



Undertake operational maintenance of machinery

AHCMOM204A

By the end of this topic, you should be able to:

- Prepare for maintenance
- Perform scheduled maintenance
- Complete maintenance activities

Types of machinery

- Horticulture tasks may require a range of machinery, such as:

Chainsaw

Harvester

Hedge
trimmer

Mechanical
pruners

Push
mower

Rotary
hoe

Skid steer
loader

Sprayer

Tractor

Turf mower

Vehicle

Types of machinery

- Each type of machinery is different in its operation and thus, maintenance requirements can vary greatly
 - May vary from a visual check to the use of tools to complete maintenance tasks
- Machines of the same type can have different service requirements. For example:
 - They may be of different brands
 - They may have four-stroke or two-stroke engine
 - They may have an engine powered by petrol or diesel fuel
 - They may have pneumatic (air) or hydraulic (pressurised fluid) powered parts

Be guided by manufacturer's specifications

- Comparing two-stroke and four-stroke engines:

Feature	Two	Four
Power cycle has two up-and-down piston movements	✓	
Power cycle has four up-and-down piston movements		✓
No oil/petrol mixing		✓
More torque at lower revs		✓
More efficient (fuel consumption, power delivery)		✓
Less maintenance requirements (less moving parts)	✓	
Light weight	✓	
With suitable carburettor, can operate at any angle	✓	
Wears out quicker (hotter running, twice as many power strokes)	✓	
Preferred for horticultural applications		✓

- Comparing diesel and petrol engines:

Feature	Diesel	Petrol
Has a carburettor		✓
Requires electrical system to ignite fuel		✓
Constructed to rugged specifications	✓	
Less maintenance	✓	
Lower fuel consumption	✓	
More reliable in wet conditions	✓	
More costly	✓	
More reliable in cold conditions		✓

- To prepare for maintenance work, you should familiarise yourself with the following:
 - Task requirements
 - Access and understand the maintenance plan prior to undertaking maintenance work
 - Speak to your supervisor
 - Apply active listening when receiving instructions
 - Clarify any unclear instructions with your supervisor
 - Refer to enterprise requirements

- To prepare for maintenance work, you should familiarise yourself with the following:
 - Documentation
 - Labels on supplies (e.g. oils)
 - Manuals or written instructions for machinery (e.g. operator's guide)
 - Laws applicable to your workplace, such as:
 - Acts [e.g. *Work Health and Safety Act 2011 (Qld)*; *Environmental Protection Act 1994 (Qld)*]
 - Regulations [e.g. *Work Health and Safety Regulation 2011 (Qld)*];]
 - Codes of Practice [e.g. *Managing risks of hazardous chemicals in the workplace Code of Practice 2013 (Qld)*; *Rural plant Code of Practice 2004 (Qld)*; *Safe design and operation of tractors Code of Practice 2005 (Qld)*]

- To prepare for maintenance work, you should familiarise yourself with the following:
 - **Work area**
 - Consider and account for WHS hazards/risks
 - Consider and account for the environmental impacts from machinery operation and maintenance
 - Report hazards to your supervisor within a timely fashion – especially emergency situations

- To prepare for maintenance work, you should familiarise yourself with the following:
 - Available machinery, tools and equipment
 - Refer to the maintenance plan to:
 - Select appropriate tools (e.g. drills to remove screws, wrenches to remove lug nuts)
 - Includes hand and power tools
 - Select appropriate supplies (e.g. grease, lubricant)
 - Ensure tools and equipment are appropriately selected, prepared and used during maintenance tasks, following the operator's manual

- Any faulty items should be reported to your supervisor
 - Follow the 'Stop, Tag, Report, Record' (STRR) approach:
 - Stop using the equipment
 - Tag the faulty equipment
 - Report the faulty equipment to your supervisor
 - Record the details of the fault

Performing scheduled maintenance

- As part of scheduled maintenance, complete the following:
 - Lubricate machinery to reduce friction, absorb heat, reduce noise
 - Lubricant may include oils (usually mineral or synthetic) and grease (solid to semi-fluid product)
 - Check and replace fluids (e.g. fuel, oil, coolant, and brake fluid)
 - Clean machinery and attachments
 - Carry out other basic servicing (e.g. replacing tyres/batteries/filters, sharpening blades)

Be guided by manufacturer's specifications and enterprise requirements

Performing scheduled maintenance

- While maintaining machinery, you may be required to handle chemicals and hazardous substances (e.g. fuels, oils).
- Be sure to follow Safety Data Sheet (SDS) requirements and be aware of signage/labels, such as:



Acute toxicity



Corrosive



Flammable



Danger to
human health



Warning

- If you encounter faults with machinery, you should apply basic diagnostic techniques to identify and rectify issues
 - The operator's manual will generally have a troubleshooting guide
 - Simple tasks may include:
 - Replacing spark plugs on ignition systems
 - Adjusting and calibrating equipment
 - Ensure that the machinery is shut down during this process, testing after changes made
- More serious/complex faults will need to be reported to an appropriate technician

- After completing maintenance work, you are required to complete the following practices:
 - Clean up the work area
 - Return to operating condition
 - Maintain according to WHS and enterprise requirements
 - Maintain, clean, secure and store tools
 - Follow manufacturer's specifications and supervisor's instructions

- After completing maintenance work, you are required to complete the following practices:
 - **Dispose of materials that cannot be reused or recycled**
 - Ensure that you follow the enterprise guidelines
 - Follow SDS to ensure environmentally safe practices
 - **Complete logbook**
 - Record details of maintenance (e.g. date, name of person completing work, what was done, identified hazards, next scheduled maintenance)
 - Identifies trends in breakdowns
 - Can help rule out poor maintenance as a cause of incidents
 - Be clear – be mindful of people's varying backgrounds and abilities