

Fitting Workshop - Build an object using fitting trade as per given specifications.

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FY IT G3

1) Write down the answers of following questions in two-three sentences.

a) What is debarring?

Answer: It is a material modification process that removes sharp edges from the material and leaves smooth edges. It is commonly performed on machine-operations.

b) For what purpose twist drills are used?

Answer: Twist drills are also called as twist bits. They are strong enough to cut through anything ranging from wood and plastic to steel and concrete. They are generally made from "M2 high speed metal."

c) What are the three fitting methods used in fitting shop?

Answer: The three fitting methods used in fitting shop are as follows:

- cross filing.

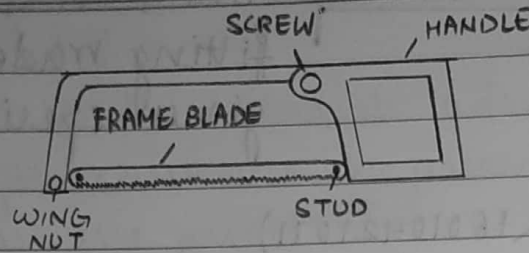
- draw filing.

- lathe filing.

Each method has its own purpose and a method to carry out.

2) Explain in brief with labeled diagram what is hacksaw? Types of frames, types of blades and use of hacksaw?

Answer:



Hacksaw.

Frames:

By shape, the frames look like the letter "C". One end of the frame has a handle attached, while the other is fixed with a pin. A pin, each is fixed handle and sliding screw itself in which the blade is fixed. The hacksaw blade is fitted on these pins and then is tightened accordingly with the help of "wing-nut". Mainly, the hacksaw frames are of 2 types:

- (i) fixed hacksaw frame.
- (ii) Adjustable hacksaw frame.

Blades:

In order to cut pipes, rods, plates, sheets and other materials; various blades are used, in order to get smoother and cleaner cuts. These blades are used, in order to get either made with tungsten steel or high speed steel and then they are hardened and tempered. The classification of blades is done on 3 major points:

- (i) size of blade.
- (ii) ~~the~~ number of dents-cuts on blade per inch.

(iii) Nature of blade.

The following are the types of blades used in fitting shop:

(i) coarse grade.

(ii) medium grade.

(iii) fine grade.

(iv) Superfine grade.

(v) Oil-hand grade.

Use:

Originally and principally made to cut steel and other metals, the hacksaw is one of the most important tools in fitting shop. The hacksaw is a hand-powered (manually done), small toothed saw used for cutting through pipes, rods, plates, sheets and plastic. It consists of a handle, frame and blade, which are fixed with the help of nuts.

3) List the cutting tools, measuring and marking tools used in fitting shop.

Answer: Marking tools

- Scriber.
- Dot-punch.
- Centre-punch.

Measuring tools.

- Steel rule.
- Try square.
- Vernier calliper.
- Divider.
- Inside calliper.
- Vernier height gauge.

cutting tools:

→ Hack saw

→ files.

- 4) What is the use of files in workshops? Explain in brief the types of files according to size, shape, grade and cut of files.

Answer: A file is used to cut, trim or finish a job of metal or wood, in order to give them a shape according to our needs such as making the job round, square or angular. They're made up of high carbon steel. It has numerous cutting points, because of which, the metal is cut into tiny pieces. Therefore, a file is mostly used to give finishing touches to a job.

Types:

- (i) Shape: The length differs between 100 mm to 450 mm, eg. flat file, round file, triangular, square, hand, knife and half round file.
- (ii) Length: It differs from (100 - 450) mm.
- (iii) Grades: rough file, bastard file, second cut, smooth and dead-smooth file.
- (iv) Cuts: single cut, double cut, curved cut, spiral cut and rasp cut files.

JOB SHEET - FITTING WORKSHOP (Q5)

NAME: HIRAL PATEL

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BATCH: IT G (3)

NAME OF THE EXPERIMENT/JOB: filing, right angle making, sawing.

TOOLS AND EQUIPMENTS: Hacksaw, files, dot-punch, centre punch, steel rule, try-square, bench-vise table, hammer.

RAW MATERIAL: mild steel sheet cut into piece of:
dimensions \rightarrow (50x50) mm.
quantity \rightarrow 1 piece.

PROCEDURE IN BRIEF:

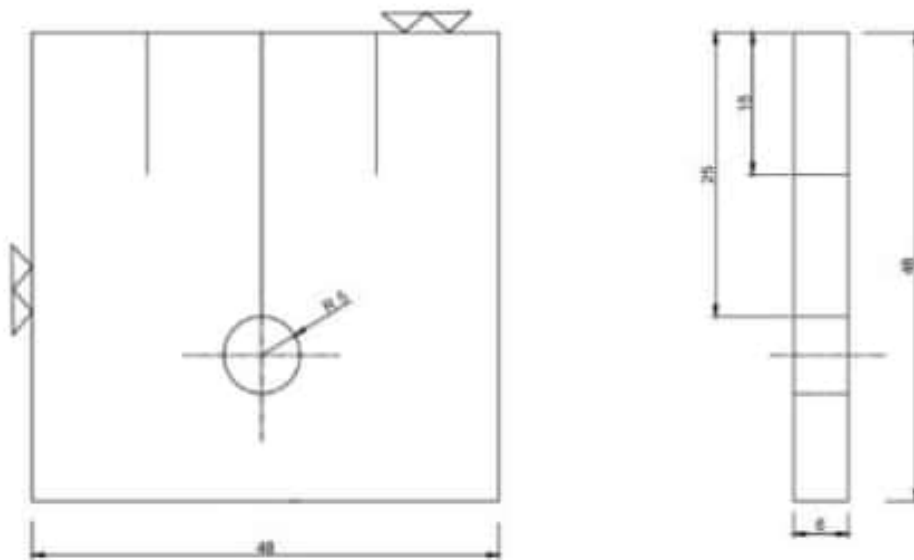
- (i) The piece acquired is checked for its dimensions.
- (ii) Adjacent edges are filed to straightness and are checked with "try-square".
- (iii) wet chalk/markers is used to mark one side and is dried for making.
- (iv) lines are marked ^{according to the figure} with dot and punch.
- (v) Centre is marked with dot and centre punch.
- (vi) Excess material is cut off using saw from remaining edges.
- (vii) finally, all parts are measured by filing the surface of the job.

USE: usually carried out to obtain material like:
machine.

CONCLUSION:

filing of the piece, right-angle making and sawing off material is successfully done to obtain a square.

OPERATIONS:- FILING, RIGHT ANGLE MAKING & SAWING PRACTICE



ACCURACY:- ± 0.1 mm

RAW MATERIAL SIZE 50 X 50 mm (1 NO.)

YEAR: 2021 - 2022	ALL DIMENSIONS ARE IN mm	CONCEPT BY: SSS
SEM: I(FE)	ACCURACY AS SPECIFIED	DRAWN BY: RAJESH PANSARI
SHOP: FITTING SHOP	SCALE: N. T. S.	APPD. BY: M. A. PALSODKAR
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