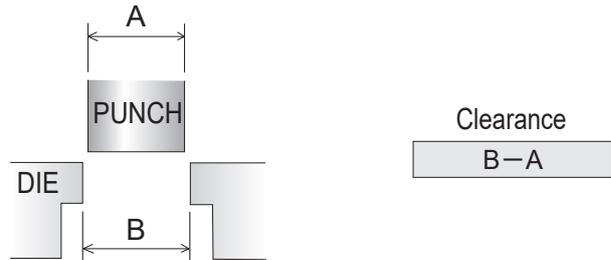


FOR CLEARANCE OF THE CUTTING DIE

Selection of the die clearance also has a significant impact on the quality of the workpiece and the tool life. This time, we summarized the selection criteria of the clearance. Also we will introduce "one pitch thread form" as a forming tool.

WHAT IS CLEARANCE?

Clearance refers to difference in dimension between punch dimension and die dimension.



REFERENCE APPROPRIATE CLEARANCE

Clearance = material thickness x clearance ratio

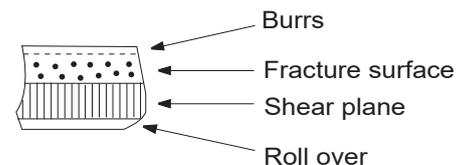
Material	Clearance Ratio		Tensile Strength (N/mm ²)
	Servo-Hydraulic Machine	Mechanical Machine	
Mild Steel (Cold Roll)	0.2~0.25	0.15	More than 270
Mild Steel (Hot Roll)			
Stainless (Hard)	0.25~0.3	0.2	More than 520
Stainless (Soft)			More than 450
Aluminum (Soft)	0.15~0.2	0.1	More than 95
Aluminum (Hard)			More than 215
Copper	0.2~0.25	0.15	More than 275
Brass	0.2~0.3	0.2	More than 410
High Tensile Steel			More than 590

1. The shear resistance should be about 80% of the tensile strength as a guide.
2. Please multiply x 1.4 to the calculation result in case of more than 3.2mm thickness.
3. Please calculate based on the number of shear resistance and Tensile strength for the material which is unspecified on the left table.
4. If there is a workpiece, please actually perform punching and purchase the appropriate clearance referring to the table below.
5. The minimum clearance is depends on machine specifications. Please also check the machine specifications.

THE INFLUENCE BETWEEN CLEARANCE AND MATERIAL (PRODUCT)

Clearance	Wide	Proper	Narrow
Condition of Slug			
Roll over	MORE	NORMAL	LESS
Shear plane	LESS	NORMAL	MORE
Fracture surface	MORE	NORMAL	LESS
Burrs	MORE	LITTLE	LITTLE
Warp	MORE	LITTLE	LITTLE
Accuracy in dimension	WORSE	BETTER	BETTER
Comment	Negative influence of slug pulling		Increase tonnage

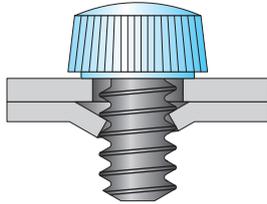
[Condition of slug]



INTRODUCTION OF FOMING TOOL

ONE PITCH THREAD FORM

[Example of use]



UNNECESSARY TAPPING PROCESS !

We recommend **one pitch thread** form for screwing in places where relatively strong strength is not required, such as decorative panels and covers.

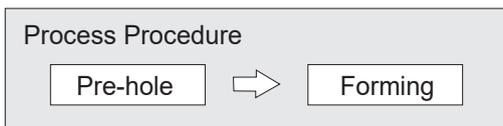
One pitch thread form is...

- Process that uses a turret punch press to form one pitch of screws on a material.
- After pre-hole (Round punching) processing, it can be easily processed by forming. Also it can be processed at high speed compared to tapping.
- If the screw size is the same, it can be formed with the same tool even if the plate thickness is different.
(Adjustment of the punch length is necessary.)

TOOLING STRUCTURE (NC 1-1/4)

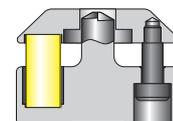
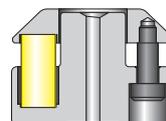
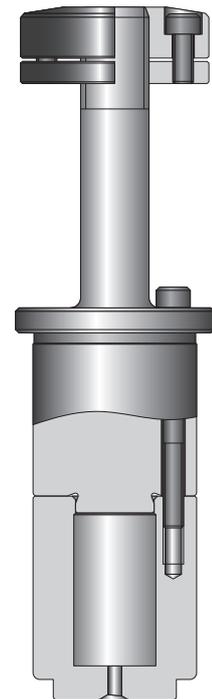
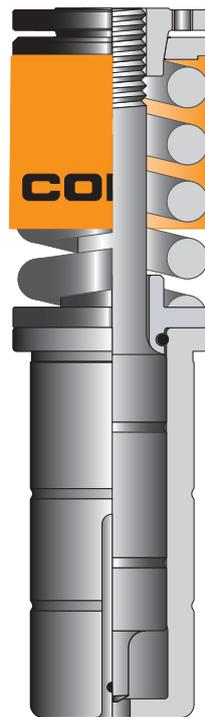
[FORMING UP]

[FORMING DOWN]



Applicability
 Thickness of material :
 0.6 mm ~ 1.6 mm
 Thread Size : M 3 ~ M 8
 ※Please consult the tool sales desk
 for Non-standard dimension

Recommended tool size	
Thick Turret Type	1-1/4 (B) station
MURATA 114 Type	C or D station



For **More** information,
 please contact
 CONIC tool sales desk.

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