

plates whose surfaces are at right angles to each other.

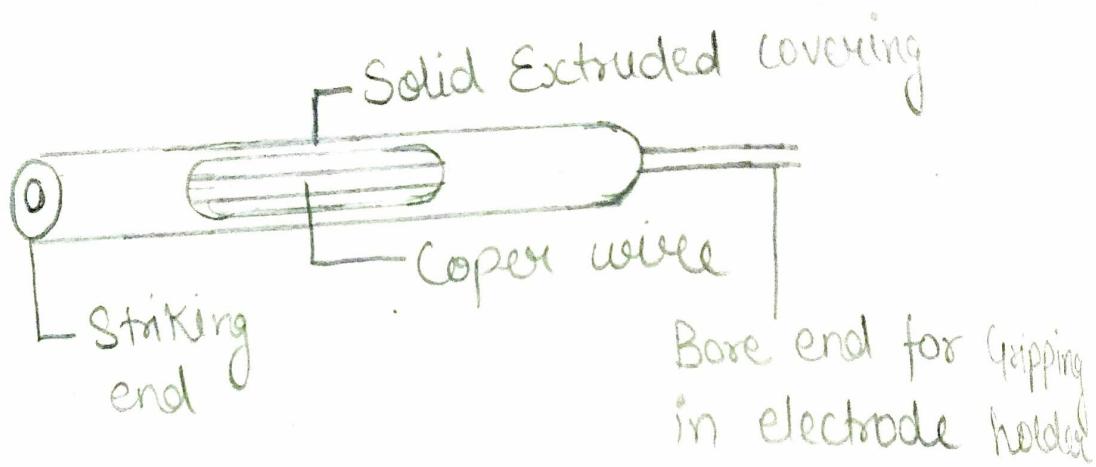
Arc Welding principle - In the arc welding arc is generated between the positive pole of D.C. called anode and negative pole of D.C. called cathode. When these two poles are brought together and separated for a small distance (1.5 to 3mm) such that the current continues to flow through a path of ionized particles called plasma, an electric arc is formed.

Equipment and eye protection guards

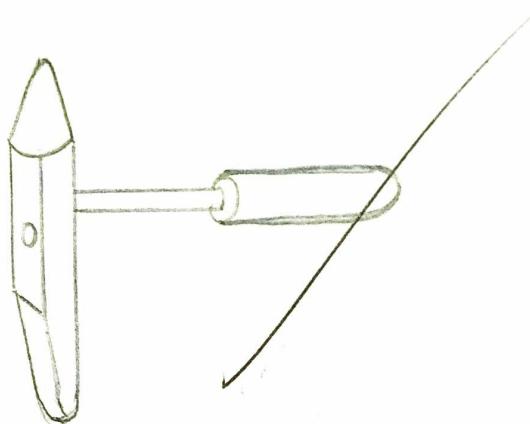
Goggles - Gas flames produce high intensity light and heat rays which are harmful to naked eye. To protect the eyes from these rays, goggles are used.

Hand gloves - Leathers or asbestos hand gloves are used to protect hands from UV & infrared rays, flying sparks & electric shock.

Welding Facescreen - The job holder or operator should keep in mind that the workers working in close proximity are must be protected.



Electrode Holder



Chipping hammer

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from the hazards of the arc.

Apron - Apron made of heat resistant chrome leather, is used to protect the operators clothes from sparks.

Electrode Holder - It is used to hold the electrode. The electrode is held between the two jaws made of hard copper alloy.

Chipping Hammer - A chipping hammer is used for removing the slag formation on welds. One end of the head is sharpened like a cold chisel and the other, to a blunt round point. It is generally made of tool steel.

