

NC TURRET PUNCH PRESS HIGH PERFORMANCE TOOLING

High Quality & Technology For  The Future

CONIC

Since 1976

AMADA TYPE (THIN TURRET) TOOLING



JAPAN QUALITY



ABOUT US

Conic has been produced quality punch tools since 1976 in Okayama Japan.

Our tools are used worldwide in the sheetmetal market and that quality is really satisfied from various production customers. Our policy is that we make a high quality tools in timely, in reasonable price to helping customers manufacture sheet metal parts in high productivity and reliability.

We have done a lot of development of new products such as Super Dry Punch(SDP), Conic Long life Punch(GLP), Conic Hard Punch(CHP) for last long tools.

We recently introduced PROTECH series tool to the market and market reflect strong praise.

Conic would like to be your punch press tool partner.

We look forward to serving you.

QUALITY



Okayama factory :
 ISO 9001:2015 provide superior Quality Management System in 1998 Conic Corp, received ISO9001 authorization, and it has been recognized as a very reliable company, both on the international front and Japan.

COMPANY HISTORY

- 1976 Established.
- 1979 Tokyo Sales Office opened.
- 1985 Okayama Factory opened.
- 1990 "International Sheet Metal Symposium" held by the company.
- 1992 Tool information and order receiving office was opened.
- 1993 Osaka Branch opened in Higashi-Osaka city.
- 1993 Head Office moved into Okayama Factory.
- 1998 Okayama factory was registered under required operation of international quality management system "ISO-9001".
- 1999 "Super Dry Punch" newly developed and launched.
- 2000 Internet order and quote receiving system was opened.
- 2002 "Conic Hard Punch" newly developed and launched.
- 2009 PROTECH series tooling newly developed and launched.
- 2012 Thailand Factory opened.
- 2013 "Conic Long life Punch" newly developed and launched.
- 2018 The Representative office in Vietnam opened.

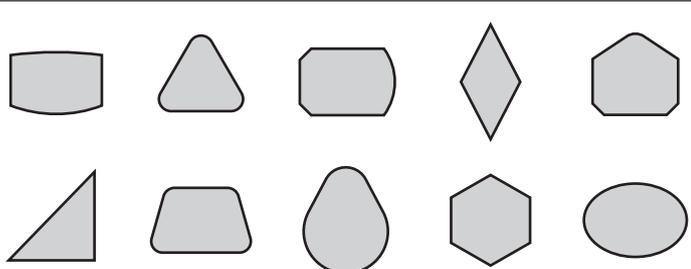
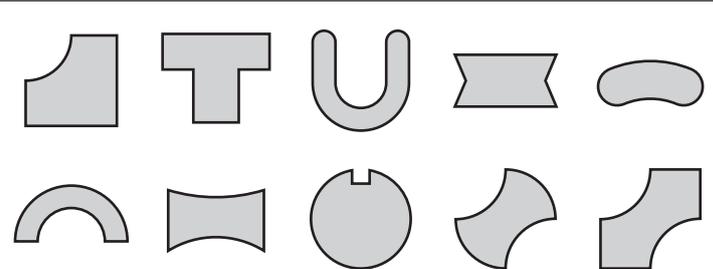


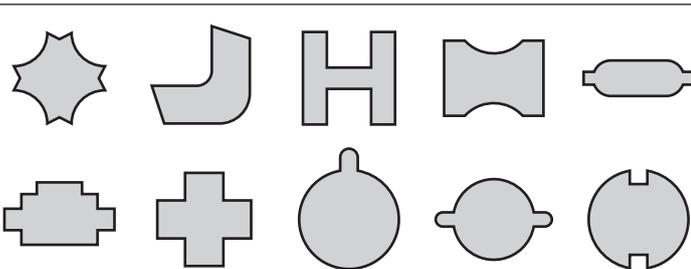
SPECIFICATION OF CONIC TOOLING

■Various Shapes

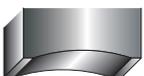
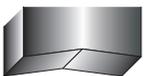
STANDARD SHAPES			WITH RADIUS CORNERS	CORNER ROUNDING
<p>■ ROUND (RO)</p> 	<p>■ SQUARE (SQ)</p> 	<p>■ RECTANGLE (RE)</p> 	<p>■ SQUARE WITH RADIUS CORNERS</p> 	<p>■ CN-42</p> 
<p>■ OBROUND (OB)</p> 	<p>■ SINGLE D (SD)</p> 	<p>■ DOUBLE D (DD)</p> 	<p>■ RECTANGLE WITH RADIUS CORNERS</p> 	<p>■ CN-41</p> 

Note : Square and Rectangle punch corner has small radius (R0.2) for prevent crack of punch tip.
If it is not necessary, please inform us.

