

TOOLING FOR PUNCH PRESSES

MURATA®
114 STYLE

HIGH PRECISION TOOLS

UNISTAMP™
Always a Step Ahead



UNISTAMP™

Always a Step Ahead



ALWAYS INNOVATING TO BRING NEW TECHNOLOGIES TO OUR CUSTOMERS

For more than 35 years UNISTAMP has been the Leader in the Metal Fabricating Sector. Today our company has over 8000 square meters of manufacturing, warehousing and administration. UNISTAMP has representatives throughout the country and abroad. UNISTAMP is made of dedicated professionals who are always in search of technological developments to offer each day better productive solutions. Our technical and commercial team is always at your disposal!

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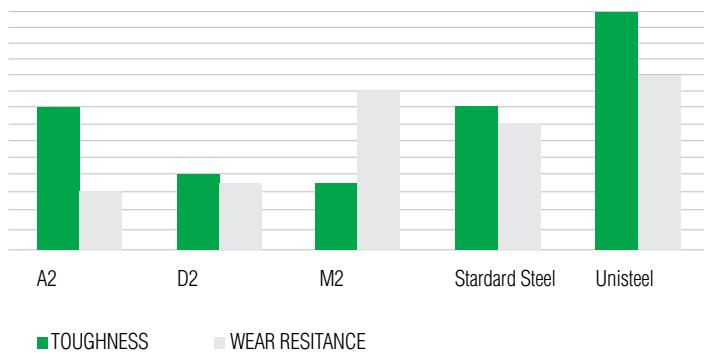
UNISTEEL – PREMIUM PERFORMANCE STEEL (OPTIONAL)

High Wear Resistance and Impact Toughness!
The best performance option for the punch press process!

Test data control
Plate Material: 304 Stainless Steel
Thickness: 0.02" (0.5mm)
Shape: Rectangle
Dimension: 0.158"x1.181" (4x30 mm)
Result until first grind = 255,000 punches!



Properties Comparison



UNITIN-CR (OPTIONAL)

A special proprietary coating to extend the life of the punch!

It is a PVD process (Physical Vapour Deposition). By applying a surface layer on the punch, besides generating high hardness and low friction, the following benefits are obtained:

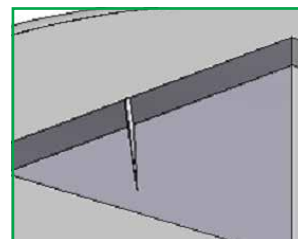
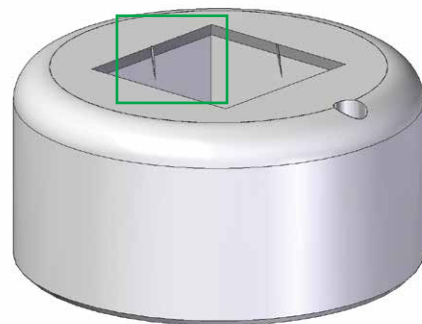
- More durability cutting edge.
- Prevents adhesive wear
- Protect of abrasive wear
- Decreases friction



UNISLUG SLUG CONTROL (OPTIONAL)

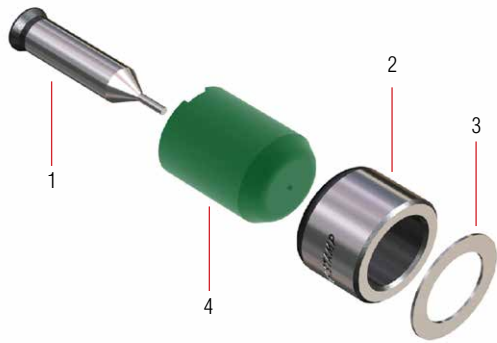
UNISLUG is an “optional” system that UNISTAMP offers, whose purpose is to avoid return of the slug while punching, eliminating the risk of accumulating slug at the exit of die.

So it's a solution for anyone who has this type of problem or that wants to avoid possible problems.



(A) STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 0.5" (12.7mm)



ITEM	CODE	DESCRIPTION
1	9150A01D	A 114 MR Standard Punch Round
1	9150A01DU	A 114 MR UNITIN-CR Punch Round
1	9150A01D-UNISTEEL	A 114 MR UNISTEEL Punch Round
2	9150A02D	A/B 114 MR Die Round
3	9150A40-0,5	A 114 MR Shim to Die - Thickness .020" (0.5mm)
3	9150A40-1,0	A 114 MR Shim to Die - Thickness .039" (1.0mm)
4	9150A03	A/X 114 MR Stripper

