FORMING TOOLS

Widest variety special forming tools in advanced technology.

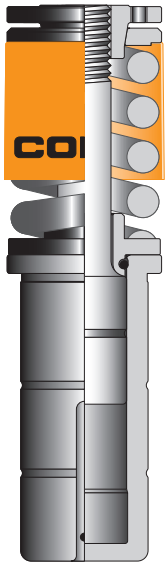
Conic Special tools

Conic offers the best performance special tools to the customer.
Conic engineers always try to find the best solution of productive tools
to the customer which uses the most advanced tooling technologies.

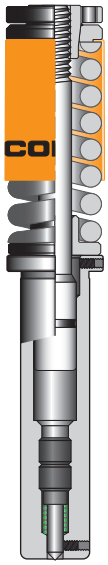
FORMING TOOLS

CENTER POINT

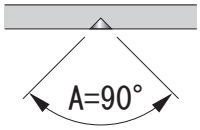
FORMING UP
NC 1-1/4″(B)



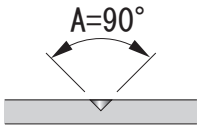
FORMING DOWN
NC 1/2″(A)



FORMING UP



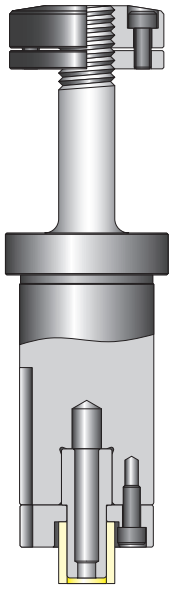
FORMING DOWN



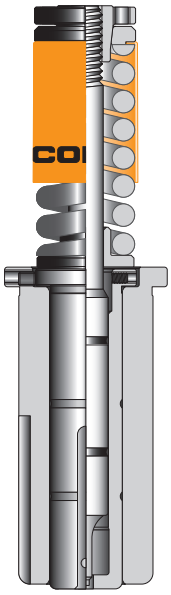
Forming process of making conical recess (center point).
Used for locator, landmark and so on.

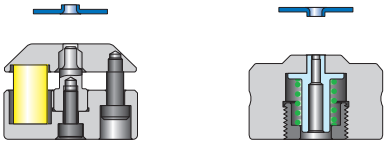
BURRING FOR THREAD FORM

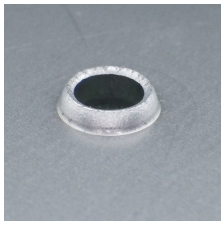
FORMING UP
NC 1-1/4″(B)
(Forming after pre-piercing)



FORMING DOWN
NC 1-1/4″(B)
(Pre-piercing and forming)

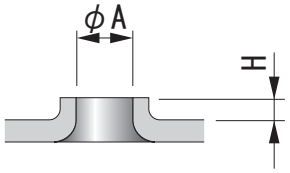




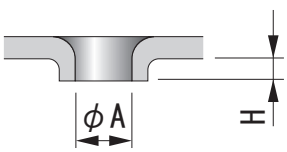


Screw size	Diameter (A)	Pre-hole
M2.5	φ2.1	φ1.2
M3	φ2.6	φ1.5
M4	φ3.4	φ2.0
M5	φ4.3	φ2.4
M6	φ5.1	φ2.8

FORMING UP



FORMING DOWN

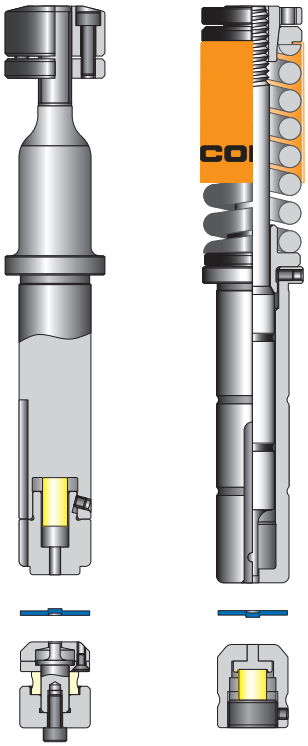


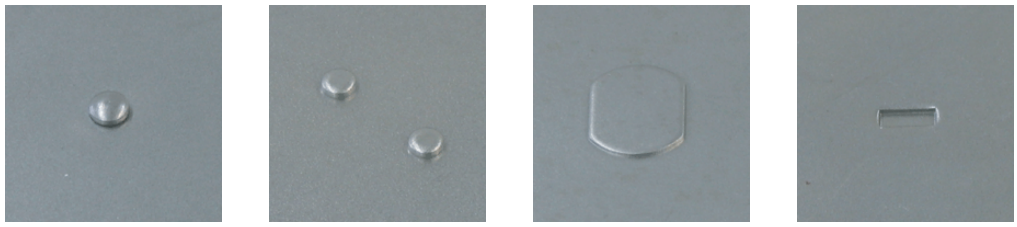
Forming process for making tubes of threading for screw.
Threading for screws and increased bearing area for tubes.

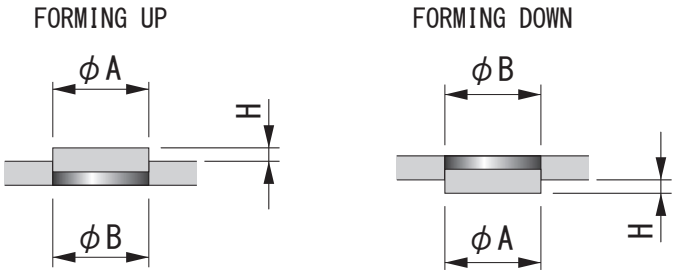
FORMING TOOLS

HALF SHEAR

FORMING UP FORMING DOWN



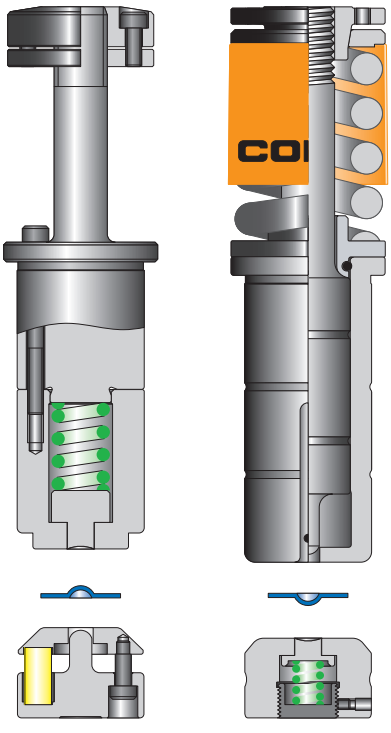


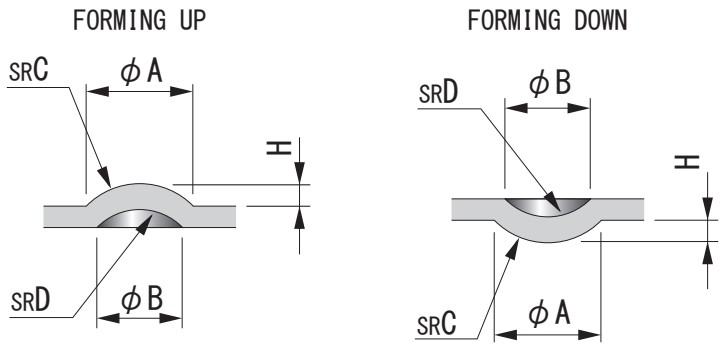


Forming process of pierce half of material thickness.
Used for locator or stopper.