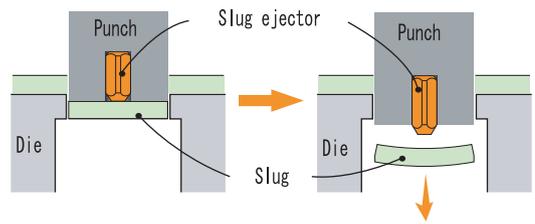
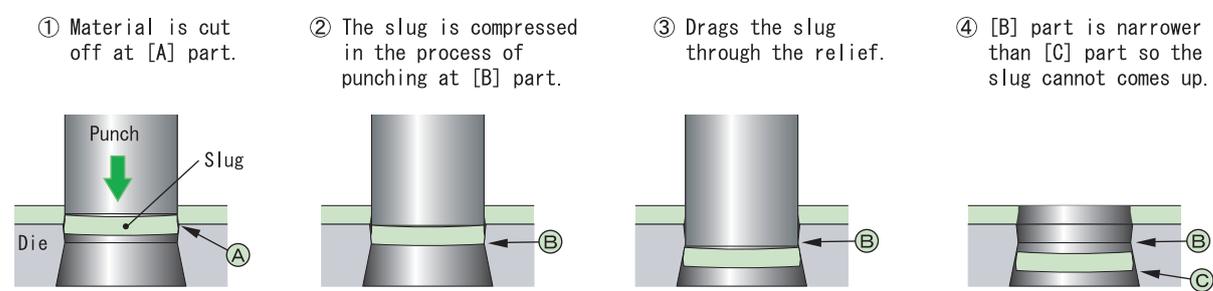
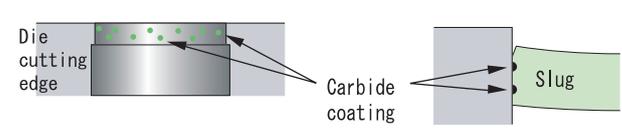
SPECIAL SHAPES (CLASS-1)	SPECIAL SHAPES (CLASS-2)
	

SPECIAL SHAPES (CLASS-3)	SPECIAL SHAPES (CLASS-4)
	<p>More complicated figure</p> <p>When make order, please inform to us the center position of the tool.</p> <p>CONIC is possible to produce other than this form list, please contact us.</p>

■Shear Angle Type For Punch

<p>Roof Top Shear</p> 	<p>To reduce tonnage and noise by added angle 2° (or 5°) at punch shear for over D station with free of charge.</p>
<p>Concave Shear</p> 	<p>To prevent touch of punch and die when use as shearing punch tool. For over D station with free of charge. It is possible to cross Inverse Roof Shape shear angle when order square.</p>
<p>Inverse Roof Top Shear</p> 	<p>To prevent touch of punch and die when use as shearing punch tool. (Need additional charge) It is possible to cross Inverse Roof Shape shear angle when order square.</p>

■ Prevent Slug Pulling

<p>PUNCH</p>	<p>Slug Ejector</p> <p>Slug ejector push down the slug. It will be installed to over $\phi 4$ for round and over 6 mm width shape tool as our standard. Please contact us, when punch thick material sheet or hard material with small punch diameter.</p>	
	<p>Slug Catcher Die</p> <p>Standard shapes and special shapes have this function as standard. (Except : Blank type, less than 2mm width die for blank will be parts, punch with heel, die clearance is less than 0.1mm)</p>	<ol style="list-style-type: none"> ① Material is cut off at [A] part. ② The slug is compressed in the process of punching at [B] part. ③ Drags the slug through the relief. ④ [B] part is narrower than [C] part so the slug cannot come up. 
<p>DIE</p>	<p>Depositron Process</p> <p>Put electrical super hard spot onto inside of die hole Except clearance 0.1mm Standard on die diameter $\phi 2 \sim \phi 4.5$</p> 	
	<p>Straight with taper Die</p> <p>Use this specification standard on Blank tool, less than 2mm width die for blank will be parts, punch with heel die clearance is less than 0.1mm</p> 	

SPECIFICATION OF CONIC TOOLING

■ Conic Original Coating

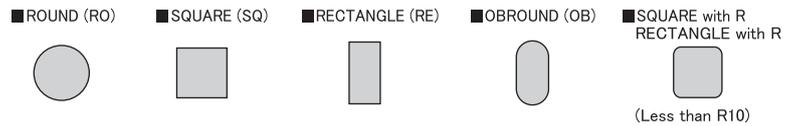


Perfect tool for stainless steel !

Super Dry Punch (SDP)

This is our best tool. Incredible durability and defeated the common sense that "Stainless is hard to process".

This tool is suitable for night time unattended operation and dry (no oil lubrication on the sheet metal) condition punching. Super Dry Punch (SDP) is available with only the following shapes.

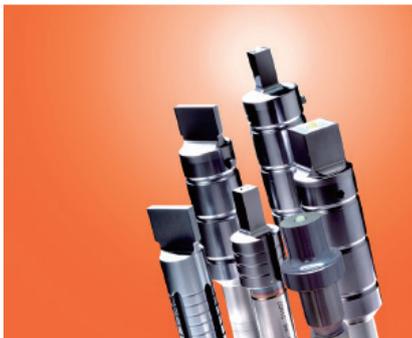


Perfect tool for thick material!