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

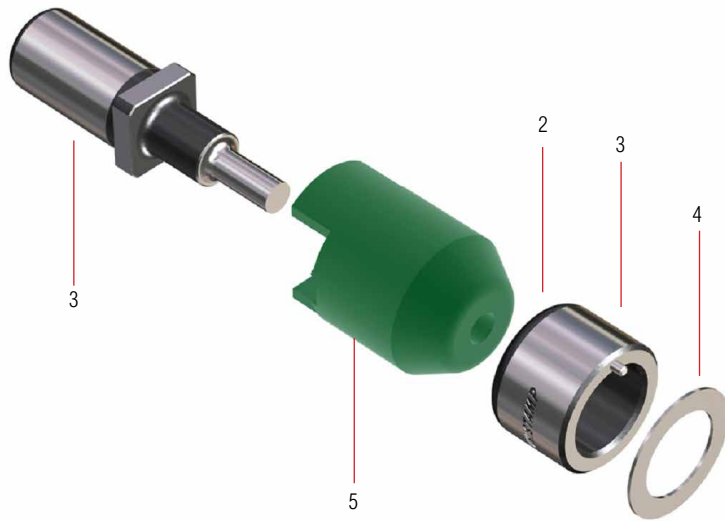


Grind Length: 0.079" (2.0mm)



(B) STATION - 114 STYLE FOR MURATA®

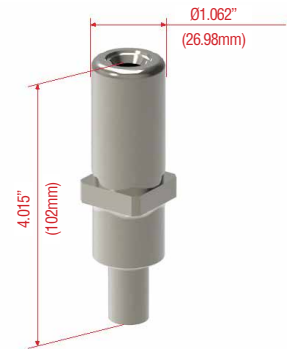
Maximum Diagonal: 0.984" (25.0mm)



ITEM	CODE	DESCRIPTION
1	9150B01D	B 114 MR Standard Punch Round
1	9150B01F	B 114 MR Standard Punch Shape
1	9150B01DU	B 114 MR UNITIN-CR Punch Round
1	9150B01FU	B 114 MR UNITIN-CR Punch Shape
1	9150B01D-UNISTEEL	B 114 MR UNISTEEL Punch Round
1	9150B01F-UNISTEEL	B 114 MR UNISTEEL Punch Shape
2	9150A02D	A/B 114 MR Die Round
2	9150B02F	B 114 MR Die Shape
3	9150B07	B 114 MR Dowel Pin to Die
4	9150A40-0,5	A 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150A40-1,0	A 114 MR Shim to Die - Thickness .039" (1.0mm)
5	9150B03	B 114 MR Stripper

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

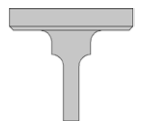


Grind Length: 0.079" (2.0mm)



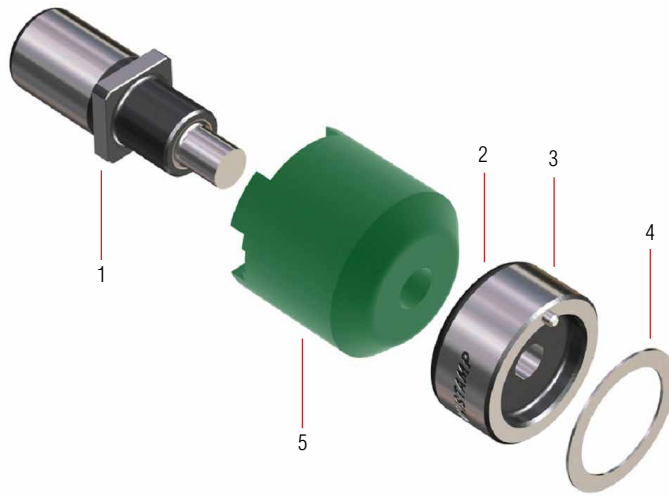
NOTE

Strong Profile
Standard for Round or Shape with
dimensions $\leq 0.018"$ (3.0mm)
Grind Length: 0.079" (2.0mm)



(C) STATION - 114 STYLE FOR MURATA®

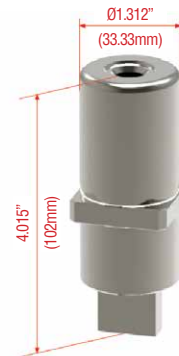
Maximum Diagonal: 1.496" (38.0mm)



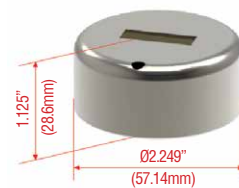
ITEM	CODE	DESCRIPTION
1	9150C01D	C 1.299" (33.0) 114 MR Standard Punch Round
1	9150C01F	C 1.299" (33.0) 114 MR Standard Punch Shape
1	9150C01DU	C 1.299" (33.0) 114 MR UNITIN-CR Punch Round
1	9150C01FU	C 1.299" (33.0) 114 MR UNITIN-CR Punch Shape
1	9150C01D-UNISTEEL	C 1.299" (33.0) 114 MR UNISTEEL Punch Round
1	9150C01F-UNISTEEL	C 1.299" (33.0) 114 MR UNISTEEL Punch Shape
1	9150CA01D	C 1.496" (38.0) 114 MR Standard Punch Round
1	9150CA01F	C 1.496" (38.0) 114 MR Standard Punch Shape
1	9150CA01DU	C 1.496" (38.0) 114 MR UNITIN-CR Punch Round
1	9150CA01FU	C 1.496" (38.0) 114 MR UNITIN-CR Punch Shape
1	9150CA01D-UNISTEEL	C 1.496" (38.0) 114 MR UNISTEEL Punch Round
1	9150CA01F-UNISTEEL	C 1.496" (38.0) 114 MR UNISTEEL Punch Shape
2	9150C02D	C 114 MR Die Round
2	9150C02F	C 114 MR Die Shape
3	9150C07	C 114 MR Dowel Pin to Die
4	9150C40-0,5	C 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150C40-1,0	C 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

