Australian Government

Department of Education, Employment and Workplace Relations

AURT316168A Select and install performance enhanced suspension system products

Release: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

AURT316168A Select and install performance enhanced suspension system products

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the competence to select and install performance enhanced products to light vehicle suspension systems.

Application of the Unit

Application of the unit	Work involves selecting products to suit a customer's proposed suspension system modification requirements. It also includes removal of existing components, installation of new products and suspension system adjustments. The unit applies to suspension system configurations fitted to light vehicles, which may include 4WD vehicles, light commercial vehicles and off-road and motorsport vehicles.

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. Identify customer requirements and assess for practicality and safety compliance	1.1. Purpose for proposed modifications are established and confirmed with the customer 1.2. Practicality of the customer requirements are assessed and discussed with the customer 1.3. Proposed modifications are assessed in relation to safety and Australian Design Rules compliance 1.4. Project parameters, including cost and timeframe considerations, are discussed and confirmed with the customer 1.5. Vehicle is road tested to ensure proposed modifications are relevant and the condition of the vehicle is appropriate to safely incorporate performance enhanced products 1.6. Written quote is prepared to be authorised by the customer according to enterprise procedures
2. Prepare vehicle for modifications	2.1. Suspension system components needed for project are sourced and ordered 2.2. Service information is accessed and interpreted prior to commencing removal procedures 2.3. Vehicle is road tested to confirm roadworthiness prior to commencing component removal procedures
3. Fit components and make suspension system adjustments	3.1. Original components are removed and stored according to customer requirements or enterprise disposal procedures 3.2. New components are inspected to confirm serviceability of use prior to installation 3.3. New components are installed according to manufacturer/component supplier instructions and enterprise guidelines 3.4. Fluids and lubricants are added to components according to manufacturer/component supplier guidelines and enterprise procedures 3.5. Suspension system adjustments are completed according to manufacturer/component supplier specifications
4. Road test vehicle, make final adjustments and complete documentation	4.1. Vehicle is road tested to ensure compliance with project intent 4.2. Suspension system is inspected to confirm it is free of leaks and other malfunctions 4.3. Final adjustments are completed 4.4. Vehicle is road tested with the customer to confirm acceptance of work carried out 4.5. Documentation relating to the work carried out is

ELEMENT	PERFORMANCE CRITERIA
	completed and distributed/filed according to enterprise procedures
5. Clean up work area	5.1. Material that can be reused is collected and stored according to enterprise procedures 5.2. Equipment used in the job tasks is cleaned and returned to designated locations in the workplace 5.3. Work area is cleaned and inspected for serviceable and safe working conditions according to enterprise requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- collecting, analysing and organising information from a variety of sources to ensure the performance enhanced products are selected to achieve the customer's proposed modifications
- discussing job card requirements and desired vehicle performance characteristics with the customer
- following removal, refitting and adjusting procedures in a planned sequence as in workshop manuals and other technical publications to achieve desired system modifications within efficient timeframes
- selection and fitting of specialised products requires cooperative working arrangements with colleagues and supervision relating to sharing of specialist equipment, sharing of technical knowledge and procurement of specialist parts
- applying basic mathematical techniques when converting specification details to the processes of adjustment procedures and dimension recording
- establishing 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
- using workplace technology related to the selection and installation of performance enhanced suspension system products, including the use of measuring equipment, computerised technology and communication devices and the documenting/recording of results

Required knowledge

A working knowledge of:

- operating principles of various suspension systems and major components

REQUIRED SKILLS AND KNOWLEDGE
• how specific performance enhanced suspension products affect suspension system and driving characteristics • enterprise product ordering procedures • component removal, refitting and adjusting procedures • road test principles and procedures • methods of using lubricants and sealants • methods of fitting gaskets and circlips • methods of interpreting results from specific testing equipment(eg shock absorber tester) • how to access information from a computer • methods of effectively requesting advice or additional information from others in the workplace • effective communication techniques with customers