Heavy Duty Punch (HDP)

High performance for all purpose, especially for thick material. Coating with excellent heat resistance.

The coating is difficult to peel of even with heat generated continuously. Special shapes are also available for this treatment.



Most efficient in long life and cost !

Conic Long life Punch (CLP)

High performance for all purpose, especially for mild steel, galvanized steel with high corrosion resistance !

Special shapes are also available for this treatment.



Ultra cost performance tool for reasonable price !

Conic Hard Punch (CHP)

Reasonable price and suitable for all purpose.

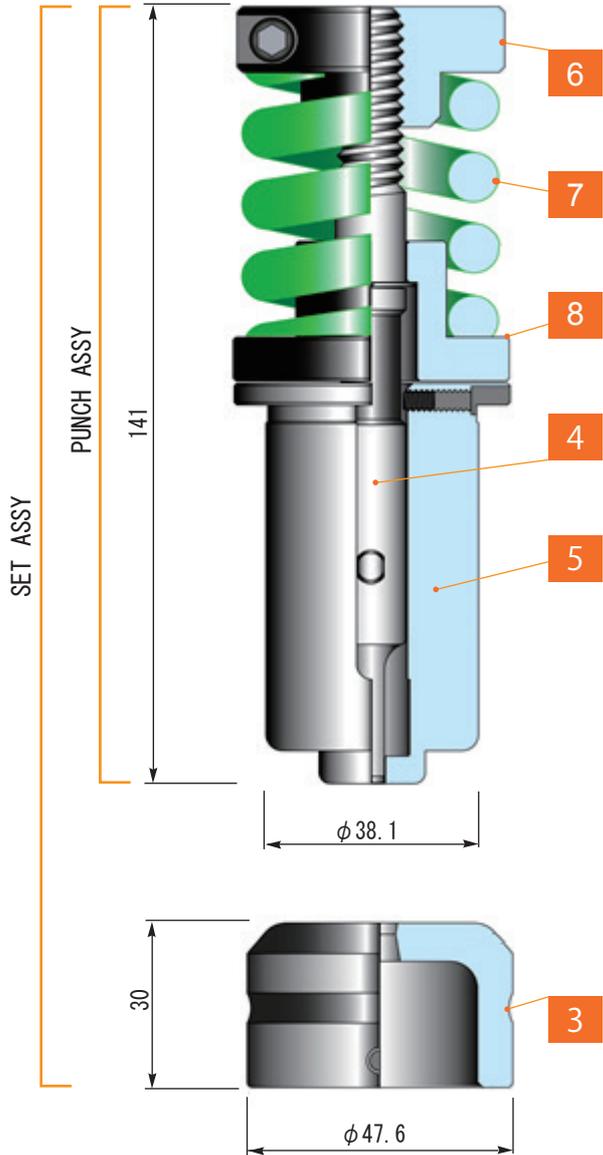
CHP shows high performance reducing adhesion and galling which is more likely to be caused by processing Aluminum and Coated steel sheet.

Total Performance	Punch type	Aptitude			
		Stainless steel (SUS)	Mild steel (SPCC)	Aluminum	Galvanized
	Super Dry Punch (SDP)	★★★★★★	★★★★★★	★★★	★★★
	Heavy Duty Punch (HDP)	★★★★★	★★★★★★★	★★★★★★★	★★★★★★★
	Conic Long life Punch (CLP)	★★★★	★★★★★★	★★★★★★★	★★★★★★★
	Conic Hard Punch (CHP)	★★★	★★★★	★★★★★	★★★★
	HSS	★★	★★★	★★★	★★★
	D2	★	★	★★	★

1/2"(A) STATION TOOLING

1/2 in
(A)

Diameters Up to 10.9mm



ROUNDS

■ Dimeters 1mm-2.3mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

■ Dimeters 2.4mm-10.9mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

STANDERD SHAPES

■ Widths 1mm-1.6mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

■ Widths over 1.61mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

SPECIAL SHAPES

■ CLASS 1-3

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

■ CLASS 4

Please request the quotation.