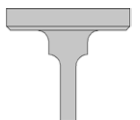


Grind Length: 0.079" (2.0mm)



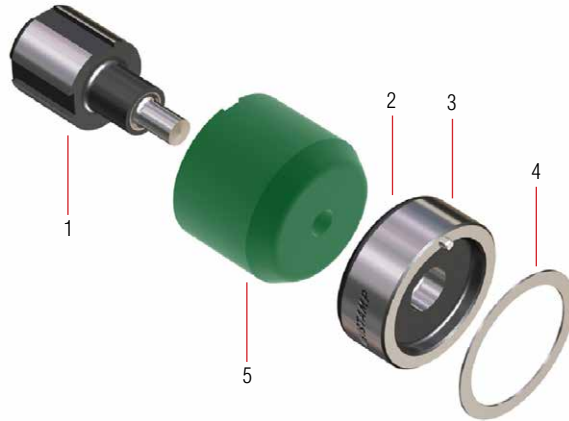
NOTE

Strong Profile
Standard for Round or Shape with
dimensions $\leq 0.018"$ (3.0mm)
Grind Length: 0.079" (2.0mm)



(D) STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 2.008" (51.0mm)



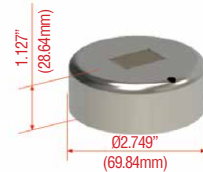
ITEM	CODE	DESCRIPTION
1	9150D01D	D 1.496" (38.0) 114 MR Standard Punch Round
1	9150D01F	D 1.496" (38.0) 114 MR Standard Punch Shape
1	9150D01DU	D 1.496" (38.0) 114 MR UNITIN-CR Punch Round
1	9150D01FU	D 1.496" (38.0) 114 MR UNITIN-CR Punch Shape
1	9150D01D-UNISTEEL	D 1.496" (38.0) 114 MR UNISTEEL Punch Round
1	9150D01F-UNISTEEL	D 1.496" (38.0) 114 MR UNISTEEL Punch Shape
1	9150DA01D	D 1.732" (44.0) 114 MR Standard Punch Round
1	9150DA01F	D 1.732" (44.0) 114 MR Standard Punch Shape
1	9150DA01DU	D 1.732" (44.0) 114 MR UNITIN-CR Punch Round
1	9150DA01FU	D 1.732" (44.0) 114 MR UNITIN-CR Punch Shape
1	9150DA01D-UNISTEEL	D 1.732" (44.0) 114 MR UNISTEEL Punch Round
1	9150DA01F-UNISTEEL	D 1.732" (44.0) 114 MR UNISTEEL Punch Shape
1	9150DB01D	D 2.008" (51.0) 114 MR Standard Punch Round
1	9150DB01F	D 2.008" (51.0) 114 MR Standard Punch Shape
1	9150DB01DU	D 2.008" (51.0) 114 MR UNITIN-CR Punch Round
1	9150DB01FU	D 2.008" (51.0) 114 MR UNITIN-CR Punch Shape
1	9150DB01D-UNISTEEL	D 2.008" (51.0) 114 MR UNISTEEL Punch Round
1	9150DB01F-UNISTEEL	D 2.008" (51.0) 114 MR UNISTEEL Punch Shape
2	9150D02D	D 114 MR Die Round
2	9150D02F	D 114 MR Die Shape
3	9150C07	C 114 MR Dowel Pin to Die
4	9150D40-0,5	D 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150D40-1,0	D 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

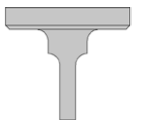


Grind Length: 0.079" (2.0mm)



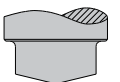
NOTE

Strong Profile
Standard for Round or Shape with
dimensions $\leq 0.018"$ (3.0mm)
Grind Length: 0.079" (2.0mm)



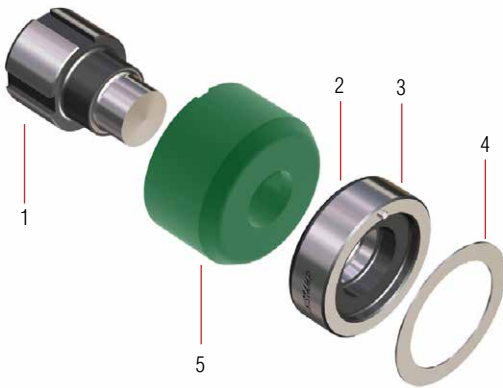
STANDARD

Rooftop



(E) STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 2.500" (63.5mm)



