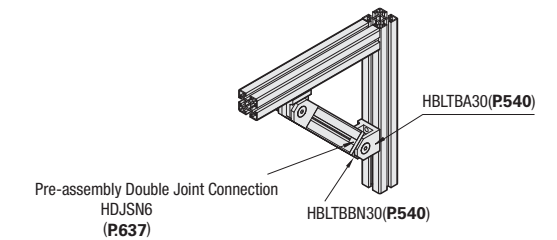
Example of Use: R Extrusion



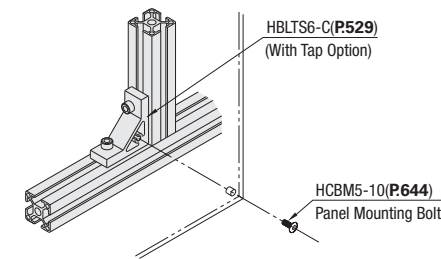
Example of Use: 45° Angle Brackets



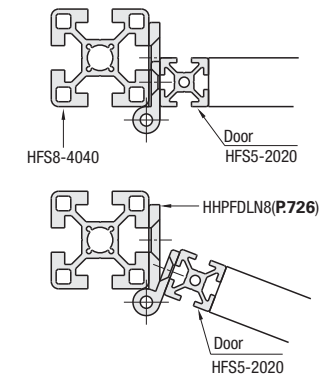
Free Angle Bracket App. Example



Example of Cover Mounting on the Bracket

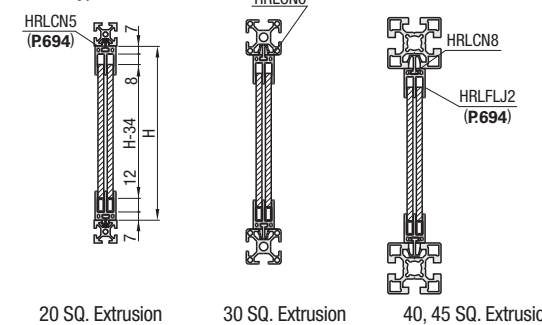


Connecting Unequal Sized Extrusions with Flag Hinges

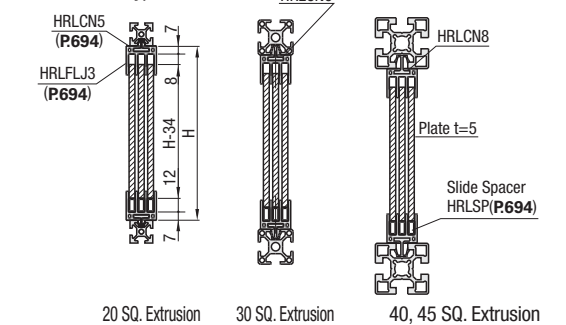


Sliding Rail Mounting Dimensions

2 Slot Type



3 Slot Type




20 SQ. Extrusion 30 SQ. Extrusion 40, 45 SQ. Extrusion 20 SQ. Extrusion 30 SQ. Extrusion 40, 45 SQ. Extrusion

Caster Kits for Doors / Anchors for Aluminum Frames

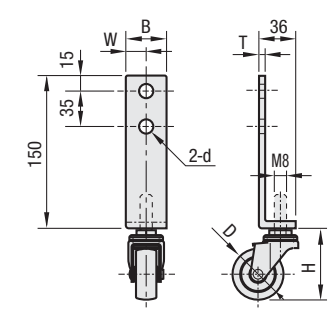
CAD Data

Caster Kits for Doors



RoHS

SQCM



P761 Usable for aluminum extrusions for doors.

Material: Plate: 1.0038/S235JR Trivalent Chromate
Caster: 1.0320/St.22 Trivalent Chromate Rubber Wheel

Part Number		Applicable Extrusions	Caster Allowable Load N	Mass (g)	€ Unit Price	Volume Discount
Type	No.				Qty. 1-9	10-20
SQCM	6	30 Square	350	160		
	8	40 Square				


For orders larger than indicated quantity, please request a quotation.

No.	Components										
	Plate				Dedicated Caster			Extrusion Mounting			
	B	W	T	d	D	H	Quantity	Mounting Screw	Quantity	Nuts	Quantity
6	30	15	6	7	50	68	1	SCB6-14	2	HNTT6-6	2
8	40	20	6	8.5	50	68	1	SCB8-18	2	HNTT8-8	2

Order Example **Part Number** **SQCM6** **Days to Ship** **8 Days** Express A 8,00 EUR/piece P88

A Express Charge of 21,60 EUR for 3 or more identical pieces.

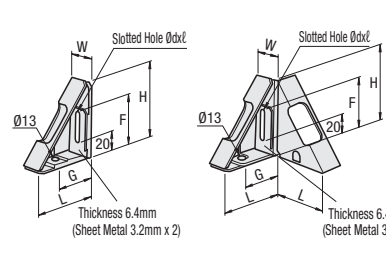
Anchors for Aluminum Frames



RoHS

HFSANK

HFSANKW



Material: 1.0320/St.22 Surface Treatment: Chromate Treatment

ex (1) Drive in anchor bolts using a hammer. (2) Tighten the nuts of anchor bolts with a wrench from the side.