CORNER ROUNDIND

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

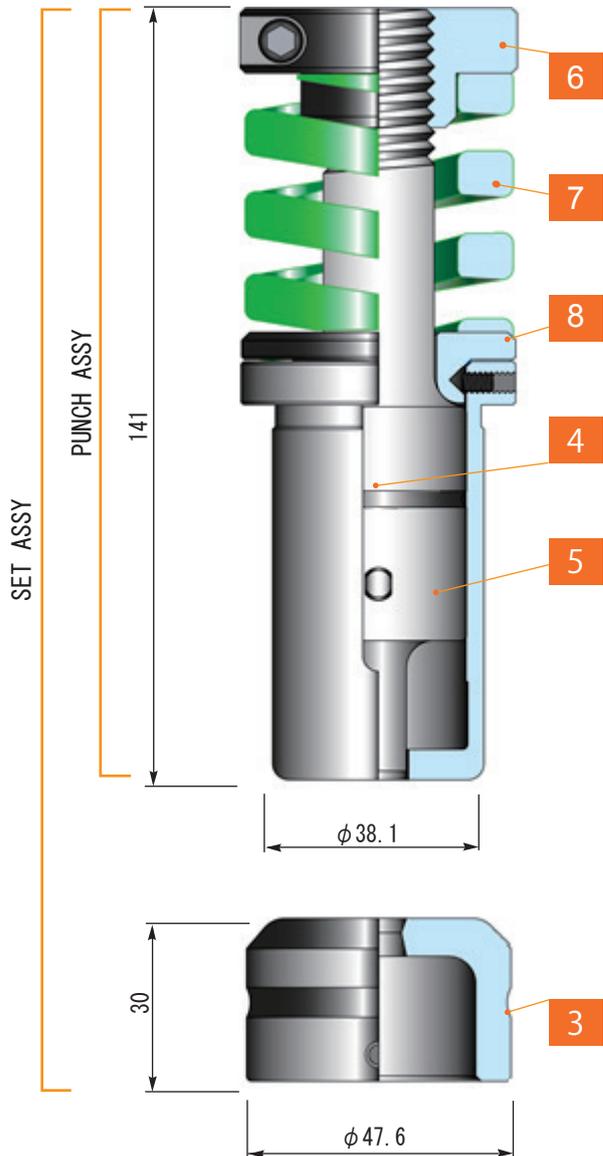
OTHER PARTS

Description	
6	PUNCH HEAD
7	SPRING
8	SPRING RETAINER

1-1/4"(B) STATION TOOLING

**1 1/4 in
(B)**

Diameters Up to 31.7mm



ROUNDS

■ Diameters 11mm-31.7mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

STANDERD SHAPES

■ Widths 1mm-1.6mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

■ Widths over 1.61mm

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

SPECIAL SHAPES

■ CLASS 1-3

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

■ CLASS 4

Please request the quotation.

CORNER ROUNDIND

Description	
1	SET ASSEMBLY
2	PUNCH ASSEMBLY
3	DIE
4	PUNCH BODY
5	GUIDE

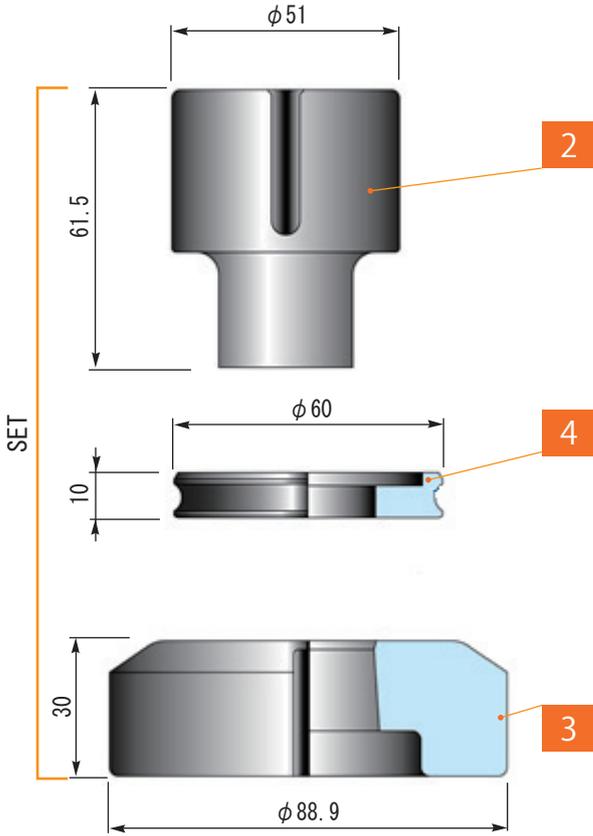
OTHER PARTS

Description	
6	PUNCH HEAD
7	SPRING
8	SPRING RETAINER

2"(C) STATION TOOLING

**2 in
(C)**

Diameters Up to 50.8mm



ROUNDS

■ Diameters 31.8mm-50.8mm

Description	
1	SET
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

STANDERD SHAPES

■ Widths 1mm-2.6mm

Description	
1	SET
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

■ Widths over 2.61mm

Description	
1	SET
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

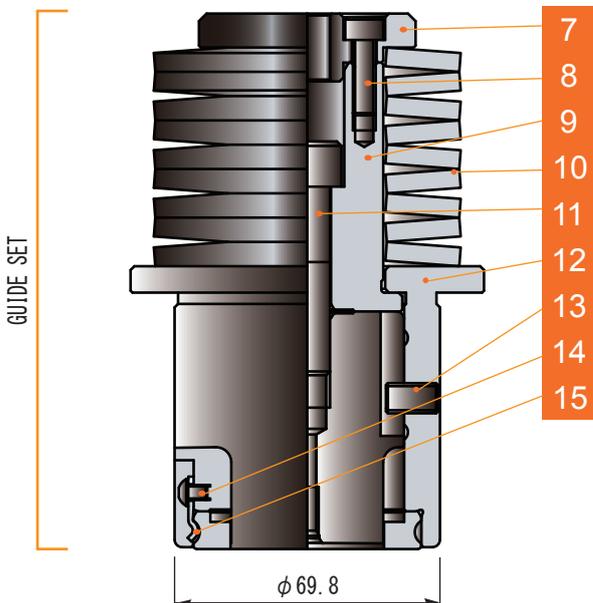
SPECIAL SHAPES

■ CLASS 1-3

Description	
1	SET
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

■ CLASS 4

Please request the quotation.