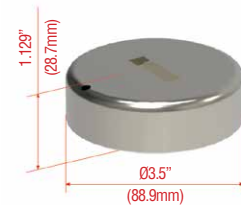
ITEM	CODE	DESCRIPTION
1	9150E01D	E 2.500" (63.5) 114 MR Standard Punch Round
1	9150E01F	E 2.500" (63.5) 114 MR Standard Punch Shape
1	9150E01DU	E 2.500" (63.5) 114 MR UNITIN-CR Punch Round
1	9150E01FU	E 2.500" (63.5) 114 MR UNITIN-CR Punch Shape
1	9150E01D-UNISTEEL	E 2.500" (63.5) 114 MR UNISTEEL Punch Round
1	9150E01F-UNISTEEL	E 2.500" (63.5) 114 MR UNISTEEL Punch Shape
1	9150E02D	E 114 MR Die Round
2	9150E02F	E 114 MR Die Shape
2	9150C07	C 114 MR Dowel Pin to Die
3	9150E 40-0.5	E 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150E 40-1.0	E 114 MR Shim to Die - Thickness .039" (1.0mm)
4	9150E 40-1.0	E 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)



Grind Length: 0.079" (2.0mm)



(F) STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 2.992" (76.0mm)



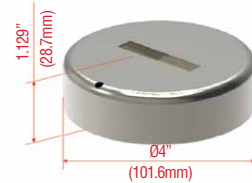
ITEM	CODE	DESCRIPTION
1	9150F01D	F 2.716" (69.0) 114 MR Standard Punch Round
1	9150F01F	F 2.716" (69.0) 114 MR Standard Punch Shape
1	9150F01DU	F 2.716" (69.0) 114 MR UNITIN-CR Punch Round
1	9150F01FU	F 2.716" (69.0) 114 MR UNITIN-CR Punch Shape
1	9150F01D-UNISTEEL	F 2.716" (69.0) 114 MR UNISTEEL Punch Round
1	9150F01F-UNISTEEL	F 2.716" (69.0) 114 MR UNISTEEL Punch Shape
1	9150FA01D	F 2.992" (76.0) 114 MR Standard Punch Round
1	9150FA01F	F 2.992" (76.0) 114 MR Standard Punch Shape
1	9150FA01DU	F 2.992" (76.0) 114 MR UNITIN-CR Punch Round
1	9150FA01FU	F 2.992" (76.0) 114 MR UNITIN-CR Punch Shape
1	9150FA01D-UNISTEEL	F 2.992" (76.0) 114 MR UNISTEEL Punch Round
1	9150FA01F-UNISTEEL	F 2.992" (76.0) 114 MR UNISTEEL Punch Shape
2	9150F02D	F 114 MR Die Round
2	9150F02F	F 114 MR Die Shape
3	9150C07	C 114 MR Dowel Pin to Die
4	9150F40-0,5	F 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150F40-1,0	F 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

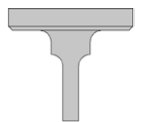


Grind Length: 0.079" (2.0mm)



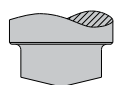
NOTE

Strong Profile
Standard for Round or Shape with
dimensions $\leq 0.018"$ (3.0mm)
Grind Length: 0.079" (2.0mm)



STANDARD

Roof top



(G) STATION - 114 STYLE FOR MURATA®

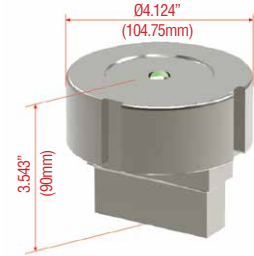
Maximum Diagonal: 3.504" (89.0mm)



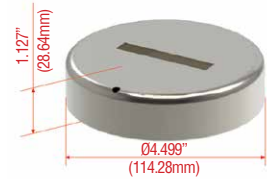
ITEM	CODE	DESCRIPTION
1	9150G01D	G 114 MR Standard Punch Round
1	9150G01F	G 114 MR Standard Punch Shape
1	9150G01DU	G 114 MR UNITIN-CR Punch Round
1	9150G01FU	G 114 MR UNITIN-CR Punch Shape
2	9150G02D	G 114 MR Die Round
2	9150G02F	G 114 MR Die Shape
3	9150C07	C 114 MR Dowel Pin to Die
4	9150G40-0,5	G 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150G40-1,0	G 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)



Grind Length: 0.079" (2.0mm)



(H) STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 4.134" (105.0mm)