EMBOSS (DIMPLE)

FORMING UP FORMING DOWN



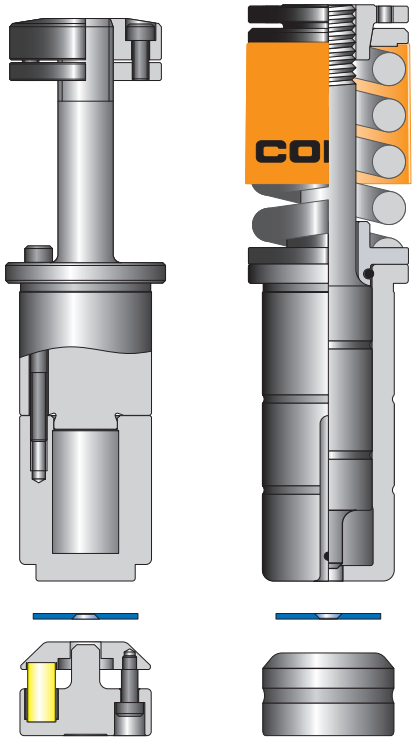


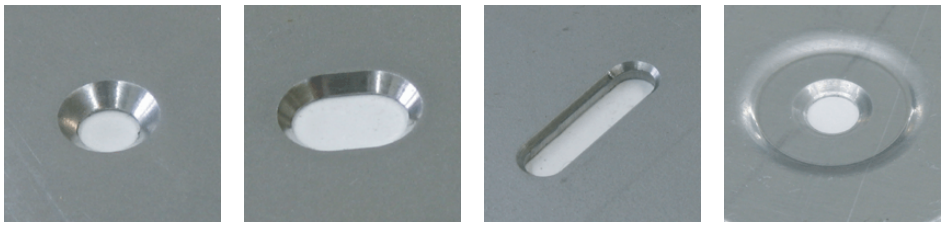
Forming process of embossing material like dimple.
Used for locator or decorative pattern of the material.

FORMING TOOLS

COUNTERSINK FOR COUNTERSUNK SCREW (CHAMFERING)

FORMING UP FORMING DOWN





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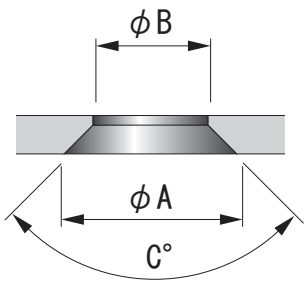

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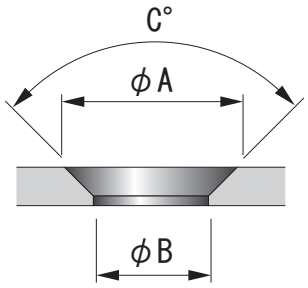
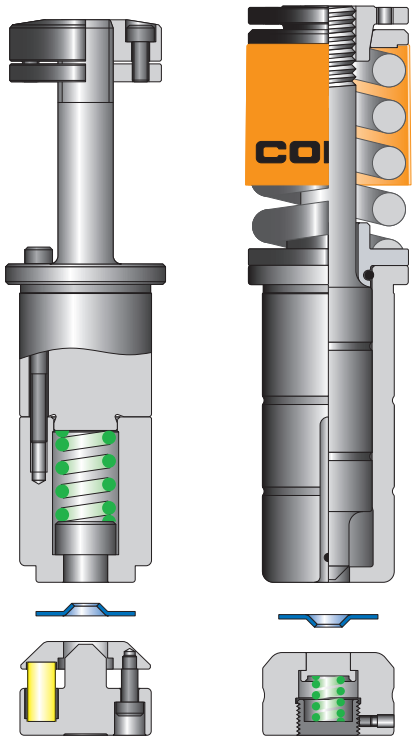
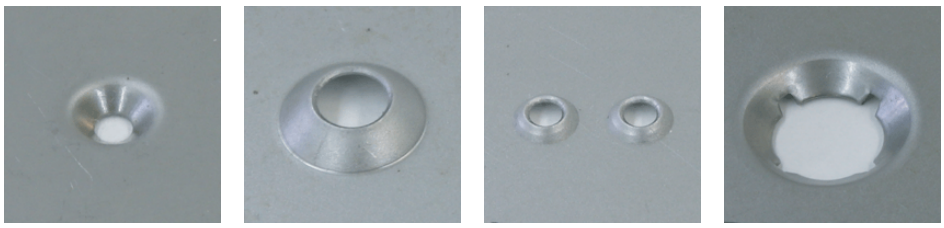


Forming process of making a chamfer to material.
Used for sink a countersunk screw head, make chamfer to a corner after punching, guide of tapping.

COUNTERSINK

FORMING UP FORMING DOWN





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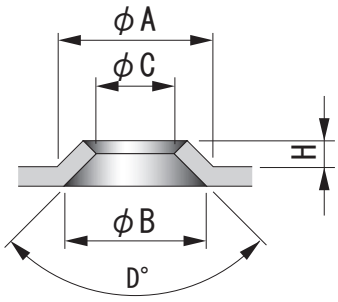

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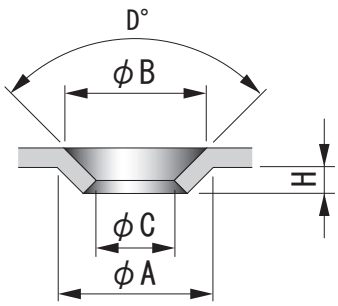
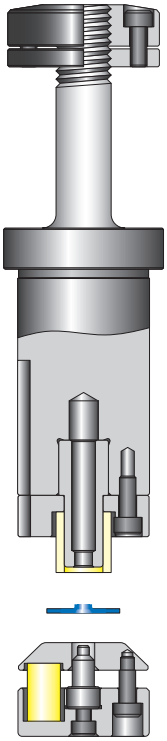


Forming process of embossing work, such as dish-shaped.
Used for sink a countersunk screw head, or used for nonslip.

FORMING TOOLS

COUNTERSINK BURRING

FORMING UP



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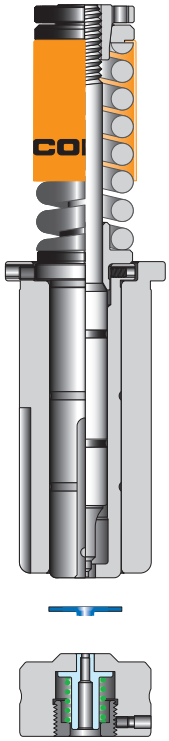

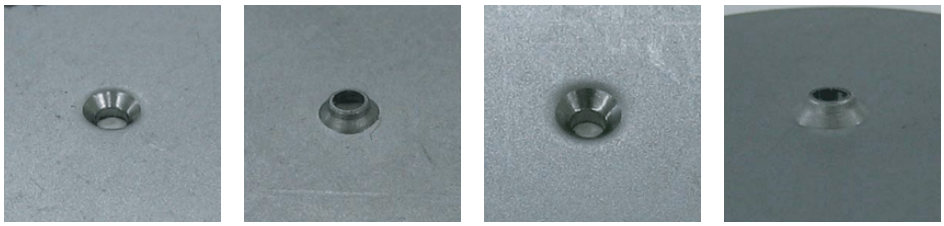

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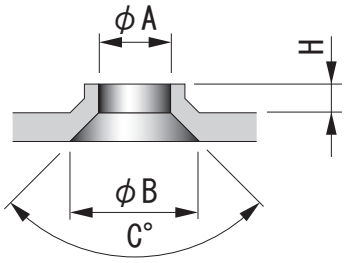

