Australian Government

AURKTAX01 Synchronise plant and equipment

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Release: 1

AURKTAX01 Synchronise plant and equipment

Modification History

Release	Comments
1	This unit of competency was first released in AUR Automotive Retail, Service and Repair Training Package Release 11.0.

Application

This unit describes the performance outcomes required to synchronise and calibrate machinery with the implements or attachments it powers or tows. In this unit, machinery includes agricultural power units and mobile plant, and implements include attachments.

It involves preparing for the task, selecting the correct synchronising procedure, carrying out the synchronisation and calibration, performing post-synchronising testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry, including the agricultural machinery and mobile plant sectors.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

No pre-requisite units

Competency field(s)

Mechanical - Mobile Plant

Unit sector(s)

Technical

Elements and Performance Criteria

Elements	**Performance Criteria**
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.*

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1. Prepare to undertake synchronising operations	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for synchronisation activity, including technical and calibration requirements 1.3 Analyse synchronisation options and select those most appropriate to the circumstances using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures 1.5 Identify tools, test equipment and support equipment required for synchronisation activity and establish serviceability according to workplace procedures
2. Conduct synchronising operations	2.1 Isolate and stabilise machinery and implement from energy sources and apply lockout and tagout (LOTO) according to workplace and manufacturer procedures 2.2 Conduct synchronising and calibration procedures according to workplace procedures, manufacturer specifications, and ***safety and environmental requirements*** 2.3 Complete and report synchronising documentation according to workplace procedures
3. Analyse results	3.1 Carry out operational tests according to ***safety and environmental requirements*** and compare results with manufacturer specifications 3.2 Document and report results according to workplace procedures
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm machinery and implement are ready for use, including protective guards, safety features and cowlings 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Check and store tools and equipment according to workplace procedures 4.4 Complete documentation according to workplace procedures

Foundation skills

This section describes the foundation skills essential to performance

Skills	Description

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Learning	• Locates manufacturer and workplace synchronisation and calibration information efficiently
Reading	• Interprets manufacturer procedures, specifications and in-cab display information when synchronising and calibrating machinery and implements
Writing	• Records synchronisation settings, test results and parts used accurately in workplace documentation
Oral communication	• Confirms machinery and implement settings with operators, supervisors and other technicians
Numeracy	• Calculates pressures, flow rates, tolerances and deviations from manufacturer specifications • Interprets readings from test equipment and in-cab displays
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses synchronising equipment.

Range of conditions

Safety and environmental requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for:
	  ○ controlling stored energy and pressurised hydraulic systems
	  ○ working near moving, cutting and crushing components
	  ○ test runs of operating equipment, including exclusion zones
	  ○ preventing fires from fuel and hot machinery components
	• environmental requirements, including procedures for trapping, storing and disposing of oils, fuels and fluids released from machinery and implements during synchronisation.

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Assessment Requirements for AURKTAX01 Synchronise plant and equipment

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- synchronise and calibrate machinery with two different implements, including:
  - selecting synchronisation and calibration procedures appropriate to the circumstances
  - synchronising and calibrating the machinery and implement
  - operating, testing and inspecting the synchronised machinery and implement
  - documenting and reporting synchronisation and test results.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- methods to locate and interpret information required to synchronise and calibrate machinery and implements, including:
  - information provided by customers and supervisors
  - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to synchronise and calibrate machinery and implements, including:
  - establishing serviceability of tools and equipment
  - documentation procedures, including recording synchronisation and test results
  - housekeeping procedures, including:
    - storage of tools and equipment
    - identification, tagging and isolation of faulty equipment
    - disposal of excess materials
    - recycling procedures
- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to synchronising and calibrating machinery and implements, including procedures for:
  - isolating and stabilising equipment, including lockout and tagout (LOTO)
  - controlling stored energy and pressurised hydraulic systems
  - working near moving, cutting and crushing components

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  - working at heights, including safe access to and from elevated machine platforms and use of fall prevention equipment
  - test runs of operating equipment, including exclusion zones
  - identifying and controlling hazards in field locations
  - fire prevention when working near hot components and crop residue
  - controlling exposure to hazardous chemicals and chemical residues on equipment
  - selecting and wearing personal protective equipment (PPE), including respiratory protection
- environmental requirements, including procedures for:
  - trapping, storing and disposing of oils, fuels and fluids released during work
  - containing and cleaning up oil, fuel and hydraulic fluid spills, including during field repairs
  - preventing chemical contamination of soil and waterways
  - machine hygiene, including removing soil, seed and plant material to prevent the spread of weeds and disease
  - dust and clean-up management
- operating principles of machinery and implements and associated components, including:
  - electrical
  - hydraulic
  - mechanical
- machinery and implement synchronisation and calibration procedures, including:
  - synchronisation faults and machinery and implement incompatibilities, and their effects on implement operation
  - electrical:
    - connect and disconnect
    - electronic control module
    - electronic calibration of implement settings and adjustments through in-cab displays
    - calibrating implement sensors to the machinery, including height and position sensors
    - GPS guidance, data transfer and connectivity between machinery and implement
  - hydraulic:
    - connect and disconnect
    - pressure and flow adjustments

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        - inspecting hydraulic couplings for condition and leaks
    - mechanical:
        - weight packs and ballast
        - power take-off (PTO)
        - three point linkage
        - towed implement
- post-synchronisation testing procedures for machinery and implements, including operational test procedures.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- assessment must include direct observation of tasks.
- where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the machinery and implements that they have synchronised and calibrated, e.g. repair orders.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer machinery and implement synchronisation and calibration specifications
- machinery and two different implements for synchronisation and calibration
- test equipment for synchronising and calibrating machinery and implements
- tools, equipment and materials appropriate for synchronising and calibrating machinery and implements.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

Unit Mapping Information

Previous Code and Title	Equivalence	Comments
AURKTA001 Synchronise plant and equipment	Equivalent	Application, performance criteria and assessment requirements updated. No change to performance outcomes.

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Links

Companion volumes, including implementation guides, are found on the national training register - https://training.gov.au/training/details/AUR.

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