ITEM	CODE	DESCRIPTION
1	9150H01D	H 114 MR Standard Punch Round
1	9150H01F	H 114 MR Standard Punch Shape
1	9150H01DU	H 114 MR UNITIN-CR Punch Round
1	9150H01FU	H 114 MR UNITIN-CR Punch Shape
2	9150H02D	H 114 MR Die Round
2	9150H02F	H 114 MR Die Shape
3	9150C07	C 114 MR Dowel Pin to Die
4	9150H40-0,5	H 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150H40-1,0	H 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)



Grind Length: 0.079" (2.0mm)



(J) STATION - 114 STYLE FOR MURATA®

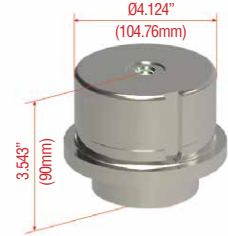
Maximum Diagonal: 4.764" (121.0mm)



ITEM	CODE	DESCRIPTION
1	9150J01D	J 114 MR Standard Punch Round
1	9150J01F	J 114 MR Standard Punch Shape
1	9150J01DU	J 114 MR UNITIN-CR Punch Round
1	9150J01FU	J 114 MR UNITIN-CR Punch Shape
1	9150J01D	J 114 MR UNISTEEL Punch Round
1	9150J01F	J 114 MR UNISTEEL Punch Shape
2	9150J02D	J 114 MR Die Round
2	9150J02F	J 114 MR Die Shape
3	9150J07	J 114 MR Dowel Pin to Die
4	9150J40-0,5	J 114 MR Shim to Die - Thickness .020" (0.5mm)
4	9150J40-1,0	J 114 MR Shim to Die - Thickness .039" (1.0mm)

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

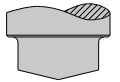


Grind Length: 0.079" (2.0mm)



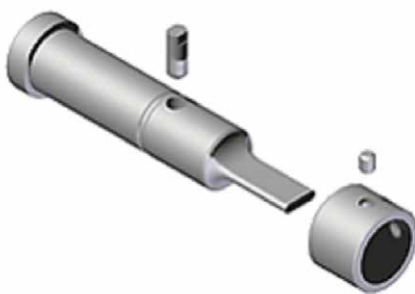
STANDARD

Rooftop



VARITOOL STATION - 114 STYLE FOR MURATA®

Maximum Diagonal: 0.512" (13.0mm)



ITEM	CODE	DESCRIPTION
1	9150V01D	Varitool 0.512"(13.0) X 2.756"(70.0) MR Standard Punch Round
1	9150V01F	Varitool 0.512"(13.0) X 2.756"(70.0) MR Standard Punch Shape
1	9150V01DU	Varitool 0.512"(13.0) X 2.756"(70.0) MR UNITIN-CR Punch Round
1	9150V01FU	Varitool 0.512"(13.0) X 2.756"(70.0) MR UNITIN-CR Punch Shape
2	9150V02D	Varitool 0.504"(12.8) X 0.685"(17.4) MR Die Round
2	9150V02F	Varitool 0.504"(12.8) X 0.685"(17.4) MR Die Shape

PUNCH & DIE GRINDING

Grind Length: 0.079" (2.0mm)

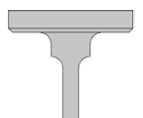


Grind Length: 0.079" (2.0mm)



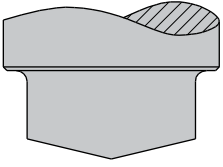
NOTE

Strong Profile
Standard for Round or Shape with
dimensions ≤ 0.018" (3.0mm)
Grind Length: 0.079" (2.0mm)



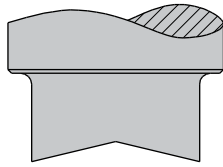
SHEAR CONFIGURATION / STANDARD SHAPES

SHEAR OPTIONS



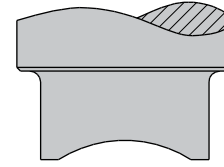
Rooftop

Standard for Stations D, E, F, G, H, J.
A good option for reduce the cutting force and noise.



Inverted Rooftop

Better shear for Nibbling



Concave

Best Shear for Nibbling

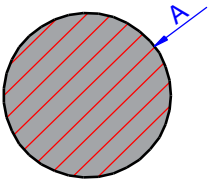
LIMITATION

Not good for nibbling. It is necessary to have 75% of point length engaged to avoid excessive side load.

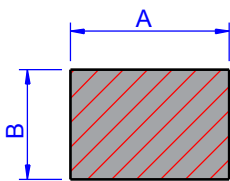
Most likely breakage will occur because of stresses at sharp points.

