

# Chapter 11- Electrical Operations

## Spot the hazard

Check to ensure electrical fittings, fixtures, plant and equipment, wiring, insulation, switches, power cords, plugs, earth wires, guarding, and welding equipment are in good condition and regularly maintained.

Look for shorting or sparking fittings. Avoid using electrical equipment in wet conditions. Wear safe footwear and clothing. For work on wires, plugs, switches, fuses and electrical plant, call the electrician.

## Assess the risk

Assess each identified hazard for likelihood and severity of possible injury or harm. If there is any risk of electric shock or electrocution, you should have a safe procedure to ensure the hazardous plant is put out of use and either isolated, or kept in a safe place until repaired or discarded.

## Make the changes

The following suggestions will help to minimize or eliminate the risk of electric shock.

- Always employ an electrician for power alterations or repairs.
- Ensure wiring, equipment, leads and plugs are kept in good repair.
- Don't overload your wiring installation.
- Don't remove guards or covers from electrical switch gear.
- In areas exposed to wind and rain, always use weather-proof outlets and fittings.
- Avoid using outdoor electrical equipment in wet weather.
- All lights exposed to breakage by farm tools should be fitted with wire guards.
- Old rubber-insulated wiring is now unsafe, and should be replaced.

## Outdoor power lines

- Make sure tall items like balers and headers are kept well clear of overhead wires.
- Never ride on top of high loads.
- If your crop-dusting is done by airplane, tell the pilot beforehand about any power lines in the area.
- Plan farm roads to avoid passing under power lines, and have new power lines installed so they don't cross over roads.
- Always check the location of power lines before you start work.
- Always check plans and records of underground power lines before any digging or earthworks.
- Never stack irrigation pipes or park machinery under power lines.
- Never up-end a pipe before looking up. Carry pipes horizontally.

- Remember, power line heights are deceptive. Know the operation and maximum height of your machine.
- Have an observer check your position when working close to overhead power lines.
- If in doubt, always contact the supply authority for advice and assistance.
- If you see a power line that has been damaged or has fallen down, keep clear and notify the supply authority.

### **Power tools**

- When buying a portable power tool, double insulated is safer.
- Never use a light socket to operate a power tool.
- Don't use tools if the casing is broken or damaged. Damaged cords and plugs should be replaced.
- Regularly check power tools are free from external damage or makeshift repairs. This includes leads and plugs.
- Don't make adjustments to a tool without first switching it off and removing the plug from the power point.
- All bench-mounted equipment, such as power saws or grinders, should be effectively grounded - except for those with double insulation.
- Don't use makeshift extension lights. Use a type with a guard around the globe and an insulated handle.

### **Welding equipment**

- Switch off power before connecting welding leads to terminals.
- Check leads are correctly connected to terminals marked 'electrode' and 'work'.
- Ensure supply terminals and live parts are suitably enclosed and protected.
- Ensure welding terminals are shrouded to prevent inadvertent contact or short circuits.
- Check the frame of welding equipment is effectively grounded.
- Don't use leads if they have bare sections. Replace them.
- Never use bare hands on metal parts of electrode holders or electrodes while the welder is switched on. Never rest the electrode on your body.
- Be sure to keep waste material away from the welder.