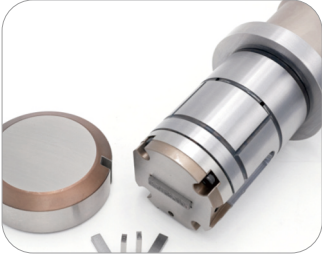


FORMING TOOLS FOR THICK TURRET

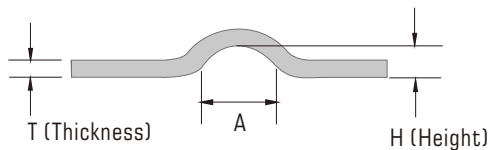


### WHEEL TOOLS



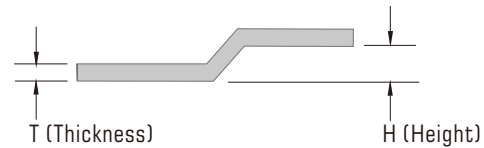
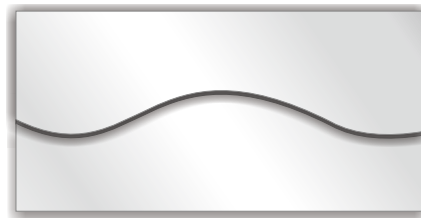
#### WHEEL RIB

- ① High speed forming, equal to table moving
- ② Make any shape in auto index station
- ③ No any nibbling marks
- ④ Any location of sheet start or end
- ⑤ Make Mini Radius on sheet: 16mm
- ⑥ For thickness : Mini. thickness: 0.8mm  
Max: 1.5mm SS, 2.0mm MS, 2.5mm AL



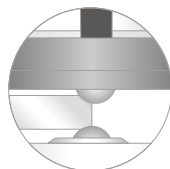
#### WHEEL OFFSET

- ① High speed forming, equal to table moving
- ② Make any shape in auto index station
- ③ No any nibbling marks
- ④ Any location of sheet start or end
- ⑤ Make Mini Radius on sheet: 25mm
- ⑥ For thickness : Mini. thickness: 0.8mm  
Max: 1.5mm SS, 2.0mm MS, 2.0mm AL

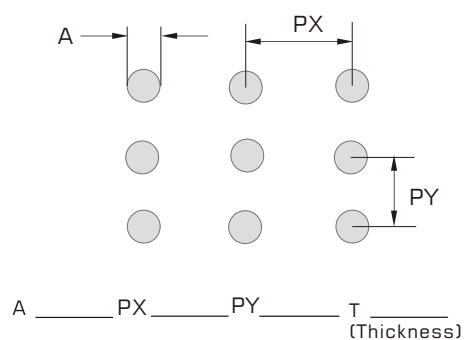
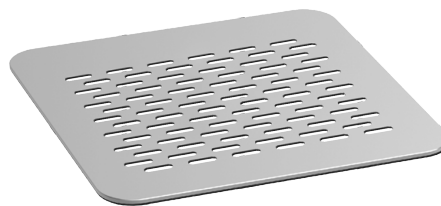
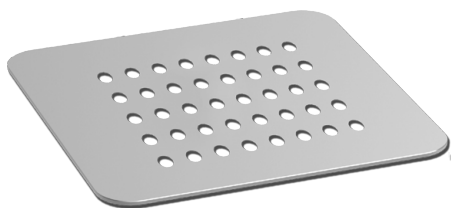


#### WHEEL DEBURRING

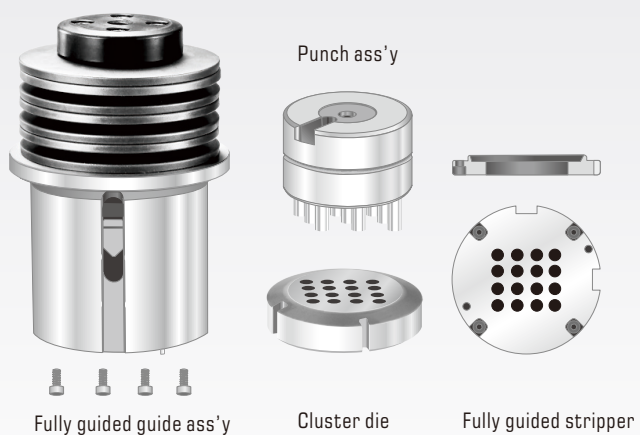
- ① High speed forming, equal to table moving
  - ② Remove burrs in auto index station
  - ③ Deburring on top and bottom of holes
  - ④ Any location of sheet start or end
  - ⑤ Designed for thick turret machine with hydraulic or servo programmable rams
- Mini Holes : Round 3.0mm  
Mini slot width: 2.0mm  
Max. Thickness: 5.0mm  
Min. Thickness: 0.8mm



