

# Mounting Plate, Bracket

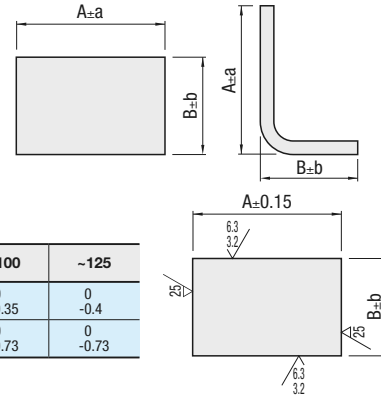
## Overview

### 1. Standard machined dimension tolerances, and thickness tolerances of sheet metals, flat bars, and rolled material

#### <Standard Machined Dimension Tolerances>

Product	Dimension Range (A & B Dim.)	6 or less	Over 6, and 30 or less	Over 30, and 120 or less	Over 120, and 400 or less
Sheet Metal (No bends) Flat Bars (Width configurable) Rolled Aluminum, 6 Surface Milled L Angle - Welded	Allowable Tolerance (a, b)	±0.1	±0.2	±0.3	±0.5
Sheet Metal (Bent Products)	Allowable Tolerance (a, b)	±0.3	±0.5	±0.8	±1.2

\* For sheet metals, Class B Tolerance stipulated in JIS B 0408, General dimensional tolerances for parts formed by press working from sheet metal is used.  
\* For others, JIS B 0405 Standard Machining Tolerances Class: Medium (m) is used.



Product	Dimension Range (B Dim.)	Material	-16	-25	-50	-60	-100	-125
Flat Bars (Width Selectable)	Allowable Tolerance (b)	EN 1.0038 Equiv. EN 1.1191 (cold drawn) Equiv.	0 -0.18	0 -0.21	0 -0.25	0 -0.3	0 -0.35	0 -0.4
		EN 1.4301 Equiv.	0 -0.27	0 -0.33	0 -0.39	0 -0.73	0 -0.73	0 -0.73

#### <Plate Thickness Tolerance>

Product	Material	Plate Thickness							
		1.0-4.5	5	6	10	12	15, 16, 19	20	
Sheet Metal	All materials EN 1.0038 Equiv. EN 1.1191 (cold drawn) Equiv.	Since the material is left bare, ±thickness×0.1 will be the reference.							
Flat Bars (Width selectable - Configurable)	EN 1.4301 Equiv.	0	0	0	0	0	0	0	
		-0.3	-0.3	-0.3	-0.22	-0.27	-0.3	-	
Rolled Material	EN AW-5052 Equiv.	±0.35	±0.45	±0.5	±0.6	±0.7	±0.7	±0.8	

\* For some products, part of the tolerances may not be supported for the corresponding thickness, even if described on the table. For details about thickness supported per material/product, see each product page.

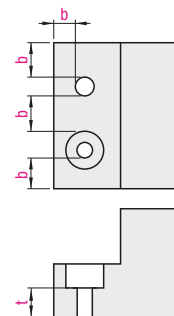
### 2. Hole Type

Hole Type	Bolt Hole	Counterbored Holes	Through Hole	Tapped Holes (Coarse Thread)
Code	N, NA	Z, ZF, ZB, ZBA	D, DA	M, MA
Shape Diagram				
Details	Through hole for screws/bolts. Use bolt nominal diameter for specifying. (See chart on right for machining dimensions)	Counterbored hole for screws/bolts. Use bolt nominal diameter for specifying. (See chart on right for machining dimensions)	Through hole whose diameter can be specified in 0.5mm or 1mm increments.	Coarse Thread Tap Use tap hole size for specifying. Effective tap depth will be the max. nominal tap dia.×2. EX) Specify M6→Effective depth is 12

⚠ Bolt through hole (N, NA), Counterbored hole (Z, ZF, ZB) Machining per nominal diameter

Screw Nominal Size	Machining Dimensions	
	d, h	d1
3	3.5, 6.5	6.5
4	4.5, 8	8
5	5.5, 9.5	9.5
6	6.5, 11	11
8	9, 14	14
10	11, 18	18
12	14, 20	20
14	16, 23	23
16	18, 26	26

### 3-1. Machining Limits: Flat Bars, Rolled Aluminum, 6-Surface Milling, L Angles, Welded



⚠ Machining below the indicated limits is not possible.

