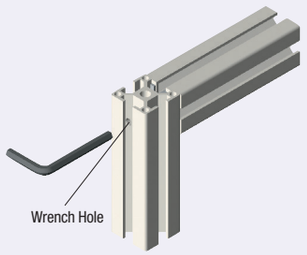
Fastening Location Wrench Access Hole Alterations

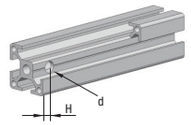
Blind Joints which require this alteration

Screw Joints	Single Joints	Tapping Joints
P.552, etc.	P.609, etc.	P.552, etc.

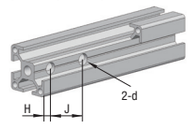
Wrench access holes used for Blind Joint connections, etc. are drilled.



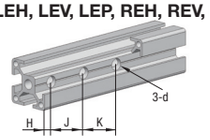
1 Slot - LCH, LCV, LCP, RCH, RCV, RCP



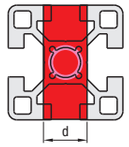
2 Slots - LWH, LWV, LWP, RWH, RWV, RWP



3 Slots - LEH, LEV, LEP, REH, REV, REP



Cross Section View



■Hole Position and Size

Extrusion Series	H(mm)	J(mm)	K(mm)	Wrench Hole d(mm)
HFS5	10	20	20	7.35
HFS5 (25 Square)	12.5	25	25	
HFS6	15	30	30	5 8
HFS6 (50 Square)	15	20	20	
HFS8	20	40	40	8
HFS8-45	22.5	45	45	

* Wrench Hole d dim. can be selected for Extrusion Series 6. Specify with X5 or X8.

■Alteration Code Specification Method

Drilling option is specifiable by combining symbols in the first, second and third column in the table.

Drills two rows of wrench holes horizontally on the left side of the extrusion. **-LWH**

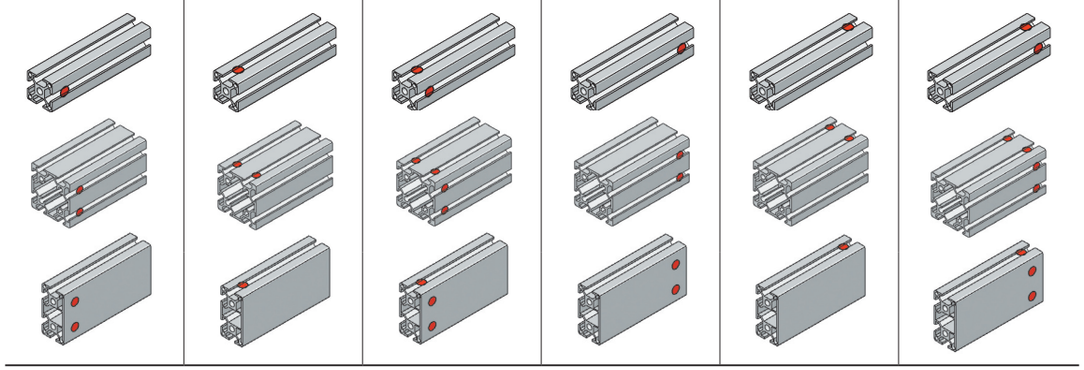
Drills two rows of wrench holes crisscross on the left side of the extrusion. **-LWP**

Meaning of Option Symbols		
First	Second	Third
L (Left) R (Right)	C (Wrench Holes in Single Line) W (Wrench Holes in Two Lines) E (Wrench Holes in Three Lines)	H (Horizontal) V (Vertical) P (Crisscross)

* For additional descriptions on various options, see Alteration Overview (**P.755**).

■Alteration Code Example

Wrench Hole					
Left Side			Right Side		
One Row Horizontally (Two Rows, Three Rows)	One Row Vertically (Two Rows, Three Rows)	One Row Crisscross (Two Rows, Three Rows)	One Row Horizontally (Two Rows, Three Rows)	One Row Vertically (Two Rows, Three Rows)	One Row Crisscross (Two Rows, Three Rows)
LCH(LWH,LEH)	LCV(LWV,LEV)	LCP(LWP,LEP)	RCH(RWH,REH)	RCV(RWV,REV)	RCP(RWP,REP)



Ordering Example — Part Number

HFS6 - 3030 - 500 - LCH - X5

HFS8 - 4080 - 1200 - RCP

⊗See the table below for the applicable extrusions and alteration charges. Indicated with "-" in the table are not applicable.