### CLUSTER



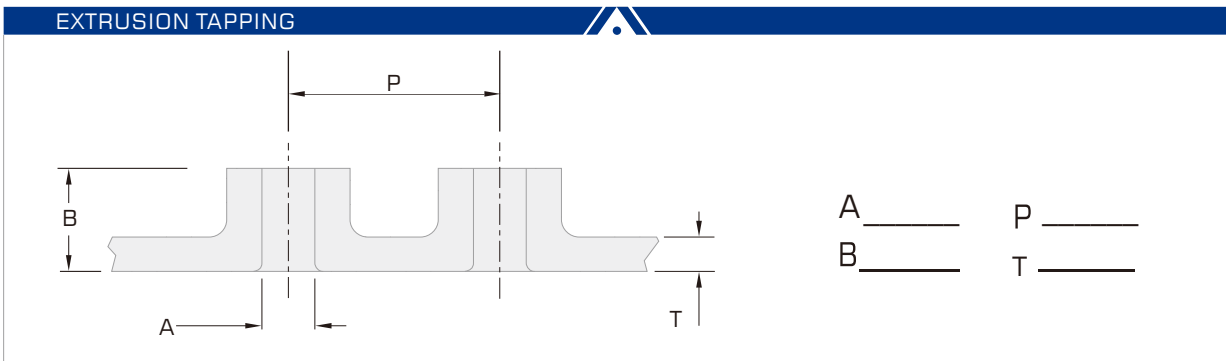
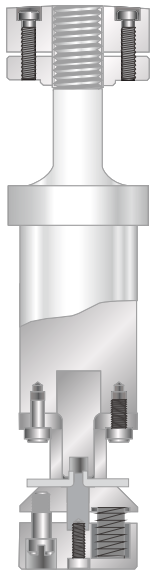
**Fully guided cluster** Recommend in Diameter/Width < 3.0mm



- A. Longer support for punch tip by stripper
- B. Accurate close clearance between punch and stripper
- C. More fixed stripper tightened by 4 screws
- D. TiCN punch available
- E. Quick adjust guide assembly Optional



### EXTRUSION TAPPING



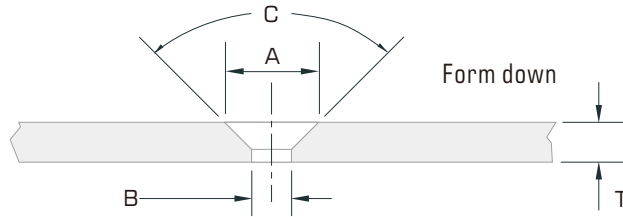
**CHART FOR PREPUNCH SIZE**

Material	Tapping size	Thickness I.D. C size	0.8	1.0	1.2	1.6	2.0	2.3
			Aluminum Mild steel	M2.6	2.21	1.3	1.3	1.3
M3	2.57	1.3		1.3	1.6	1.6	N/A	N/A
M4	3.40	2.0		2.0	2.0	2.3	2.3	2.5
M5	4.30	N/A		2.3	2.3	2.8	2.8	3.0
M6	5.20	N/A		N/A	N/A	3.0	3.8	3.8
Stainless steel	M2.6	2.21	1.3	1.3	N/A	N/A	N/A	N/A
	M3	2.57	1.3	1.6	1.8	N/A	N/A	N/A
	M4	3.40	2.0	2.0	2.0	N/A	N/A	N/A
	M5	4.30	N/A	2.3	2.3	N/A	N/A	N/A
	M6	5.20	N/A	3.0	3.0	N/A	N/A	N/A

### COUNTERSINK



#### COUNTERSINK

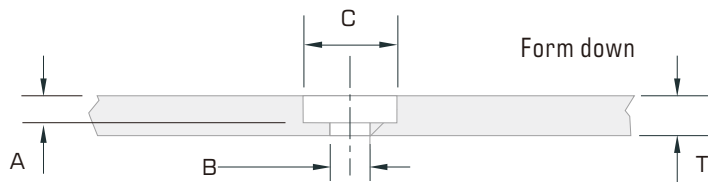
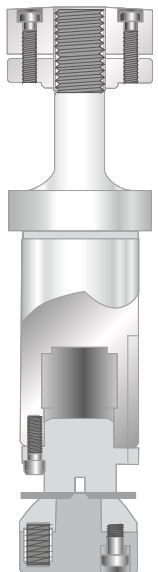


A \_\_\_\_\_  
 B \_\_\_\_\_  
 C \_\_\_\_\_  
 T \_\_\_\_\_

Material Type \_\_\_\_\_  
 Machine Type \_\_\_\_\_  
 Tooling Station \_\_\_\_\_