Not good for high tonnages, because of inverted stresses

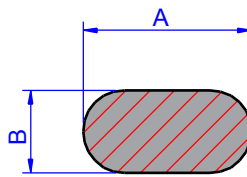
STANDARD SHAPES



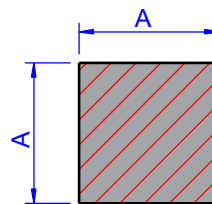
Round



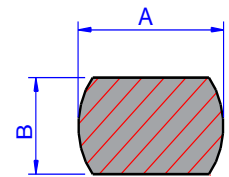
Rectangle



Obround



Square

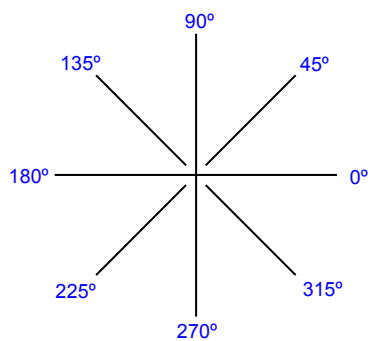


Double-D

PIN DIE POSITION

Die Station	Type	Standard	Square Shape
A	Pin	90°	0°
C	Pin	90°	0°
D	Pin	90°	0°
E	Pin	90°	0°
F	Pin	90°	0°
G	Pin	90°	0°
H	Pin	90°	0°
J	Pin	90°	0°