(3) Insert a wrench into the slot in the anchor's sloped face and secure the anchor on to the aluminum extrusion. (Completed)

Part Number	Type	No.	Mass g	Extrusions (Series)	Screws - Nuts				H	F	G	W	L	d	ℓ	€ Unit Price	Volume Discount
					Screws	Quantity	Nuts	Quantity								Qty. 1-9	10-
HFSANK	6	318	HFS6	CBM6-15	2	HNTT6-6	2	100	60	40	30	86.5	7	40			
	8	512	HFS8*	CBM8-15	4	HNTT8-8	4	120	80	50	40	96.5	10	60			
HFSANKW	6	624	HFS6	CBM6-15	4	HNTT6-6	4	100	60	40	33.2	86.5	7	40			
	8	1020	HFS8*	CBM8-15	8	HNTT8-8	8	120	80	50	43.2	96.5	10	60			

*Not applicable to HFS8-45.
Screws and nuts are not included.


Order Example **Part Number** **HFSANK6** **Days to Ship** **6 Days** P87

Alterations **Part Number** - (SET - SST) **HFSANK6** - SET1

Alteration	Code	Spec.	Applicable Anchor	Price Adder
Applicable Screw / Nut Set	SET	Set of screws and nuts for mounting the anchor to an aluminum extrusion. Anchor bolts are not included. When SST is specified, screw and nut will be the set of stainless steel type. (Ex. Screw: SCB6-15 Nut: HNTT8-6)	HFSANK6	0,95 1,00
	SST (Stainless Steel)		HFSANK8	1,15 1,20
			HFSANKW6	1,90 2,00
			HFSANKW8	2,30 2,40

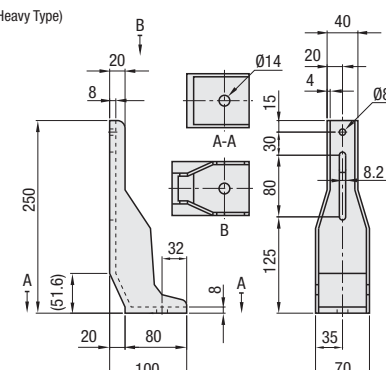
Anchors for Aluminum Frames

CAD Data



RoHS

HFHANK8 (Heavy Type)



Material: 1.1191/C45E
Surface Treatment: Black Baked Paint

Part Number	Mass g	Extrusions (Series)	Screws / Nuts				€ Unit Price	Volume Discount
			Screws	Quantity	Nuts	Quantity	Qty. 1-9	10-
HFHANK8	1650	HFS8	CBM8-20	2	HNTT8-8	2		
		HFS8-45						


Screws and nuts are not included.

Order Example **Part Number** **HFHANK8** **Days to Ship** **6 Days** P87

Alterations **Part Number** - (SET) **HFHANK8** - SET1

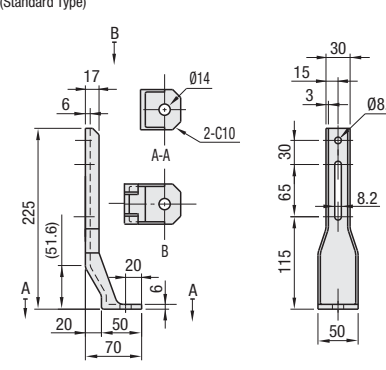
Alteration	Code	Spec.	Extrusions (Series)	Price Adder
Applicable Screw / Nut Set	SET	Set of screws and nuts for mounting the anchor to an aluminum extrusion. Anchor bolts are not included.	HFS8 HFS8-45	1,20

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



RoHS

HFANK225 (Standard Type)



Material: 1.1191/C45E
Surface Treatment: Black Baked Paint

Part Number	Mass g	Extrusions (Series)	Screws / Nuts				€ Unit Price	Volume Discount
			Screws	Quantity	Nuts	Quantity	Qty. 1-9	10-
HFANK225	577	HFS6	CBM6-14	3	HNTT6-6	3		
		HFS8	CBM8-18	2	HNTT8-8	2		
		HFS8-45						

Screws and nuts are not included.

When mounting to HFS6 series, washers are required.

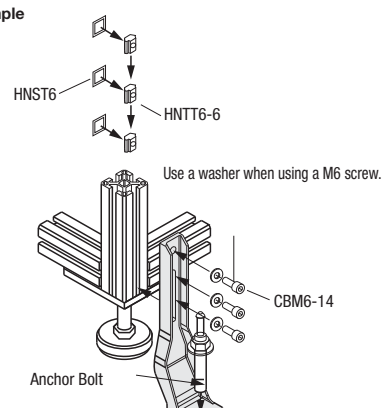
Order Example **Part Number** **HFANK225** **Days to Ship** **6 Days** P87

Alterations **Part Number** - (SET1 - SET2) **HFANK225** - SET1

Alteration	Code	Spec.	Extrusions (Series)	Price Adder
Applicable Screw / Nut Set	SET1	Set of screws and nuts for mounting the anchor to an aluminum extrusion. Anchor bolts are not included.	HFS6	1,55
	SET2		HFS8 HFS8-45	1,20

When SET1 is selected, three washers (WSSM12-6-1) are included.
When specifying SET1 and SET 2, the products are not RoHS-compliant.

ex Example



Use a washer when using a M6 screw.