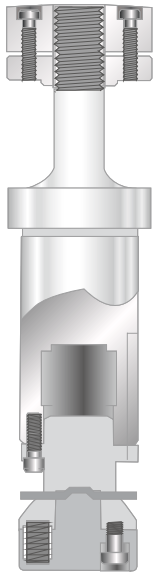


#### COUNTERSINK

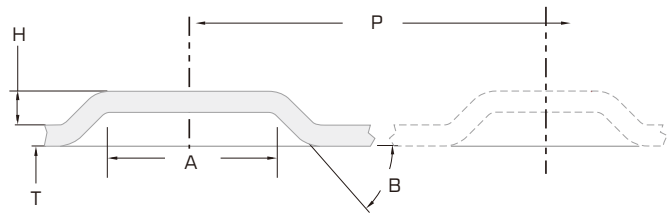


A \_\_\_\_\_  
 B \_\_\_\_\_  
 C \_\_\_\_\_  
 T \_\_\_\_\_

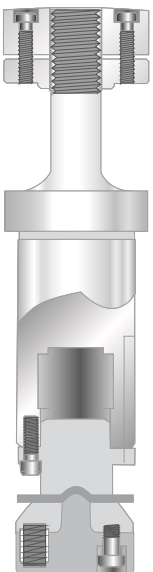
Material Type \_\_\_\_\_  
 Machine Type \_\_\_\_\_  
 Tooling Station \_\_\_\_\_



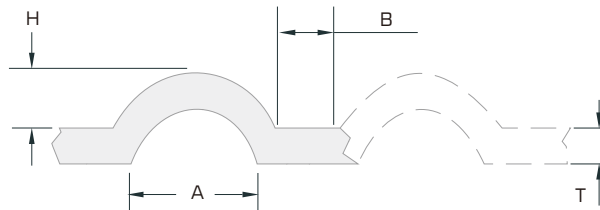
#### EMBOSS



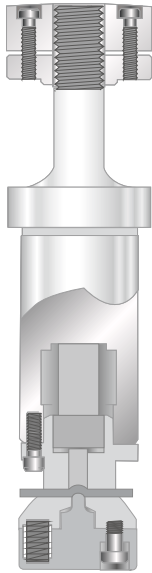
A \_\_\_\_\_ H \_\_\_\_\_  
 B \_\_\_\_\_ T \_\_\_\_\_ P \_\_\_\_\_