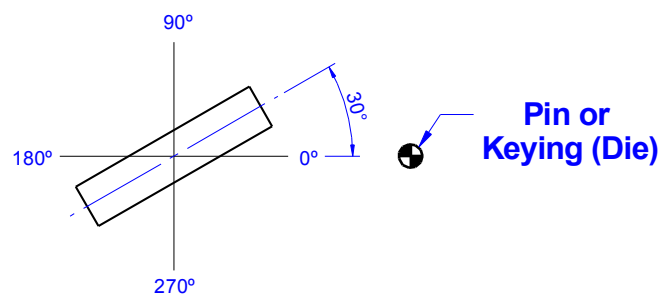
Unistamp Tool's keying diagram



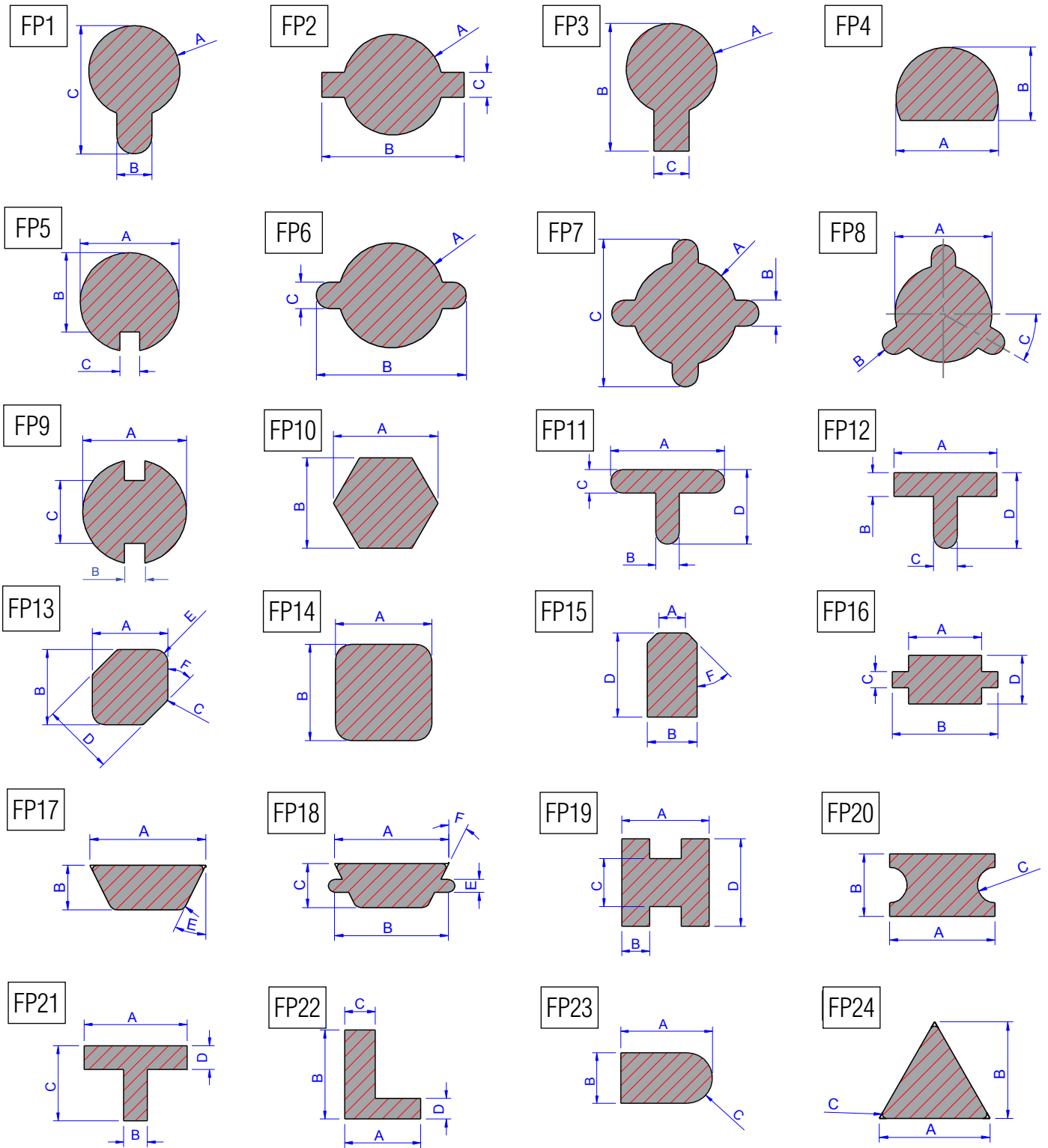
Die View

Example

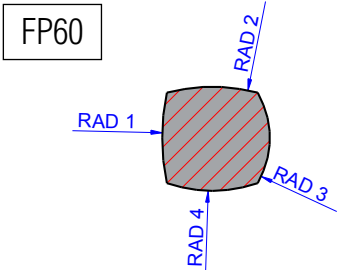
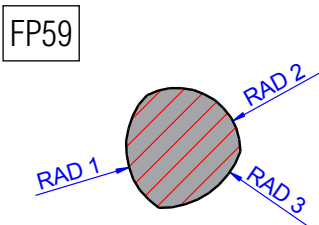
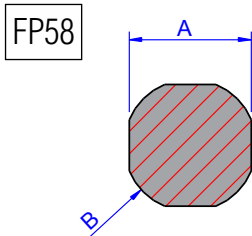
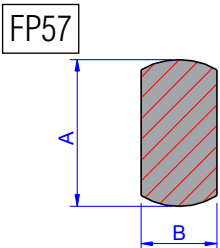
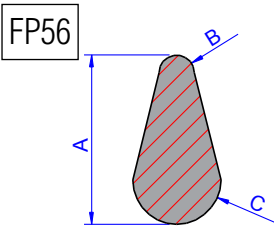
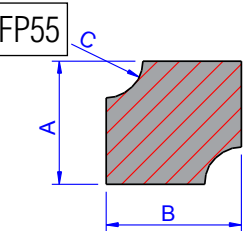
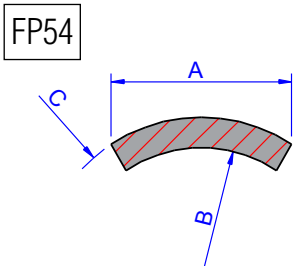
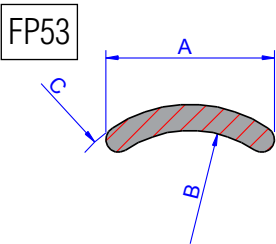
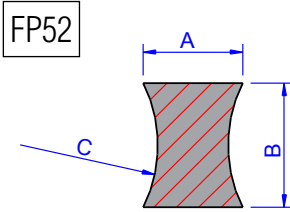
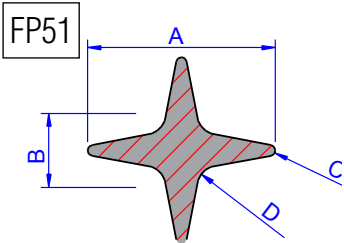
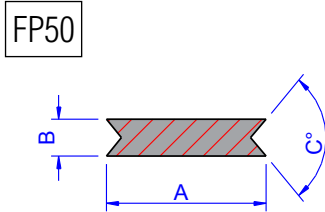
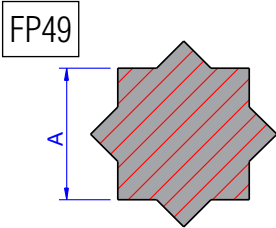
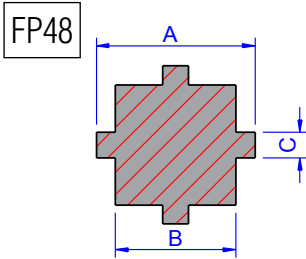
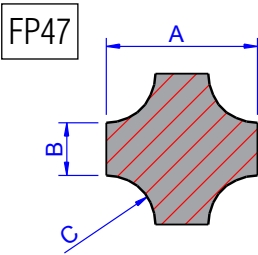
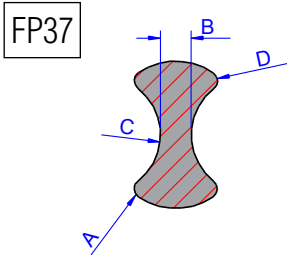
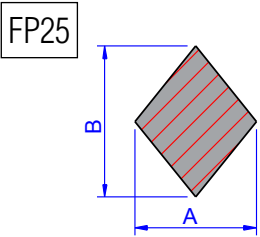
Shape at 30°