Anchor Stands for Aluminum Frames



CAD Data

RoHS

HFLANK6-3030
HFLANB6-3030

HFLANK6-3060
HFLANB6-3060

HFLANK8-4040
HFLANB8-4040

HFLANK8-4080
HFLANB8-4080

Type	Material	Surface Treatment	Screws · Nuts				HFLANK		HFLANB	
			Screws	Quantity	Nuts	Quantity	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
HFLANK	1.0038/	Trivalent Chromate	CBM6-14	2	HNTTP6-6	4				
HFLANB	S235JR	Black Oxide	CBM6-18	2	HNTTP8-8	2				

*When erecting 2 aluminum extrusions, reinforce the extrusions with sheet metal plates (Refer to the example below).
 Ⓢ Applicable screws or nuts are not included.

Order Example

Part Number: **HFLANK6-3060**

Days to Ship: **6 Days** P.87

Alterations

Alteration	Code	Spec.	Stand	Price Adder
Applicable Screw / Nut Set	SET	Screws and nuts come in a set for mounting the anchor to an aluminum extrusion. Anchor bolts are not included. Screw → CBM Nut → HNTTP	HFLANK 6-3030	1,00
			HFLANK 6-3060	2,00
			HFLANK 8-4040	1,00
			HFLANK 8-4080	2,00

Ⓢ When -SET is specified, product is not RoHS compliant.

Example

<Example of 1 Slot Extrusion>

<Example of 2 Slot Extrusion x 1>

<Example of 1 Slot Extrusion x 2>

- Erect 2 frame extrusions and reinforce the top of the extrusions with a sheet metal plate.

RoHS

4-point Anchor Type
HFTANK6-3030
HFTANK8-4040

2-point Anchor Type
HFTANM6-3030
HFTANM8-4040

HFTANK6-3060
HFTANK8-4080

HFTANM6-3060
HFTANM8-4080

Ⓢ Material: 1.0320/St.22 Ⓢ Surface Treatment: Trivalent Chromate
 Ⓢ Since the inside of the rectangular cylinder is deep, surface treatment is thinly applied.

4-point Anchor Type

Part Number	Extrusion (Series)	Mass g	A	W	V	Applicable set screws are included (P.205)		€ Unit Price	Volume Discount
						Set Screws	Quantity		
HFTANK6	3030	HFS6-3030	1350	150	31	-	MSSF6-12	4	
	3060	HFS6-3030* · HFS6-3060	1650	150	62	31	MSSF6-12	6	
HFTANK8	4040	HFS8-4040	1900	170	41	-	MSSF6-16	4	
	4080	HFS8-4040* · HFS8-4080	2210	170	82	41	MSSF6-16	6	

2-point Anchor Type

Part Number	Extrusion (Series)	Mass g	A	W	V	Applicable set screws are included (P.205)		€ Unit Price	Volume Discount
						Set Screws	Quantity		
HFTANM6	3030	HFS6-3030	800	150	31	-	MSSF6-12	4	
	3060	HFS6-3030* · HFS6-3060	1000	150	62	31	MSSF6-12	6	
HFTANM8	4040	HFS8-4040	1100	170	41	-	MSSF6-16	4	
	4080	HFS8-4040* · HFS8-4080	1400	170	82	41	MSSF6-16	6	

*When erecting 2 aluminum extrusions, reinforce the extrusions with sheet metal plates (Refer to the example below).
 Ⓢ Applicable set screws are not included.
 Ⓢ For orders larger than indicated quantity, please request a quotation.

Order Example

Part Number: **HFTANK6-3030**

Days to Ship: **6 Days** P.87

Example

HPTSS (P.541)

-When using a stand to erect 2 aluminum extrusions, reinforce the extrusions with sheet metal plates (P.541)

MSSF (P.205)

- Can be mounted with set screws instead of nuts for aluminum extrusions.

Alterations

Alteration	Code	Spec.	Stand	Price Adder
Applicable set screws are included	SET	Set Screws for mounting the anchor to an aluminum extrusion come in a set. Anchor bolts are not included.	HFTANK6-3030 HFTANK8-4040 HFTANM6-3030 HFTANM8-4040	2,00
			HFTANK6-3060 HFTANK8-4080 HFTANM6-3060 HFTANM8-4080	3,00

UPCN (P.742)

HHPSN (P.719)

HSUKJ (P.737)

SOCM (P.715)

HJUST (P.760)

HPTSS (P.541)

- Can be used to let the Safety Fence Units self-stand.



