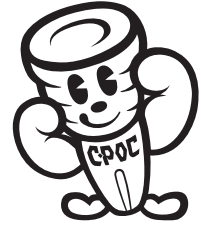


TECHNICAL COUNSELING FAQ

This time, we will introduce countersink and C-chamfering from the questions you have asked to the tool consultation.

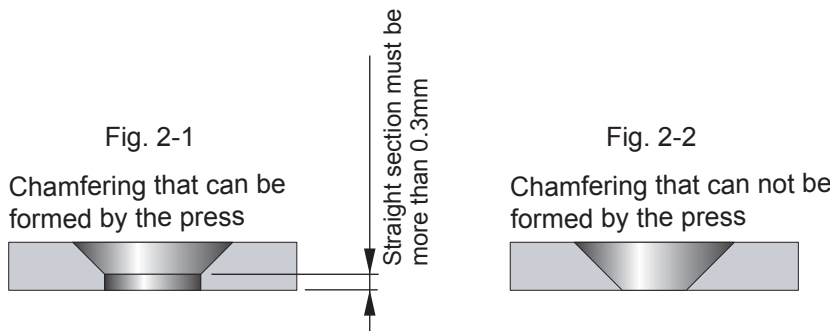


COUNTERSINK FOR COUNTERSUNK SCREW (CHAMFERING)

Q Is it possible to form a countersink (Chamfering) by the turret punch press? Also, please tell me if you have any point to pay attention to.

A With a turret punch press, countersunk processing can be formed to sink the countersunk screw (chamfering) and rivet head.(see.Fig.1) However, as shown in Fig.2-2, a countersink with a taper from the front to the back of the workpiece (material) cannot be manufactured because the punch and die contact each other. A straight is required, as shown in Fig. 2-1.

Fig.1 Chamfering formed by press

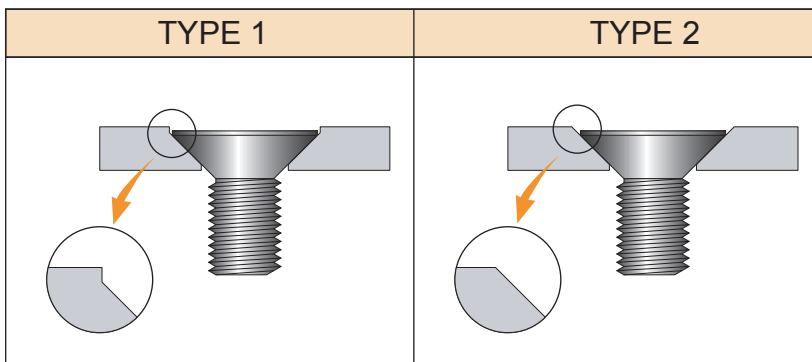


There are two types of the chamfer shape as shown in Fig.3.

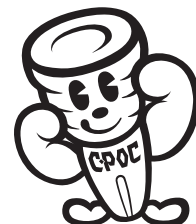
1. Chamfer with a straight section
2. Chamfer without a straight section

Type 1 looks better when a countersunk screw is inserted, and we adopt this shape as standard.

Fig.3 The type of chamfering



Chamfering can be formed by punching press.

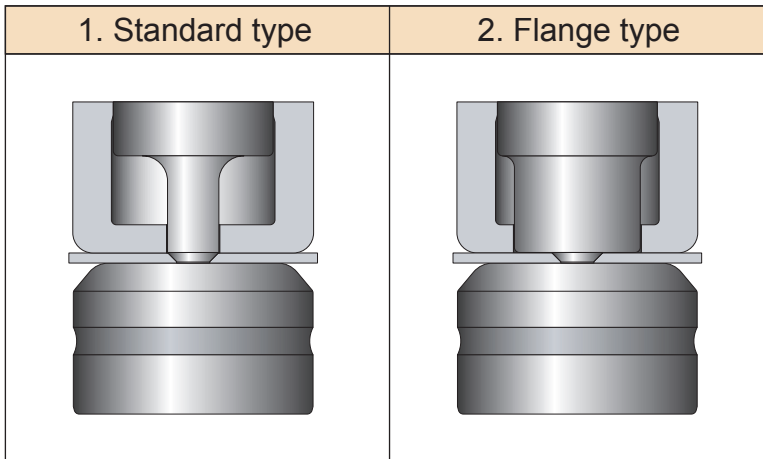


TECHNICAL COUNSELING FAQ

In addition, there are two tool structures as shown in Fig. 4.

1. A type that presses around the formed part with a guide (our standard specification)
2. A type that presses the periphery of the formed part with the punch flange.

Fig.4 Type of tooling structure (e.g. Downward)



Advantages of flange type are...

1. Protect the swelling around the chamfer.
2. Punch strength improvement (break prevention).
3. Reduce variation in bottom dead center during forming.

Disadvantages of flange type are...

4. The chamfer depth cannot be adjusted.
5. There might be a holding mark on the flange.

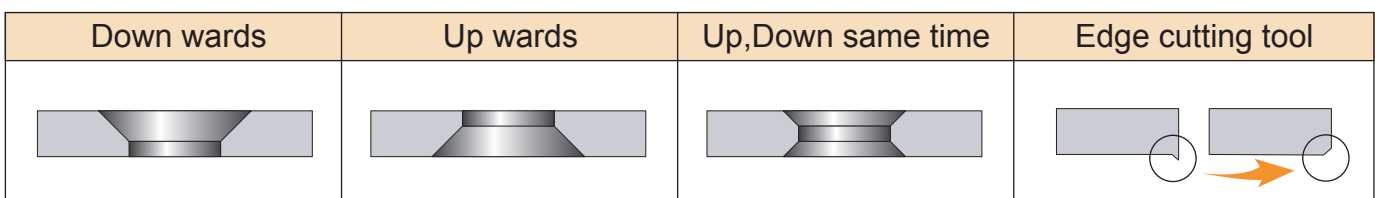
For C-chamfering, there are processing types as shown in Fig. 5.

Chamfering is possible not only for round shapes but also for square and irregular shaped holes.

Edge cutting is a tool that chamfers by pressing the burr after punching out.

Deburring (chamfering) can be processed by using tool that matches the shape of the R-shaped part and curved part as well as the straight part.

Fig.5 Type of C-chamfering



ADVICE ON ONE POINT

1. The head diameter of the standard countersunk screw is twice the nominal diameter of the screw, but some sash screws are one or two times smaller than the standard head diameter. Please be careful when ordering tools.
2. In the case of chamfer for rivets, the taper angle is various, such as 100°, 110°, and 120°. Please refer to your rivet catalog.
3. When the amount of chamfering is large, raised parts and gloss appear around the chamfer. In such a case, please enlarge the pre-hole.

For More information,
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