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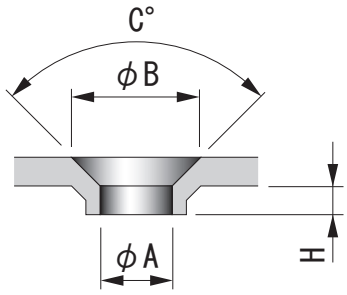
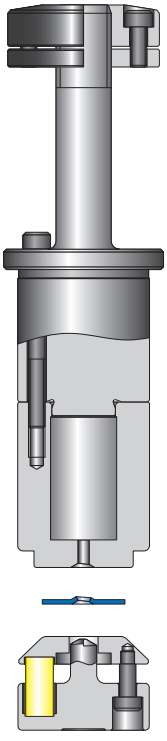


Forming process for making tube of threading for screw, and at the same time make a chamfer in the entrance part.

Used for threading for screw. Used to guide at the time of tapping.

ONE PITCH THREAD FORM

FORMING UP



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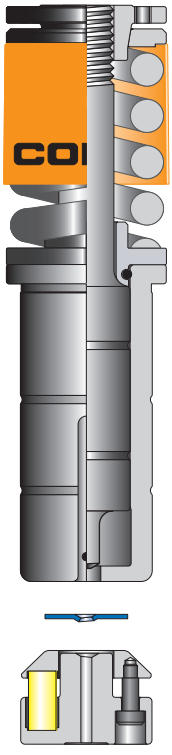
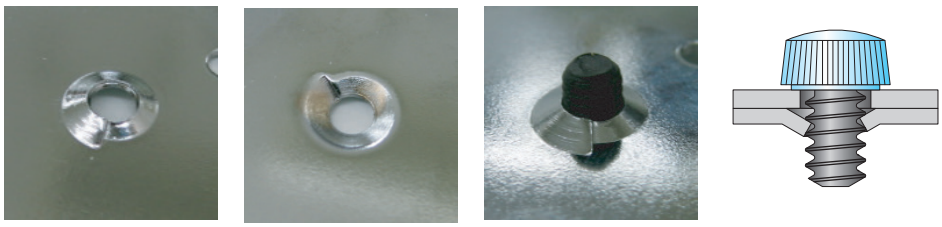




FORMING UP

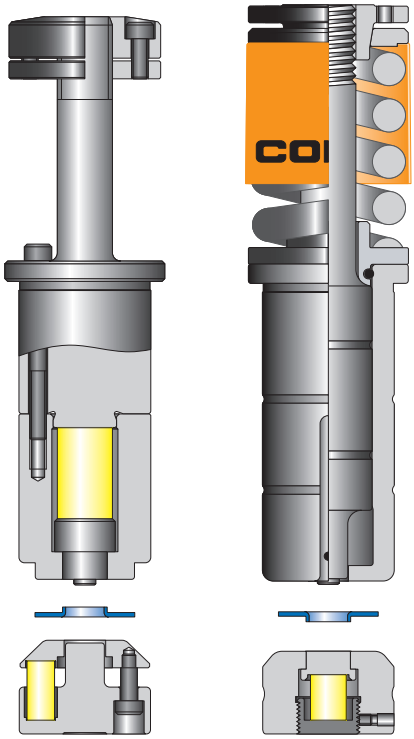
FORMING DOWN

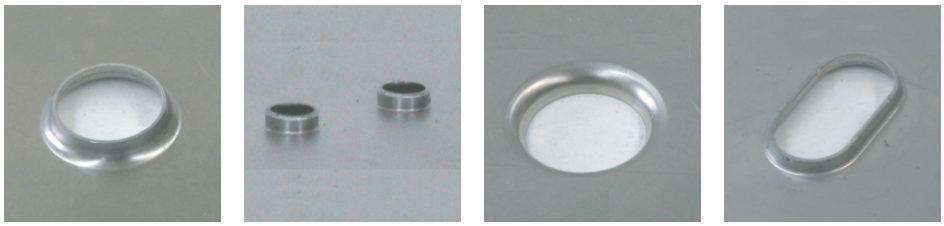
Forming process of making the one pitch thread form.
Used to screw in place that does not require a heavy strength.

FORMING TOOLS

COUNTERSINK BURRING

FORMING UP FORMING DOWN





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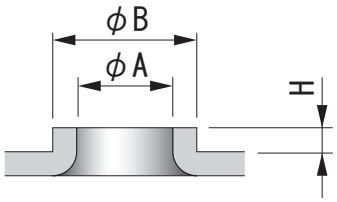

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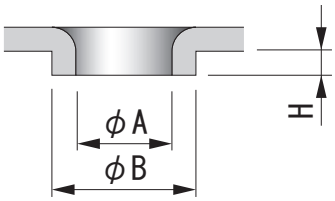
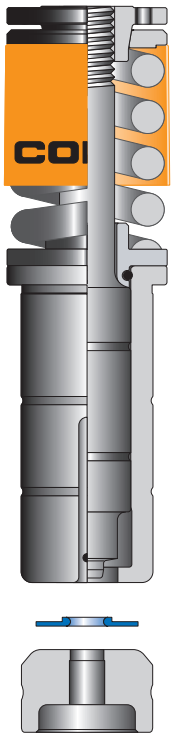


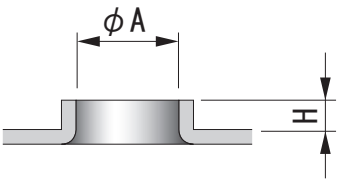
Forming process for making tubes.
Used to guide or protect the code and pipe.

CURLING

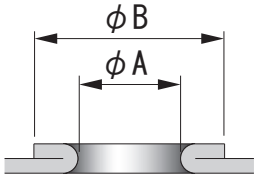
FORMING DOWN



BURRING



CURLING

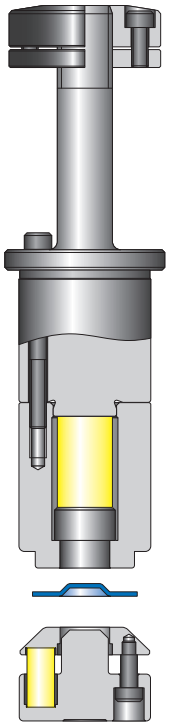


Forming process to bend the material after forming of burring.
Used to guide or protect the code and pipe.
The order of processing is Pre-hole ⇒ Burring ⇒ Curling.

