FITTING SHOP

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TURNING, FACING AND CHAMFERING

EX NO: 12

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Aim

To make the turning, facing and chamfering on the given metal work piece to get the required dimension

Application

Mechnical industries

Material Supplied

Mild steel rod of 25mm diameter x 75mm length

Tools Required

1) steel rule
2) Vernier caliper
3) Center lathe m/c
4) Single point cutting tool
5) Chuck Key
6) Tool post key
7) spanner
8) cleaning brush

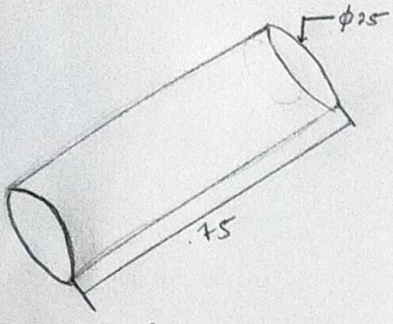
Sequence of operation

1) checking
2) work piece setting
3) Tool setting
4) Facing
5) Turning
6) Chamfering

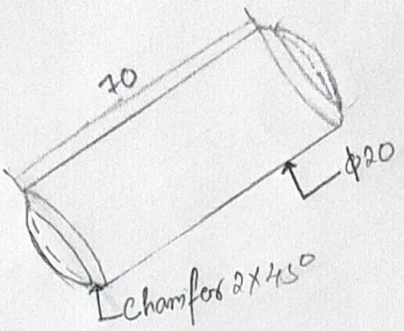
Working Steps:

1) The given work piece is checked for its given dimensions
2) The work piece is held in the three jaw chuck. chuck key is used to tighten the job rigidly ensuring centering of the work piece
3) The single point cutting tool is fixed in the tool post of the lathe machine using tool post key and spanners. Sometimes the packing material like hacksaw blade pieces, thick sheet paper material can be used to set the tool appropriately pointing towards the center of the job
4) Facing operation is done to obtain the required length of the job
5) Turning operation is done to obtain the required diameter of the job
6) Chamfering is done to remove sharp edges and corners of the work piece by keeping the tool at an angle 45° to the lathe axis

7) Finally the work piece dimensions are checked to conform to the specification given in the drawing



Raw material



Finished Work piece

All dimension in mm.

PRE LAB QUESTION

1) Define lathe

A lathe is a machine tool that rotates a work piece about an axis of rotation to perform various operation such as facing, turning, chamfering etc.

2) List out the types of lathe

1) CNC lathe 2) Central lathe 3) Automatic lathe 4) Semiautomatic lathe
5) Turret lathe 6) Carpentory lathe 7) Toolroom lathe 8) workshop lathe

3) Mention main parts of lathe

1) spindle 2) chuck 3) Headstock 4) Tailstock 5) feedrod
6) Live centre 7) Dead centre 8) lathe bed 9) carriage 10) Toolpost

4) Mention different operations performed in lathe.

1) facing 2) Turning 3) Chamfering 4) Drilling 5) Knurling

5) List out lathe cutting tools

1) Turning tool 2) carbide tipped tool 3) Knurling tool 4) revolving centre 5) dead centre

Post LAB Question

1) what are the different types of lathe chuck?

1) four jaw chuck 2) Three jaw chuck 3) Drill chuck

2) Mention the tool materials used in lathe.

1) steel 2) carbide 3) Alloys

3) Mention the tool post angle for facing turning and chamfering process

facing - 15° to 20°

Turning - 90°

Chamfering - 45°

4) What is facing?

Facing is a operation is used to create a flat surface by reducing the height of the work piece

5) Define turning operation

Turning operation is used to reduce the diameter of the work piece

Result:

Hence the required shape and size are obtained using turning, facing and chamfering operation on the given work piece