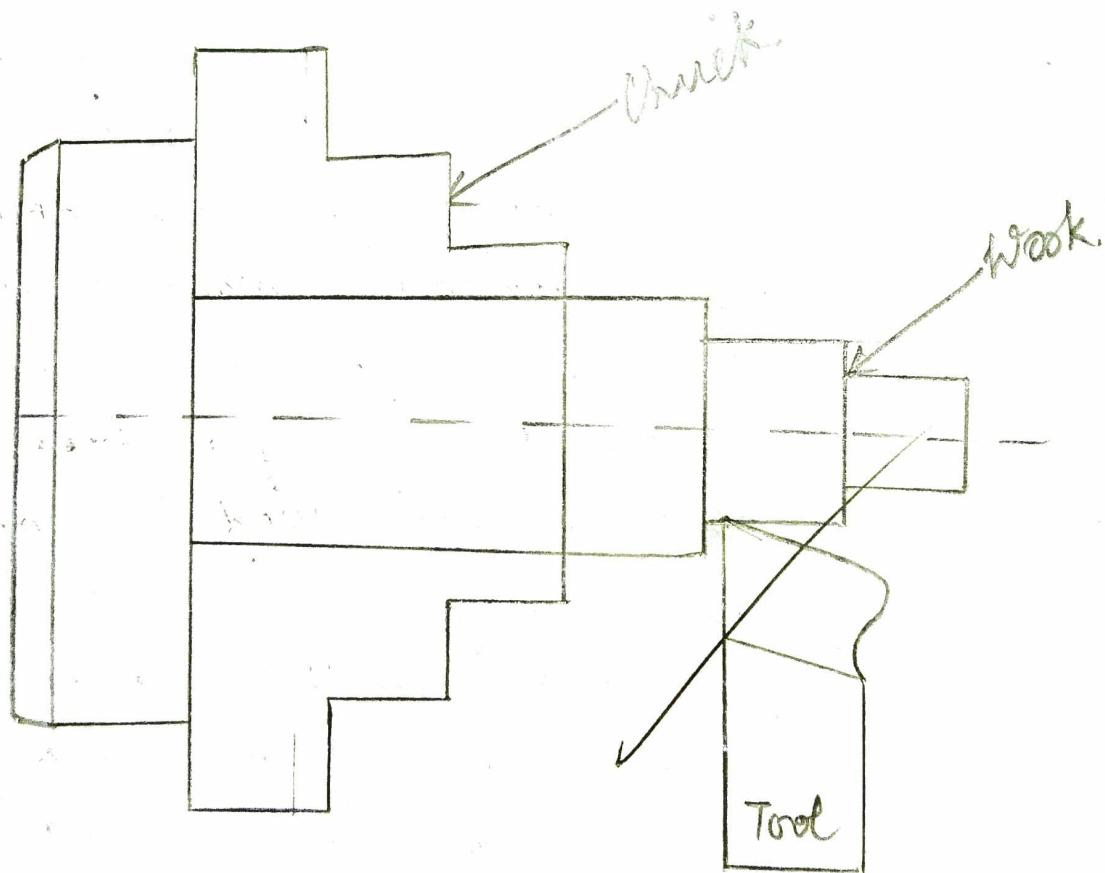
Electrode - The electrodes are used for providing heat input in arc welding.

Ash
22/03/21

Practical No - 10.

Aim - To perform step turning operation on CNC machine.

Materials used - CNC machine, work piece, lubricant.



Practical No-10

Aim :- To perform step turning on CNC machine.

Materials used - CNC machine, work piece Lubricant.

Procedure:-

1. Hold the workpiece in the chuck.
2. Then check the machine if it is working properly.
3. Then set the programme of step-turning in CNC machine.

Step Turning.

N5 G54 ;

N10 M42 ;

N15 G95 S300 M0.4;

N20 T01 D1 M8 ;

N25 G00 X30 Z0 ;

N30 G00 X40 Z0 ;

N35 CYCLE 95 ;

CYCLE 95 (Step Turn, 5,0,1,0.1---> X40.)

N40 G00 X200 Z200 M17 ;

N45 M30 ;

Step Turn : (Sub Program)

N05 G01 X0 Z0 F0.2;
N10 G01 X0 Z0 F0.2;
N15 G01 X20 Z-10;
N20 G01 X20 Z-30;
N25 G01 X30 Z-45;
N30 G01 X40 Z-45;
N35 G01 M17;

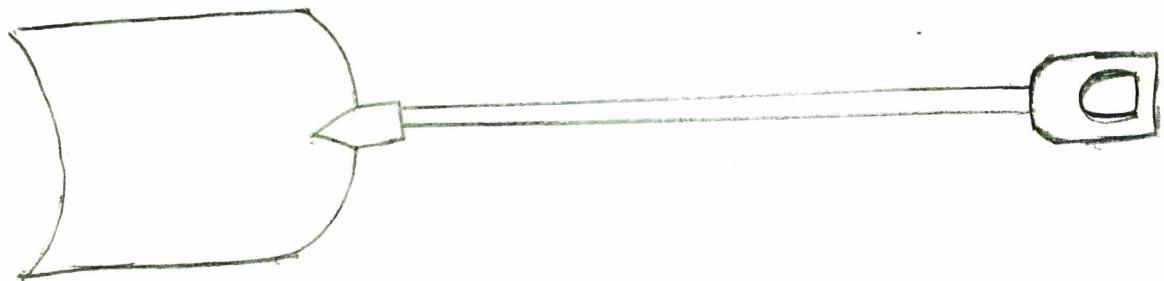
The two step turning is done on workpiece.