FORMING TOOLS

EMBOSS

FORMING UP



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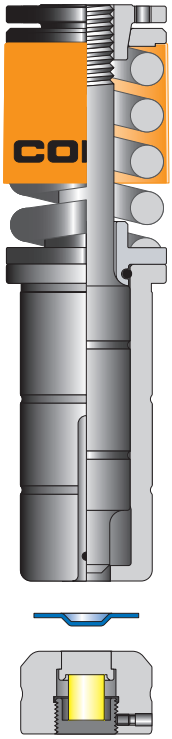

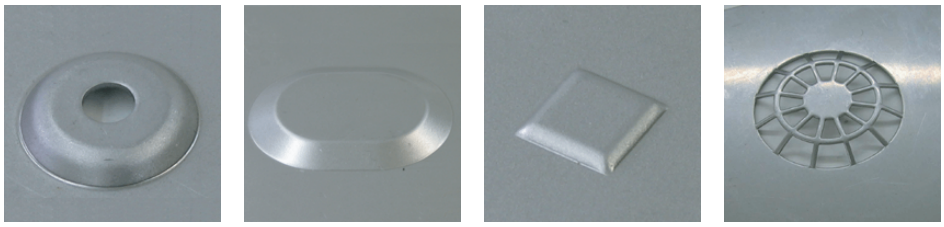

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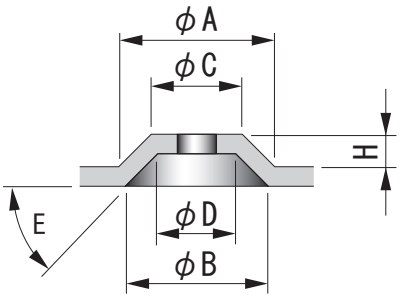

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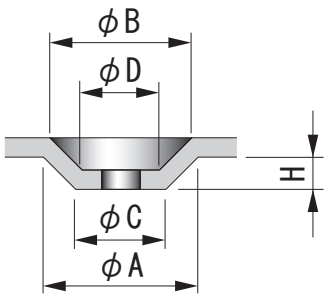
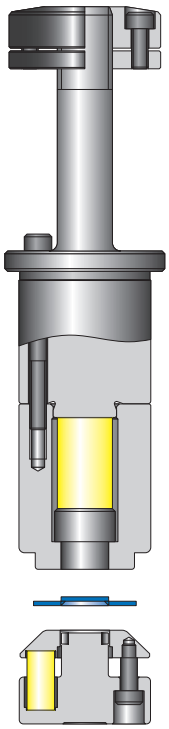


Forming process to produce raised or sunken shape.

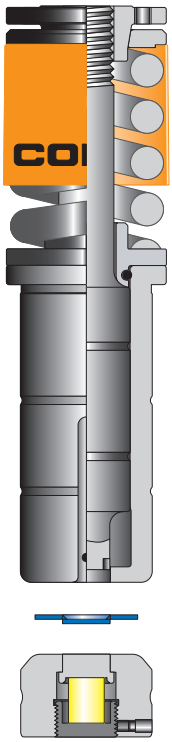
Used for sinking a head of bolts or nuts.
Used for the seat of the product.

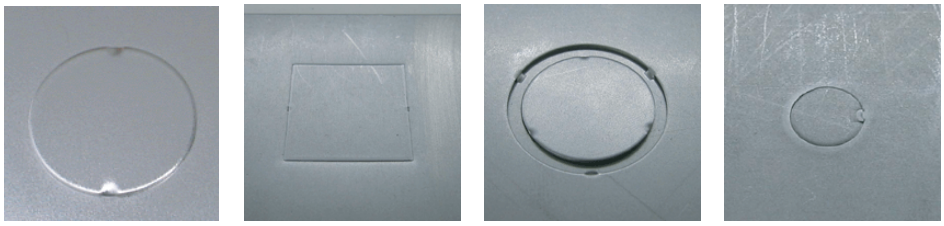
KNOCKOUT

FORMING UP



FORMING DOWN





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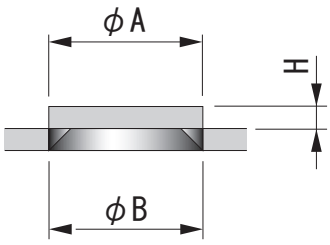

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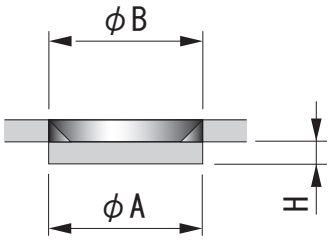


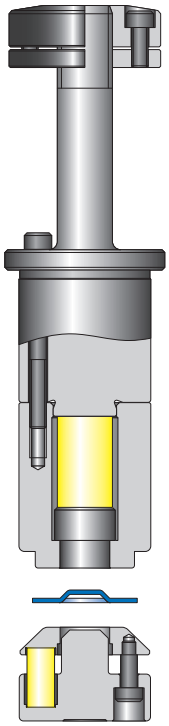
Forming process of piercing a hole and keep the slug on the sheet metal by tabs.

When using a hole, remove the slug using a screwdriver.

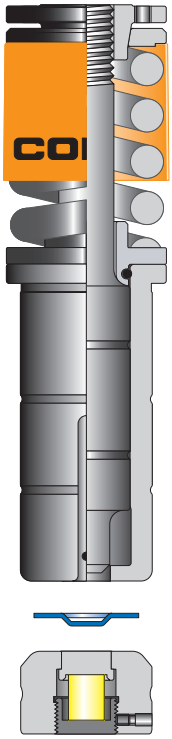
FORMING TOOLS

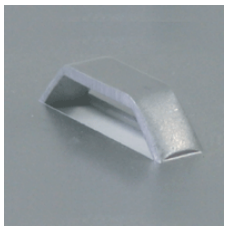
BRIDGE , DOUBLE BRIDGE

FORMING UP

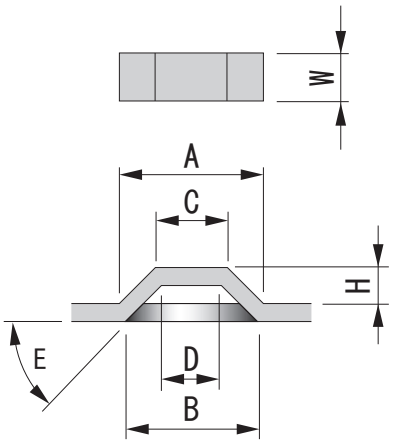


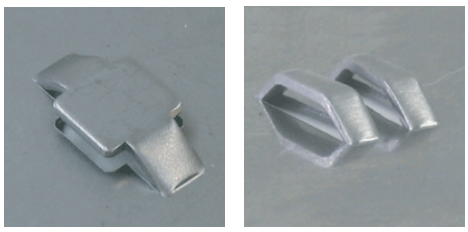
FORMING DOWN



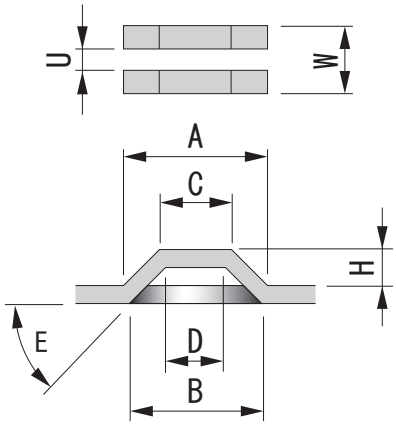


SINGLE BRIDGE(FORMING UP)





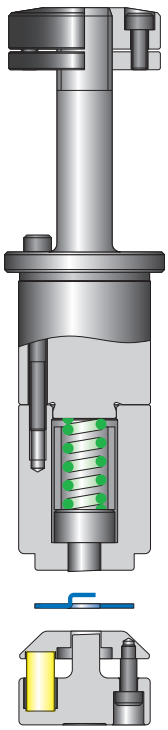
DOUBLE BRIDGE(FORMING UP)

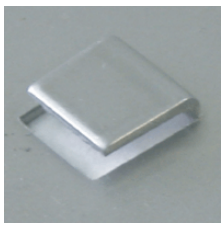


Forming process of lance like a bridge.