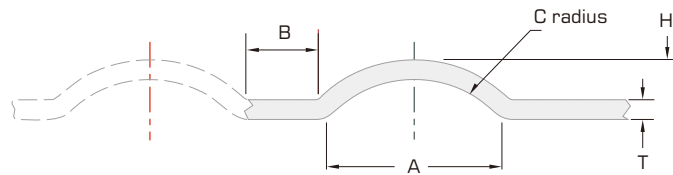
#### COUNTINUOUS BEAD



A \_\_\_\_\_ H \_\_\_\_\_  
 B \_\_\_\_\_ T \_\_\_\_\_



#### DIMPLE



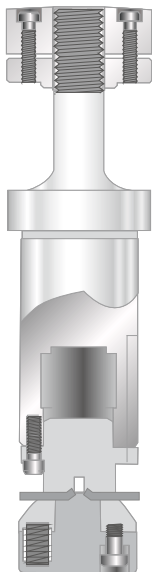
A \_\_\_\_\_

B \_\_\_\_\_

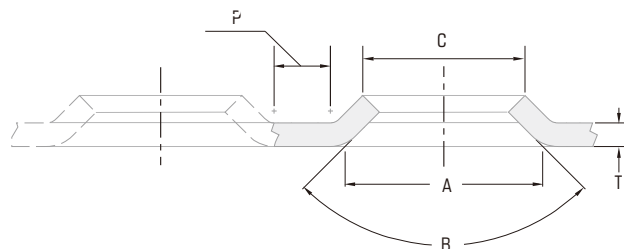
C \_\_\_\_\_

H \_\_\_\_\_

T \_\_\_\_\_



#### EMBOSS COUNTERSINK



A \_\_\_\_\_

B \_\_\_\_\_

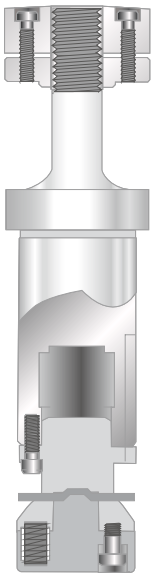
C \_\_\_\_\_

H \_\_\_\_\_

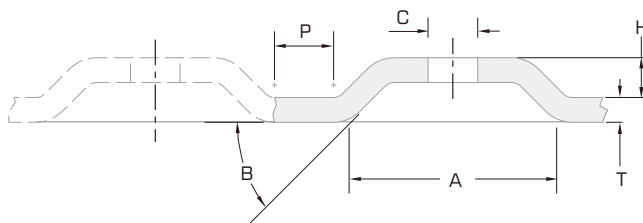
P \_\_\_\_\_

T \_\_\_\_\_

### EMBOSS EXTRUSION



#### EMBOSS EXTRUSION

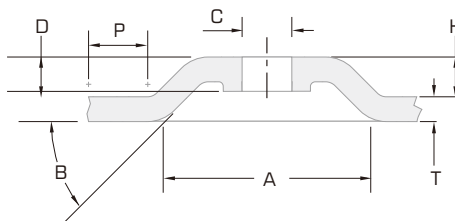


A \_\_\_\_\_ H \_\_\_\_\_  
 B \_\_\_\_\_ P \_\_\_\_\_  
 C \_\_\_\_\_ T \_\_\_\_\_

Note: The tooling need prepunch



#### EMBOSS EXTRUSION

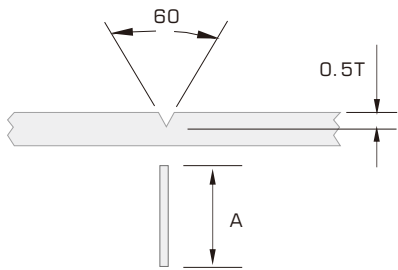


A \_\_\_\_\_ D \_\_\_\_\_ P \_\_\_\_\_  
 B \_\_\_\_\_ H \_\_\_\_\_ T \_\_\_\_\_  
 C \_\_\_\_\_

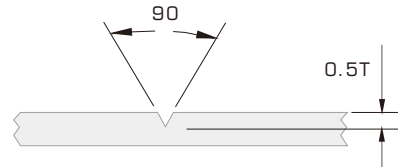




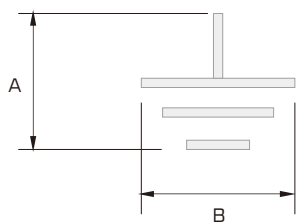
#### V LINE MARKING



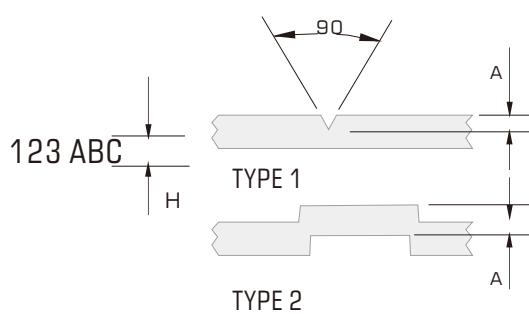
#### CENTER POINT



#### EARTH GROUND

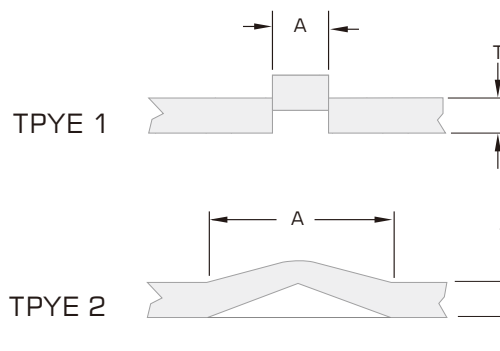


#### LOGO MARKING

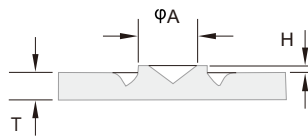




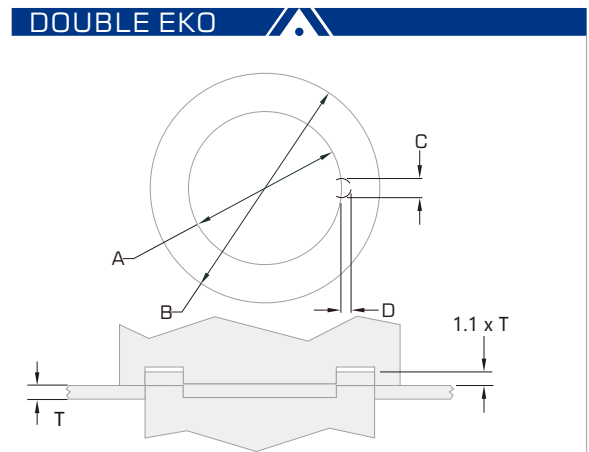
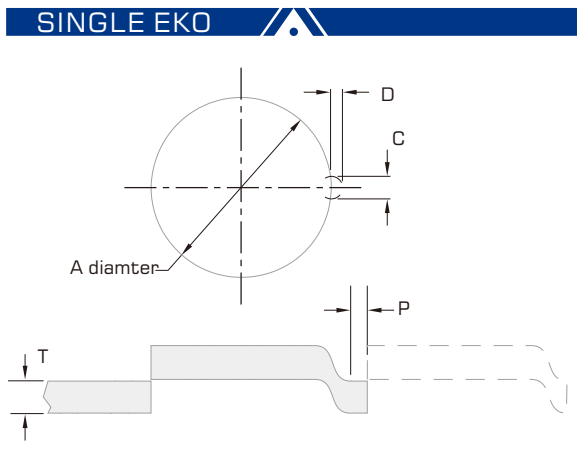
#### SHEAR BUTTON



#### LOCATOR TOOL



1. Tool can not be used for SUS304
2.  $\pm 0.02\text{mm}$  deformation appears of reverse side
3. More than 2.0mm thick material may swell around the formed area
4. FAB spring pack can not be used for this tool



