CDX Using an angle grinder

Objective:

Show the correct operating procedure for using an angle grinder.

This activity sheet contains:

- Step-by-step instructions for completing the workshop procedure.

Personal safety:

Whenever you perform a task in the workshop you must use personal protective clothing and equipment that is appropriate for the task and which conforms to your local safety regulations and policies. Among other items, this may include:

- Work clothing - such as coveralls and steel-capped footwear.
- Eye protection - such as safety glasses and face masks.
- Ear protection - such as earmuffs and earplugs.
- Hand protection – such as rubber gloves and barrier cream.
- Respiratory equipment – such as face masks and valved respirators.

If you are not certain what is appropriate or required, ask your supervisor.

Safety check:

- Always wear impact-resistant protective glasses, ear protection and a full-face shield when using an angle grinder.
- Disconnect the power supply when changing any grinding attachments or discs.
- Wear safety shoes, leather gloves and an apron to protect your body from flying metal chips. Make sure the blade guard is firmly secured.
- Use the correct type of disc.
- Make sure the guard handles are secure.
- Use the correct flange or spindle nut for the type of disc being used. If you don't, the disc can shatter at high speed and injure you.
- Angle grinders, like all portable grinding tools, need to be equipped with safety guards to protect you from flying fragments in case the disc breaks apart.
- Always follow the manufacturer's recommendations to make sure the spindle wheel does not exceed the abrasive wheel specifications.
- Make sure there are no obvious defects or damage to the disc before you install it.
- Everyone who uses an angle grinder must receive training and instruction in safe work procedures.
- Make sure that you understand and observe all legislative and personal safety procedures when carrying out the following tasks. If you are unsure of what these are, ask your supervisor.

Points to note:

- The angle grinder uses an electric motor to drive an abrasive disc at high speed.
- The grinder disc is turned at speeds that range from 5,000 rpm to 12,000 rpm.
- The turning disc is used to grind or cut metal.
- The grinder size relates to the diameter of the cutting disc. This can range from 100 mm to 230 mm (4 inches to 9 inches). The size of grinder you use depends on the type of job you are doing.
- The smaller the grinder, the higher the speed it turns.
- Sanding discs and wire wheels can be fitted on the grinder, making it a versatile electric tool.

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Using an angle grinder

Points to note:

- An extra handle is provided that is attached to the grinder head. This can be fitted to either the left, right or top of the head to make it easy to use for left-handed as well as right-handed people.
- The abrasive disc or cutting wheel is attached to the grinder by a flange and nut. The nut is specially designed to fit in a recess in the center of the pad or wheel. It is tightened by a spanner that is provided with the grinder when purchased. Do not lose this wrench because it is the only tool that can tighten the nut properly.
- Do not confuse a grinder with a sander/polisher. The sander/polisher turns at lower speeds, typically 600 to 3,000 rpm. They are commonly used to sand and polish paint. The pads these tools use cannot be turned at high speed. If the polish pad were attached to an angle grinder, the higher rotational speed would cause the polishing pad to burn the paint and cause the polish pad to fly apart.

1. Position the disc

Hold the face of the disc against the work, not the edge.

2. Work carefully

Be careful that the motor's torque does not cause the grinder to slip out of your hand. Do not press too hard. Let the grinder do the work.

2. Special discs for cutting

Use special discs for cutting, in places where a hacksaw can't be used. With cutting discs, use the edge of the wheel, not the face.