GUIDE ASSEMBLY

Description	
5	GUIDE SET FOR ROUNDS
6	GUIDE SET FOR SHAPES

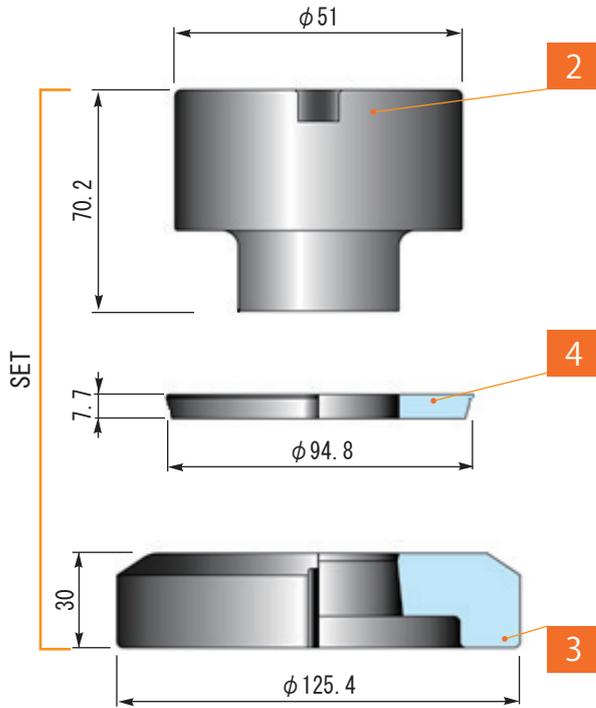
OTHER PARTS

Description	
7	HEAD
8	HEAD FIXING BOLT
9	DRIVER
10	DISK SPRING
11	PUNCH FIXING BOLT
12	GUIDE
13	GUIDE KEY
14	STRIPPER SCREW
15	STRIPPER SPRING

3-1/2"(D) STATION TOOLING

3 1/2 in
(D)

Diameters Up to 88.9mm



ROUNDS

■ Diameters 50.9mm-88.9mm

Description	
1	SET ASSEMBLY
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

STANDARD SHAPES

■ Widths 1mm-2.6mm

Description	
1	SET ASSEMBLY
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

■ Widths over 2.61mm

Description	
1	SET ASSEMBLY
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

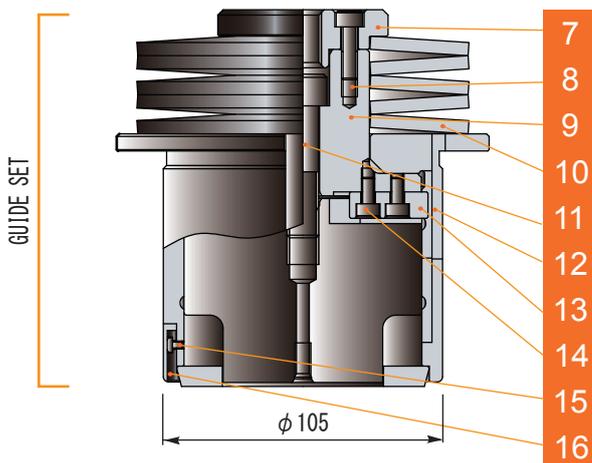
SPECIAL SHAPES

■ CLASS 1-3

Description	
1	SET ASSEMBLY
2	PUNCH BODY
3	DIE
4	STRIPPER PLATE

■ CLASS 4

Please request the quotation.



GUIDE ASSEMBLY

Description	
5	GUIDE SET FOR ROUNDS
6	GUIDE SET FOR SHAPES

OTHER PARTS

Description	
7	HEAD
8	HEAD FIXING BOLT
9	DRIVER
10	DISK SPRING
11	PUNCH FIXING BOLT
12	GUIDE
13	GUIDE KEY
14	KEY FIXING SCREW
15	STRIPPER SCREW
16	STRIPPER SPRING

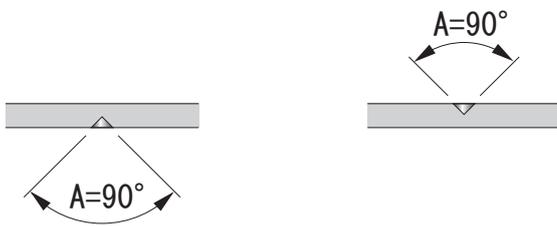
FORMING TOOLS

CENTER POINT



FORMING UP

FORMING DOWN



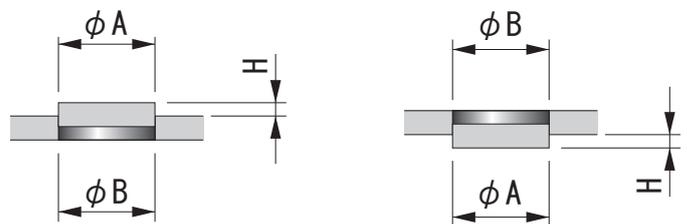
Forming process of making conical recess (center point).
Used for locator, landmark and so on.