Material Type \_\_\_\_\_

A \_\_\_\_\_ D \_\_\_\_\_

B \_\_\_\_\_ P \_\_\_\_\_

C \_\_\_\_\_ T \_\_\_\_\_

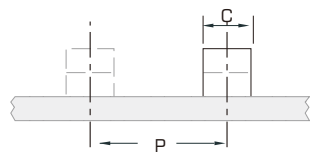
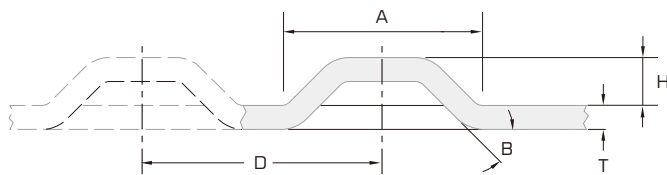
Machine Type \_\_\_\_\_

Tooling Station \_\_\_\_\_

### BRIDGE TOOL

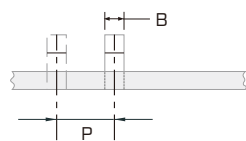
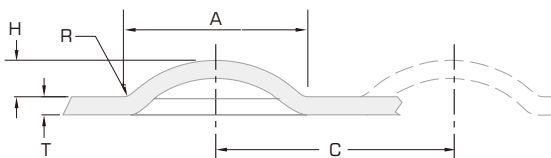


#### BRIDGE-FLAT TOP



A \_\_\_\_\_  
 B \_\_\_\_\_ H \_\_\_\_\_  
 C \_\_\_\_\_ P \_\_\_\_\_  
 D \_\_\_\_\_ T \_\_\_\_\_

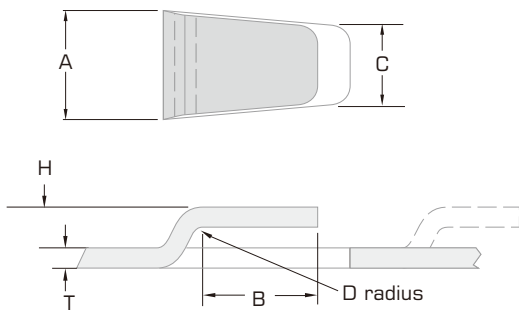
#### BRIDGE-RADIUS TOP



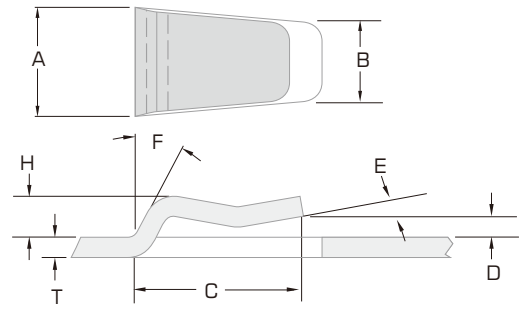
A \_\_\_\_\_ H \_\_\_\_\_  
 B \_\_\_\_\_ R \_\_\_\_\_  
 C \_\_\_\_\_ T \_\_\_\_\_  
 P \_\_\_\_\_