Aluminum Hinges / Aluminum Hinges for Different Extrusion Sizes

CAD Data



Aluminum Hinges with Tabs / Aluminum Hinges with Slotted Holes

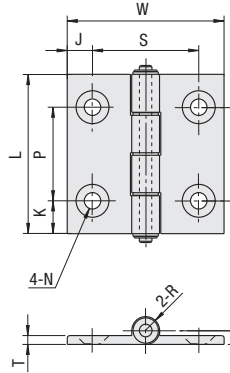
CAD Data

Aluminum Hinges with Tabs
Extrusion Sizes

RoHS

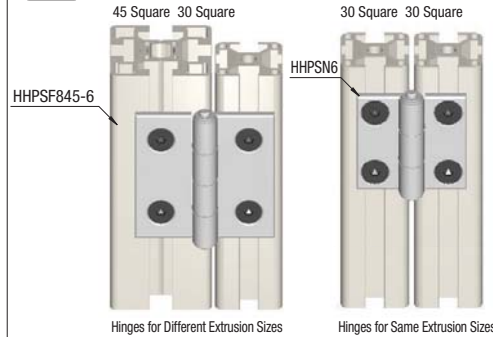


HHPSN (Clear Anodize)
HHPBSN (Black Anodize)
HHPSF (For Different Extrusion Sizes: Clear Anodize)



Materials: EN AW-6063/AlMg0,7Si-T5 Bushing: Polyacetal
Surface Treatment: Anodize

Example



Hinges for Different Extrusion Sizes Hinges for Same Extrusion Sizes

Hinges for Different Extrusion Sizes
HHPSF 6-5: Attaches HFS5-20mm to HFS6-30mm.
HHPBSF 6-6: Attaches HFS6-30mm to HFS8-40mm.
HHPSF845-5: Attaches HFS5-30mm to HFS8-45mm.
HHPSF 8-5: Attaches HFS5-20mm to HFS8-40mm.
HHPSF 845-6: Attaches HFS6-30mm to HFS8-45mm.
When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Part Number	*Allowable Load		Mass g	L	W	K	P	J	S	N		T	E	R	Screws · Nuts			Clear Anodize		Black Anodize			
	No.	kg								N	Through				Counter-sunk	Screws	Quantity	Nuts	Quantity	Qty. 1-8	9-	Qty. 1-8	9-
HHPSN HHPBSN (Black Anodize)	5	10	98	22	47	36	11	25	7.5	21	5.5	11	3.5	5	5	Flathead Screw 5-8	2	HNTT5-5	2				
	6	10	98	33	48	8.5	30	8	32				5.5	5.5	Flathead Screw 6-10	2	HNTT6-6	2					
	8	10	98	48	62	13	37	10	42				6.5	6.5	Flathead Screw 6-12	2	HNTT8-6	2					
	8-45	15	147	81	80	10	43	16.5	47				4.5	4.5	Flathead Screw 6-15	2	HNTT8-6	2					
HHPSF (For Different Extrusion Sizes)	6-5	10	98	33	47	44.75	8.5	30	10.75	26.5	5.5	11	3.5	5.5	Flathead Screw 5-8	2	HNTT5-5	2					
	8-5	10	98	48	63	54.25	13	37	15.25	31.5	5.5	11	3.5	5.5	Flathead Screw 6-10	2	HNTT6-6	2					
	845-5	10	98	81	63	55.5	13	37	14	34	5.5	11	3.5	5.5	Flathead Screw 5-8	2	HNTT5-5	2					
	8-6	15	147	48	63	62	13	37	12.5	37	6.5	13	3.5	5.5	Flathead Screw 6-10	2	HNTT6-6	2					
845-6	15	147	48	63	62	13	37	11.5	39	6.5	13	3.5	5.5	Flathead Screw 6-12	2	HNTT8-6	2						
845-6	15	147	48	63	62	13	37	11.5	39	6.5	13	3.5	5.5	Flathead Screw 6-15	2	HNTT8-6	2						

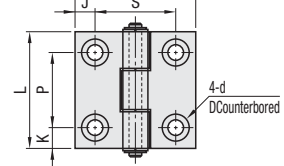
*The allowable load is the value when 2 pieces are used.

Aluminum Hinges Extra Low Head Cap Screw Type

RoHS

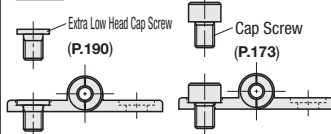


HHPSNT



Material: EN AW-6063/AlMg0,7Si Bushing: Polyacetal
Surface Treatment: Clear Anodize

Example



Normal cap bolts are available for installation.
When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Part Number	*Allowable Load		Mass g	L	W	K	P	J	S	d Through	D Counterbore	E	Screws · Nuts			€ Unit Price		Volume Discount Rate	
	No.	kg											N	Screws	Quantity	Nuts	Quantity	Qty. 1-8	9-
HHPSNT	5	10	98	22	47	36	11	25	7.5	21	5.5	10	5	CBSA5-6	4	HNTT5-5	4		
	6	10	98	34	48	8.5	30	8	32				5.5	CBSA6-8	4	HNTT6-6	4		
	8	10	98	49	63	13	37	10	42				6.5	CBSA6-10	4	HNTT8-6	4		

*The allowable load is the value when 2 pieces are used.