Alterations: Features	Alterations: Type	Alterations: No.	Alterations: Page	Wrench Access Hole Dia.	Wrench Hole: Horizontal Drilling on the Left 1 Row	2 Rows	3 Rows	Vertical Drilling on the Left 1 Row	2 Rows	3 Rows	Crisscross Drilling on the Left 1 Row	2 Rows	3 Rows	Horizontal Drilling on the Right 1 Row	2 Rows	3 Rows	Vertical Drilling on the Right 1 Row	2 Rows	3 Rows	Crisscross Drilling on the Right 1 Row	2 Rows	3 Rows
					LCH	LWH	LEH	LCV	LWV	LEV	LCP	LWP	LEP	RCH	RWH	REH	RCV	RWV	REV	RCP	RWP	REP
Four-Side Slots	HFS5 NFS5 CAF5 HFSY5	2020	P529	Ø7.35																		
		2040	P530																			
		2060 2080 2525 2550	P531																			
		4040	P530																			
		4060 4080	P531																			
		404020	P532																			
3-Side Slot 1Side Flat	HFSF5 NFSF5	2020 2040 4040	P529 P530																			
Two-Side Slots Two Flats	HFST5 NFST5	2020 4040	P529 P530																			
Two Slots on Opposite Sides	HFSH5	2020	P529																			
One-Side Slot Three Flats	HFSC5																					
Angled	HFS30A5 HFS45A5 HFS60A5	20	P532		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Anodize	HFSB5 NFSB5	2020 2040 2525 2550 4040	P529 P530 P531 P530																			
	HFSFB5 HFSTB5	2020	P529																			
Curved	HFSR5	2020 404020	P532		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

⊗See the table below for the applicable extrusions and alteration charges. Indicated with "-" in the table are not applicable.

Alterations: Features	Alterations: Type	Alterations: No.	Alterations: Page	Wrench Access Hole Dia.	Wrench Hole: Horizontal Drilling on the Left 1 Row	2 Rows	3 Rows	Vertical Drilling on the Left 1 Row	2 Rows	3 Rows	Crisscross Drilling on the Left 1 Row	2 Rows	3 Rows	Horizontal Drilling on the Right 1 Row	2 Rows	3 Rows	Vertical Drilling on the Right 1 Row	2 Rows	3 Rows	Crisscross Drilling on the Right 1 Row	2 Rows	3 Rows
					LCH	LWH	LEH	LCV	LWV	LEV	LCP	LWP	LEP	RCH	RWH	REH	RCV	RWV	REV	RCP	RWP	REP
Four-Side Slots	HFS6 EFS6 NFS6 NEFS6 GFS6 CAF6 HFSY6	3030	P571	Ø5 Ø8																		
		3060	P573																			
		3090	P576																			
		30120																				
		5050	P579																			
		50100						-	-	-	-	-	-				-	-	-	-	-	-
		100100																				
		6060	P575																			
		6090	P577																			
		60120																				
		606030	P578																			
		3090	P576					-	-	-	-	-	-				-	-	-	-	-	-
3-Side Slot 1Side Flat	HFSF6 EFSF6 NFSF6 NEFSF6	3030	P572																			
		3060	P574																			
		5050	P579																			
		6060	P575																			
Two-Side Slots Two Flats	HFST6 EFST6 NEFST6	3030	P572																			
		3060	P574																			
		5050	P579																			
		6060	P575																			
Two Slots on Opposite Sides	HFSH6 EFSH6	3030	P572																			
		3060	P574																			
One-Side Slot Three Flats	HFSC6 EFSC6	3030	P572																			
Light Type	NFSL6		P571																			
	HFSL6	3060	P573																			
		5050	P579																			
Heavy Type	HFSQ6	6060	P575																			
Angled	HFS30A6 HFS45A6 HFS60A6	30	P578		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Anodize	HFSB6 EFSB6 NFSB6 NEFSB6	3030	P571																			
		3060	P573																			
		3090	P576																			
		30120																				
		5050	P579																			
		50100																				
		100100																				
		6060	P575																			
	HFSFB6 EFSFB6 HFSTB6 EFSTB6	3030	P572																			
	HFSLB6	3060	P573																			
Curved	NFSR6 HFSR6	3030	P578		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		606030																				
Four-Side Slots	HFS8 EFS8 NFS8 NEFS8 GFS8 CAF8 HFSY8	4040	P631	Ø8																		
		4080	P633																			
		40120	P636																			
		40160	P635																			
		8080	P637					-	-	-	-	-	-				-	-	-	-	-	-
		80160	P636																			
		808040	P637																			
	HFSH8	8080	P635																			
3-Side Slot 1Side Flat	HFSF8 EFSF8 GFSF8	4040	P632																			
		4080	P634																			
		8080	P635																			
Two-Side Slots Two Flats	HFST8 NEFST8 EFST8 GFST8	4040	P632																			
		4080	P634																			
		8080	P635																			
Two Slots on Opposite Sides	HFSH8 EFSH8	4040	P632																			
		4080	P634																			
One-Side Slot Three Flats	HFSC8 EFSC8	4040	P632																			
Light Type	HFSL8	4040	P631	Ø8																		
	NFSL8	4080	P633																			
Angled	HFS30A8 HFS45A8 HFS60A8	40	P637		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Anodize	HFSB8 EFSB8	4040	P631																			
		4080	P633																			
		40120	P636																			
		40160	P635																			
		8080	P637					-	-	-	-	-	-				-	-	-	-	-	-
		80160	P636																			
	HFSFB8 EFSFB8 HFSTB8 EFSTB8	4040	P632																			
	HFSLB8	4040	P631																			
		4080	P633																			
Curved	HFSR8	4040	P637		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		808040																				
Four-Side Slots	HFS8 EFS8 NFS8 NEFS8 GFS8 CAF8	4545	P681	Ø8																		
		4590	P684																			
		45180	P685																			
		5050	P687																			
		50100	P689																			
		6060	P685																			
		9090																				
		90180						-	-	-	-	-	-				-	-	-	-	-	-
		909045	P686																			
		100100	P688																			
		100200																				
3-Side Slot 1Side Flat	HFSF8 EFSF8 NEFSF8	4545	P682																			
		4590	P684																			
		5050	P687																			
	GFSF8	6060	P689																			
Two-Side Slots Two Flats	HFST8 EFST8 NEFST8	4545	P683																			
		5050	P687																			
	GFST8	6060	P689																			
Two Slots on Opposite Sides	HFSH8 EFSH8	4545	P683																			
One-Side Slot Three Flats	HFSC8 EFSC8																					
Light Type	HFSL8	4545	P681																			
Four-Side Slots	NFSL8	4590	P684																			
Three-Side Slots	HFSLF8	4545	P682																			
Two-Side Slots	HFSLT8		P683																			
Angled	HFS30A8 HFS45A8 HFS60A8	45	P686		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Anodize	HFSB8 EFSB8	4545	P681																			
		4590	P684																			
		45180	P685					-	-	-	-	-	-				-	-	-	-	-	-
		5050	P687																			
		50100																				
		9090	P685																			
		90180						-	-	-	-	-	-				-	-	-	-	-	-
	HFSFB8	4545	P682																			
	HFSTB8		P683																			
Curved	HFSR8	4545 909045	P686		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