HALF SHEAR



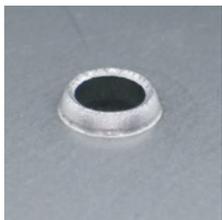
FORMING UP

FORMING DOWN



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

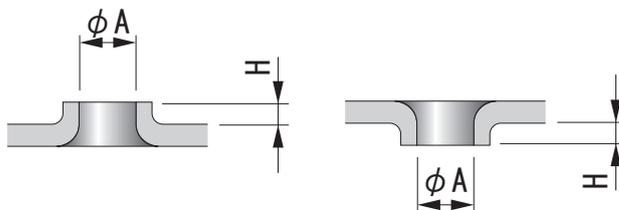
BURRING FOR THREAD FORM



Screw size	Diameter (A)	Pre-hole
M2.5	$\phi 2.1$	$\phi 1.2$
M3	$\phi 2.6$	$\phi 1.5$
M4	$\phi 3.4$	$\phi 2.0$
M5	$\phi 4.3$	$\phi 2.4$
M6	$\phi 5.1$	$\phi 2.8$

FORMING UP

FORMING DOWN



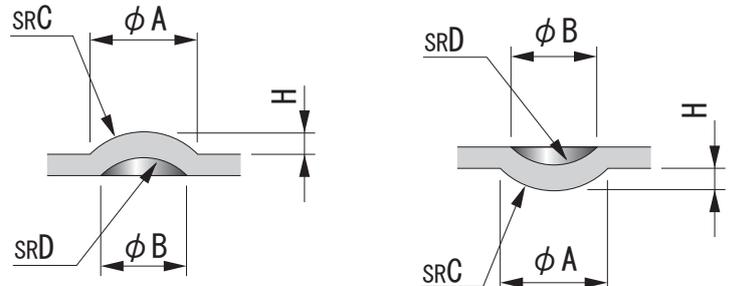
Forming process for making tubes of threading for screw.
Threading for screws and increased bearing area for tubes.

EMBOSS (DIMPLE)



FORMING UP

FORMING DOWN

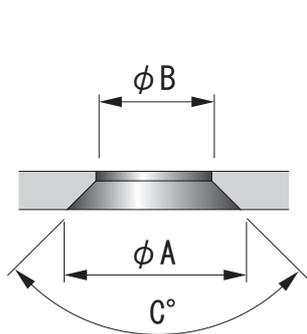


Forming process of embossing material like dimple.
Used for locator or decorative pattern of the material.

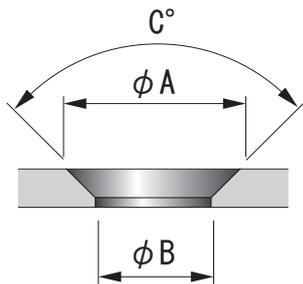
CHAMFERING



FORMING UP



FORMING DOWN

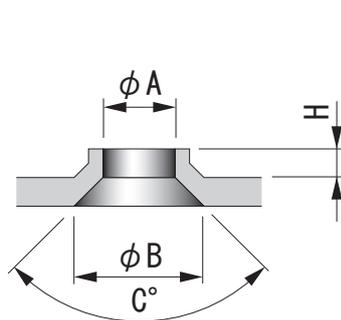


Forming process of making a chamfer to material.
Used for sink a countersunk screw head, make chamfer to a corner after punching, guide of tapping.

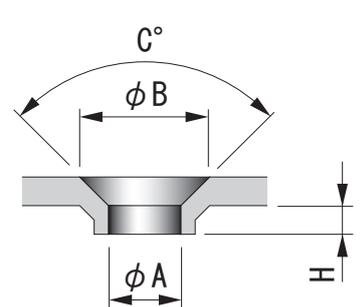
COUNTERSINK BURRING



FORMING UP



FORMING DOWN

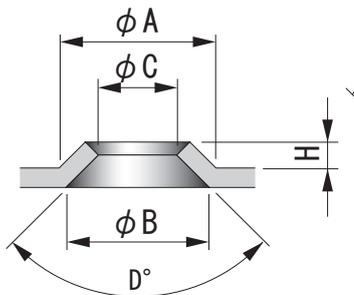


Forming process for making tube of threading for screw, and at the same time make a chamfer in the entrance part. Used for threading for screw. Used to guide at the time of tapping.

