

	<p>tester, grease gun, jumper lead set, oil disposal container, oil tray and oil drum.</p> <p>2.3 Materials and supplies relevant to activities or tasks including grease, oil, sprays, transmission fluid, brake fluid, drive belts, washer fluid, power steering fluid, axles fluid, transfer case oil, engine oil, fuel, oil filter, air filter, spark plugs and antifreeze.</p> <p>2.4 Access to relevant workplace or appropriate simulated environment where assessment can take place.</p> <p>2.5 OEM manual</p> <p>2.6 Standard Operational Procedures</p> <p>2.7 Workshop checklists</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Real work observation (checklist, projects, job aids, project teams)</p> <p>3.2 Simulated work</p> <p>3.3 Written tasks (multiple choice, short answers, assignments, projects, essays, true/false)</p> <p>3.4 Oral questions (role plays, interviews, presentation by learner, discussion groups)</p>
4. Context of Assessment	<p>Competency may be assessed on the job, off the job or a combination of these or during Industrial Attachment. Off the job assessment must be undertaken in a closely simulated workplace environment.</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

12. INSPECT AUTOMOTIVE STEERING AND SUSPENSION SYSTEMS

UNIT CODE: ENG/OS/AUT/CR/3/3/A

UNIT DESCRIPTION

This unit describes the competences required to inspect automotive steering and suspension systems. It involves conducting steering and suspension systems familiarization, inspecting suspension bushes, steering systems, coil springs, struts, control arms and linkages, shock absorbers, leaf springs and tires and rims in an automotive service environment.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Conduct steering and suspension familiarization	1.1 Checklist for steering and suspension familiarization is provided as per SOPs. 1.2 <i>Types of steering system</i> are inspected as per manufacture's service manual. 1.3 <i>Types of suspension</i> system are inspection as per manufacture's service manual. 1.4 Components of steering & suspension system are inspected as per manufacturer's service manual.
2. Inspect suspension bushes	2.1 Checklist for suspension bushes inspection is provided as per SOPs. 2.2 Bushes in suspension system of vehicle are inspected as per manufacture's service manual. 2.3 Suspension bushes for normal function are inspected as per manufacture's service manual.
3. Inspect steering system	3.1 Checklist for steering system is provided as per SOPs. 3.2 Steering gearboxes are inspected for damage, leakage, wear as per manufacture's service manual. 3.3 Steering column is inspected for wear and tear as manufacturer's service manual. 3.4 Steering pump is inspected for leakage as per manufacturer's service manual. 3.5 Inner and outer tie rods are inspected for normal working as per manufacturer's service manual. 3.6 Steering fluid levels and characteristics are inspected for normal performance as per manufacturer's service manual. 3.7 Steering pump belt is inspected for normal performance as per manufacturer's service manual.

4. Inspect coil springs, struts, control arms and linkages	4.1 Checklist for coils springs, struts, control arms and linkages is provided as per SOPs. 4.2 Coil springs, struts, control arms and linkages are inspected as per manufacture's service manual.
5. Inspect shock absorbers	5.1 Checklist for shock absorber inspection is provided as per SOPs. 5.2 Shock absorbers in suspension systems are inspected as per manufacturer's service manual.
6. Inspect leaf springs	6.1 Checklist for leaf spring inspection is provided as per SOPs. 6.2 Leafs springs in suspension are identified as per manufacturer's service manual. 6.3 Leaf springs in suspension are visually inspected as per manufacture's service manual. 6.4 Leaf springs rebound clips are inspected as per manufacturer's service manual. 6.5 Leaf springs bushes are inspected for wear as per manufacturer's service manual.
7. Inspect tires and rims	7.1 Checklist for tire and rim inspection is provided as per SOPs. 7.2 Tires and rims are inspected as per manufacture's service manual.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE
1. Types of steering system may include but are not limited to:	<ul style="list-style-type: none"> ● Rack and pinion ● Parallelogram ● Worm and wheel ● Worm and sector ● Cam and peg
2. Type of suspension may include but are not limited to:	<ul style="list-style-type: none"> ● Leaf spring ● Coil spring ● Torsion bar ● Modified strut ● Rubber

	<ul style="list-style-type: none"> ● Air suspension ● Stabilizer bar
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REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

The individual needs to demonstrate the following skills:

- Skills on preliminary identification of workplace hazards/risks
- Critical thinking
- Troubleshooting
- Problem solving
- Decision making
- Observation
- Communication
- Listening
- Measuring
- Visualizing objects and shape
- Reading

Required Knowledge

The individual needs to demonstrate knowledge of:

- Use OEM manual
- Interpret service manual
- Interpret pictorial drawings
- Select proper tools
- Safety precautions
- Identify required tools and equipment
- Enumerate required procedures
- Knowledge of steering components
- Knowledge on suspension components

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: <ul style="list-style-type: none"> 1.1 Conducted steering and suspension familiarization. 1.2 Inspected suspension bushes. 1.3 Inspected steering systems.
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	<p>1.4 Inspected coil springs, struts, control arms and linkages.</p> <p>1.5 Inspected shock absorbers.</p> <p>1.6 Inspected leaf springs.</p> <p>1.7 Inspected tires and rims.</p>
2. Resource Implications	<p>The following resources must be provided:</p> <p>2.1 Comprehensive set of tools for inspecting automotive steering and suspension systems.</p> <p>2.2 Materials and supplies relevant to activities or tasks including tire grease, wheel weights, cotter pins, center bolts, tires, rims, tire lube, grease, oil, power steering fluid, leaf spring, coil spring, steering pump and steering fluids.</p> <p>2.3 Equipment relevant to activities or tasks including a tire changer, tire balancer, jack stands, vehicle jack or lift, steering gear box, hydraulic press, impact gun, engine stand, coil spring compressor, hydraulic jack, hoist/car lift, steering system model, bearing remover and steering gear box.</p> <p>2.4 Access to relevant workplace or appropriate simulated environment where assessment can take place.</p> <p>2.5 Workshop checklists</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Real work observation (checklist, projects, job aids, project teams)</p> <p>3.2 Simulated work</p> <p>3.3 Written tasks (multiple choice, short answers, assignments, projects, essays, true/false)</p> <p>3.4 Oral questions (role plays, interviews, presentation by learner, discussion groups)</p>
4. Context of Assessment	<p>Competency may be assessed on the job, off the job or a combination of these or during Industrial Attachment. Off the job assessment must be undertaken in a closely simulated workplace environment.</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>