

SAFETY IN THE WORKSHOP

SAFETY:

The condition of being safe; freedom from danger, risk, or injury.

WORKSHOP :

A room, group of rooms, or building in which work, especially mechanical work, is carried on.

SAFETY

- Personal Safety
- Working area
- Electric Safety
- Rescue and Resuscitation



Personal Safety

- Dress Code
- Workshop Safety



Dress Code:

- Wear your coverall.
- Tie up long hair and remove your jewelries, watches etc.
- Wear safety goggles to protect your eyes from dust and flying chips.
- Wear masks to avoid breathing in dust.
- Wear gloves when handing hot materials.

Workshop Safety rules:

- You are not allowed to work in the workshop unless the instructor is present.
- You should not use any machine unless you have been taught how to use it.
- Handle chemicals, tools and machines carefully and in the correct manner.
- Know the location of the emergency stop switches in the workshop.
- When doubt, always ask the instructor.


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- Report all accidents and injuries to the instructor.
 - Keep the workshop clean and tidy.

Working area.

- Cleanliness and Tidiness in the working area.
- Safety with hand tools.
- Safety with machines.

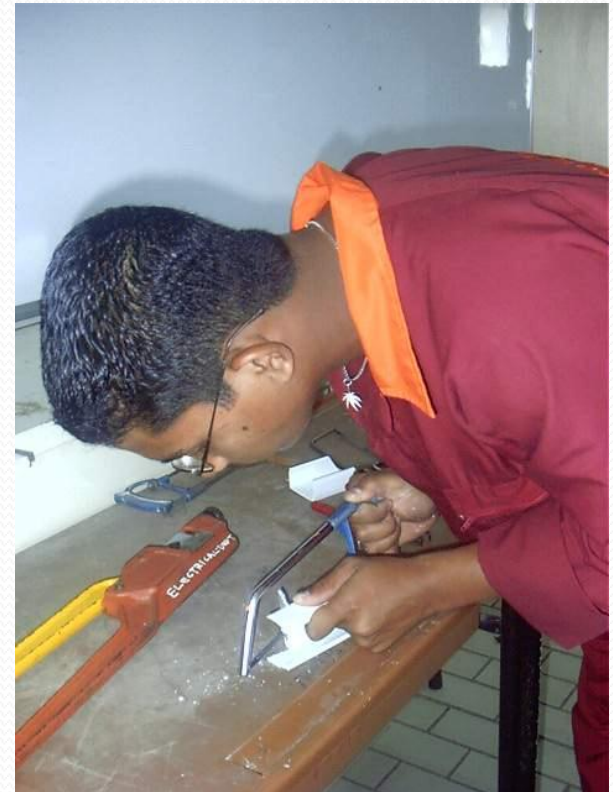
Cleanliness and Tidiness in the working area.

- Keep all passageways, aisles and exits clear of obstruction.
- Remove immediately any oils, paints, greases and other fluids that have been spilt on the floor.
- Keep your immediate work area clear and tidy and do not allow discarded pieces of material to accumulate.
- Do not leave tools and materials scattered about thoughtlessly.

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- Put away all the tools you are not using.
 - Use the receptacles provided for waste and refuse.
 - Stack materials so that they do not fall dangerously.


Safety with hand tools

- Use tools that are in good condition.
- Use the right tools for the right job and the correct procedures in using it.
- Extreme care taken when handling sharp-pointed and sharp-edged tools.
- Do not carry sharp tools in your pockets.



Safety with machines.

- Ensure that all safety guards are in place.
- Ensure that the chuck key is removed before you start the machine.
- Clamp tightly all work pieces and tools before starting the machines.
- Always start and stop the machine yourself.
- Stop the machine before making any adjustment or measurement.

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- Do not try to stop the moving parts of the machine with your hands.
 - Never use your hands to remove the metal chips, use a brush.
 - Do not leave the machine unattended.
 - Do not talk to anyone while operating the machine.

ELECTRICAL SAFETY



Electric shock

Electric shock occurs when a person's body completes a circuit between two different voltage levels and current is forced through the body.

Severity of electric shock


- Can be range from a slight tingling sensation to electrocutions and death.
- Causes of electric shock also can be:
 - serious and deep-seated burns.
 - consequential injuries such as falling.