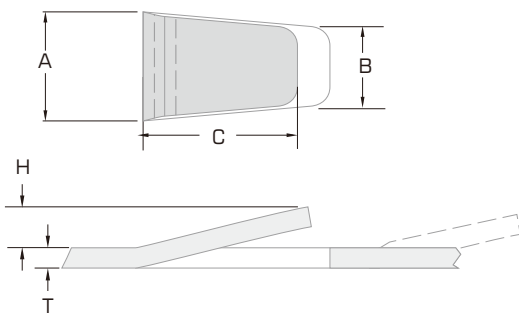
LANCE AND FORM SELF CLIP



LANCE AND FORM SPRING CLIP

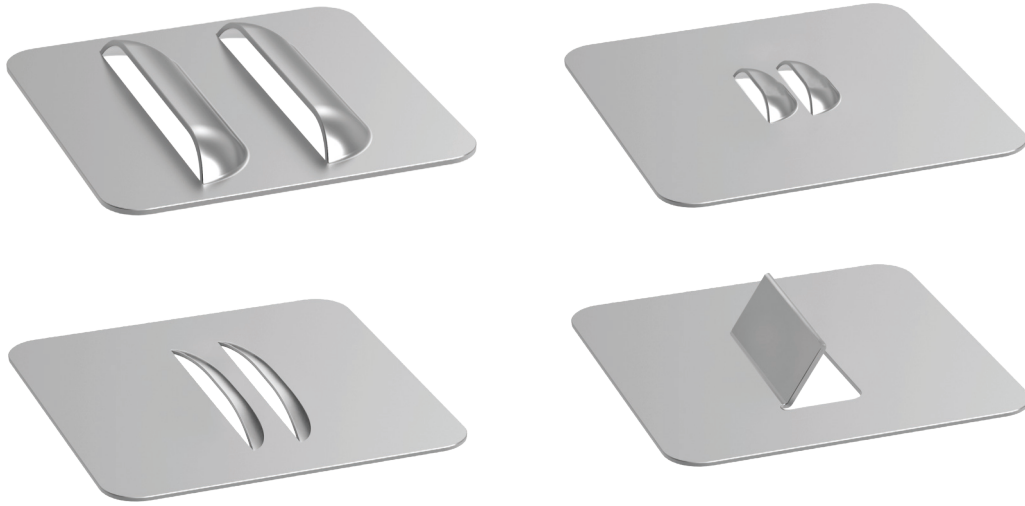


LANCE AND FORM TAB

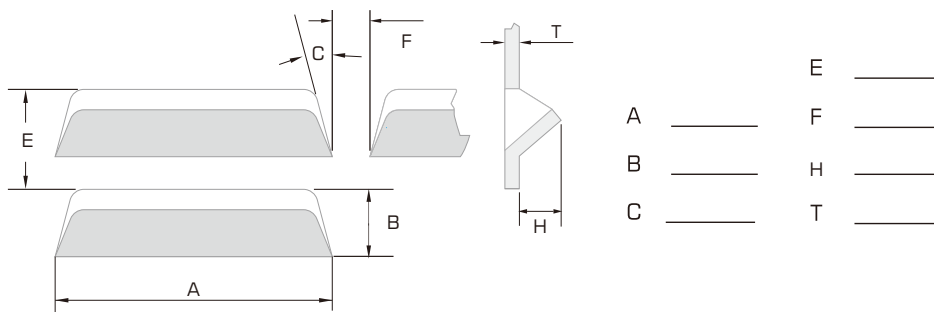


- A \_\_\_\_\_
- B \_\_\_\_\_
- C \_\_\_\_\_
- D \_\_\_\_\_
- E \_\_\_\_\_
- F \_\_\_\_\_
- H \_\_\_\_\_
- P \_\_\_\_\_
- T \_\_\_\_\_

