



Australian Government

Department of Education, Employment and Workplace Relations

AURT309166A Repair hydraulic systems

Release: 1

AURT309166A Repair hydraulic systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to carry out the testing and repair of hydraulic systems.
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Application of the Unit

Application of the unit	<p>The unit includes identification and confirmation of the work requirement, preparation for work, testing, analysis of results and repair of hydraulic system faults and work finalisation processes, including clean-up and documentation.</p> <p>Work involves vehicles fitted with hydraulic systems.</p> <p>Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</p> <p>Work is carried out in accordance with award provisions.</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to undertake testing of hydraulic system	1.1. Nature and scope of the work requirements are identified and confirmed 1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals, specifications and tooling, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or hydraulic testing requirements for hydraulic systems are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with fluids under pressure are observed
2. Test hydraulic system and analyse results	2.1. Methods for the conduct of the testing implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is forwarded to appropriate persons for action in accordance with workplace procedures
3. Prepare to repair hydraulic systems	3.1. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 3.2. Procedures and information required are identified and sourced 3.3. Technical and tooling requirements for the repair are identified and support equipment is identified and prepared
4. Carry out repair	4.1. Methods for the conduct of the repair are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 4.2. All adjustments made during the repair are in accordance with manufacturer/component supplier specifications

ELEMENT	PERFORMANCE CRITERIA
5. Prepare vehicle/system for use or storage	5.1.Repair schedule documentation is completed 5.2.Final inspection is made to ensure protective guards, safety features and cowlings are in place 5.3.Final inspection is made to ensure work is to workplace expectations 5.4. Vehicle/system is cleaned for use or stored to workplace expectations 5.5.Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the repair of hydraulic systems, including the use of specialist tooling, measuring equipment, computerised technology and communication devices and the documenting/ recording of results

REQUIRED SKILLS AND KNOWLEDGE**Required knowledge**

A working knowledge of:

- OH&S and environmental regulations/requirements, equipment, material and personal safety requirements
- dangers of working with hydraulically operated equipment
- identification of the application, purpose and operation
- identification of component parts to include physical, fluid, gases and heat generation
- identification of hydraulic system schematic symbols
- types and layout of service/repair manuals (hard copy and electronic)
- hydraulic system testing procedures
- hydraulic system repair procedures
- enterprise quality procedures
- work organisation and planning processes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- identification of the application, purpose and operation
- application of the full repair sequence as per the Range Statement to a hydraulic system relative to the qualification being sought
- interpreting of the system test results
- conducting the repair in accordance with workplace and manufacturer/component supplier requirements
- completing repair of hydraulic systems and associated components within workplace timeframes
- vehicle/hydraulic system presentation to customer in compliance with workplace requirements

Context of, and specific resources for assessment

Application of competence is to be assessed in the workplace or simulated worksite

Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints

Assessment is to comply with regulatory requirements, including Australian Standards

The following resources should be made available:

- workplace location or simulated workplace
- materials relevant to carrying out the testing and repair of hydraulic systems

EVIDENCE GUIDE	
	<ul style="list-style-type: none"> • equipment, hand and power tooling appropriate to carrying out the testing and repair of hydraulic systems • activities covering the mandatory task requirements • specifications and work instructions
Method of assessment	<p>Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package</p> <p>Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge</p> <p>Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies</p> <p>Assessment may be applied under project related conditions (real or simulated) and require evidence of process</p> <p>Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances</p> <p>It is preferable assessment reflects a process rather than an event and occurs over a period of time to cover the varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other appropriate persons subject to agreed authentication arrangements</p> <p>Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</p>
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different

RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Variables	Variables include: <ul style="list-style-type: none"> • linear or rotary actuators • conductors • pressure flow or directional control valves and pumps • pumps may be of gear, vane or piston design
Repair methods	Repair methods and sequence are to include isolation of faults, dismantling, inspection and evaluation, replacement of components parts, assembly and completion of operational tests and records
Faults	Faults to include, excessive internal leakage in both actuators and pumps, low operating pressure and implement creep
OH&S	OH&S requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to

RANGE STATEMENT	
	include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, meters, gauges, and hydraulic hose repair and load testing devices
Materials	Materials may include hydraulic fluids, spare parts and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	<p>Sources of information/documents may include:</p> <ul style="list-style-type: none"> • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the testing and repair of hydraulic systems • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions

RANGE STATEMENT

	<ul style="list-style-type: none">• organisation work specifications and requirements• instructions issued by authorised enterprise or external persons• Relevant Australian Standards
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Unit Sector(s)

Unit sector	Technical
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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