Result :- The step turning is thus formed on workpiece by CNC machine through following the above sequence of operation

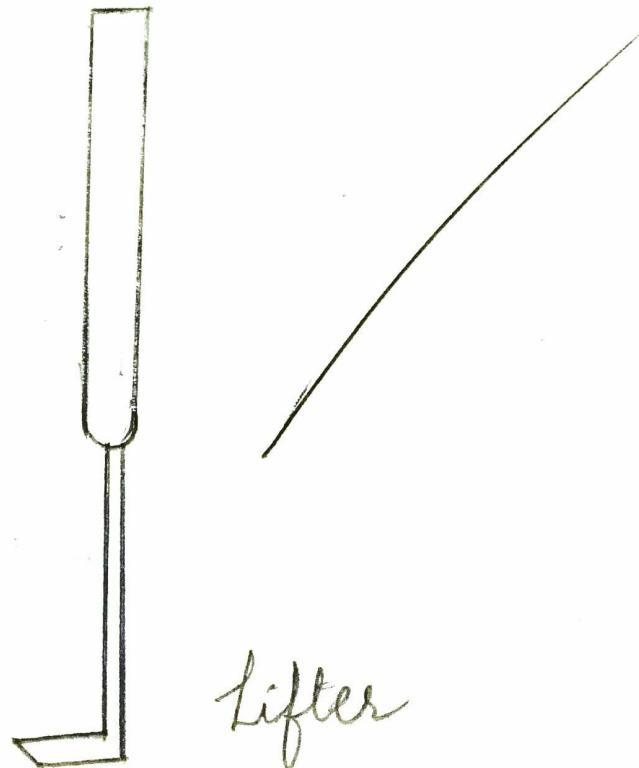
Abt
22/03/21

Practical No - 11

Aim - To study various types of foundry tools used in a foundry shop.



Shovel



Lifter

Practical No - 11

Date.....

Aim - To study tools used in various types of foundry shop.

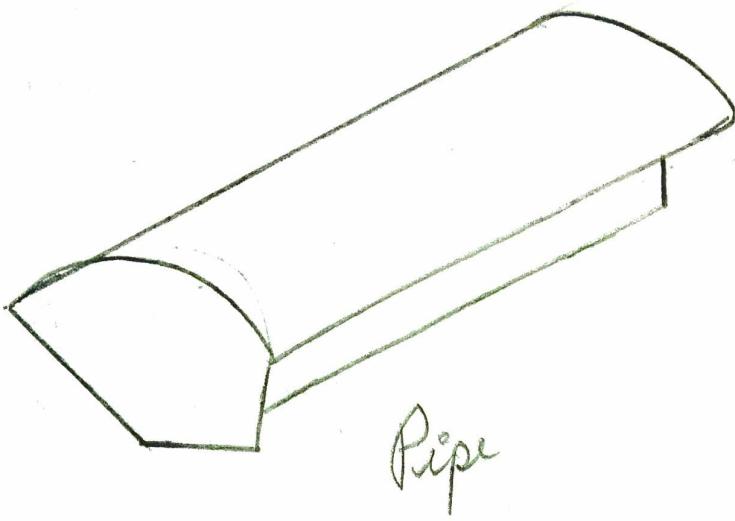
Pattern - A pattern may be defined as a model of a desired product, constructed in such a way as can be used for forming an impression called mould (cavity) in damp sand.

Shovel - It consists of a square pan fitted with a wooden handle. It is used for transferring sand to sand mixer and pouring sand in the moulding flask.

Hand Saddle - It is also known as a sieve. It is used to remove the lumps and foreign particles from the sand.

Brushes - These are used for finishing flat surface ^{and} joins in the mould after withdrawing the pattern.

Lifters - Lifters are used for removing loose sand from inside the mould cavity.



Pipe



Lever

Abl
22/03/2021

smoothers and corner slicks - These are used to repair and finish the round and square corners & round & flat surfaces and edges etc.

Moulding Box - The boxes used in sand moulding may be made of wood & cast iron or steel. It is a container in which sand is packed and rammed.

Ladle - Ladles are used to transport molten metal from melting furnace to the mould and vice versa.

Crucible - Crucible is used to melt the metal in a furnace. It is packed inside the furnace & raw material is put in this crucible.

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22/03/91