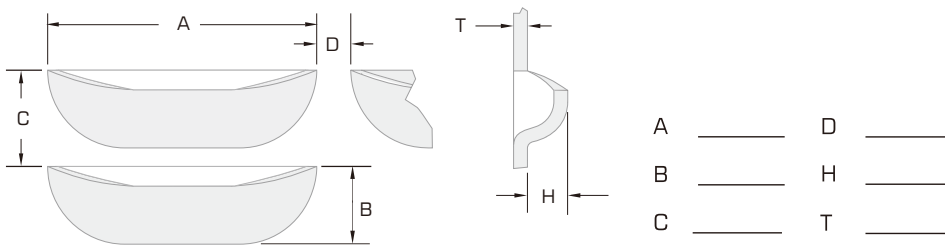
### LOUVER TOOL



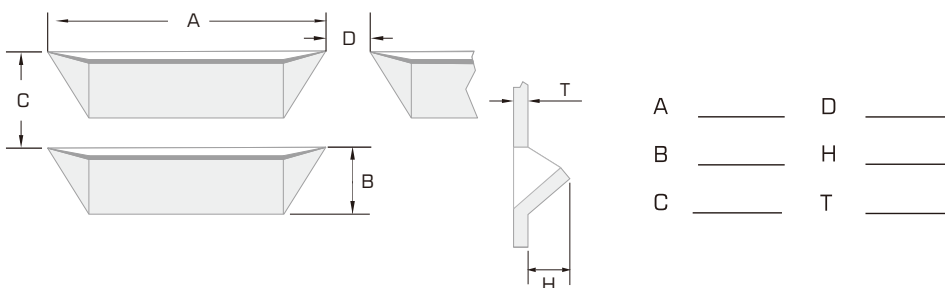
#### OPEN STRAIGHT LOUVER



#### CLOSE RADIUS LOUVER

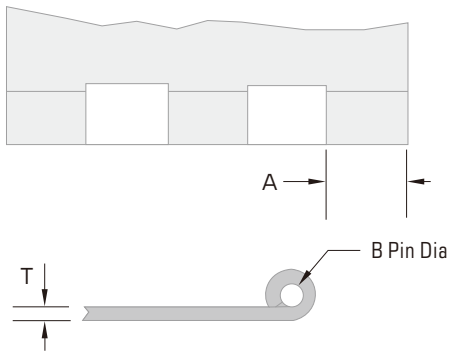


#### CLOSE STRAIGHT LOUVER





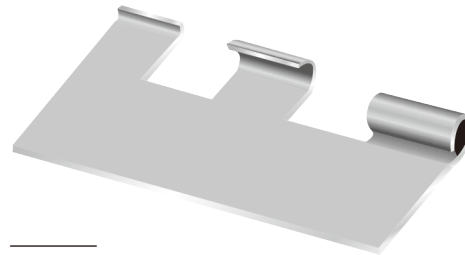
#### HINGLE TOOL



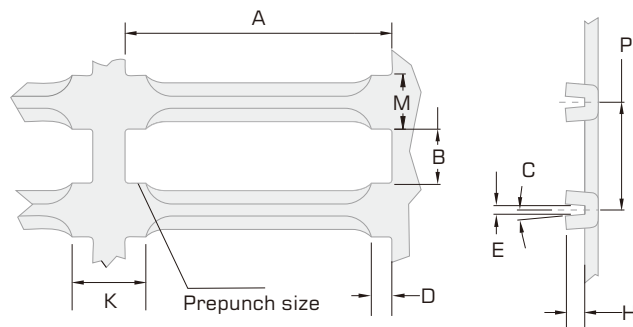
A \_\_\_\_\_

B \_\_\_\_\_

T \_\_\_\_\_



#### CARD GUIDE



A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

D \_\_\_\_\_

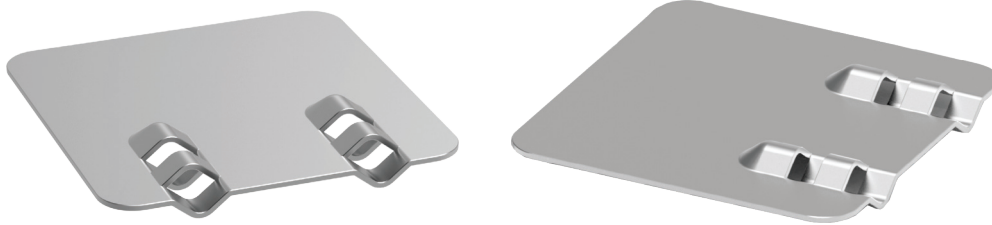
E \_\_\_\_\_

H \_\_\_\_\_

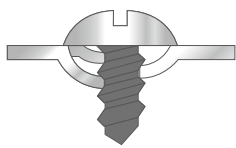
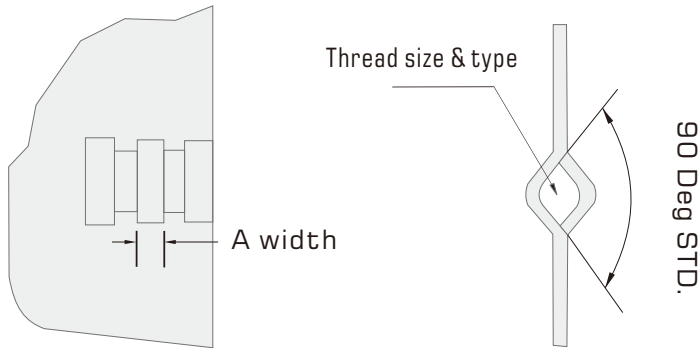
K \_\_\_\_\_

P \_\_\_\_\_

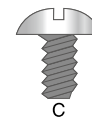
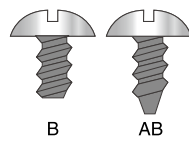
M \_\_\_\_\_



#### THREAD LOOP

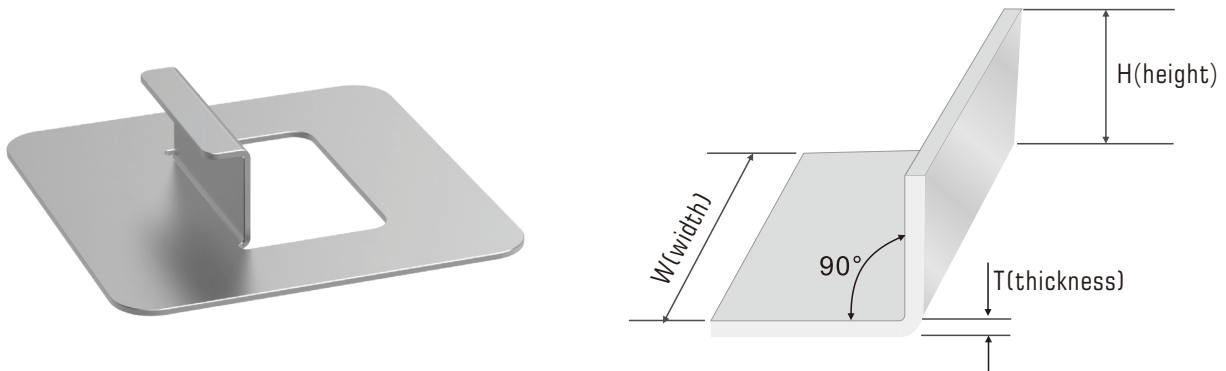


#### THREAD FORM



(Machine Screws)





## BENDING TOOL

- ① Tool can bend sheet to 90 degree, not 88 degree
- ② For aluminium and mild steel, thickness 0.8mm~2.0mm  
For stainless steel, thickness 0.8mm~1.5mm  
Need not change insert
- ③ D station, Max height = 18mm, Max. width = 80mm



