

Design & Manufacture

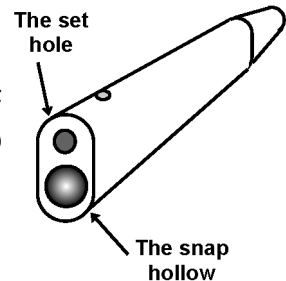
Homework 39

Metalwork-Riveting

The tools required for riveting with solid rivets are:

Rivet Set & Snap

The hole in this tool is used to set up the joint by making sure that the pieces of metal and the head of the rivet are pressed firmly together. The hollow is used to form the shank of the rivet into a second 'head'.



The peen

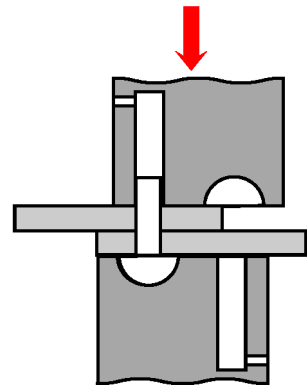
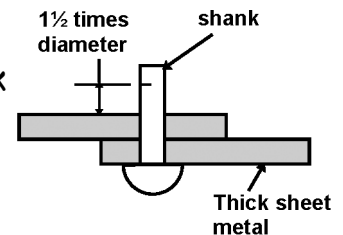


Ball-peen Hammer

The peen (also spelt 'pein') is used to roughly form the second head of the

Stage 1

Place the rivet in the joint and mark a line $1\frac{1}{2}$ times the diameter of the shank from the metal to be joined. Remove the rivet and cut the shank to the line.

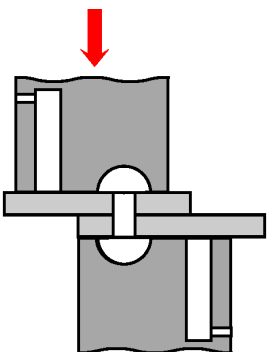
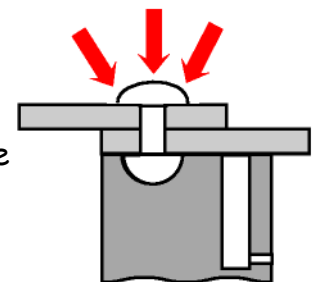


Stage 2

Use two 'Set & Snaps'. Hold the lower one in the vice and tap the upper one with the normal face of the hammer. Make sure that there are no gaps in the joint. rivet.

Stage 3

Hammer the rivet shank into a rough mushroom shape using the Ball Peen part of the hammer head.

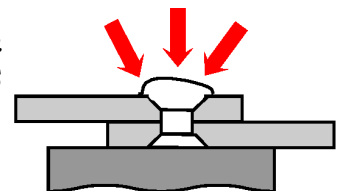


Stage 4

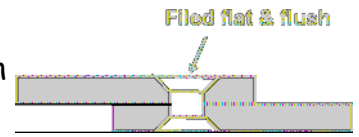
Use the snap part of the upper snap & set to smooth and shape the second head by hitting it with the hammer. The rivet is now complete.

Countersink Riveting

Stage 1 and 2 are the same as for a round head rivet, except the head of the countersunk rivet should be placed on a solid flat surface. The shank is hammered by the peen until it fills the countersunk hole.

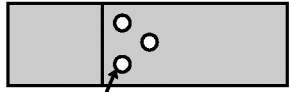


The rough mushroom shape is then filed until the head is flat and flush with the surface of the metal sheet.



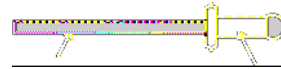
Lining up rivet holes

When more than one rivet is used it is important that all the holes in one metal sheet line up with the holes in the sheet to be joined to it.

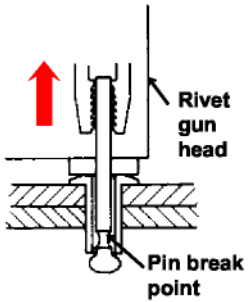


To make sure the holes line up, mark out and drill one pair of holes only. Rivet them together and then line up the metal sheets. The remaining holes can then be marked out and drilled.

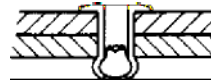
Pop Riveting



Steel pin Rivet body



The pin is pulled by jaws in the gun. The pin head squeezes into the tube of the rivet. The pin then breaks away and leaves the head behind.



Questions

1. Illustrate how the ball peen of a hammer may be used, when riveting.

2. What is the purpose of the Rivet Set & Snap?

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3. How can you make sure that all the holes line up when using more than one rivet to make a joint?

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4. How is the second head formed on a pop rivet?

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