Factors that affect the severity of an electric shock include:

- The magnitude of the voltage.
- The path of the current through the body.
- The length of the contact (length of time taken).
- The frequency of the current.

Precautions;

- Try never to work on live equipment, but if you have to, never work alone and take the following precaution:
 - Equipment must be earthed.
 - Adequate foot ware.
 - Work on rubber or insulated mats.

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- One hand in pocket.
 - No metallic jewelry and watches.
 - Be aware of tell-tale signs of wear or neglect, eg. Broken plugs, excessive sparks or noise from motors etc.

Causes of electrical accidents:

- Lack of knowledge.
- Unsafe work practice.
- Defective equipment.

Act quickly in this order;

- Switch 'off' power supply, or get casualty clear from electrical source.
- Apply first aid by detecting casualty symptoms.

How to release casualty from electrical contact

- (a) 240V and below.
- (b) 240 to 1000V.
- (c) 1000V and above.

(a) 240V and below.

- Use dry non-conductive material such as:
 - dry rope, clothing, rubber or plastic.
 - casualty's own clothes (loose and dry).
 - stand on dry wood.
 - Push using dry wood.
- Try in one sweeping movement (as quick as possible).
- Prepare considerable force for casualty grasping a live conductor.
- Use gloved hand to punch the wrist or back of the hand clear.

(b) 240V to 1000V.

- Do not approach within 1.5 meter distance.
- Use dry non-conductive material not less than 1.5 meter long.

(c) 1000V and above.

- Greater distance must be kept from casualty.
- Advisable to wait for expert's help.

RESCUE AND RESUSCITATION

Rescue.

Before doing any resuscitation make sure the person is conscious or not conscious.

HOW to know casualty is conscious or unconscious?

- Shake the casualty firmly but gently.
- If the casualty responding, proceed to make the casualty comfortable and observe the breathing (this means casualty is conscious).
- If the casualty is not responding or abnormal respond but still breathing so casualty is not conscious.

Unconscious casualty may suffocate due to:

- Breathing blood and vomit.
- Loose teeth or broken dentures may block airways.
- The tongue may fall back and block airways.

Resuscitation

If a casualty is breathing normally and his or her heart is beating, resuscitation is not required.

Method of Resuscitation:


- Mouth to mouth resuscitation.
- Cardio-Pulmonary resuscitation.
- Holger-Nielson resuscitation.

Mouth to mouth resuscitation

This method of resuscitation is applied to a casualty who is not breathing but has heartbeat

Mouth to mouth resuscitation:

- Place the casualty on his back.
- Tilt the head backward and raise his chin upward to ensure an open air.
- Pinch the casualty nostril to close them.
- Take a deep breath, open your mouth wide and seal the casualty's mouth with yours.
- Blow gently but firmly to inflate his lungs.

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- Check that the casualty's chest rises and falls (this means the airway is clear).
 - Repeat procedures 3, 4, 5 and 6 until the casualty begins to breathe normally.

Cardio-Pulmonary resuscitation

This method of resuscitation is applied to a casualty who is not breathing and has no heartbeat.

Cardio-Pulmonary resuscitation:

- Apply the mouth-to-mouth resuscitation.
- Inflate the casualty's lungs four times.
- Place your hand, one on top of the other on the casualty's chest.
- Press quickly and firmly 15 times, taking care not depress the chest too much.
- Repeat procedures 2, 3 and 4 until the casualty's heart starts beating.
- Continue mouth-to-mouth resuscitation until the casualty begins to breathe normally.

Holger-Nielsen resuscitation

This method of resuscitation is applied if the casualty has facial injuries and preventing the mouth-to-mouth resuscitation.

Holger-Nielsen resuscitation:

- Lay the casualty face down, his face sideways and resting on his hands.
- Kneel in front of the casualty and press down on his back three seconds.
- Raise the casualty's elbows for three seconds.
- Repeat procedures 2 and 3 until the casualty begins to breathe normally.
- Get medical assistance.

Note:

Before commencing any resuscitation method, be sure that there is a clear airway must be loosened around the neck.

End of lecture

Questions and answers session.