SPECIAL SHAPES



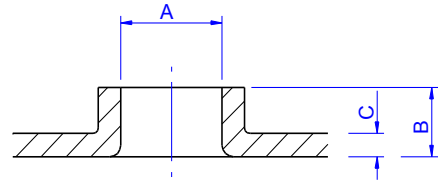
SPECIAL SHAPES



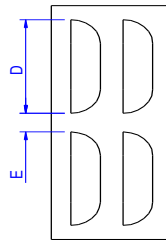
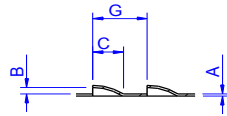
Multiple profiles Multiple shapes



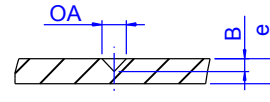
Extrusion (Form-Up)



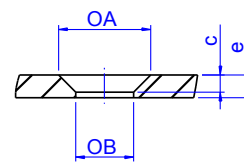
Louvers (Form-Up)



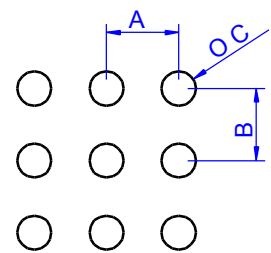
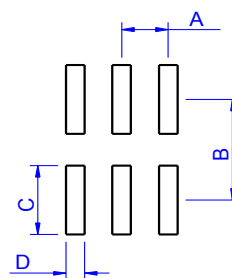
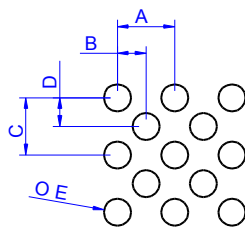
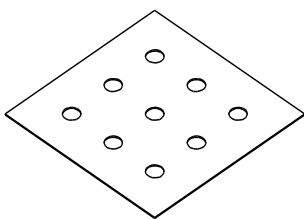
Mark



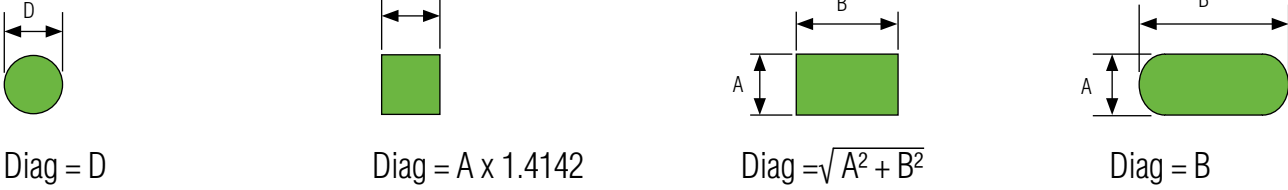
Countersink



Cluster Tool



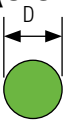
DIAGONAL DEFINITION



How to choose correct station considering diagonal size?

Situation 1

ROUND HOLE Ø3/8" (0.375")


For round, should to use:  Diag = D

Diagonal = 0.375"

Station A (≤ 1/2")

Situation 2

SQUARE SHAPE 2"

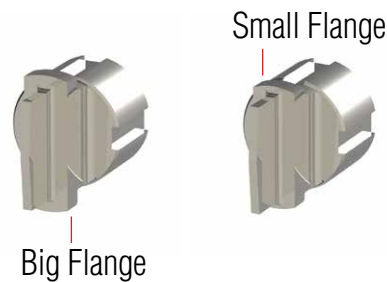
For round, should to use:  Diag = A x 1.4142

Diag = 2" x 1.4142 = 2.828"

Diagonal = 2.828"

Station F 2.992"

Important: It's not possible utilize F 2.716" station, because the Diagonal (2.828") is bigger than flange (2.716")



CUTTING FORCE





$$Cf = P \cdot t \cdot \tau$$

Cf = Cutting force
P = Shape perimeter
t = Plate thickness
 τ = Shear Stress

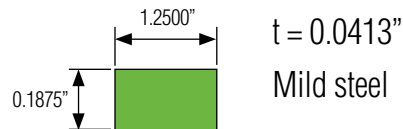
Shear Stress

Aluminium	≈21,320 psi (*)	≈147 MPa (*)
Mild steel	≈56,564 psi (*)	≈390 MPa (*)
Stainless steel	≈84,121 psi (*)	≈580 MPa (*)

Shape perimeter

	P = D . 3.1416		P = 2 x (A+B)
	P = D . 3.1416		P = 2x(B-A) + (Ax3.1416)

Situation 1



$$P = 2 \times (A + B)$$

$$P = 2 \times (0.1875 + 1.2500)$$

$$P = 2.875"$$

$$Cf = 2.875 \times 0.0413 \times 56,564$$

$$Cf = 6,716 \text{ lbs}$$

UNISTAMPTM
Always a Step Ahead

Rod. Edgard Máximo Zamboto | Km 68 | Caixa Postal 293
Jarinú SP | 13240-970 | Brasil | Tel/PABX: 55 11 4016 0250
unistamp@unistamp.com.br | www.unistamp.com