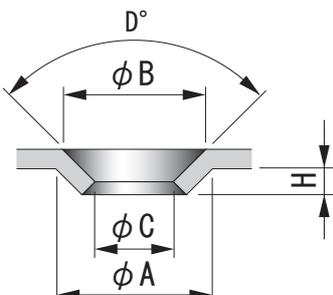
COUNTERSINK



FORMING UP



FORMING DOWN

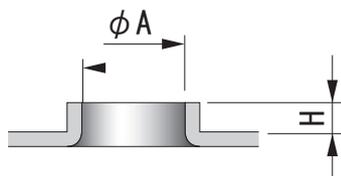


Forming process of embossing work, such as dish-shaped.
Used for sink a countersunk screw head, or used for nonslip.

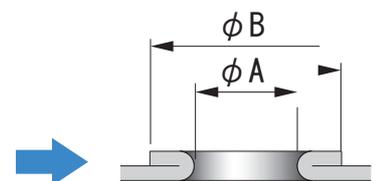
CURLING



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 \Rightarrow Burring \Rightarrow Curling.

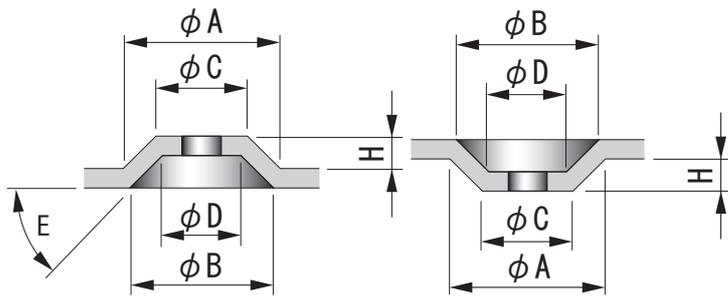
FORMING TOOLS

EMBOSS



FORMING UP

FORMING DOWN



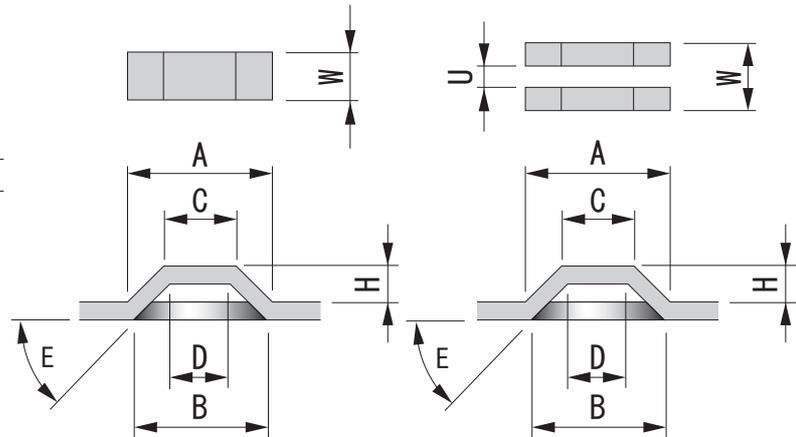
Forming process to produce raised or sunken shape.
Used for sinking a head of bolts or nuts.
Used for the seat of the product.

BRIDGE , DOUBLE BRIDGE



SINGLE BRIDGE (FORMING UP)

DOUBLE BRIDGE (FORMING UP)



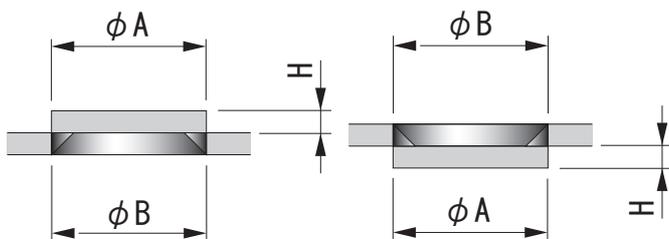
Forming process of lance like a bridge.

KNOCKOUT



FORMING UP

FORMING DOWN



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

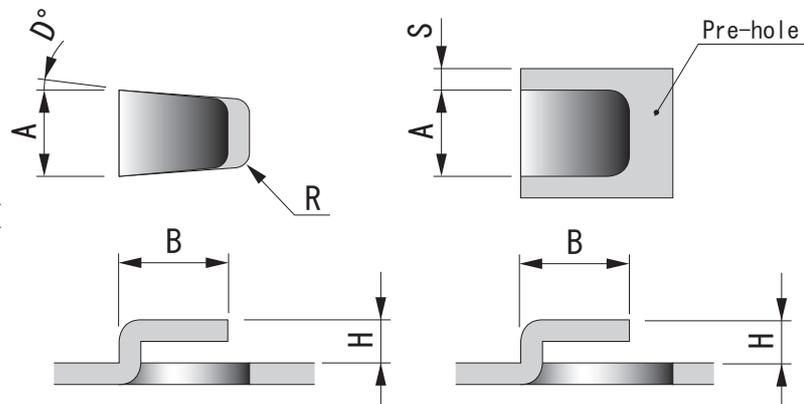
When using a hole, remove the slug using a screwdriver.

LANCE (Z-BENDING)



Forming without pre-hole

Forming after pre-hole



Forming process of lance like Z figure.

Used for hook, locator and stopper.