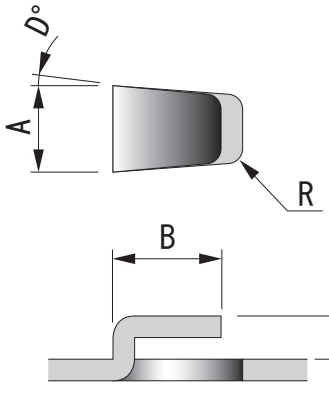
LANCE (Z-BENDING)

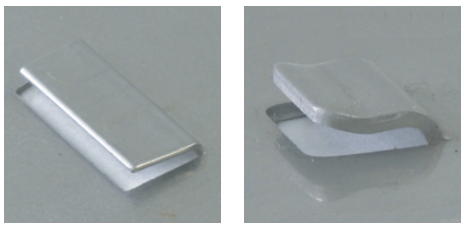
FORMING UP



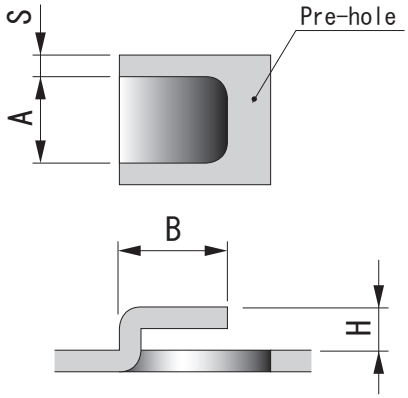


Forming without pre-hole





Forming after pre-hole



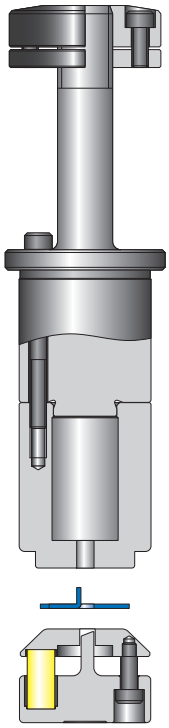
Forming process of lance like Z figure.

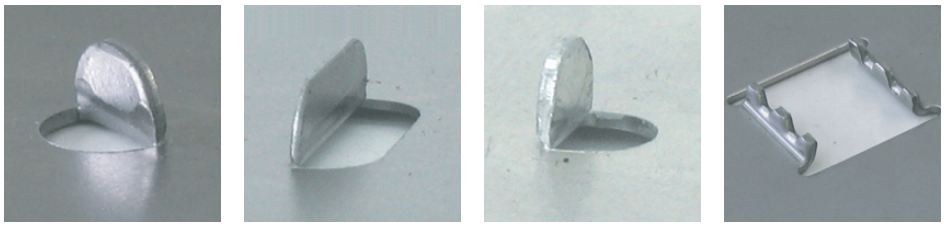
Used for hook, locator and stopper.

FORMING TOOLS

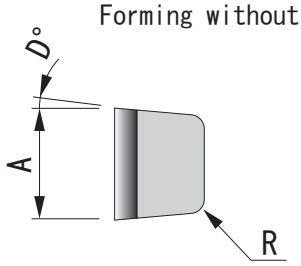
LANCE (L-BENDING)

FORMING UP

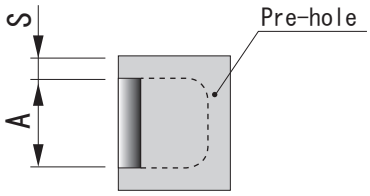




Forming without pre-hole



Forming after pre-hole



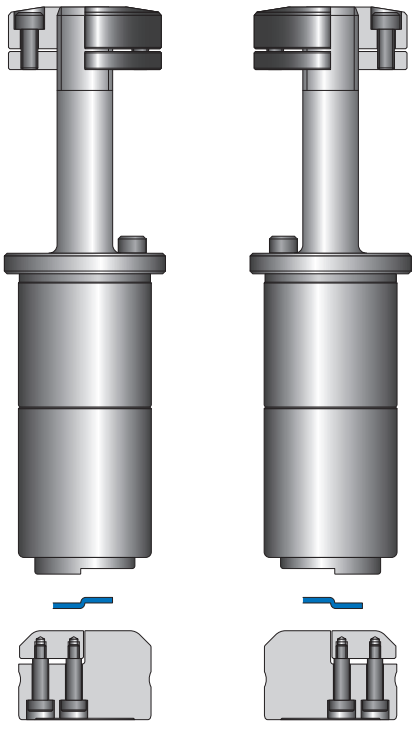
Forming process of lance like L figure.

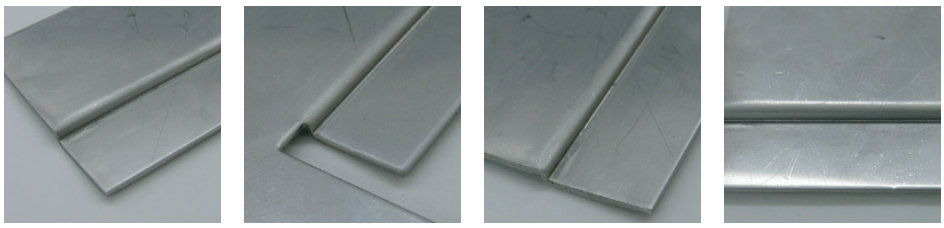
Used for hook, locator and stopper.

BENDING (OFFSET TOOL)

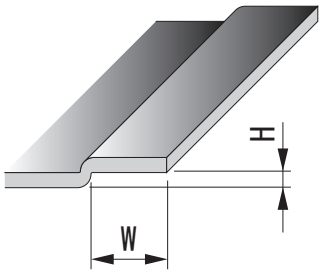
FORMING UP

FORMING DOWN

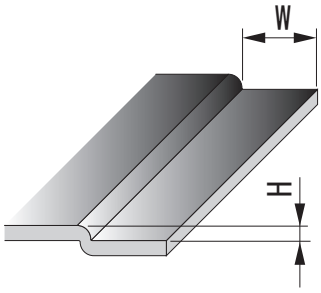




FORMING UP



FORMING DOWN



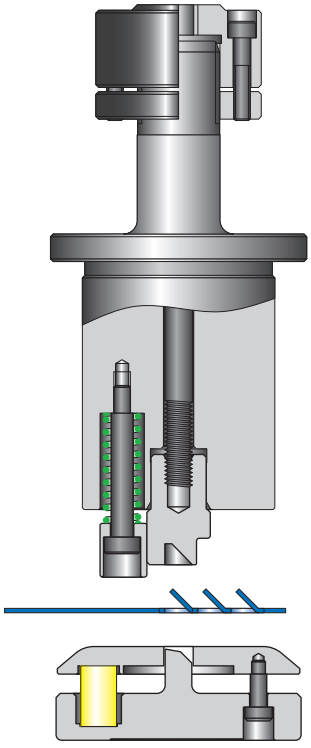
Forming process of bending that can hit continuously along the sheet.

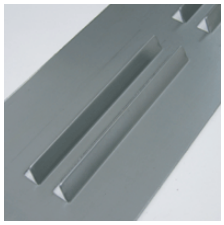
Used for the overlaying the sheet.