Order Example Part Number HHPSN6

Alterations Part Number - (SET · SST) HHPBSN6 - SET

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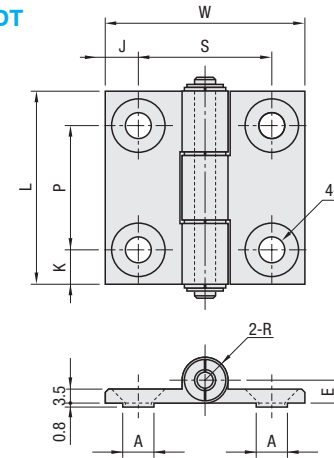
Alterations	Code	Spec.	Hinges	No.	Price Adder		
					SET	SST	
Applicable Screw Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, stainless steel screw and nut are included. (When SET is specified, the material of the Flathead Screws is 1.7220/34CrMo4 and their surface treatment is Black Oxide.)	HHPSN	5	1,80	2,35	
			HHPBSN	6	1,92	2,90	
				8	2,24	3,20	
				5	7,12	-	
			HHPSNT	6	7,76	-	
				8	7,96	-	
				6-5	845-5	2,08	2,60
				8-5	8-6		
				845-6			

Aluminum Hinges with Tabs

RoHS

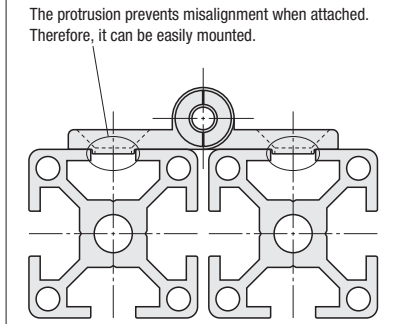


HHPSDT



Material: EN AW-6063/AlMg0,7Si Bushing: Polyacetal
Surface Treatment: Clear Anodize

Example



When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Part Number	*Allowable Load		Mass g	L	W	K	P	J	S	N		E	A	R	Screws · Nuts			€ Unit Price		Volume Discount	
	Type	No.								kg	N				Through	Counter-sunk	Screws	Quantity	Nuts	Quantity	Qty. 1-8
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	10	98	35	48	8.5	30	8	32				5.5	5.5	5	Flathead Screw 6-10	4	HNTT6-6	4		
	8	10	98	51	63	13	37	10	42				6.5	6.5	5	Flathead Screw 6-12	4	HNTT8-6	4		

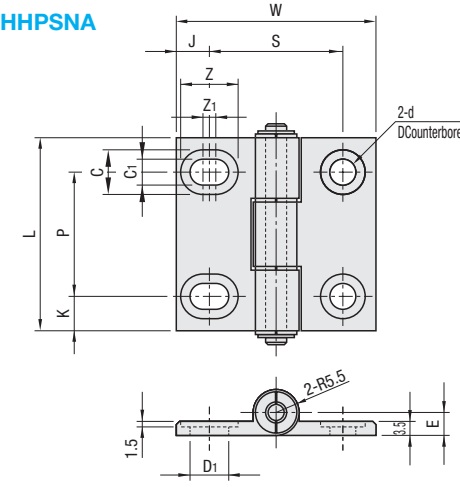
*The allowable load is the value when 2 pieces are used.

Aluminum Hinges with Slotted Holes

RoHS

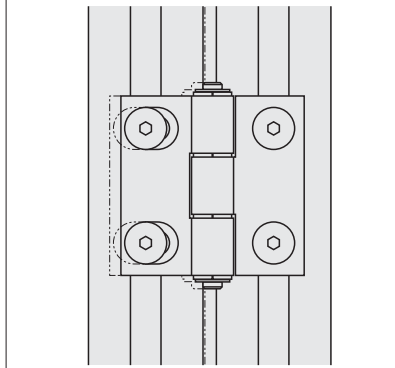


HHPSNA



Material: EN AW-6063/AlMg0,7Si Bushing: Polyacetal
Surface Treatment: Clear Anodize

Example



When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Part Number	*Allowable Load		Mass g	L	W	K	P	J	S	d Through	D Counter-bore	D1	C	C1	Z	Z1	E	Screws · Nuts			€ Unit Price		Volume Discount	
	Type	No.																kg	N	Screws	Quantity	Nuts	Quantity	Qty. 1-8
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	10	98	32	48	8.5	30	8	32				9.5	11	6.5	14	3	5	CBSA6-8	4	HNTT6-6	4		
	8	10	98	47	63	13	37	10	42				11.5	11.5	6.5	16	5	5	CBSA6-10	4	HNTT8-6	4		

*The allowable load is the value when 2 pieces are used.

