Australian Government

Department of Education, Employment and Workplace Relations

AURT408145A Overhaul transmissions (hydrostatic)

Release: 1

AURT408145A Overhaul transmissions (hydrostatic)

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence required to completely dismantle and rebuild a hydrostatic transmission.

Application of the Unit

Application of the unit	The unit includes identification and confirmation of the work requirement, preparation for work, testing and analysis of hydrostatic transmissions, dismantling, assembling, inspection, adjusting and preparation of the hydrostatic transmissions and completion of work finalisation processes, including clean-up and documentation. This unit of competence applies to hydrostatic transmissions fitted to heavy vehicle, plant and outdoor power equipment. Work requires individuals to demonstrate some judgement and problem-solving skills in managing own work activities and contributing to a productive team environment. Work is carried out in accordance with award provisions.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to overhaul hydrostatic transmission	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 calibration requirements for testing and overhaul are sourced and support equipment is identified and prepared
2. Test hydrostatic transmission and analyse results	2.1. Methods for the conduct of the system tests are 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 processed in accordance with workplace procedures
3. Overhaul hydrostatic transmission	3.1. Information is accessed and interpreted from manufacturer/component supplier specifications 3.2. Hydrostatic transmissions are overhauled using approved methods and equipment, according to specifications and tolerances relative to the component/vehicle/plant manufacturer/component supplier 3.3. Hydrostatic transmission is overhauled without causing damage to any component or system 3.4. Appropriate workplace documentation is completed and dealt with to overhaul outcomes 3.5. Overhauling activities are carried out according to industry regulations/guidelines, OH&S legislation, legislation and enterprise procedures/policies
4. Prepare transmission	4.1. Overhaul documentation is completed

ELEMENT	PERFORMANCE CRITERIA
for installation/storage	4.2. Final inspection is made to ensure protective guards and safety features are in place 4.3. Final inspection is made to ensure work is to workplace expectations 4.4. Transmission is prepared for installation/storage to workplace expectations 4.5. 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 required 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 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
- apply problem-solving strategies in purposeful ways, both in situations where the problem and desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome
- use mathematical ideas and techniques to calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to overhauling hydrostatic transmissions, including the use of electronics, computerised technology and communication devices and reporting/ documenting of results

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- identification of the application, purpose and operation
- identification of component parts to include physical, fluid, gases and heat generation
- identification of wear evaluation methods
- types and layout of service/repair manuals (hard copy and electronic)
- hydrostatic transmission overhaul procedures
- hydrostatic transmission system test procedures
- manual handling techniques
- 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 overhaul sequence as per the Range Statement relative to the qualification being sought • interpreting the test results • conducting the overhaul in accordance with workplace and manufacturer/component supplier requirements • completing overhaul of the transmission and associated components within workplace timeframes • presentation of transmission to customer/storage in compliance with work 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 overhauling hydrostatic

EVIDENCE GUIDE	
	transmissions • equipment, hand and power tooling appropriate to overhauling hydrostatic transmissions • activities covering the mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies Assessment may be applied under project related conditions (real or simulated) and require evidence of process 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 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 Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role
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.	
Methods	Methods include: • visual, aural and functional assessment (including excessive wear, corrosion, selection and damage) • system testing under operating conditions
Specific requirements	Specific requirements: • variable displacement and fixed displacement hydraulic pumps • variable displacement and fixed displacement hydraulic motors
Variables	Other variables may include: • radial piston, axial piston, vane, rotor and gear type pumps and motors • closed and replenishing systems
Overhaul methods and sequences	Overhaul methods and sequences are to include the complete dismantling of component parts, measuring and evaluation of wear, the replacement, repair, rebuilding or reconditioning of parts comparable to original parts, the assembly of parts, performance of functional testing and the completion of records
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

RANGE STATEMENT	
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 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, power tooling, hydraulic pressure gauges, hydraulic test bench, hydraulic flow meters and precision measuring equipment
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	Sources of information/documents may include: • verbal or written and graphical instructions,

RANGE STATEMENT	
	signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to overhauling of hydrostatic transmissions • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	