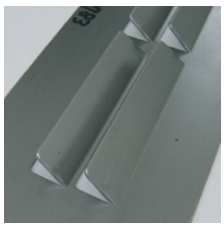
FORMING TOOLS

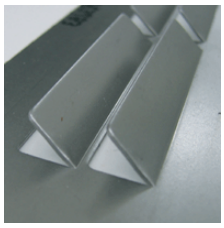
LANCE FOR AIR FLOW

FORMING UP

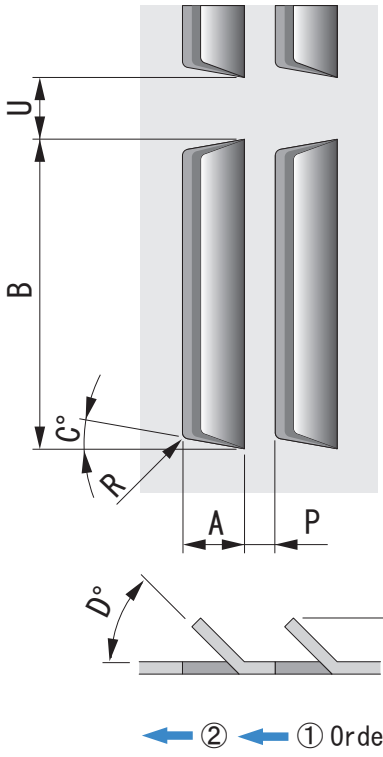








FORMING UP

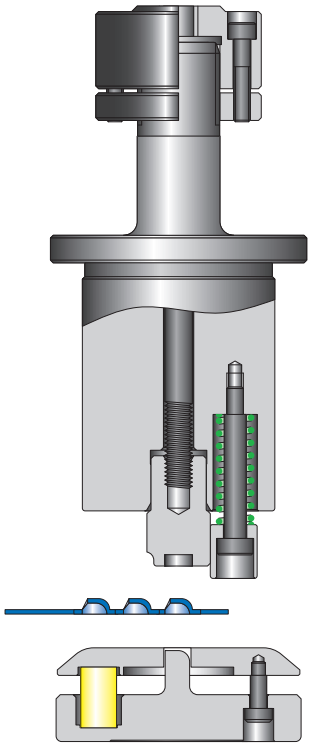


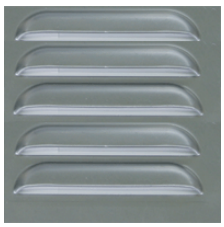
Forming process of lance to create an opening.

Used to provide air flow or ventilation.

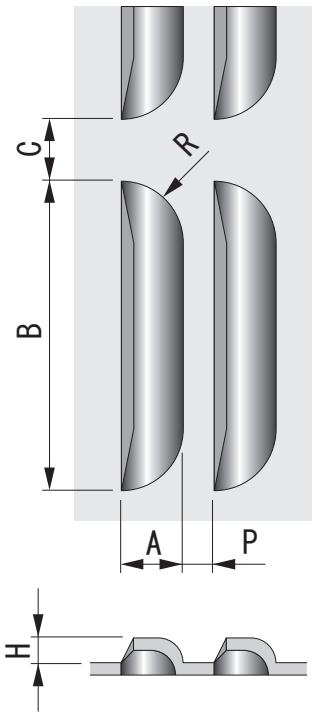
LOUVER FOR AIR FLOW

FORMING UP





FORMING UP



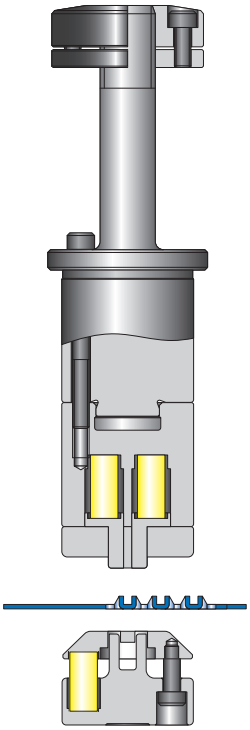
Forming process of louver to create an opening.

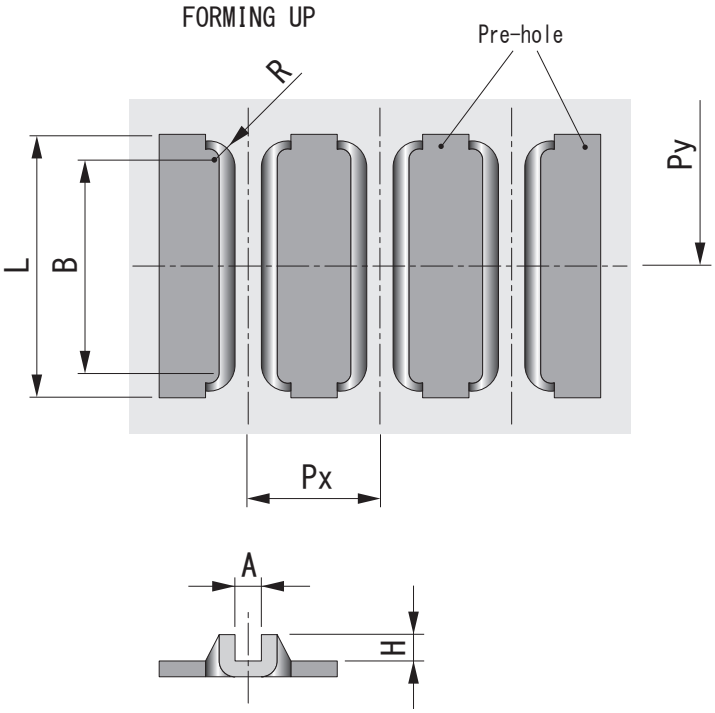
Used to provide air flow or ventilation.

FORMING TOOLS

CARD GUIDE

FORMING UP

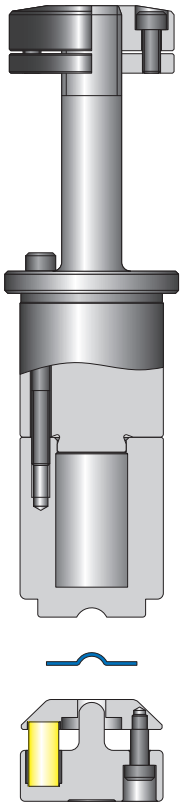


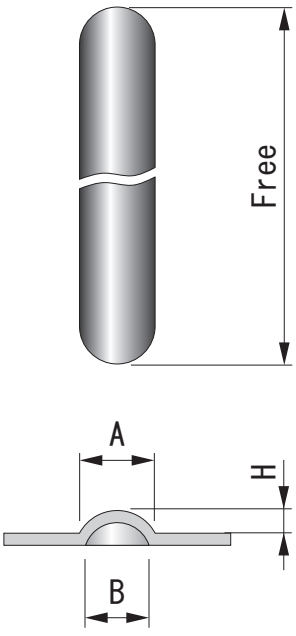


Forming process to form U-groove for a printed circuit board.