Order Example Part Number HHPSDT6 HHPBSNA6

Alterations Part Number - (SET · SST) HHPSDT6 -

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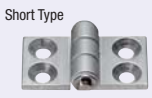
Alterations	Code	Spec.	Hinges	No.	Price Adder	
					SET	SST
Applicable Screw Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When specified, stainless steel screw and nut are included. (When SET is specified, the material of the Flathead Screws is 1.7220/34CrMo4 and their surface treatment is Black Oxide.)	HHPSDT	5	1,80	2,35
				6	1,92	2,90
				8	2,24	3,20
				5	7,12	-
			HHPSNA	6	7,76	-
				8	7,96	-

Aluminum Hinges Long Type - Short Type / Plastic Hinges / Compact Plastic Hinges


CAD Data

Aluminum Hinges RoHS

Short Type



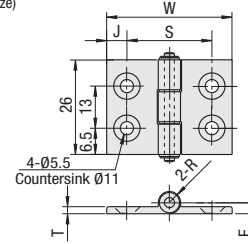
Long Type



Short Type

HHPNSC
(Clear Anodize)

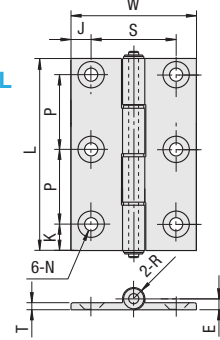
HHPBSNC
(Black Anodize)



Long Type

HHPNSL
(Clear Anodize)

HHPBSL
(Black Anodize)



Material: EN AW-6063/AlMg0,7Si-T5
Bushing: Polyacetal
Surface Treatment: Anodize

Short Type

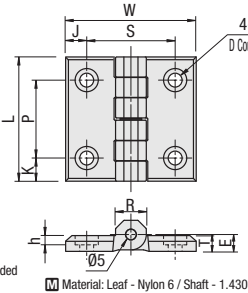
Part Number	* Allowable Load	Mass g	W	J	S	T	E	R	Screws - Nuts			Clear Anodize		Black Anodize		
									Screws	Quantity	Nuts	Quantity	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
HHPNSC	5	19	36	7.5	21	5	5		Flathead Screw 5-8	4	HNTT5-5	4				
HHPBSNC	6	24	48	8	32	3.5			Flathead Screw 5-10		HNTT5-6					
	8	27	62	10	42	5.5	5.5		Flathead Screw 5-12		HNTT5-6					
	8-45	15	147	36	80	16.5	47	4.5	Flathead Screw 5-15							

Long Type

Part Number	* Allowable Load	Mass g	L	W	K	P	J	S	Through	Counter-sunk	T	E	R	Screws - Nuts			Clear Anodize		Black Anodize		
														Screws	Quantity	Nuts	Quantity	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
HHPNSL	5	49	66	36	8	25	7.5	21	5.5	11	5	5		Flathead Screw 5-8	6	HNTT5-5	6				
HHPBSL	6	69	78	48	9	30	8	32	6.5	13	3.5			Flathead Screw 6-10		HNTT6-6					
	8	106	113	80	13.5	43	10	42	6.5	13	5.5	5.5		Flathead Screw 6-12		HNTT8-6					
	8-45	23	220	144	80	16.5	47	4.5			4.5			Flathead Screw 6-15							

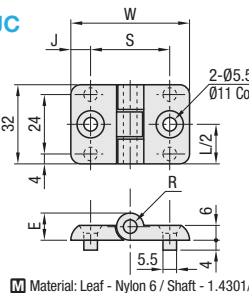
Plastic Hinges RoHS

HHPSJ



Compact Plastic Hinges RoHS

HHPNSJC



Material: Leaf - Nylon 6 / Shaft - 1.4301

Part Number	Color	* Allowable Load	Mass g	L	W	K	P	J	S	D	d	T	E	R	h	Screws - Nuts			€ Unit Price	Volume Discount		
																Screws	Quantity	Nuts			Quantity	
HHPSJ	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		
	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			
				44	70	80	13.5	43	16.5	47							CBS6-12		HNTT8-6			

Part Number	* Allowable Load	Mass (g)	W	J	S	E	R	€ Unit Price		Volume Discount
								Qty. 1-9	10-	
HHPNSJC	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	

Order Example: Part Number **HHPSJ6** - Color **B** - Days to Ship **6 Days** P.87

Alterations Example: Part Number **HHPSJ6** - Color **B** - (SET - SST) - Days to Ship **2 Days**

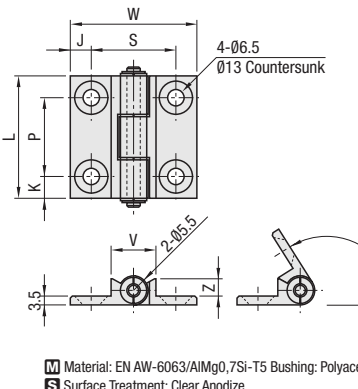
Alterations	Code	Spec.	Hinges	No.	Price Adder	
					SET	SST
Applicable Screw Nut Set	SET SST (Stainless Steel)	Applicable screws and nuts come in a set. When SST is specified, stainless steel screw and nut are included. (- When SET is specified, the material of the Flathead Screws is 1.7220/34CrMo4 and their surface treatment is Black Oxide.)	HHPNSC	5	1,80	2,35
			HHPBSNC	6	1,92	2,90
				8	2,24	3,20
				8-45	2,24	3,20
			HHPNSL	5	2,52	3,25
			HHPBSL	6	2,64	3,92
				8	3,06	4,02
				8-45	3,06	4,02

