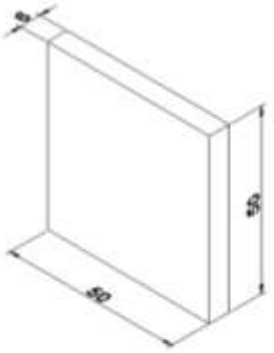
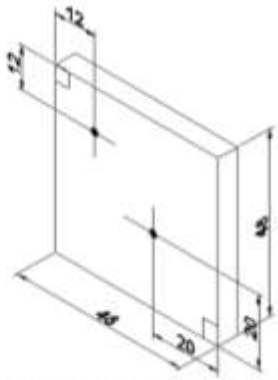
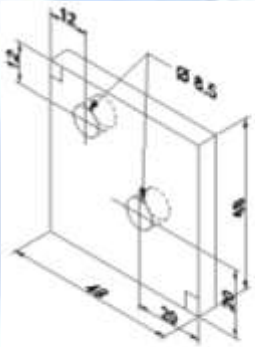
DRILLING AND TAPPING



RAW MATERIAL



MARKING AND PUNCHING



FORMULA
TAP DRILL SIZE =TAP SIZE - PITCH SIZE
= 10 - 1.5
= 8.5 mm.

DRILLING OF HOLES

TAPPING

ALL DIMENSIONS ARE IN mm.

DRILLING AND TAPPING

Ex no:

Date :

Aim:

To make drill and tap on given mild steel work piece.

Application:

Fitting industries, Fasteners industries, Automobile industries

Supplied Material Specification:

Mild steel metal plates of dimension is 50mm x 50mm x 6mm

Tools Required:

1) Steel rule 2) Try square 3) Jenny caliper 4) 12'' Flat rough File 5) Center punch
6) Bench vice 7) ball peen hammer 8) Drilling M/c 9) 6mm, 8.5 mm 13mm Drill bits
10) 10 mm X 1.5 mm Hand Tap set 11) Adjustable tap wrench 12) Thread pitch gauge

Calculation:

Tap drill size = tap size - pitch size

= 10 mm – 1.5 mm = 8.5 mm

Sequence of operation

1) Preparation 2) Marking 3) Drilling 4) Tapping 5) Finishing

Working Steps:

1) Preparation

a) Check the initial dimensions using steel rule.

b) Fix the job on a bench vice and file the two adjacent sides using a flat file to form right angles.
C) Check for the perpendicularity with try square

2) Marking:

a) Apply chalk on the work surface.

b) Measure 20mm using jenny caliper from the steel rule.

c) Transfer the measured dimensions to the work piece with edge 12mm.

d) Draw lines along the dimensions on work piece with scriber.

e) Make dots inter center point using center punch.

3) Drilling:

a) Place the work piece on the drilling machine platform.

b) Using drilling machine make two holes on the dotted place made by center punch.

c) Pour some oil for smooth drill and drill the work piece properly by adjusting the pilot.

d) Repeat the steps twice for better finishing.

e) Lastly go to the thread pitch gauge machine & complete the drilling procedure on the work piece

4) Tapping:

a. Fix the work piece in the bench vice in such a way that it should not move.

b. Using Tapping tool 1 make threads in the holes.

C. Repeat the procedure for both .holes, then take the taping tool 2 and use it carefully by rotating in clockwise, simultaneously do this process for both holes.

5) Finishing:

a) Using a 10mm screw, check the accuracy of the finish.

Pre Lab Question:

1) Define drilling?

2) List out the types of drilling machine?

3) Mention the type of drilling tool?

4) What is mean by tapping?

5) How to calculate tap drill size?

Post Lab Question:

1) What is twist drill cutting angle?

2) Mention the center punch angle?

3) How to hold the drill bit?

4) How to measure the hole diameter in drilling process?

5) How do you determine the pitch for tapped holes?

Result:

The required holes with proper measurements has been obtained using Drilling & Taping techniques.