BEADING

FORMING UP



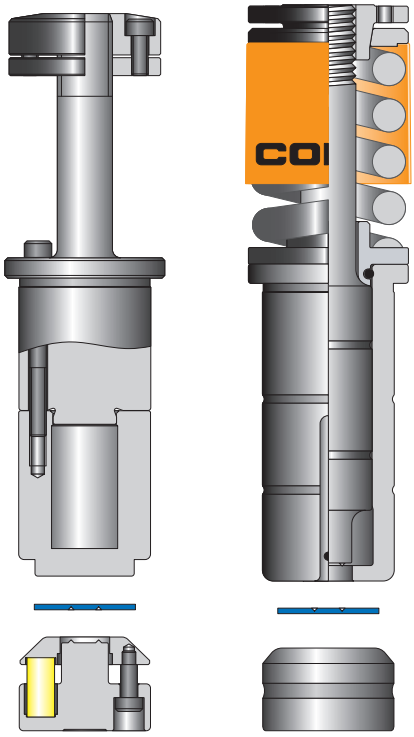


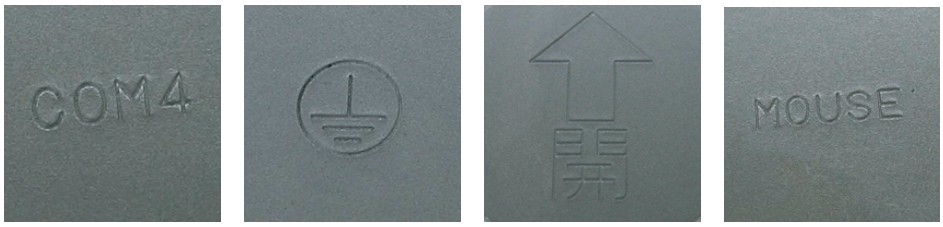
Forming process of embossing that can hit continuously along the sheet.
Used for strengthening, nonslip or decoration.

FORMING TOOLS

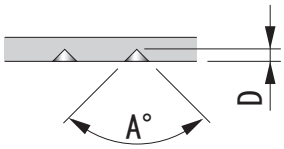
MARKING (STAMPING)

FORMING UP　　FORMING DOWN

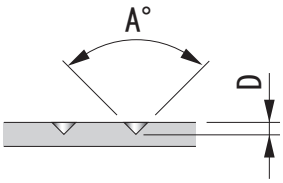




FORMING UP



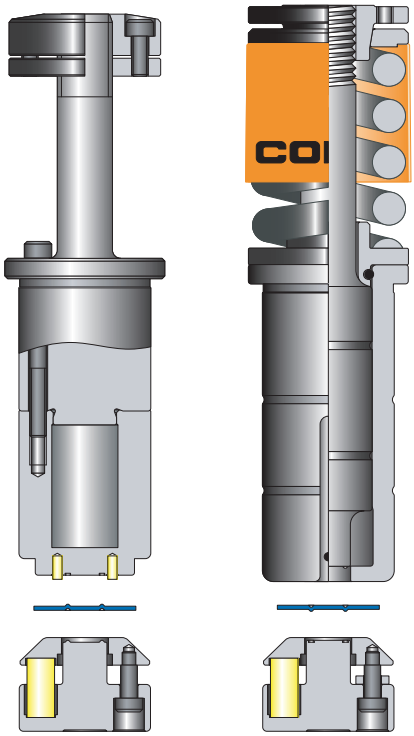
FORMING DOWN

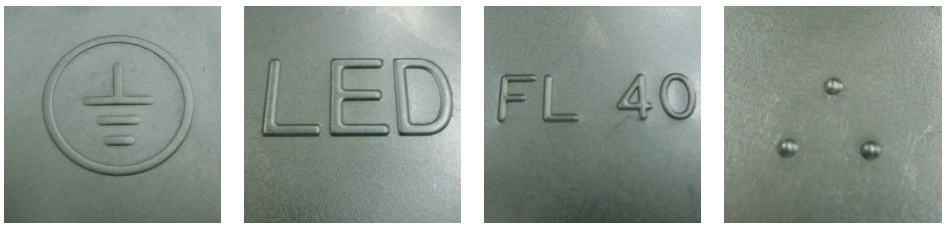


Forming process of stamping the character or logo etc.

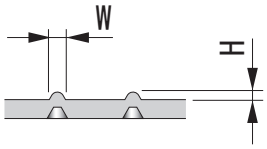
MARKING (EMBOSS)