Stop Hinges / Low Particulate Hinges

CAD Data

Stop Hinges RoHS

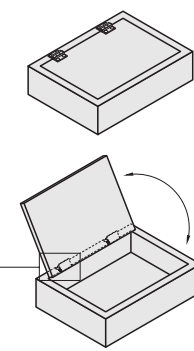
HHPNSH



Material: EN AW-6063/AlMg0,7Si-T5
Bushing: Polyacetal
Surface Treatment: Clear Anodize

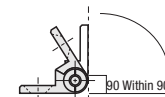
Example

The lid of the box stops at a constant level.



When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

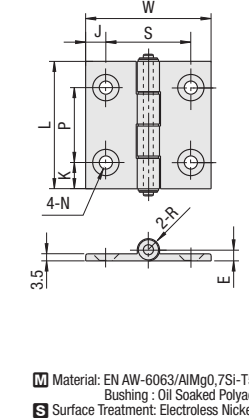
When a hinge is positioned within 90°, it automatically falls to be flat.



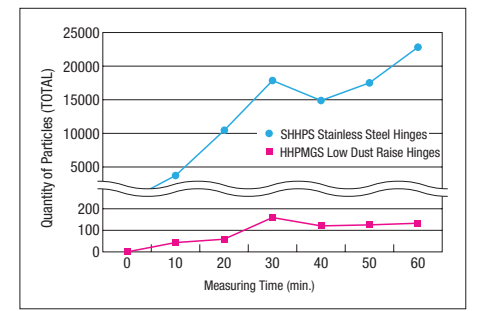
Part Number	* Allowable Load	Mass g	L	W	K	P	J	S	V	Z	Screws - Nuts			€ Unit Price	Volume Discount			
											Screws	Quantity	Nuts			Quantity		
HHPNSH	10	98	47	48	8.5	30	8	32	17	6.8	5.4	4	HNTT6-6	4				
															120	37		
															135	36		
	10	98	63	62	13	37	10	42	21	5.8	4.2	4	HNTT8-6	4				
															120	58		
															135	56		
	150	55																

Low Particulate Hinges RoHS

HHPMGS



Material: EN AW-6063/AlMg0,7Si-T5
Bushing: Oil Soaked Polyacetal
Surface Treatment: Electroless Nickel Plating



Features

- Excels in friction resistance and sliding compared with conventional hinges as the sliding section resin is made from the special material (oil embedded Polyacetal).
- The aluminum part is electroless nickel plated instead of conventional anodizing providing excellent conductivity, resulting in less static and dust.
- When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Part Number	* Allowable Load	Mass g	L	W	K	P	J	S	Through	Counter-sunk	E	R	Screws - Nuts			€ Unit Price	Volume Discount											
													Screws	Quantity	Nuts			Quantity										
HHPMGS	10	98	47	36	11	25	7.5	21	5.5	11	5	5	4	SHFB5-8	HNTTSN5-5	4												
																	33	48	8.5	30	8	32	6.5	13	5.5	5.5	SHFB6-10	HNTTSN6-6
																	48	63	62	13	37	10						

Order Example: Part Number **HHPMGS6** - (SET - SST) - Days to Ship **6 Days** P.87

Alterations Example: Part Number **HHPMGS6** - (SET - SST)

Alterations	Code	Spec.	Hinges	No.	Price Adder	
					SET	SST
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. (- When SET is specified, the material of the Flathead Screws is 1.7220/34CrMo4 and their surface treatment is Black Oxide.)	HHPNSH	5	1,80	2,35
			HHPMGS	6	1,92	2,90
				8	2,24	3,20



Stainless Steel Hinges / Steel Hinges

CAD Data

Stainless Steel Hinges RoHS

SHHPS (Stainless Steel)
SHHPSK (Stainless Steel Satin Finish)
SHHPT (Steel)

When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Type	Material	Surface Treatment
SHHPS	1.4401/ X5CrNiMo17-12-2	-
SHHPSK	1.4301/ X5CrNi18-10	Satin finish
SHHPT	1.0330/1.0320/ St22 or SPHC	Chrome Plating

Part Number	Holes on One Side	* Allowable Load		Mass g	L	W	K	P	J	S	N	T	E	R	CR	D	SHHPS		SHHPSK		
		kg	N														€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	
SHHPS	2	9	88	43	41	36	8	25	7.5	21	5.5	2	4.6	4.6	7.5	5					
		11	108	70	66	48	9	30	8	32											
		12	117	60	48																
SHHPSK	3	15	147	98	78	62	11	37	10	42	6.5	3	5.6	5.6		6					
		38	372	230	96									6.1	6.1		5				
		30	294	190	70									5.6	5.6		5				
845	3	40	392	325	113	80	13.5	43	16.5	47			6.1	6.1		6					

Part Number	Holes on One Side	* Allowable Load		Mass g	L	W	K	P	J	S	N	T	E	R	CR	D	SHHPS		SHHPSK	
		kg	N														€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
SHHPT	2	9	88	36	41	36	8	25	7.5	21	5.5	2	4.6	4.6	4	5				
		11	108	59	66	48	9	30	8	32										
		12	117	50	48															
845	3	25	245	124	59	62	11	37	10	42	6.5	3	3.2	6.5	5	6				
		38	372	207	96															
		30	294	181	70															

* The allowable load is the value when 2 pieces are used.