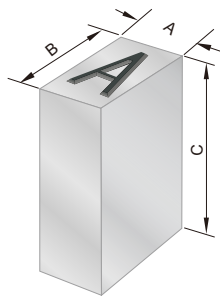
## BENDING TOOL

- ① Be available at B,C,D station
- ② Punch ass'y designed for specified thickness and material. Not adjust
- ③ V-line tip on punch and die insert create weak slot in both sides of sheet metal. Shake up and down to break parts
- ④ Restriction for thickness: Minimum 0.8mm, Maximum 1.5mm
- ⑤ Clear, smooth in cutting edge after breaking

# ML TECHNOLOGIES

## FORMING TOOLS

### MULTI SCRIBE/EXCHANGABLE LETTER MARKING



Character font & range

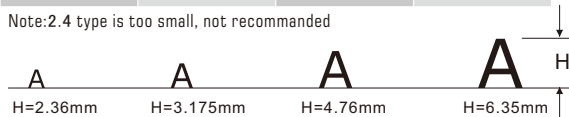
ABCDEFGHIJKLMN  
 NOPQRSTUVWXYZ  
 0123456789  
 & / . - ( )



TYPE	A SIZE	B SIZE	C SIZE
2.4	2.36mm	6.35mm	19.05mm
3.2	3.175mm	6.35mm	19.05mm
4.8	4.76mm	7.94mm	19.05mm
6.4	6.35mm	9.52mm	19.05mm

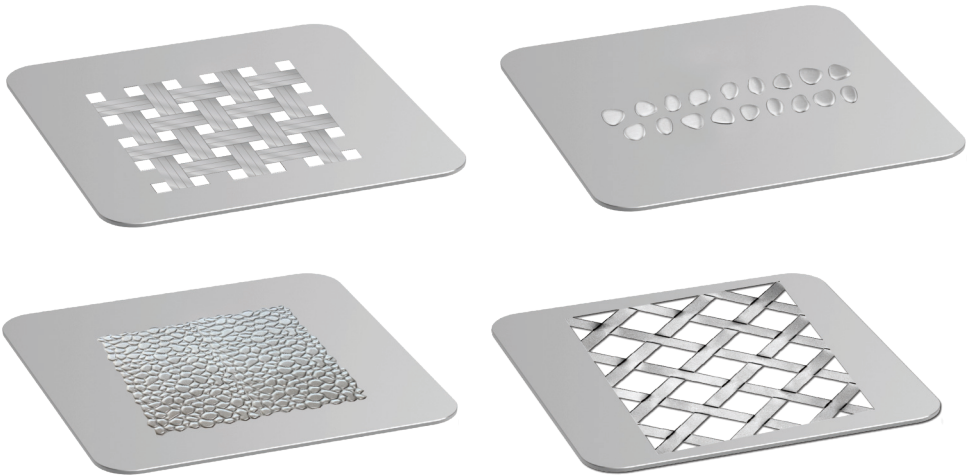
Note: 2.4 type is too small, not recommended

EXCHANGABLE LETTER MARKING

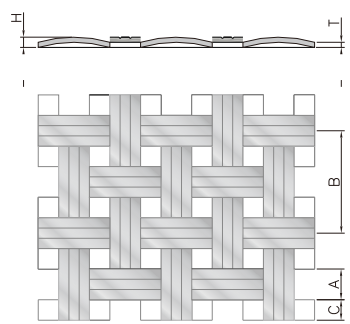


FORMING TOOLS

TEXTURE/DRIPS/LEATHER

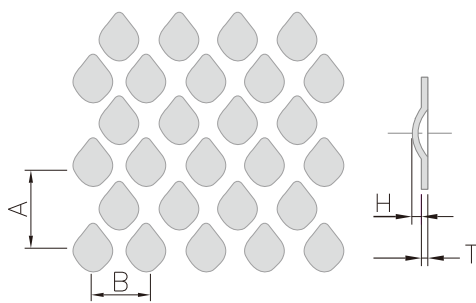


EMBOSS-EXPANDED METAL



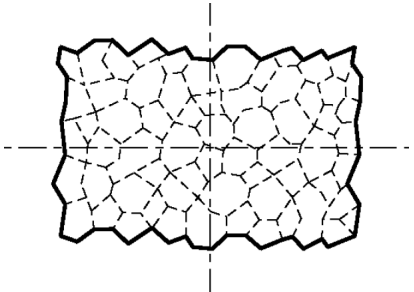
A: \_\_\_\_\_  
B: \_\_\_\_\_ H: \_\_\_\_\_  
C: \_\_\_\_\_ T: \_\_\_\_\_

EMBOSS-DRIPS



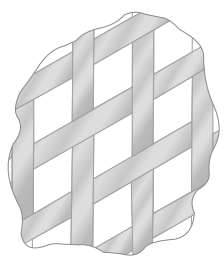
A: \_\_\_\_\_ H: \_\_\_\_\_  
B: \_\_\_\_\_ T: \_\_\_\_\_

LEATHER TEXTURE



Max. thickness: 2.0mm  
Emboss height 0.5mm

EMBOSS-EXPANDED METAL



The texture need prepunch

