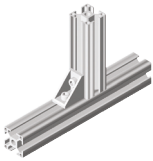




Brackets - Overview

For 5 Series (Slot Width 6mm) Aluminum Extrusions

■ There are two types of aluminum extrusions connections.


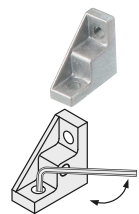
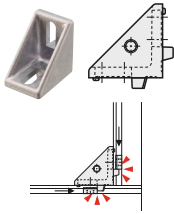


Bracket Connection		Inserts nuts into the slots of aluminum extrusions and fix with screws. Economical and mountable at desired positions since alterations on extrusions are not required.
Blind Joint Connection		Adds hole alterations on the extrusion sides and connects with special joints. Connection without brackets produces clean corners. Recommended where interference needs to be avoided. For details of Blind Joint Connection, see P.551.

■ About Brackets

- For 1 Slot : Products effective to increase assembly workability and with different surface treatments are available. Various types other than representative ones are also available. See the table below to find the rough features and check the details on each product page.  **P.537~P.540**


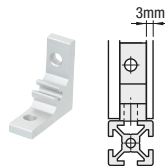
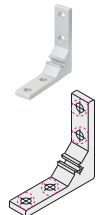
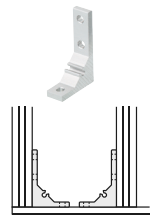
Tabbed Brackets

Mounting surfaces are tabbed to prevent rotations. Other than conventional "HBLFSN5", products with additional functions are also available.


Product Name	Tabbed Reversal Brackets	One-Side Rib Brackets	Nut Mounting Brackets	Brackets with Single Side Tab	Brackets with Cover
Product Photo					
Material	EN AC-46100 Equiv.	EN AC-46100 Equiv.	EN AC-46100 Equiv.	EN AC-46100 Equiv.	EN AC-46100 Equiv.
Features	Tabs on mounting surfaces enable easy positioning. Most conventional type.	One-Sided Tabbed (Side Face), easy to work with hex wrenches.	Nut position adjustment is not required since the long protrusion fixes nuts.	Only one side of bracket has tabs. Suitable when connecting extrusions and plates.	Brackets with cover type. Superior in sanitation since dust does not intrude.
Representative Product	HBLFSN5	HBLFSL5	HBLFSR5	HBLFSNK5 HBLFSNE5	HBLFSNT5
Page	P.537	P.537	P.537	P.538	P.538




Extruded Brackets


Surfaces are anodized. In addition to the conventional "NBLTS5 / HBLTS5", products with additional functions are available.

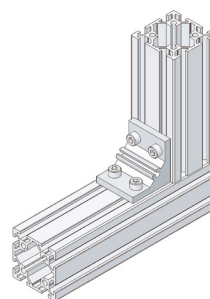
Product Name	Thick Brackets	Lateral Misalignment Brackets	Thick Brackets	Scalene Brackets
Product Photo				
Material	<ul style="list-style-type: none"> EN AW-6063-T5 Equiv. EN AC-51400-T5 Equiv. 	EN AC-51400-T5 Equiv.	EN AC-51400-T5 Equiv.	EN AC-51400-T5 Equiv.
Features	Made of the same material as aluminum extrusions with anodizing. Suitable when uniform appearance with the extrusions is desired.	Hole positions are offset. Can be combined with plates of 3mm thickness as a flush surface when mounting plates on the side.	Two mounting holes are provided on one side. Extrusions can be connected more securely with 4 screws.	Length of two sides are scalene. Usable where space is narrow.
Representative Product	<ul style="list-style-type: none"> NBLTS5 (EN AW-6063-T5 Equiv.) HBLTS5(EN AC-51400-T5 Equiv.) 	HBLTH5	HBLTSW5	HBLTF5
Page	P.539	P.540	P.540	P.540

 Side surface and screw holes are not anodized for NBL□□ Series(A 6063S-T5 material).