#### ■ b Conditional Values

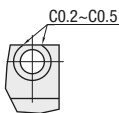
Hole Type, Code	Specified Values	Specified Values (Nominal) b Conditional Values								
		3	4	5	6	8	10	12	14	16
Tapped Holes	M, MA	0.8	0.8	0.8	1	1	1	1	1.5	1.5
Bolt Hole	N, NA	0.8	0.8	1	1	1	1	1	1	1
Counterbored Holes	Z, ZF, ZB	0.8	0.8	1	1	1	1	1	1	1

Hole Type, Code	Specified Values	Per Specified Value (Hole Diameter) b Conditional Values			
		3.0-5.0	5.1-25.0	25.1-50.0	50.5-100.0
Through Hole	D, DA	0.8	1	2	3
Precision Hole (H7)	DC, DFC	1.5	2	3	4

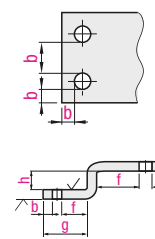
#### ■ t Conditional Values

Hole Type, Code	Specified Values	Specified Values (Nominal) t Conditional Values								
		3	4	5	6	8	10	12	14	16
Counterbored Holes	Z, ZF, ZB	0.8	0.8	0.8	1	1	1	1	1.5	1.5

⚠ When counterbore and wall thickness is less than 0.5, the counterbore may break through.



### 3-2. Machining Limits: Sheet Metal



⚠ Machining below the indicated limits is not possible.

Plate Thickness	f (Distance between the hole and the bend)	Through Hole		Tapped Holes		Toleranced Hole: Slotted Hole parallel to bend	Distance between the hole and the end face	h	g
		L Bend	Z, Convex Bend	L Bend	Z, Convex Bend				
1.0	1.0	2	3	3	5.5	3.5	1	5.5	5.5
1.6	1.5	2	3.5	3	6	4	1	6	6
2.3	2.0	2	4.5	3	7	5	1.5	7	7
3.2	3.0	2	6.5	3	9	7	1.5	9	9
4.5	4.0	3	7.5	4	11	8 (9)	2	11	11
6.0	5.0	3	14	4	16	15	2.5	16	18

⚠ Slotted hole f parallel to T4.0 - 4.5 will be (9).

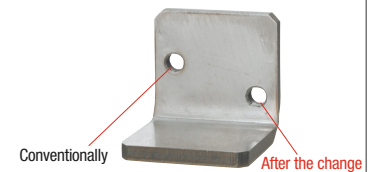
⚠ The hole may be deformed if specified at the limit value shown above.



#### Note

L bending machining limits have been greatly relaxed. Holes can be placed closer to the bends than before!

(Catalog published in 2012)

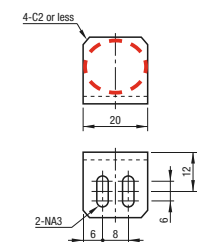
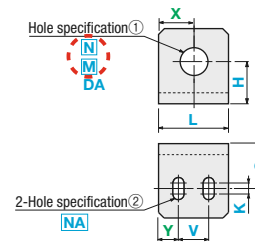


### 4. Hole Specifying Example

① For each of □ enclosed hole symbols, the applicable hole can be eliminated.

Ordering Code Specify hole position parameters and hole as 0.

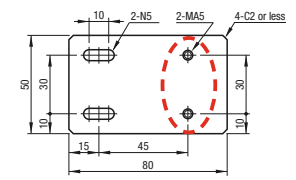
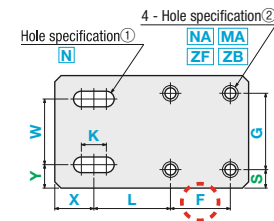
Ordering Example FASBS-SP-T2.3-A20-B20-L20-X0-H0-N0-Y6-V8-S12-NA3-K6



② Holes can be reduced by specifying the hole pitch as 0.

Ordering Code Specify hole pitch parameter with 0.

Ordering Example HRJDA-SCB-A80-B50-T6-X15-Y10-W30-N5-K10-L45-F0-S10-G30-MA5



③ When holes are evenly located about the center, the green color parameter can be omitted.

Ordering Example FALBS-SP-T2.3-A20-B20-L20-H15-N3-V8-S12-NA3 (Same as FALBS-SP-T2.3-A20-B20-L20-X10-H15-N3-Y6-V8-S12-NA3)