Stainless Steel Hinges (Countersunk Type) RoHS

SHHPSD (Countersunk Type)

When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Material: 1.4301/X5CrNi18-10

Part Number	Holes on One Side	* Allowable Load		Mass g	L	W	K	P	J	S	Through	Countersunk	T	E	R	CR	D	SHHPSD	
		kg	N															€ Unit Price	Volume Discount
SHHPSD	2	9	88	34	41	36	8	25	7.5	21	5.5	8.6 (For M4)	2	4.6	4.6	4	5		
		11	108	56	66	48	9	30	8	32									
		12	117	49	48														
845	3	25	245	111	59	62	11	37	10	42	6.5	10.6 (For M5)	3	6.1	6.1	5	6		
		38	372	185	96														
		30	294	162	70														

* The allowable load is the value when 2 pieces are used.

Order Example Part Number: SHHPS6 - No. of Holes on One Side: 2

Days to Ship 6 Days P.87

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

Alteration	Code	Spec.	Hinges	No.	Holes on One Side	Price Adder
Applicable Screw Nut Set	SET	Applicable screws and nuts come in a set. ⊕ Stainless steel screws and nuts are included.	SHHPS SHHPSK SHHPT SHHPSD	5	2	3,12
				5	3	4,68
				6	2	2,84
				6	3	4,26
				8	2	3,16
				8	3	4,74
				845	2	3,16
				845	3	4,74

Hinges with Slotted Holes / Stainless Steel Hinges for Heavy Loads / Aluminum Detachable Hinges

CAD Data

Hinges with Slotted Holes RoHS

SHPSNA

When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Material: 1.4301/X5CrNi18-10

Part Number	Holes on One Side	* Allowable Load		Mass (g)	L	W	K	P	J	S	N	Z	T	(E)	(R)	CR	D	SHPSNA	
		kg	N															€ Unit Price	Volume Discount
SHPSNA	2	9	88	34	41	36	8	25	7.5	21	5.5	5.5x6.5	2	4.6	4.6	4	5		
		12	117	48	48	48	9	30	8	32		5.5x10							
		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 2 pieces are used.

Stainless Steel Hinges for Heavy Loads RoHS

SHHPSZ

(1) Body	Material	Surface Treatment
(1) Body	1.4401/ X5CrNiMo17-12-2	Buffed Finish
(2) Shaft	X5CrNiMo17-12-2	-

Part Number	Holes on One Side	* Allowable Load (N)	Weight (g)	L	W	P	S	C	C1	T	N		Screws · Nuts		€ Unit Price	Volume Discount
											Through	Countersunk	Screws	Nuts		
SHHPSZ	2	350	110	47	48	30	32	6	14	5	5.5	11	4	HNTT6-5		
		450	190	63	62	37	42	6	14	5	6.5	13	4	HNTT6-6		
		450	190	63	80	43	47	8	16	6	6.5	13	4	HNTT8-6		

* The allowable load is the value when 2 pieces are used.

Detachable Hinges RoHS

HHPNL (For Left-hand Use)
HHPNR (For Right-hand Use)

When the Hinges are mounted to the panels, etc., use the recommended Hinge Nuts on P.725

Material: EN AW-6063/AlMg0.7Si-T5
 Bushings: Polyacetal
 Surface Treatment: Anodize

Part Number	Holes on One Side	* Allowable Load		Mass g	L	W	K	P	J	S	Through	Countersunk	E	R	Screws · Nuts		€ Unit Price	Volume Discount
		kg	N												Screws	Nuts		
Detachable Hinges	2	22	47	36	11	25	7.5	21	5.5	11	5	5	5	5	4	HNTT5-5		
		33	48	48	8.5	30	8	32	6.5	13	5.5	5.5	4	4	HNTT6-6			
		48	63	62	13	37	10	42	6.5	13	5.5	5.5	4	4	HNTT8-6			

* The allowable load is the value when 2 pieces are used.

Order Example Part Number: SHHPSZ6 - (SET - SST)

Days to Ship 6 Days P.87

Alteration	Code	Spec.	Hinges	No.	Price Adder		
					SET	SST	
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. (When - SET is specified, the material of the Flathead Screws is 1.7220/34CrMo4 and their surface treatment is Black Oxide.)	SHPSNA	5	-	3,12	
				6	-	2,84	
				8	-	3,16	
				6	1,64	2,70	
				SHHPSZ	8	1,85	3,20
					8-45		
					8		
				HHPNL HHPNR	5	1,80	2,35
					6	1,92	2,90
					8	2,24	3,20

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