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	• Applying and using safety equipment and items of PPE
	• Selecting and fitting performance enhanced suspension system products to suit a customer requirements
	• Following task instructions, operating procedures and approved inspection processes to:
	  • minimise risk of injury to self and others
	  • prevent damage to workshop equipment and customer vehicles
	  • achieve outcomes within quoted timeframes quality standards
	• Applying safe work practices
	• Correctly interpreting and communicating technical information
	• Applying safe and effective vehicle road testing techniques
	• Correctly completing workplace documentation
	• Working with and around other team members
	• Working effectively with others
	• Modifying work activities to cater for variations in workplace context and environment

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 Assessment is to be conducted without additional assistance from supervision or other work colleagues except where it is normal practice to consult or clarify with others on matters pertinent to specific job tasks Information accessed by an external assessor during assessment procedures, which is derived from enterprise policies and practices, must be treated as commercial-in-confidence and not passed on to unauthorised persons The following resources should be made available:

EVIDENCE GUIDE	
	• workplace location or simulated workplace • material relevant to the selection and installation of performance enhanced suspension system products • equipment, hand and power tooling appropriate to the selection and installation of performance enhanced suspension system products • activities covering mandatory task requirements • specifications and work instructions Candidate for assessment should be able to access resources to complete job tasks if they are deemed part of normal workplace job requirements. However, if assessment is to be conducted in a simulated work environment, resources must be provided but with additional verbal questioning to confirm how the candidate would access these resources in the workplace

EVIDENCE GUIDE	
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 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 Assessment of workplace outcomes performance must only take place after a sufficient period of supervised practice and repetitive experience 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 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.	
OH&S	OH&S requirements include OH&S legislation, safety management systems, hazardous substances and dangerous goods code, enterprise safe operating procedures and Australian Design Rules
Modifications	Modifications refer to suspension system components which have been altered from the standard manufacturer design either in material,

RANGE STATEMENT	
	shape, specification or adjustments according to an aftermarket component manufacturer with the intent of enhancing or improving the function of the standard suspension system

RANGE STATEMENT	
Legislative requirements	Work is carried out in accordance with legislative obligations, environmental legislation, OH&S regulations, manual handling and lifting equipment procedures and enterprise insurance requirements
Work requirements	• Work involves being able to correctly select and install products which will address the requirements of the customer and ensuring the customer is conversant with the altered ride and handling characteristics of their vehicle • Work also involves the ability to discuss requirements of the customer at a suitable technical level that does not intimidate or confuse the customer. It also includes being able to access technical information from workshop manuals, technical bulletins and manufacturer/component supplier publications of performance enhanced suspension system products to assist the customer to understand how their requirements may be achieved
Proposed modifications	Types of proposed modifications may include: • modified spring rates • modified shock absorbers and struts • modified sway bars • modified suspension bushes • modified torsion bars • removal of factory fitted electronic suspension systems and replacement with non-electronic components
Project parameters may include:	Project parameters may include: • whether work will be carried out in phases • requesting specific persons to carry out the work • using specific manufacturer/component supplier products • variation to product final adjustments
Suspension system components	Suspension system components may include: • shock absorbers and struts • coil springs • leaf springs • torsion bars

RANGE STATEMENT	
	• panhard rods • suspension bushes • bump stops • dust boots • shackle and sway bar bushes • ball joints

RANGE STATEMENT	
Service information	Service information may include: • workshop manuals • product manufacturer/component supplier specifications and guidelines • enterprise service information • customer product information
Suspension system adjustments	Suspension system adjustments may include: • setting adjustable shock absorbers • wheel hub bearing adjustments
Types of malfunctions	Types of malfunctions may include distorted suspension system components such as: • upper and lower control arms • struts • front cross member • rear axle housing • trailing arms • missing split pins
Types of documentation	Types of documentation may include • enterprise job cards • customer vehicle history database • product warranties • computerised invoicing system

Unit Sector(s)

Unit sector	Technical

Co-requisite units

Co-requisite units		

Competency field

Competency field	