FORMING UP　　FORMING DOWN

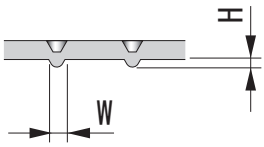




FORMING UP



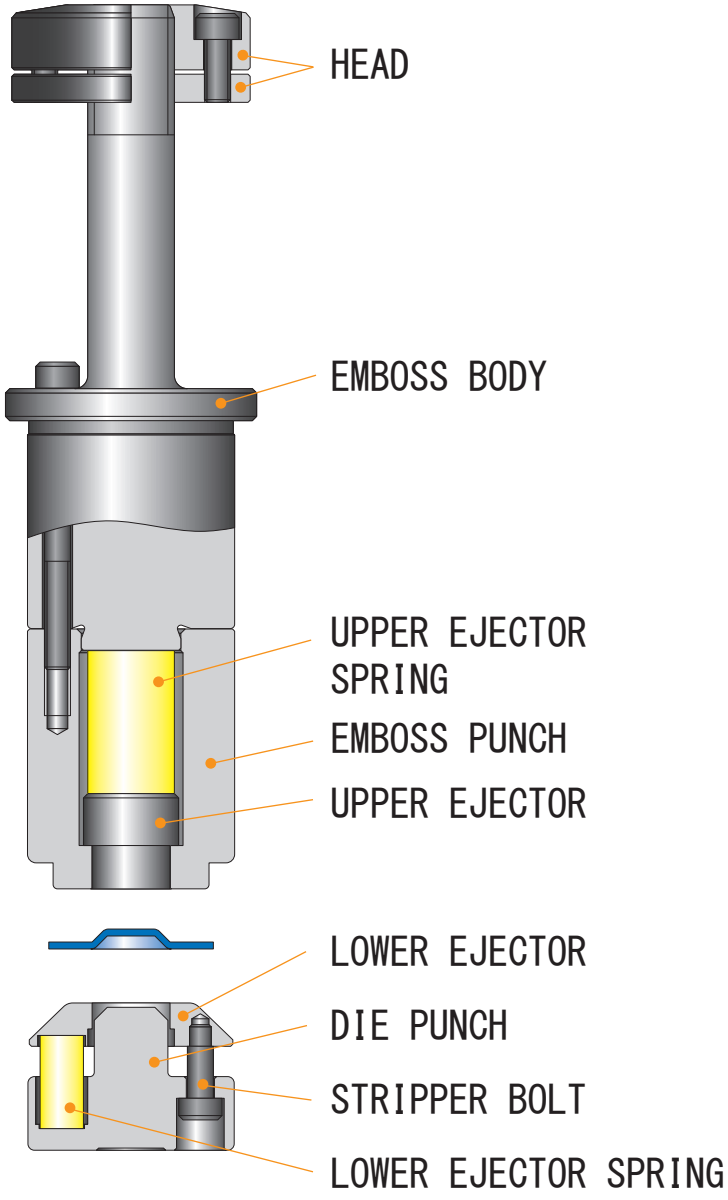
FORMING DOWN



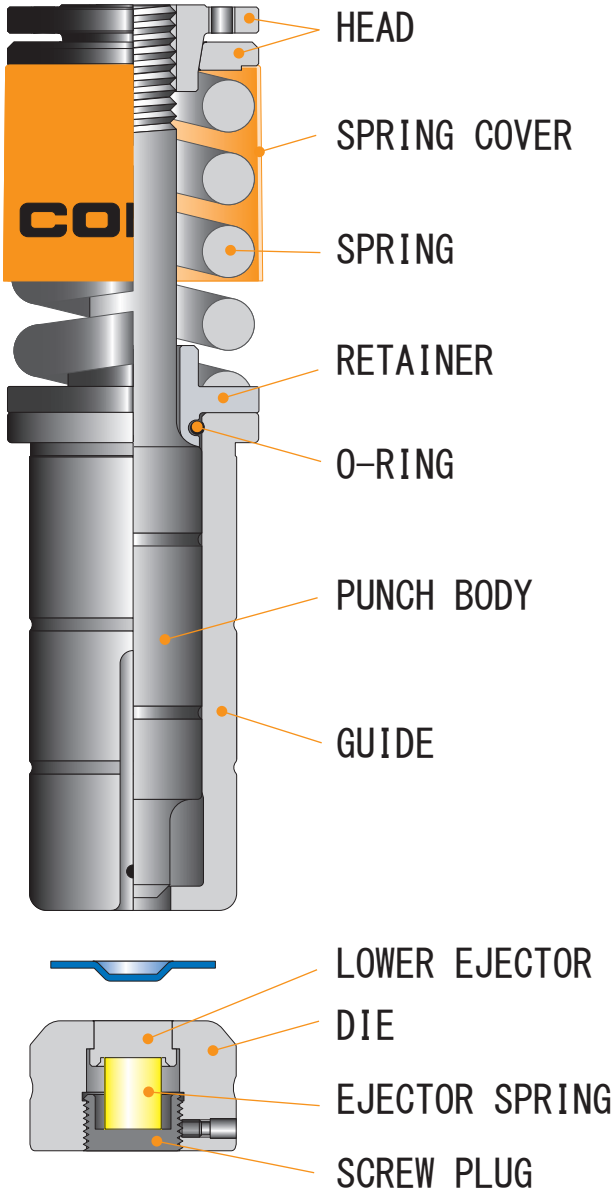
Forming process of embossing the character or logo etc.

FORMING TOOLS

FORMING UP



FORMING DOWN



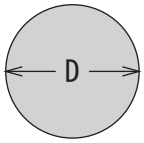
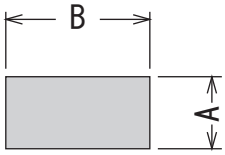
TECHNICAL INFORMATION

CALCULATE PUNCHING FORCE (TONNAGE)

Tonnage capacity is different depending on machines.
Use the calculation formula below to prevent from over tonnage.

$$\text{Tonnage (ton)} = \frac{\text{Circumference (mm)} \times \text{Material thickness (mm)} \times \text{Shear resistance (kg/mm}^2\text{)}}{1000}$$

Circumference

Round	Shaped
Diameter x 3.14	(Length dimension + Width dimension) x 2
	
Circumference = D x 3.14	Circumference = (A + B) x 2

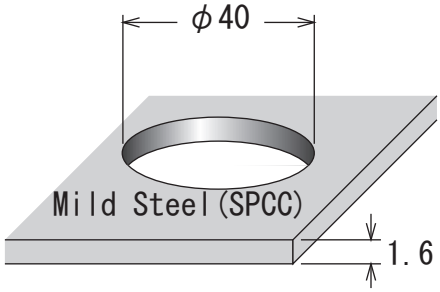
Shear resistance by material

Material	Shear resistance (kg/mm^2)
Mild Steel	26～35
SS400	33～42
Stainless Steel	52～56
Aluminum	7～16
Copper	18～30
Brass	22～40

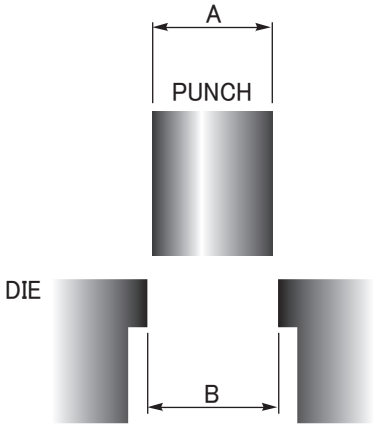
<Calculation example>

The tonnage when piercing Φ40 to Mild Steel T=1.6mm.

$$\frac{\underset{\text{Circumference}}{40 \times 3.14} \times \underset{\text{Material thickness}}{1.6} \times \underset{\text{Shear resistance}}{35}}{1000} = 7 \text{ (ton)}$$



DIE CLEARANCE



■ DIE CLERANCE IS ・・・

Die clearance is difference between punch diameter and die diameter.

Die clearance = B − A

■ RECOMMENDED DIE CLERANCE

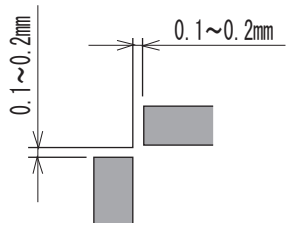
Die clearance = Material thickness x Clearance Ratio

Material	Clearance Ratio	Material thickness					
		0.5～1.0	1.2	1.5	2.0	2.3	3.2
Mild steel	0.15	0.15	0.2	0.25	0.3	0.4	0.5
Stainless steel	0.2	0.2	0.25	0.3	0.4	0.5	0.6
Aluminum	0.1	0.15	0.15	0.15	0.2	0.25	0.35
Copper	0.1	0.15	0.15	0.15	0.2	0.25	0.35

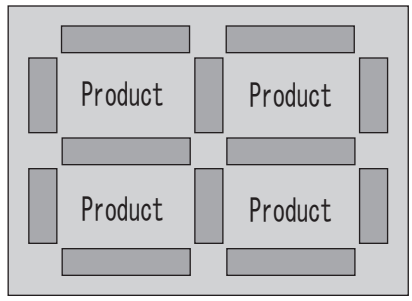
TECHNICAL INFORMATION

JOINT METHOD

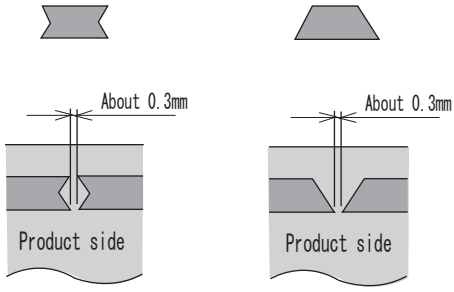
CORNER JOINT



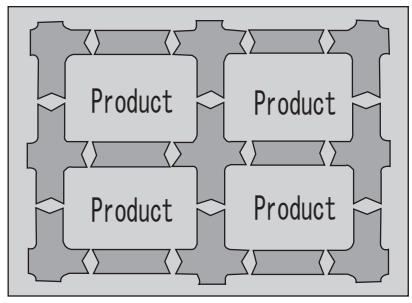
Joint of corner part



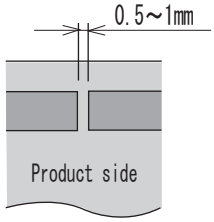
MICRO JOINT



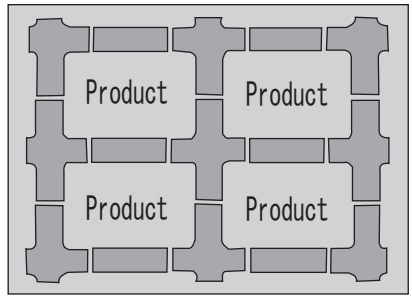
Joint of straight part



WIRE JOINT



Joint of straight part



CORNER ROUNDING

Standard Corner rounding tool	Corner rounding tool with tangent line	Corner rounding tool with joint