

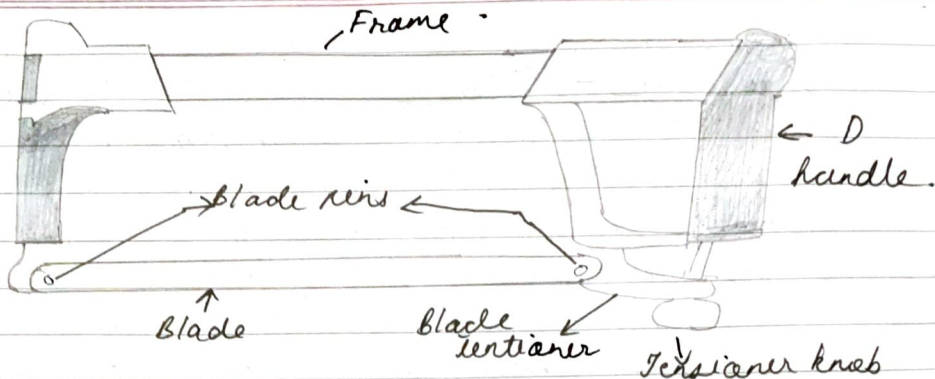
Name - Tannu Nattu  
Roll no. - 16010421065  
Branch - IT Gr3

classmate  
Date \_\_\_\_\_  
Page \_\_\_\_\_

## Fitting shop Assignment

- Q1 Ans a) Debarring - Debarring is a material modification process which removes sharp edges from the material and leaves smooth edges. It is commonly performed on machine operations.
- b) Twist drills are used to put a hole in steel, wood or other non-ferrous materials. They are rotary cutting tools that normally have two cutting edges and 2 flutes which are grooves formed in the body to provide cutting lips to permit the removal of chips & to allow coolant or cutting fluid to reach the cutting action.
- c) The 3 fitting methods used in fitting shop are -
- Cross filing - This technique involves pushing the file across edge of ~~the~~ material. It can be used for finishing, shaping or sharpening.
  - Draw filing - Used only for finishing and only with single-cut files.
  - Lathe filing - Used to smooth and shape cylindrical pieces of material, such as wooden chair legs.

Q2 Ans Hacksaw - A hacksaw is a hand powered, small toothed saw, used for cutting metal pipes, rods, brackets etc. ~~They~~<sup>It</sup> can also cut through plastic. The hacksaw has a U-shaped frame and a handle at one end. It has a small pin at each end of the frame that receives a blade. A tensioner nut or knob is then used to extend the length of the frame which puts tension on the blade and locks it in place. The blade can be installed to cut on either ~~a~~ push or pull stroke.



### Hacksaw

Use - Hacksaws are originally & principally made for cutting metal, but can also cut various other materials such as plastic & wood. Eg. Plumbers & electricians often cut plastic pipe and plastic conduit with them.

#### Types of hacksaw frames -

- i) Fixed hacksaw frame - In this type of hacksaw frame, only hacksaw blades of a specific size can be fixed, not of short size or long size. Two types of handles are used - straight handle, pistol type handle.
- ii) Adjustable hacksaw frame - The frame is made in 2 parts. These parts can be adjusted. Here in this hacksaw, big & small blades of different standards can be used. straight, pistol type, tubular type and flexible are the types of handles used.

#### Types of hacksaw blades -

- i) Coarse grade blade - Used for cutting thickness of copper, aluminium, brass etc. 14-18 teeth per inch.
- ii) Medium grade blade - Used for cutting all kinds of metals such as cast iron, tool steel, high carbon steel, brass etc. 20-24 teeth per inch.
- iii) Fine grade blade - Used to cut thin pipe, sheets, tubes etc. 24-30 teeth per inch.

- iv) Superfine grade blade - Used for cutting extraordinary solid metals & thin metals. 30-32 dents per inch.
- v) Air hard blade - Used for cutting cast iron or mould iron.
- vi) Flexible blade - Used for cutting thin sheets, pipes, curves etc.

Q3 Ans. Cutting tools used in fitting shop are -

- i) Hack saw
- ii) Files

Marking tools used in fitting shop are -

- i) Scriber
- ii) Dot - Punch
- iii) Center - Punch

Measuring tools used in fitting shop are -

- i) Steel rule
- ii) Try square
- iii) Vernier calliper
- iv) Divider
- v) Inside calliper
- vi) Outside calliper
- vii) Odd leg calliper
- viii) ~~Very~~ Vernier height gauge.

Q4 Ans. A file is a tool used to remove fine amounts of materials from a workpiece. It is common in wood-working, metalworking and other similar trade & hobby tasks. Most are hand tools, made of a case hardened ~~ste~~ ~~stet~~ steel bar of rectangular, square, triangular or round cross-section, with one or more



Name - Tannu Nattu

Roll no. - 16010421065

Branch - ITG3.

classmate

Date \_\_\_\_\_

Page \_\_\_\_\_

surfaces cut with sharp, generally parallel to teeth. A narrow, pointed tang is common at one end to which a handle may be fitted.

Types of files according to shape -

- i) Flat file - It has rectangular cross section shape. This instrument is used to reduce flat surfaces by filing and finishing the workpiece.
- ii) Round file - It has a circular cross section. Used for rubbing or finishing keyholes of small diameter.
- iii) Half round file - It is round on side & curved on other side. Used to repair damaged hole.
- iv) Square file - It is in shape of square & are found being tapered.
- v) Hand file - Used for filing internal right angle side of a job.
- vi) Knife edge file - Used in lock industry for making keys.

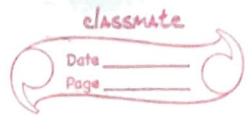
Types of files according to grade -

- i) Rough file - They have teeth of bigger size. Used in cutting soft materials.
- ii) Second cut file - It has medium grade. Used to bring the job in a proper size.
- iii) Smooth file - Used to get a smooth surface.
- iv) Dead smooth file - Used to bring shine on job, once the finishing has been done.

Types of files according to cut -

- i) Single cut file - Used for hard metals as well as for finishing.
- ii) Double cut file - Used for cutting metal quickly.
- iii) Curved cut file - Used for filing of wide surfaces of soft metals like zinc, aluminium, copper etc.

Name - Tanni Nater  
Roll no. - 16010421065  
Branch - IT G3



- iv) Spiral cut file - Has teeth which are cut in round or semi round files.
- v) Rasp cut file - Used for working in woods, plastic, fibre, hard rubber etc.

Types of files according to size -

The size of file is its length. This distance is from point to heel, without tang. Files for fine work are usually from 100 - 200 mm and those for heavier work from 200 - 450 mm in length.

Q5 Ans -

### Job sheet

Job title - To perform filing job for the drawing given

Materials used - One mild <sup>steel</sup> sheet cut into piece of 50 x 50 mm in dimension.

Tools and equipments - Hacksaw, file, dot punch, center punch, steel rule, try square, bench vice table, hammer

Operations - Filing, right angle making & sawing.

Procedure - i) The piece required is checked for its dimensions

- ii) Adjacent edges are filed to straightness and are checked with 'try-square'
- iii) Marker is used to mark one side & is dried for marking.
- iv) Lines are marked according to figure
- v) Center is marked with dot & center punch.

Name - Tanni Nater  
Roll no. - 16010621065  
Branch - IT G3

- vi) Excess material is cut off using saw from remaining edges.
- vii) Finally, all parts are removed by filing the surface of job.

Job drawing