- For Multiple Slot Extrusions : Extrusions with two/three slots can be connected with one bracket.
Check the details on each product page.  **P541~P543**

Product Name	Tabbed Brackets - For 2 Slots	Extruded Brackets - For 2 Slots	Extruded Brackets - For 3 Slots
Product Photo			
Material	EN AC-46100 Equiv.	<ul style="list-style-type: none"> • EN AW-6063-T5 Equiv. • EN AC-51400-T5 Equiv. 	<ul style="list-style-type: none"> • EN AW-6063-T5 Equiv. • EN AC-51400-T5 Equiv.
Representative Product	HBLFSD5	<ul style="list-style-type: none"> • HBLTDS(EN AW-6063-T5 Equiv.) • HBLTDS(EN AC-51400-T5 Equiv.) 	<ul style="list-style-type: none"> • HBLTTS(EN AW-6063-T5 Equiv.) • HBLTTS(EN AC-51400-T5 Equiv.)
Page	P541	P542	P543


 Side surface and screw holes are not anodized for NBL□□ Series(A 6063S-T5 material).



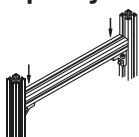
- Special Shape: Products with special functions/shapes are also available. Check the details on each product page.  **P544~P548**

Product Name	Post-Assembly Insertion Easy Brackets	Thin Brackets	Angled Brackets	Free Angle Brackets
Product Photo				
Features	2 aluminum extrusions can be connected with only 1 tightening screw.	Thin and compact type. Effective for space saving at mounting locations.	45° / 135° angled type. Extrusions with 45° cut can be connected.	Extrusions can be connected at any arbitrary angle.
Representative Product	HABL5	HBLSS5	HBL45TS5 HBL135TS5	HBLTBA20
Page	P544	P545	P547	P548

■ Perpendicularity

Perpendicularity of Extruded Brackets is manufactured within $\pm 1^\circ$ tolerance based on JIS Standard H4100 Special Grade.
For applications where perpendicularity is important, use Perpendicularly Machined Type.  **P539**


■ How to Specify Allowable Load of Bracket







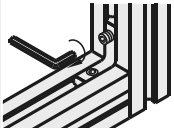
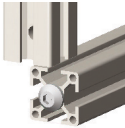
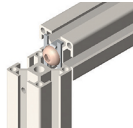
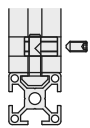
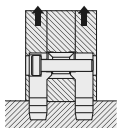
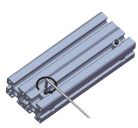


Allowable load per one bracket is calculated with one beam extrusion between two vertical extrusions supported by a bracket under each side of the beam as shown on the left-side figure.

Allowable Load here means the load applied when all mounting holes of the brackets are fixed with screws and the brackets can hold the position without break or sliding.

■ About Blind Joint Components

Blind Joint Connection is recommended where standard brackets and peripherals interfere.
See the table below and check the details on each product page.  **P549~P554**

Product Name	Blind Brackets	Tapping Joints	Screw Joints	Center Joint	Post-Assembly Insertion Double Joints	Parallel Joints
Product Photo						
Installation Diagram						
Material	EN 1.1191 Equiv. or EN 1.4308 Equiv.	JIS-SWCH18A	Steel or EN 1.4301 Equiv.	EN 1.4308 Equiv.	EN 1.4308 Equiv. / EN 1.4301 Equiv.	EN 1.4308 Equiv. / EN 1.4301 Equiv.
Features	No need for alterations to hide brackets inside of the slot.	<ul style="list-style-type: none"> • Tapping alteration is not required. • Most economical Blind Joints. 	Joint Plate enables secure and economical connection.	Most standard Blind Joints usable with various types of aluminum extrusions.	Connects securely at two locations. Tightest connection can be achieved of all Blind Joints.	Extrusions can be connected in parallel.
Representative Product	HBLBS	HTJ	HCJ	HMJ	HPJN	HLJ
Page	P550	P552	P552	P553	P554	P554