FORMING TOOLS

LANCE FOR AIR FLOW

FORMING UP

Forming process of lance to create an opening.
Used to provide air flow or ventilation.

← ② ← ① Order of punching

LOUVER FOR AIR FLOW

FORMING UP

Forming process of louver to create an opening.
Used to provide air flow or ventilation.

Order of punching ① → ② →

BEADING

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

MARKING (STAMPING/EMBOSS)

■ STAMPING
FORMING UP

FORMING DOWN

■ EMBOSS
FORMING UP

FORMING DOWN

CONIC A B C

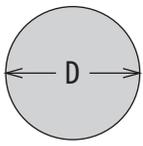
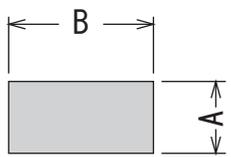
Forming process of embossing the character or logo etc.

TECHNICAL INFORMATION

CALCULATE PUNCHING FORCE (TONNAGE)

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

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

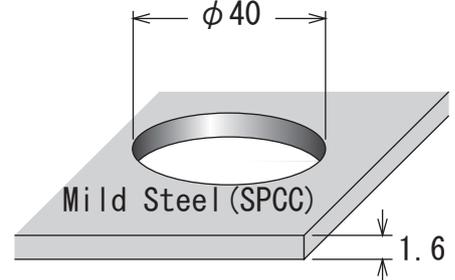
Circumference	
Round	Shaped
Diameter x 3.14	(Length dimension + Width dimension) x 2
	
Circumference = D x 3.14	Circumference = (A + B) x 2

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

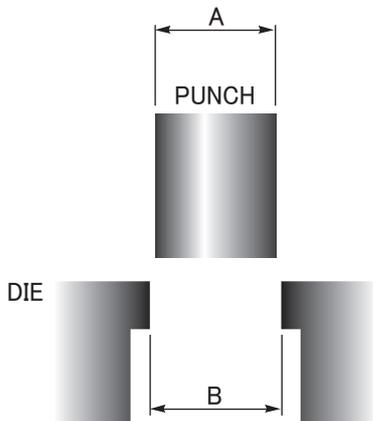
<Calculation example>

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

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



DIE CLEARANCE



DIE CLEARANCE IS ...

Die clearance is difference between punch diameter and die diameter.

$$\text{Die clearance} = B - A$$

RECOMMENDED DIE CLEARANCE

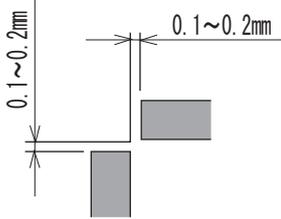
$$\text{Die clearance} = \text{Material thickness} \times \text{Clearance Ratio}$$

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

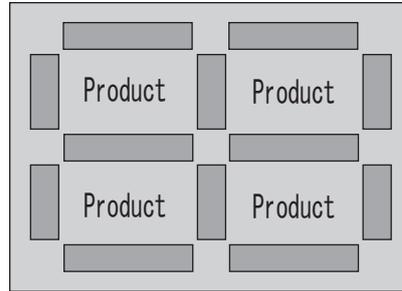
TECHNICAL INFORMATION

JOINT METHOD

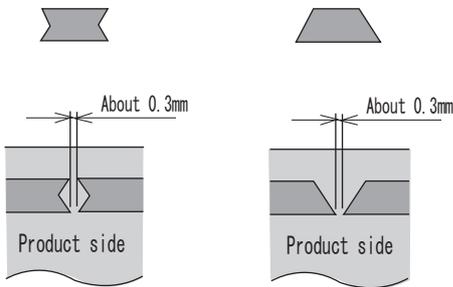
CORNER JOINT



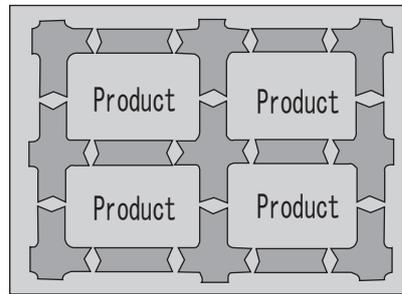
Joint of corner part



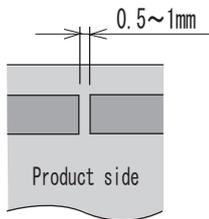
MICRO JOINT



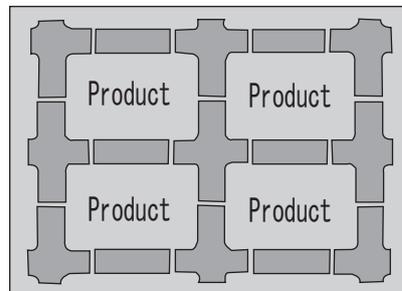
Joint of straight part



WIRE JOINT



Joint of straight part



CORNER ROUNDING

Standard Corner rounding tool	Corner rounding tool with tangent line	Corner rounding tool with joint
		<p>Product</p>

CONIC HIGH PERFORMANCE TOOLING

- Amada type tooling
- Murata type tooling
- Trumpf type tooling
- Komatsu type tooling
also available.

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