■Standard of Extrusion Position

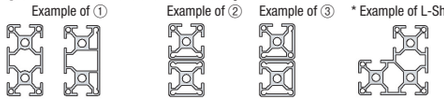
Placing method of the extrusion, which is a basis to determine right and left is shown as follows.

① On the vertical length

② Flat side down

③ One flat side down and another flat side right

Example of ① Example of ② Example of ③ * Example of L-Shaped

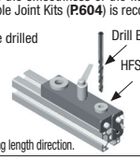


When the extrusion is on the vertical length and also has a flat side, ① has the priority. * For L-shaped, both vertical and horizontal hole machining are only in the long length direction.

■Hole(s) on smooth surfaces.

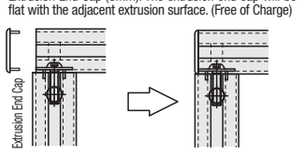
Specifying Wrench Access Hole in the flat surface direction provides holes on the flat surface also. To maintain the smoothness of the flat surface without wrench access holes, use of Simple Joint Kits (**P.604**) is recommended.

- Wrench access hole can be drilled using a jig on **P.846**.



■Available Alteration Combinations

Offsets the wrench access hole for the thickness of Extrusion End Cap (3mm). The extrusion end cap will be flat with the adjacent extrusion surface. (Free of Charge)

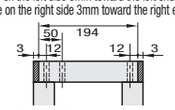


In order to make the extrusion and the extrusion end cap flat,

-FL : Shifts the wrench hole on the left side 3mm toward the left end.

-FR : Shifts the wrench hole on the right side 3mm toward the right end.

Example



For HFS6-3030-194-LCV-FL-RCV-FR:
The wrench access holes originally to be drilled at 15mm will be moved to 12mm to take the extrusion end cap thickness in account.

Note that this alteration is an additional modifier of the Wrench Access Hole Alteration. Adding this modifier alone to other alterations will be invalid.

Ordering Example — Part Number

HFS6 - 3030 - 2160 - LCV - FL - RCV - FR